CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

INTRODUCTION

KERALA ECONOMY:CHALLENGES OF THE FUTURE

Global Growth, Tourism and Remittances

The opening sentence of United Nations, World Economic Situation and Prospects, 2016 is prognostic: “The world economy stumbled in 2015”. The downward revision of world gross product to a mere 2.4 per cent in 2015 from the 2.8 per cent forecast in mid- 2015 is a clear indication that the global economy is yet to see a revival. Growth has been low at 2.4 per cent (2012), 2.5 per cent (2013), and 2.6 per cent (2014) and has now reverted to the level of 2012. The forecast for 2016 and 2017 at 2.9 per cent and 3.2 per cent too are laced with hope, based on the better than average growth numbers in the high income countries; from 1.4 per cent each in 2012 and 2013 rising to 1.8 per cent in 2014 and estimated to grow at 2.0 per cent in 2015 and 2.4 per cent in 2016. The pick up in the advanced economies is predicated on the expected robust activity in the United States, supported by strengthening housing and labour markets, stronger private consumption in the euro area and the revival in Japan.

Downward risks are higher in the emerging market developing economies (EMDE), which as a group are home to 85 per cent of the world’s population and account for 60 per cent of the global GDP. They were the prime movers of growth in the aftermath of the financial crisis as advanced countries were grappling with the after effects of the crisis. The situation has reversed. While there are signs of mild revival in the developed economies, the EMDEs are saddled with lower commodity prices and diminished trade and capital flows. The worrying dimension of global growth is the simultaneous slowing of four of the largest emerging economies- Brazil, China, Russia and South Africa. Developing countries have witnessed growth falling from 4.9 and 5.1 per cent in 2012 and 2013 respectively to 4.6 and 4.4 per cent in the next two years. Among the developing countries, Chinese growth is on a downward slide, growth in 2015 estimated at 7.1 per cent earlier has now been revised downwards by the World Bank at 6.9 per cent and the forecast for 2016-17 have been downgraded from around 7 per cent to reach 6.5 per cent. Indian growth, after the sharp 2 percentage point rise between 2012 and 2013 (following the revision of the base year) has not shown much of a rise since then.

World trade volume that has been growing at double digits between 2005 and 2011 fell steeply in 2012 and there has been no sign of revival in trade since then. World merchandise exports have grown at 7 per cent per annum during 2005-14 (World Trade Report 2015) but the last three years of the period 2012-14 reported growth rates of 0, 2 and 1 per cent respectively. World merchandise imports fared no better: import growth averaged 6 per cent during 2005-14 but the last three years reported growth rates of 0, 1 and 1 per cent respectively. Indian merchandise exports had outperformed world exports by a huge margin by growing at 14 per cent during 2005-14. But the last three years, 2012-14, showed worse performance at -2, 6 and 2 per cent respectively. Indian merchandise imports followed exports with 14 per cent growth during 2005-14 and 5, -5 and -1 per cent growth respectively in the three years ending 2014.

World commercial services trade performed better than merchandise trade in recent years. The growth rate of services exports was 7 per cent during 2005-14 and 3, 5, and 4 per cent respectively during the three years ending 2014. Services imports too showed 7 per cent growth during 2005-14 but growth fell to 4, 6 and 5 per cent respectively in the three years, 2012 to 2014. Indian services trade compares well with the merchandise trade with exports and imports growing at 13 and 11 per cent respectively during 2005-14. The last three years-2012 to 2014- however, showed significantly lower growth rates of 5, 2 and 4 per cent respectively for exports and 4, -3 and -1 per cent respectively for imports.

Among trade in services, tourism has grown into a major economic sector and an important source of foreign currency revenue for many countries. That is the reason sustainable tourism is firmly positioned in the 2030 Agenda for Sustainable Development of the United Nations. Tourism continues to grow at rates

higher than many other sectors despite the weak economic conditions at the global level. But visitor growth has decelerated from about 7 per cent in 2010 and 6 per cent in 2011 to about 4 per cent in 2014 and it is expected to grow at 2.8 per cent in 2015. While overall growth has begun sliding, variation across regions of the world is large. In Asia, while North East and South East Asia each recorded 5 per cent increase in international arrivals in the first half of 2015, South Asia recorded a comparatively modest 4 per cent increase after two years of double digit growth. Within South Asia, Sri Lankan growth was closer to 20 per cent in 2014 compared to the Indian growth of 10 per cent. And within India, Kerala's growth of international tourist arrivals has been less than expected in 2014 and in the first half of 2015 (See Chapter 6 for details).

World trade growth slowed from 1.8 per cent in the fourth quarter of 2014 to 0.7 per cent in the first quarter of 2015. Some of the slowdown originated in Asia, where import growth decelerated from 2.1 per cent in the fourth quarter of 2014 to -0.3 per cent in the first quarter of 2015, but North America and other regions also saw import demand slowing. Recent months have seen a further slowdown in global trade flows and "total volumes of imports and exports are projected to grow by only 2.6 per cent in 2015, the lowest rate since the Great Recession" (WESP, 2016: p.6). Overall, trade growth continues to be weak and is not expected to pick up in the near future. The slowing of GDP growth and the declining trade flows have led to the decline in commodity prices. Following global financial crisis, the non-oil commodity price index had almost doubled between 2009 and 2011. The slump began soon after and has been continuing during the last four years. From the beginning of 2015 almost all commodity prices have fallen across the board- the exceptions are cocoa, cotton and tea- and the trend is expected to continue into 2016. The largest fall has been recorded by nickel, coffee, sugar and natural rubber. Coconut and coconut oil too has seen a decline in the last two years (WESP, Figure II.10). The global commodity rout is negatively impacting the macroeconomic performance of economies dependent on commodities. Regional economies, such as Kerala, the agriculture of which is dominated by rubber and coconut too fall in this category.

Crude oil price remained below $ 20 per barrel over the long period from 1986 to 1999, except for two spikes of short duration. Since 1999, the price of oil saw a steady increase until hit by the global financial crisis. But the sharp fall in 2008-09 was short lived and the upward movement resumed. But 2014 saw a precipitous fall and by the beginning of 2016 price of crude has fallen by over 70 per cent from its peak at the end of 2013. The expectation is that the price of oil will rule low for some time to come as the low GDP growth and the structural changes taking place in the fuel and power sector the world over will change the demand for oil significantly. The steady fall in the price of solar panels and the rapid expansion of renewable power is expected to change the demand for oil.

The slump in oil price combined with a slowing world economy has adversely affected economic growth in West Asia. Average GDP growth has slowed to 2.0 per cent in 2015. Although some recovery is expected in 2016 and 2017, economic activity in the region will remain weak during the next few years. Given the low prices, growth prospects in the oil exporting countries will rely on non-oil economic activities and countries will be forced to draw on their reserves. Balance on current account (%GDP) that ranged between 6.0 (Oman) and 36.80 per cent (Kuwait) in 2007, before the global financial crisis, showed sharp pickup post-2009 and ruled high till 2013. With the slump in oil price began the adverse movement of the current account balance and in 2015 they have turned negative in all but two countries, namely Kuwait and United Arab Emirates. The current account of oil exporters are expected to remain stressed in 2016 as well. Governments have been forced to cut spending and investment. Cut in spending has started affecting subsidies and taxation has also been thought of for mobilising revenues. Cut in investment will affect real estate, finance and oil investments. These reductions may not be immediate and large as drawing from the reserves built over the previous five years cushion the finances of many of the governments. But expatriate numbers and their incomes are likely to come under pressure and regions like Kerala that has over two million of its people working in West Asia could be impacted by the developments.

Stumbling world economy, low growth of merchandise and services trade and slump in the commodity prices has begun hurting developing country growth hard. The dream of continued high growth is turning into a distant mirage for many developing countries. And economies with external orientation, such as that of Kerala, have become vulnerable. The simultaneous downturn in tourism and commodity prices and the fall in remittances are likely to affect Kerala economy.

Kerala Economy

Kerala economy has been growing at rates higher than the national economy the last three years (based on the GDP at 2004-05 prices). GSDP growth rate of Kerala was over one percentage point higher than the national growth rate. Last fiscal Government of India changed the base year from 2004-05 to 2011-12 and with the change in base the growth rate showed a jump of close to two percentage point over the rate computed using the earlier base. As regards Kerala, while the GSDP growth rate with the new series for

CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

2012-13 was not very different from that of the old series, for the next two years the new series showed significantly lower growth rates. The net result is that Kerala which was apparently performing better than the national economy seems not doing so. Which is the true measure? There cannot be an answer to that question as GSDP is more an indicator than an exact measure.

Agriculture in Kerala has been hit by declining commodity prices. Agricultural growth rates in 2013-14 and 2014-15 have turned negative, largely owing to the sharp fall in the prices of rubber and coconut and the related fall in production (see Chapter 2). Rubber and coconut account for almost two thirds the total area under crops and the global commodity price fall has hit Kerala hard. The growth rate shown for the sector would have been much lower but for the higher growth of milk and meat production in the State.

Construction was a high growth sector till recently but has not shown much growth during the last three years (see Chapter 1). Along with construction, mining and quarrying has also taken a hit reporting growth rates of -16 and -21 per cent in 2012-13 and 2013-14 respectively. There was a slight reversal in the fortunes of quarrying in 2014-15 but it was not adequate to compensate the large declines of the previous two years. It may be recalled that the analysis of growth drivers by the Kerala Perspective Plan 2030 had identified construction as one of the drivers. It was stated that the period beyond 2001 saw construction, transport, storage and communication, trade, hotel and restaurants, real estate ownership, business and legal services, and other services boosting growth. These sectors witnessed high growth riding on the strength of tourism and remittances.

Remittances have not yet started falling but threats loom large on the horizon as the employment situation in West Asia has been stressed with the drastic fall in the price of crude oil. Interestingly, these changes in growth rates of the different sectors correspond to the analysis carried out in the Kerala Perspective Plan 2030 (KPP2030). It was shown that any fall in remittances, tourism and welfare spending will take growth to lower levels and that the magnitude of the fall in growth can be large. Three different growth scenarios were visualized: (i) Growth in banking and communication sectors slow down; (ii) Growth in banking, communication and construction sectors slow down; and (iii) Growth in remittances slows down. The results would be: Scenario1- overall growth rate in Kerala expected to fall to 5.1 per cent in 2012−16, and later this growth rate could reach a new low of 4.6 per cent in 2027−31; Scenario 2- a range of growth rate from 3 to 4 per cent; Scenario 3- growth rate of 3.3 per cent. These are extremely low growth rates under which sustaining the welfare gains of the ageing population would pose major problems. Kerala has to prepare itself to face these challenges (see Chapter 9).

Kerala Perspective Plan 2030 did not envisage the impact of terms of trade shock. With the precipitous fall in commodity prices and with many of them hitting historic lows of recent decades, the dependence of the State on a few commodities has made it vulnerable to external shock. While the crop sector accounts for only around 10 per cent of the Gross State Value Added, the ability of the State Government to support crisis ridden agriculture is rather limited. Also, it may be worth remembering the Brazilian coffee experience of yore: the more the government supports the more is produced and both the sector and government wade into deeper crisis. Kerala has become a high cost producer and the market rule is that they may find it difficult to survive unless productivity increases. Government support has to be redesigned to encourage productivity growth.

The lower growth of the economy and the fall of commodity prices have begun playing out in the mobilisation of tax revenue by the State. Revenue receipts have fallen below expectations for three years in a row and the coming years are going to be difficult, given the external environment. While 2015-16 has seen larger flow of Central resources following the larger award of the Fourteenth Finance Commission- both the share in Central taxes and grants- it may not be as bountiful in the next fiscal (see Chapter 1). Firstly, Revenue Deficit grant will be lower by over Rupees 1000 crore in 2016-17. Secondly, tax revenue of the Central Government may not show the increase seen in 2015-16. Gross Tax Revenue this fiscal has been growing at a rate higher than forecast in the last budget largely on account of the higher excise duties on the back of falling crude prices and service tax collections. Direct tax collection has fallen below the forecast reflecting the general slowing down of the economy and wholesale price increase being in negative territory. Further, the tax revenue increases are decelerating, cumulative increases till November of both income tax and corporation tax trending to below 10 per cent whereas it was between 12 and 14 per cent till September and October.

Overall, the economy of Kerala is facing headwinds both domestic and international. The external environment that has spurred the economy for over two decades has turned distinctively negative with the commodity prices hitting historic lows and decline in foreign tourist arrivals. More pain may yet come if remittances start their southward movement with oil exporters dipping into their reserves. On the expenditure side, the cumulative burden of pay arrears will eat into whatever resources that can be

CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

mobilised, leaving little room for manoeuvres of any kind.

Opportunities Ahead

"Only a crisis- actual or perceived- produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around. That,
I believe, is our basic function: to develop alternatives to existing policies, to keep them alive and available until the politically impossible becomes the politically inevitable" (Friedman, 1962)

To sustain growth we have to "develop alternatives to existing policies". The Kerala Perspective Plan 2030 has developed a framework aimed at overcoming possible roadblocks. Many of the 'ideas propounded have been lying around' for a while but lacked a coherent frame to offer a perspective. The Perspective Plan filled the gap.

Kerala is part of a globalised world in which rapid change is a constant. The State's growth hinges on ensuring that it is competitive, accessible, liveable and safe. To achieve this, Kerala needs to foster an economic environment that helps businesses succeed, simultaneously holding on to the gains in human development. A free, open and innovation-embracing economy can lay the foundation for thriving businesses, markets and investors, which, in turn, will create an impetus for development. The imperative for Kerala is to create an international business climate, clearly prioritise investments and link spatial development and infrastructure. The State needs to work towards this goal alongside the central government and local governments, spelling out clearly defined responsibilities, simple rules and selective government involvement and by creating freedom of choice for individuals and companies. This new approach will require an overhaul of the State's policies and programmes and is set out in the Kerala Perspective Plan 2030.

The trajectory of encouraging, sustaining and enhancing growth will require decisive action to boost Kerala's competitiveness and improve its future economic outlook. Reforms and the right set of investments to enhance competitiveness are crucial for the economic transformation that can lead to sustained higher growth and development over the long term. It is, therefore, imperative that competitiveness - the set of institutions, policies and factors that determine a country's level of productivity - features high on the economic reform agenda. A competitive economic environment is built on eight pillars, of which the first is the institutional environment determined by the legal and administrative framework within which individuals, firms and governments interact to generate wealth. The quality of institutions has a strong bearing on competitiveness and growth. The role of institutions goes beyond the legal framework. Government attitudes toward markets and freedoms and the efficiency of its operations are also very important. Excessive bureaucracy and red tape, overregulation, corruption, lack of transparency and trustworthiness and the inability to provide appropriate services can considerably slow down the process of economic development. In this context, the Comprehensive Mission for Employment Generation (MEGA), formulated by the State Planning Board in consultation with stakeholders in industry and business, can greatly help in improving ease of doing business in Kerala.

Infrastructure, health and primary education, quality higher education and training, technological readiness, local governance (increasingly urban governance, as the State is urbanising rapidly) are some of the other pillars for enhancing the competitiveness of the State (see Chapter 9 for elaboration). Sustainable competitiveness is the keystone of rapid economic growth in a globalising era. The need to consider sustainability along with competitiveness has become all the more relevant. Combining the ideas of competitiveness and sustainability, sustainable competitiveness may be defined as "the set of institutions, policies and factors that make a nation remain productive over the longer term while ensuring social and environmental sustainability," (Schwab, 2013: 61). It is a combination of competitiveness or high quality growth, an equitable society and sustainable environment that creates the ideal conditions for life. Kerala wishes to be one such society by 2030 and KPP 2030 sets its contours.

The framework for the development of the Kerala Perspective Plan 2030 has been conceived in terms of innovation-embracing entrepreneurs at the centre of the economy, with eight pillars of institutional elements, infrastructure, health and primary education built on the foundational elements of environmental sustainability and social sustainability.

As already mentioned, while the Perspective Plan brought in coherence, many of the 'ideas propounded have been lying around' for a while. And some have been converted into action plans. Kerala has been urbanising rapidly with the level of urbanisation reaching 48 per cent by 2011 and is expected to reach 70 per cent by 2030. With rising incomes and rising urbanisation, infrastructure demand has grown rapidly. While Kerala has a vast network of roads of all types, the infrastructure deficit is yet to be bridged.

CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

Infrastructure assets have their life and many built before the 1960s have to be replaced and improved. Government has taken up projects to meet the replacement demand as well as the new demand in the road sector. The highly acclaimed Thiruvananthapuram City Improvement Project is sought to be extended to Kozhikode, Kannur, Malappuram and Kottayam (Chapter 5). New National Highway projects are under implementation.

As regards Railways, a suburban train service in the Thiruvananthapuram- Chengannur sector has been finalised and a special purpose vehicle is expected to implement the project with the State Government and the Ministry of Railways as partners. Kochi Metro has been making steady progress and the first phase of the project is expected to be completed in a few months. Detailed project reports have been prepared for setting up light metro projects in Thiruvananthapuram and Kozhikode and these are now under the consideration of the Government of India for joint funding. Detailed Project Report for the High Speed Rail corridor is under preparation for transmission to the Government of India for financing. Vizhinjam International Sea Port, Kannur Airport and the expansion of Kochi airport too fall in this category and are part of the vision to take the big leap. Inland Waterway 3 is almost complete and Kollam and Azheekkal ports have begun brisk coastal traffic.
The State Planning Board and the Finance Department jointly have worked out an apparatus for harnessing investible resources for financing infrastructure. The Kerala Infrastructure Investment Fund set up a few years ago, will be the vehicle for attracting resources into investment in infrastructure through an array of financial instruments. The stage is being set for the implementation of this scheme in the years to come.

Transmission and distribution of quality electricity has been a problem in all the Indian states for long. Recent years have seen states making concerted efforts to bring down distribution losses and Kerala stands in the forefront. Distribution has been improved by extending lines and installing transformers. Consumers have been the centre of attention of the distribution company. Their concerns have been addressed by introducing speedy rectification systems and e-payment facilities. Through Case I bidding and through renewable energy projects, the State has secured the power needed for the next few years. The lack of production capacity within the State, however, continues to remain a concern. Much more needs to be done as Kerala does not generate adequate power and transmission has to improve where land acquisition has been a problem. The solution to the problem of land acquisition depends on the society at large and cooperation of all (Chapter 5).

Manufacturing growth during the last four years in India has been moderate. Manufacturing in Kerala-never a strong point of the State- had shown some sparks in 2012-13 but along with the general decline at the national level growth in Kerala too has suffered. While the number of Public Sector Enterprises has been large in Kerala, there has hardly been any increase in their value of production or turnover during the last four years. The thrust of recent years has been to create an institutional and economic environment for the promotion of Micro, Small and Medium Enterprises (MSME) the results of which have been encouraging. The number of MSMEs registered has increased from just over 10,000 a year in 2011-12 to over 15,000 in 2014-15. Along with the promotion of MSMEs, recent years have also seen the promotion of entrepreneurship and skill development (Chapter 4).

An entrepreneurial ecosystem cannot be sustained without a knowledge base. Kerala needs to be transformed into a key node in the global knowledge network. Higher education and scientific research institutions will be the engine for new ideas for sustaining innovative enterprises. Srinivasa Ramanujan Institute for Basic Sciences, State Centre Resource Institute for Partnership in Technologies and Critical Mineral Research Institute have all been conceived and established with this objective. To transform ideas into innovative enterprises and production centres skilled human potential is indispensable. The severe mismatch between the skill sets possessed by the workforce and those required by the industry are sought to be addressed by setting up skill acquisition and enhancement programmes. Kerala Academy for Skills Excellence, a section 25 company has been set up for this purpose (Chapter 7). The Additional Skill Acquisition Programme (ASAP) meant for those studying in various colleges in the State has taken root and has grown phenomenally. ASAP strives to transform the State as a human resource hub of the region. It aims to impart industry specific skills to the needy students in selected schools and colleges along with their regular studies through modular courses with the active participation of industry partners. Along with skill development initiatives, Kerala was also amongst the earliest states to encourage and nurture a start-up culture.

Kerala Startup Mission (formerly known as Technopark-Technology Business Incubator) has been set up with a vision to support and nurture startups in Kerala. It was initially established in 2006 by the Department of Science and Technology (DST), Government of India and Technopark. Since 2012, the Mission is designated as the nodal agency for establishing startup ecosystem in the State. The Mission has been

CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

incubating on average 50 companies every year. It has signed MOUs with many business incubators for facilitating support to startups. It has distributed 10,000 raspberry kits among 8th standard students across Kerala during the last two years, launched technology innovation fellowship programmes, implemented many startup boot camps and distributed numerous startup boxes.

Declining agriculture has to be revived by transformative initiatives. In this context two initiatives taken in the last three years need necessarily to be mentioned. Hi-tech agriculture has been given priority by promoting protected agriculture and open precision farming as part of vegetable development programme. The poly houses established as part of the programme of protected cultivation are useful in combating both biotic and abiotic stress that limits productivity and quality of produce. They have evinced good response from the farming community. A new approach on crop health management has also been initiated that brings together management of sustainable ecosystems and people's health through good plant protection practices (Chapter 2). A significant achievement has been the huge increase in vegetable cultivation.

The outlay to local governments has increased steadily in the five years starting from 2011-12 as, Rs 2574 crore, Rs. 3228 crore, Rs 4000 crore, Rs.4700 crore, and Rs 4800 crore. The proposed outlay in 2016-17 is Rs.5500 crore including the additional plan assistance of Rs 500 crore. Additional plan assistance is being started from 2016-17 to promote local governments to take up viable projects of vital interest to the State. The major areas of intervention include waste management and production of organic manure, certification of commercially produced organic products, construction of storm water/waste water drains, slaughter houses, crematorium and setting up of infrastructure facilities for industrial parks. This scheme is initially limited to District Panchayats and Corporations. The allocation from this fund will be purely demand based and release will be performance based on specific indicators. 50% of the fund is exclusively for solid and liquid waste management. The cost of the project is shared in the ratio between 70:30 between the State government and Local governments.

Major changes have been initiated in the plan formulation guidelines of local governments. Technical Advisory Group (TAG) mechanism has been discontinued. Instead of vetting the projects by the TAG concerned, it has been verified and certified by the implementing officer and then furnished to the officer of the same sector at the higher levels for getting it appraised and approved. Thus the local governments would get more time to implement projects. Project Formulation Committee (PFC) can be constituted, if required, for providing technical expertise to prepare and approve the projects for local governments. The Annual Plan Document of local bodies need only be approved by the District Planning Committee (DPC) instead of approving individual projects. Submission and approval of the projects through online software (SULEKHA) has made planning and implementation tasks easier. Introduction of Sevagram and Ayal Sabha has strengthened the participation in the grama/ward sabha.

As part of strengthening the Annual Plan review mechanism, an online plan monitoring system (planspace) was introduced by the State Planning Board. Regular review is being undertaken at various levels in Government using planspace data. PLANSPACE has been integrated with the Treasury network in respect of all Departments where payments are made on the basis of Bills. This facilitates comparison of figures as reported by Departments with treasury figures of outflow. District Roll Out of planspace, is on the anvil. As part of good governance initiative for strengthening the plan monitoring mechanism, it has been decided to introduce digitized documentation of the assets created in the Annual Plan.

The State Planning Board in October 2015 decided to introduce some systemic changes in the presentation of Plan document and Plan formulation process in the Annual Plan 2016-17 in order to facilitate speedy implementation of the schemes. The Annual Plan (2016-17) will now be presented in two separate volumes viz. Green Book & Amber Book. The schemes which require high priority and are ready for implementation will be included in the Green Book and the other schemes will be included in the Amber Book. The State Planning Board has also decided to introduce clubbing of schemes as 'Umbrella Schemes' with a single write up, to give more flexibility to departments in implementing schemes and reduce the need for re-appropriation or supplementary demand for grants.

Kerala has been a frontrunner in e-governance and mobile governance by promoting and developing core infrastructure and e-literacy programmes. The e-governance programme of the State has been exemplary with a strong infrastructure base in terms of State Wide Area Network, Secretariat Wide Area Network, State Data Centre and State Service Delivery Gateway. Kerala is the only state in the country where every Gram Panchayath is digitally connected; every district has implemented e-district programme and certificates are issued on line. Implementation of e-office has been started in several departments.

Overall, the Government has already taken many steps to boost competitiveness and improve the future economic outlook of the State. In some, initial steps have been taken as for example, in school education

CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

and health committees have been constituted to study the problems and suggest steps. Committees have submitted their reports and action plans are being developed. To promote health and well-being and to encourage preventive health care, a public health programme has been designed. With a clear vision of the future Kerala can turn the crisis into an opportunity.

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CHAPTERS

Foreword
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

CHAPTERS

Introduction
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

FOREWORD

Kerala was known for long for its high human development at low incomes. But recent years have seen a great change in the status of Kerala. A fairly high density of population, close settlements in the low lands and coastal plains and the increasing movement towards service sector employment has seen Kerala urbanize rapidly. Urbanization has brought to the fore many daunting challenges before the State. Rapid urbanization calls for greater investment in transportation, housing, sewerage, drinking water and waste management. All this calls for vast improvement in the efficacy of public expenditure.

Agriculture remains a key sector in the Kerala economy. The global commodity price collapse has affected two of Kerala's most important crops, namely, natural rubber and coconut. Agro processing and value addition, and safe to eat and organic mode of production are to be supported further to improve incomes of the farmers.

Kerala never had great strength in manufacturing and times have become bad. Kerala has taken some major steps in upgrading the skills of labour and for boosting entrepreneurship. Skill training has begun making strides in the State. A boost to entrepreneurship can take place with the implementation of the Comprehensive Mission on Employment Generation. All these should be changing the manufacturing scene in the State.

Kerala's achievements on social front have been lauded all around. The progress made in the realm of Education, Health and Gender development have been noteworthy. The State has been much ahead of the rest of the states in terms of access to basic services including education and medical care and in improving the socio economic conditions of SC/ST. This has been achieved mainly through large scale intervention and targeted efforts by the Government. However, the effort needs to be sustained to achieve higher levels of social development.

Recognizing the importance of infrastructure, the State has during the last four years given a thrust to major projects like the Kochi Metro, Vizhinjam Port and Kannur Air Port. These projects are expected to bring about major transformation in the State economy. Further to ensure smooth progress of projects the Government has earmarked a lump sum amount for infrastructure development projects. A scheme has also been drawn up by the Finance Department and Planning Board jointly to harness resources into the Kerala Infrastructure Investment Fund through diverse financial instruments. This will ensure that projects which are progressing are not constrained by lack of funds. Though a push has been given to promote infrastructure growth, challenges persist in terms of the emerging infrastructure and urban infrastructure in the State. Similarly, improving the power scenario in the State is imperative. The State needs to explore the full potential of Hydro Electric generation and Renewable Energy. Adequate focus also needs to be given on using energy efficient lighting. The feasibility of innovative approaches like floating Solar Power Plants may be explored.

The Kerala economy has always been more open than the Indian economy. A much higher proportion of its produce had external market as its destination and a sizable part of its consumption came from outside. The last four decades have also seen a sizable proportion of its labour force exploring the globe for employment and the last two decades have seen large migration of labour from other states of India into Kerala in search of work. The growing remittance flow into the Kerala economy has been one of the engines of growth of the economy. The last two decades have seen Tourism bloom in Kerala. Currently the contribution of Tourism to the Kerala economy is over 10 per cent equaling that of agriculture.

Innovation and skilled man power is the need of the hour as the economy moves towards a competitive

innovation based economy. Increasing focus on knowledge creation is required to fuel innovation and productivity, growth. Kerala requires a focused approach towards spearheading innovation, entrepreneurship and skill enhancement in the economy. The skill shortage needs to be plugged and effort is required towards acquisition of new skills. The State has to take adequate steps for creating and encouraging an environment which promotes research and development, nurtures entrepreneurial skills and helps in acquisition of new skills attuned to the needs of the economy so as to raise productivity levels in the economy.

Kerala's decentralization experience is unique and encouraging, and it is recognized world over. The decentralization has had its impact in local level planning. The systems developed under this process have become part and parcel of the development activities at the grass root level. While adequate and enhanced budgetary funds are provided to local governments, there is inadequate capacity among them to conceptualize and prepare detailed project reports, implement and monitor them.

Kerala Perspective Plan 2030 is a strategic articulation of its development vision, mission, goals and objectives, and a high level strategy to achieve them. It also specifies an action plan around the frame work of resources, competencies and capacities. The KPP 2030 identifies critical challenges; provides a strategic frame work for sustainable and inclusive growth drawing on international experiences; sets developed country bench marks for Kerala to achieve; examines the best regional and international practices and provides the rationale for development planning and resource requirement. Creation of knowledge-based economy is central to this Perspective Plan.

The latest edition of the Economic Review is brought out with the objective of providing valuable and comprehensive information about Kerala's economic performance in the last year of the 12th Five Year Plan. This year also, as usual, the latest available data has been included on Government policy, plan priorities and on-going major programmes/schemes and projects to provide a clear picture of how Kerala's economy has performed in the first four years of the Twelfth Five Year Plan. A Sub Committee with Dr. D. Narayana, Technical Advisor, Ms. Gayathri Nair, Director, Project Financing Cell and Sri. P. V. Kamalasanan Nair, Chief (in charge) Plan Co-ordination Division as members have carefully gone through the draft report to improve its quality. The list of those involved in the preparation of the respective sections of the Economic Review appears at the end. The performance of the State's Economy as well as major achievements of various departments is brought out sector wise in Volume I and corresponding data is provided in Volume II. In addition to the General Chapters, a theme paper on 'Kerala Perspective Plan 2030 – Towards Action and Implementation' is also included. The Economic Review 2015 is published in print media in English and Malayalam. An e-version is also uploaded to the State Planning Board website www.spb.kerala.gov.in.

State Planning Board Thiruvananthapuram, Kerala, India.

CHAPTERS

Introduction
Kerala - a quick look
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

KERALA -A QUICK LOOK

Sl. No.	Item	Units	1960-61	1970-71	1980-81	1990-91	2000-01	2010-11	2014-15
1	Geographical Area	'000 Sq.Km.	38856.7	38864	38863	38863	38863	38863	38863
Administrative Setup									
2	Revenue Divisions	No.						21	21
3	Districts	-do	9	10	12	14	14	14	14
4	Taluks	-do	55	56	58	61	63	63	75
5	Villages	-do		1326	1331	1364	1452	1532	1664
6	Towns	-do	92	88	106	197	159	520	520
Population as per Census			1951	1961	1971	1981	1991	2001	2011
7	Total	(in 000s)	13549.1	16903.72	21347.38	25453.68	29098.51	31843.8	33406.06
8	Males	-do		8361.93	10587.85	12608.74	14288.99	15468.61	16027.41
9	Females	-do		8541.89	10759.52	12885.08	14809.52	16372.76	17378.65
10	Rural	-do		14351	17880	20682.4	21618	23574.45	17471
11	Urban	-do		2552	3467	4771.3	7018	8266.93	15935
12	Scheduled Castes	-do		1422	2002*	2549	2886.52	3123.94	3040
13	Scheduled Tribes	-do		208	193*	261	320.97	364.19	485
14	Density of Population	Per Sq.Km.		435	549	655	749	819	860
15	Literacy Rate	Percentage		55.08	60.42	70.42	89.81	90.9	94
16	Sex Ratio	Females per 1000 males		1022	1016	1032	1036	1058	1084
17	Urban Population	Percentage		15.1	16.24	18.74	24.11	26	47.7
State Income -at constant prices			1960-61	1970-71	1980-81	1990-91	2000-01	2009-10	2014-15 (Q)*
18	State Income	Rs.Crore	462	1255	3823	12195	63715	180812	432361.4
19	Primary Sector	-do	241	652.6	1682.12	4756.05	14017.3	15966	47984.53
20	Secondary Sector	-do	68	163.15	841.06	3170.7	14017.3	38249	99153.13
21	Tertiary Sector	-do	153	439.25	1299.82	4268.25	35680.4	126597	247730.31
22	Percapita Income	Rupees	276	594	1508	4207	19951	47360	127166
Agriculture			1960-61	1970-71	1980-81	1990-91	2000-01	2009-10	2014-15
23	Net Area Sown	'000 Ha.	1923.7	2171	2179.6	2246.8	2206.1	2078.7	2042.8
24	Gross Cropped Area	-do	2349	2933	2884.8	3020	3021.67	2668.7	2624.6
25	Gross Irrigated Area	-do-			380.9	384.5	460.3	457.78	469.6
26	Gross Irrigated Area to Gross	Percentage			13.2	12.7	15.2	17.66	17.89

CHAPTERS

Foreword
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

	Cropped Area								
Gross area under principal cropes			1960-61	1970-71	1980-81	1990-91	2000-01	2012-13	2014-15
27	Paddy	'000 Ha.	778.9	874.9	801.7	559.45	347.45	197.28	198.15
28	All Pulses	-do	44.1	39.54	33.86	23.38		2.948	3.601
29	Total Foodgrains	-do	1565.1		1778	1496.2	331.69	358	156.24
30	Sugarcane Harvested Area	-do-	9.15	7.65	8.04	7.62	3.37	1.74	
31	Rubber	-do	132.84	188	237.8	384	474.36	545	549.96
32	Tea	-do	39.79	37.27	36.13	34.71	36.85	30.21	30.21
33	Coconut	-do	500.76	719.14	651.37	870	925.78	798.16	793.856
34	Aracanut		54.26	85.82	61.24	64.82		101.78	96.69
35	Groundnut	-do	16.03	14.69	9.4	12.82		0.699	
36	Pepper	-do	99.75	11.75	108.07	168.51	202.13	84.71	85.43
37	Cardamomum	-do	28.6	47.49	56.38	66.89	41.29	41.6	39.73
38	Ginger	-do-	12	12.17	12.66	14.14	11.61	4.51	4.8
Production of Principal Crops			1960-61	1970-71	1980-81	1990-91	2000-01	2012-13	2014-15
39	Rice	'000 tonnes	1067.53	1298.01	1271.96	1086.58	751.33	508.99	562.09
40	All Pulses	-do	17.56	13.05	22.45	16.54		3.25	3.4
41	Sugarcane	-do	38.09	37.63	48.18	51.98	27.55	16.52	
42	Rubber	-do	24.103	88	140.333	307.521	579.866	800.05	507.7
43	Tea	-do	39.476	43.012	47.631	63.416	69.132	62.963	65.17
44	Coconut	In million nuts	3220	3981	3008	4232	5536	5799	5947
45	Arecanut	'000 tonnes	7.74	12.74	10.8	13.07		118.23	125.93
46	Groundnut	-do	13.8	16.09	8.2	9.53	9.76	8.59	
47	Pepper	-do	27.03	25.03	28.52	46.8	60.93	46.29	40.6
48	Cardamomum	-do	1.28	1.25	3.1	3.4		10.2	16
49	Ginger	-do-	11.27	19.68	32.04	45.68	42.7	22.06	22.99
Live Stock Census			1977	1982	1987	1996	2003	2007	2012
50	Total Livestock	in lakh	53.17	56.45	55.01	55.77	34.81	35.87	27.35
51	Total Poultry	-do		151.86	184.59	308.24	138.64	127.14	242.82
Forest			1960-61	1970-71	1980-81	1990-91	2000-01	2011-12	2013-14
52	Forest Area	'000 Ha.	1056.05	1055.73	1081.51	1081.51	1081.51	1081.51	1093
Factories			1971	1981	1991	2001	2011	2012	2014
53	Working Factories	No.	3024	9106	13255	18554	19676	20473	21764
54	Employees	-do	206839	300515	368738	436410	644606	644802	646923
55	Employees per lakh population	-do	969	1181	1267	1370	1930	1930	1930
Electricity			1970-71	1980-81	1990-91	2000-01	2009-10	2011-12	2014-15
56	Total Generation	Mu	2125.99	5242	5490.8	7655.57	6494.5	8350.74	7342.76
57	Total Consumption	-do		2869	5281.86	10319	12877.65	16181.63	18426.26
58	Industrial Consumption	-do		2025.3	2696.78	3784	4002.37	4926.43	4995.45
59	Agricultural Consumption	-do		124.6	287.57	350	225.22	286.18	298.28
60	Domestic Consumption	-do		409.2	1620.93	4688	5931.27	7705.86	9367.26
Education			1970-71	1980-81	1990-91	2000-01	2009-10	2012-13	2014-15
61	Primary Schools	No.	9437	9605	9682	9714	9828	9737	6743

CHAPTERS

Foreword
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

62	Enrolment	'000s	4156	4284	4402	3637	3015	2545	1228
63	High Schools	No.	1199	1971	2451	2596	2814	2890	2964
64	Enrolment	'000s		1310	1498	1611	1443	1426	1397
Health			1970-71	1980-81	1990-91	2000-01	2009-10	2011-12	2014-15
65	Hospitals	No.	553	746	1199	1319	1254	1255	2937#
66	No. of Beds	-do	21777	32447	38726	38242	37021	37388	54814#
Vital statistics (Demographic Status)			1970-71	1980-81	1990-91	2001	2009	2010	2011
67	Birth Rate/1000 population		32.26	25.5	20.3	16	14.6	14.7	14.8
68	Death Rate		9.23	6.4	6.1	6.6	6.6	6.8	7
69	Infant Mortality Rate		61	37	21	11	12	14	13
Transport			1970-71	1980-81	1990-91	2000-01	2010-11	2011-12	2014-15
70	Railway Route Length	Kms.	892	921.35	988	1148	1257	1257	1257
71	Total Road Length	-do	18037	94145	128403	125835	151652	244373	372472
72	Motor Vehicles	'000s	86234	195000	648000	2111885	6072019	8048673	9421245
Local bodies			1990-91	2000-01	2006-07	2007-08	2008-09	2010-11	2014-15
73	Zilla Parishat/Panchayat	No.		14	14	14	14	14	14
74	Gram Panchayats	-do	983	990	999	999	999	978	941
75	Block Panchyats	-do		152	152	152	152	152	152
76	Municipalities	-do	58	53	53	53	53	60	87
77	Corporations	-do	3	5	5	5	5	5	6

CHAPTERS

Foreword
Macro Economic Profile
Agriculture and Allied Sectors
Industry, Labour and Employment
Social Service
Infrastructure
External Sector
Capacity Building
Local Self Governments and Decentralised Planning
Perspective Plan 2030

Home |

Chapter 1

MACRO ECONOMIC PROFILE

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

Introduction

Kerala was known for long as a case of high human development at low incomes. But recent years have seen a great change in the status of Kerala. Now both urban and rural areas of the State report asset holdings much higher than that of the Indian average and the State ranks among the top three Indian States. In rural Kerala, the average value of assets of the cultivators is about □1 crore compared to □1.79 crore and □1.25 crore in Punjab and Haryana respectively. The value of assets of non-cultivators is about □26 lakh compared to □17 lakh and □18 lakh in Punjab and Haryana respectively. Overall, at □27 lakh per household the average rural asset holding in Kerala is close to three times the Indian average. In urban areas, the average asset holding in Kerala at □40 Lakhs is almost twice the national average and is way above that in Punjab (□26 lakh) and Haryana (□37 lakh) and slightly below that in Maharashtra (□43 lakh). Along with asset holding, the monthly per capita consumer expenditure in rural Kerala is □2669 which is the highest for any State and 86% higher than the national average. The urban monthly per capita consumer expenditure at □3408 in Kerala is about 10% lower than that in Haryana but is about 30% higher than the national average. Along with higher levels of asset holding and per capita expenditure level of inequality has also risen in the State. Currently, inequality in per capita consumer expenditure in Kerala is one of the highest among the Indian states.

A fairly high density of population, close settlements in the low lands and coastal plains and the increasing movement towards service sector employment has seen Kerala urbanise rapidly. Kerala, in 2011 is one of the most urbanised Indian states. Rapid urbanisation calls for greater investment in transportation, housing, sewerage, drinking water and waste management. All this calls for vast improvements in the efficiency of public expenditure, especially, when the fiscal health of the State is not in good shape.

Section 1

Demography

The Census of 2011 counted Kerala's population at 3,34,06,061. Out of this population 1,60,27,412 (48 per cent) are males and 1,73,78,649 (52 per cent) are females. In the last census in 2001, the population was 3,18,41,374; 1,54,68,614 (48.6 per cent) males and 1,63,72,760 (51.4 per cent) females.

1.2 The growth rate of Kerala's population during the last ten years is 4.9 per cent, the lowest rate among Indian states. Figure 1.1 shows that the national rate of growth of population during the period 2001-2011 is 17.64 per cent. The population growth trend shows that Kerala is moving towards zero population growth or towards negative growth. Among the districts Malappuram has the highest growth rate of 13.4 per cent, and Pathanamthitta has the lowest growth rate (-3.0 per cent). Idukki also has a negative growth rate (-1.8 per cent). The growth rate of population is low in six southern districts (Idukki, Kottayam, Alappuzha, Kollam, Pathanamthitta and Thiruvananthapuram) of the State.

Fig 1.1
Decadal Growth of Population in India and Kerala 1901-2011

Source: Census of India 2011

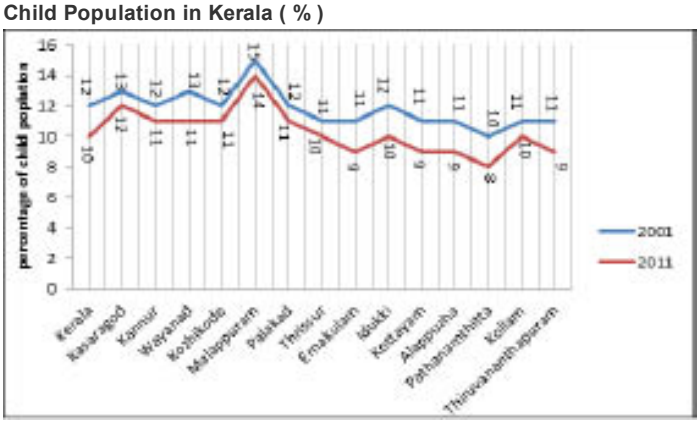
Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

1.3 The child population (0-6 years) in Kerala shows a declining trend. Census data reveals a negative growth rate of the child population in the State (-8.44 per cent). Kerala's total child population in 2011 is 3472955 compared to 3793146 in 2001 census. Figure 1.2 presents a visual of child population in the districts of Kerala in 2001 and 2011. The highest proportion of child population is in Malappuram district and the lowest proportion is in Pathanamthitta district. The proportion of child population has decreased from 12% in 2001 to 10% 2011 in the State. The decreasing trend is seen in all the districts. The southern districts of Kerala show 2% decline except Kollam which reports a decline of 1% in the proportion of child population. All the northern districts of Kerala show 1% decline in the proportion of child population, except Wayanad which reports a decline of 2%. It shows that new addition to population in northern districts is faster than in the southern districts. Details are in Appendix 1.1

Fig 1.2
Child Population in Kerala (%)



Source: Census of India 2011

Literacy

1.4 Kerala has the highest effective literacy rate of 94 per cent among Indian states as per 2011 census. It was 90 per cent during 2001 census. Kottayam tops in the literacy chart with 97.2 per cent and Pathanamthitta is just behind with 96.5 per cent. Wayanad has the lowest literacy rate of 89 per cent and Palakkad is just above with 89.3 per cent. Even the lowest literacy rate of Wayanad is higher than national rate of literacy (72 per cent). The difference between the lowest and the highest value is just 8.2. As compared to 2001, literacy rate of all the districts has improved. Details are in Appendix 1.1.

Sex Ratio

1.5 The sex ratio (number of females per thousand males) of Kerala according to census 2011 is 1084 and has improved by 26 points from 2001. Sex ratio of India is 943 as per census 2011.

1.6 Among the districts, Kannur has the highest sex ratio (1136) followed by Pathanamthitta (1132). While Idukki has the

lowest ratio (1006), Ernakulum is just above with 1027. All the districts have the ratio above 1000. The difference between the lowest (Idukki-1006) and highest (Kannur-1136) is 130 points. Details are in Appendix 1.2.

Child Sex Ratio (0-6 Years)

1.7 Child sex ratio (number of females per 1000 males) in Kerala is 964 as per the 2011 census. It was 960 in 2001. Pathanamthitta reports the highest ratio (976) followed by Kollam (973) and Kannur (971). While, Thrissur has the lowest ratio of 950, Alappuzha is just above with the ratio of 951. Considering that the biological level sex ratio at birth is around 105 male births per 100 female births and that it is not invariant, the variations observed across the districts may be the effect of natural selection processes. When analysing the decadal change, the highest gain is for Kollam (13) and Kozhikode followed with a score of 10. All other districts have the score below 10 points. Thrissur (-8), Idukki (-5) and Alappuzha (-5) have negative decadal change in sex ratio. Details are in Appendix 1.2.

Density of Population

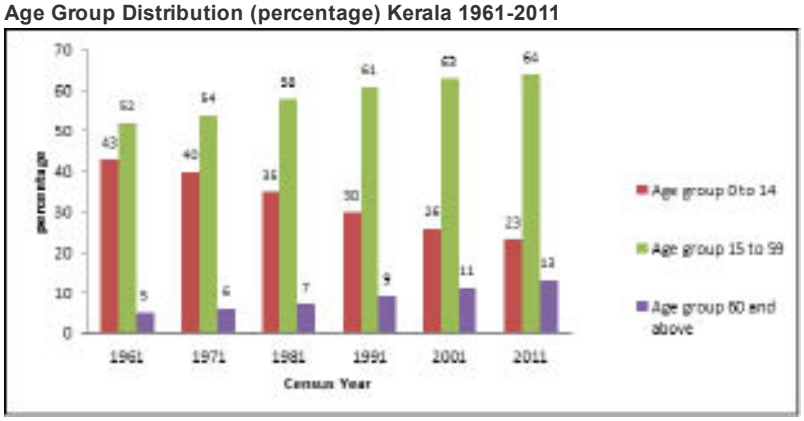
1.8 Kerala's density of population as per 2011 census is 860 persons / sq. km. It is much higher than that of India (382). Thiruvananthapuram is the most densely populated district (1508) and Idukki is the least densely populated district (255). Density of population has increased in all districts compared to 2001 except for Pathanamthitta (-16) and Idukki (-4) where it has declined. Details are in Appendix 1.1.

Age Group Distribution

1.9 The demographic transition of Kerala during the last six decades has resulted in major changes in the composition of population. It is observed that the proportion of population in the age group of (0-14 years), has declined from 43% in 1961 to 23% in 2011. In the case of working age group (15-59 years), there is an increasing trend with slow growth rate. However, due to the increasing life expectancy and availability of health facilities, the proportion of population in the old age group (60 years and above) is showing an increasing trend from 6% in 1961 to 13% in 2011(See Fig 1.3). It may be observed that the addition to the working age group (15-59 years) has become smaller as the feeder category (0-14 years) is diminishing. Moreover, proportion of the old age dependent group (60 years and above) has increased which will entail higher social security expenditure by government.

Fig 1.3

Age Group Distribution (percentage) Kerala 1961-2011



Source : Census 1961,1971,1981,1991,2001,2011

Section 2

Urbanisation in Kerala

1.10 According to the World Population Report 2007, by 2030, 40.76% of India's population is expected to reside in urban areas. As per World Bank, India along with China, Indonesia, Nigeria, and the United States will lead the world's urban population surge by 2050. At current rates of growth, urban population in India will reach a staggering total of 575 million by 2030.In 2011,as many as 52 cities in India had population of a million plus and the total urban population in India is 377 million, ie. 31.2% of the total population lives in 7935 towns. In recent years, the urban sector in India has undergone a major change following the country's transition towards a market based economy.

1.11 Urbanisation as measured by the share of urban population has shown a sharp increase from 25.96% in 2001 to 47.72% in 2011 in Kerala. Corresponding levels for India were 25.52% in 2001 and 31.16% in 2011. The Urban Sector of Kerala consists of 6 Municipal Corporations and 87 Municipalities. Among the states, Kerala has undergone highest level of urbanisation in its history during 2001-2011 with an increase of 83.82% in its urban population. Kerala, positioned 19th in terms of the level of urbanisation among the states of India as per the 2001 Census came to be ranked 9th in 2011. Ernakulam (68.1%) is the most urbanised district of Kerala and Wayanad (3.9%) the least urbanised. Details of urban and rural population in Kerala are given in Appendix 1.3.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

1.12 The trend of urbanisation in Kerala shows some peculiarities. Generally, increase in the rate of urban population is the result of over concentration of population in the existing cities especially in metropolitan cities. But in Kerala, the main reason for the growth of urban population is the increase in the number of urban areas and also urbanisation of the peripheral areas of the existing major urban centres. Barring a few Panchayaths in the hilly tracks and a few isolated areas here and there, the entire State depicts the picture of an urban – rural continuum. It is very difficult to demarcate the urban and rural areas in the State since the features in rural and urban areas are almost alike.

1.13 In Kerala the population has settled all along the transportation routes in non-nucleated settlements wherever there are community facilities such as schools, administration and market centres. The geographical features, availability of sub soil water, climatic factors, easy access to transportation corridors and the socio economic factors etc. have contributed to the development of a dispersed settlement pattern in the State. The effectiveness of investments in infrastructure development and social services is considerably reduced since the scarce resources are spread too thinly throughout Kerala and the accruing benefit is only marginal.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

Section 3

Income

1.14 The Gross National Income (GNI) of India at 2011-12 prices is estimated at □10513163 crore during 2014-15, as against the previous year's estimate of □9800813 crore (Table 1.1). The gross national income is estimated to have risen by 7.27 per cent during 2014-15, in comparison to the growth rate of 6.85 per cent in 2013-14. GNI at current prices is estimated at □12383908 crore during 2014-15, as compared to □11205169 crore during 2013-14 showing a rise of 10.5 per cent. The Net National Income (NNI) at current prices is estimated at □11117615 crore during 2014-15, as compared to □10056523 crore during 2013-14, showing a rise of 10.6 per cent. Details are given in Table 1.1.

1.15 GDP at constant (2011-12) prices in the year 2014-15 is estimated at □10643983 crore showing a growth rate of 7.3 per cent over the estimates of GDP for the year 2013-14 of □9921106 crore. GDP at current prices in the year 2014-15 is estimated at □12541208 crore showing a growth rate of 10.5 per cent over the estimates of GDP for the year 2013-14 of □11345056 crore. The per capita GDP in real terms (at 2011-12 prices) during 2014-15 is estimated at □84009 as against □79305 in 2013-14, registering an increase of 5.9 per cent during the year. The per capita GDP at current prices is estimated at □98983 in 2014-15 as against □90688 for the previous year depicting a growth of 9.1 per cent.

Table 1.1
National Income, Domestic Product & Per Capita Income at 2011-12 Prices and Current prices (All India)
(□ crore)

Sl No	Item	At 2011-12 Prices			At Current Prices		
		2012-13 (NS)	2013-14 (NS)	2014-15 (PE)	2012-13 (NS)	2013-14 (NS)	2014-15 (PE)
1	Gross National Income (GNI)	9172925	9800813 (6.85)	10513163 (7.27)	9871777	11205169 (13.5)	12383908 (10.5)
2	Net National Income (NNI)	8193427	8751834 (6.82)	9388992 (7.28)	8841733	10056523 (13.7)	11117615 (10.6)
3	Gross domestic product (GDP)	9280803	9921106 (6.9)	10643983 (7.3)	9988540	11345056 (13.6)	12541208 (10.5)
4	Net domestic product (NDP)	8301305	8872127 (6.9)	9519811 (7.3)	8958496	10196410 (13.8)	11274915 (10.6)
5	Per capita Gross domestic product (□)	75148	79305 (5.5)	84009 (5.9)	80879	90688 (12.1)	98983 (9.1)
6	Per capita Net domestic product (□)	61217	70920 (5.51)	75136 (5.95)	72538	81506 (12.36)	88989 (9.18)

Note: The figures in Parenthesis shows the percentage change over previous year.
NS- New Series Estimate, PE- Provisional Estimate

1.16 The details of GDP, NDP, GNI and NNI at current and constant (2011-12) prices from 2011-12 to 2014-15 with percentage change over previous year are given in Appendix 1.4, 1.5, 1.6 and 1.7. The sectoral distribution of GVA at constant (2011-12) prices and current prices with percentage change over previous year is given in Appendix 1.8 and Appendix 1.9.

State Income

1.17 The Ministry of Statistics & Programme Implementation has released the new series of national accounts. There are some conceptual differences between the key aggregates of national accounts published till 2014-15 at 2004-05 base year prices and 2011-12 base year prices being published now. The new series follows System of National Accounts (2008) standards to a large extent. GDP at factor cost has been replaced by Gross Value Added (GVA) at basic prices and GDP at market prices is now termed GDP (Box 1.1).

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

Box 1.1

Base Year Change and Growth Rates

Base year has been revised in the computation of national accounts statistics from 2004-05 to 2011-12. Some concepts have also undergone changes following the adoption of System of National Accounts (2008) partly. Gross Domestic Product (GDP) at constant market prices will henceforth be known as GDP and Gross Value Added at basic prices will replace GDP at factor cost. The relation between the two is: GVA at basic prices = GVA at factor cost + production taxes less production subsidies. GDP and GVA at basic prices bear the following relationship: GDP = GVA at basic prices + product taxes - product subsidies.

Production taxes or production subsidies are paid or received with relation to production and are independent of the volume of actual production. Some examples of production taxes are land revenues, stamps and registration fees and tax on profession. Some production subsidies are subsidies to Railways, input subsidies to farmers, subsidies to village and small industries, administrative subsidies to corporations or cooperatives, etc. Product taxes or subsidies are paid or received on per unit of product. Some examples of product taxes are excise tax, sales tax, service tax and import and export duties. Product subsidies include food, petroleum and fertilizer subsidies, interest subsidies given to farmers, households, etc. through banks, and subsidies for providing insurance to households at lower rates.

Comprehensive coverage of the corporate sector in manufacturing, services and the financial sector by inclusion of information from the accounts of stock brokers, stock exchanges, asset management companies, mutual funds and pension unds, and the regulatory bodies has led to changes in the estimates of GVA both at aggregate and sectoral levels. The sector-wise shares in aggregate GVA in Kerala have also undergone significant revision. Consequent to changes in weights and growth rates of sectors the aggregate growth rates too have changed. As may be seen below the growth rate of GVA in Kerala has shown a decline in 2013-14 and 2014-15. While there was a marginal increase in growth rate in 2012-13 from 5.92 per cent to 5.97 per cent, the next two years witnessed significant decreases- from 6.27 per cent to 4.34 per cent in 2013-14 and from 6.82 per cent to 6.20 per cent in 2014-15.

Growth Rates (%) of GVA, Kerala: Effect of Base Change

	2012-13	2013-14	2014-15
Kerala, Base 2004-05	5.92	6.27	6.82
Kerala, Base 2011-12	5.97	4.34	6.20

Such changes in aggregate growth rates have come about owing to the change in the weights of sectors and change in the sectoral growth rates. The change in the base year has resulted in the weight of primary sector in 2011-12 increasing from 10.41 per cent (at 2004-05 prices) to 15.21 per cent (2011-12 prices); in industry the corresponding rise was from 21.63 per cent to 27.43 per cent; and tertiary sector showed a corresponding fall from 67.96 per cent to 57.46 per cent. Sectoral growth rates too have changed because of the change of base. For instance in year 2013-14, primary sector growth rate fell from -1.96 per cent to -2.97 per cent, secondary sector growth rate from 1.34 per cent to 1.20 per cent and tertiary sector growth rate from 8.95 per cent to 7.60 per cent. Thus the decline in the GVA growth rate from old base to new base of 1.93 percentage point (6.27- 4.34) is accounted for by change in sectoral growth rates of 1.15 per cent and change in weights of 0.78 per cent.

The Indian growth rates too changed consequent to the change in the base. In the Indian case too in 2012-13 the change was marginal- from 4.7 per cent to 5.1 per cent; but 2013-14 saw a big jump from 5.00 per cent to 6.9 per cent. While the direction of change in the case of India is opposite to that of Kerala, the reasoning is more or less the same.

Growth Rates (%) of GVA, India: Effect of Base Change			
	2012-13	2013-14	2014-15
India, Base 2004-05	4.7	5.0	5.6

India, Base 2011-12	5.1	6.9	7.3

The change in the share of the three sectors consequent to the shifting of the base at the all-India level is comparable to that of Kerala: share of primary sector increased from 17.9 per cent to 18.7 per cent, share of secondary sector from 26.1 per cent to 31.7 per cent and share of tertiary sector dropped from 56.1 per cent to 49.6 per cent. The sectoral growth rate of manufacturing in the year 2013-14Q2 with the old series was 1 per cent which increased to 3.8 per cent with the new series; trade and hotel showed an increase from 4 per cent to 11.9 per cent and communication from 7 per cent to 9.1 per cent; and agricultural growth hardly changed. And the GDP growth rate increased from 5 per cent to 6.9 per cent as the fall in the share of tertiary sector was more than compensated by the rise in manufacturing, unlike in Kerala.

GDP growth rates came to be revised in opposite directions despite the sectoral weights changing in a comparable manner. The main reason for such a change is that in Kerala the sectors which gained more weight reported poorer growth rates- agriculture a severe strain on Kerala- whereas it did not happen in the case of India. In the Indian case the weight of manufacturing went up so too its growth rate.

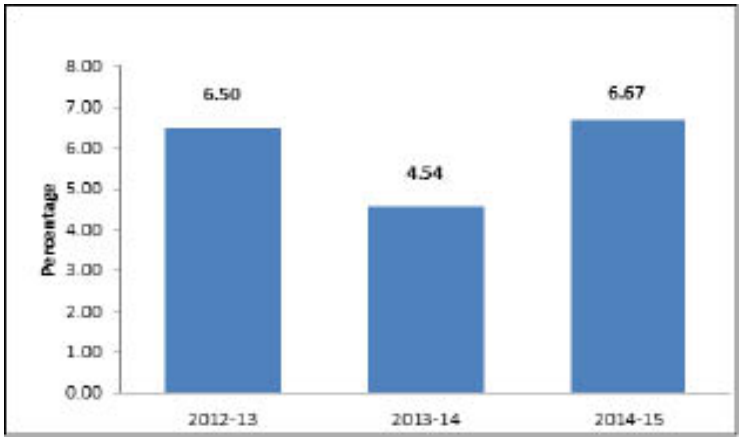
Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

1.18 The quick estimate of Gross State Domestic Product (GSDP) at constant (2011-12) prices is □43236140 lakh during 2014-15 as against the provisional estimate of □40530850 lakh during 2013-14, registering a growth rate of 6.67 per cent in 2014-15 compared to 4.54 per cent in 2013-14 (Figure 1.4). At current prices the Gross State Domestic Product is estimated at □51989585 lakh (quick estimate) during 2014-15 as against the provisional estimate of □46291606 lakh during 2013-14.

Fig 1.4
Growth Rate of GSDP at Constant (2011-12) Prices – Kerala



Source: Department of Economics and Statistics

1.19 The quick estimate of Net State Domestic Product (NSDP) at constant prices (2011-12) is □39176307 lakh during 2014-15 compared to the provisional estimate of □36588661 lakh during 2013-14, recording a growth rate of slightly above 7.0 per cent in 2014-15. At current prices the NSDP is estimated at □47052306 lakh (quick estimate) in 2014-15 compared to the provisional estimate of □41804353 lakh during 2013-14. The growth rate of NSDP at current prices is 12.55 per cent in 2014-15 compared to 12.56 per cent in 2013-14 (Table 1.2).

Table 1.2
State Domestic Product and Per Capita Income of Kerala

Sl No	Item	Income (□ Lakhs)			Growth Rate (Per cent)	
		2012-13	2013-14 (P)	2014-15 (Q)	2013-14 (P)	2014-15 (Q)
1	Gross State Domestic Product					
	a) At Constant (2011-12) prices	38769346	40530850	43236140	4.54	6.67
	b) At Current prices	41231300	46291606	51989585	12.27	12.31
2	Net State Domestic Product					
	a) At Constant (2011-12) prices	34861581	36588661	39176307	4.44	7.07
	b) At Current prices	37138412	41804353	47052306	12.56	12.55
3	Per Capita GSDP (□)					

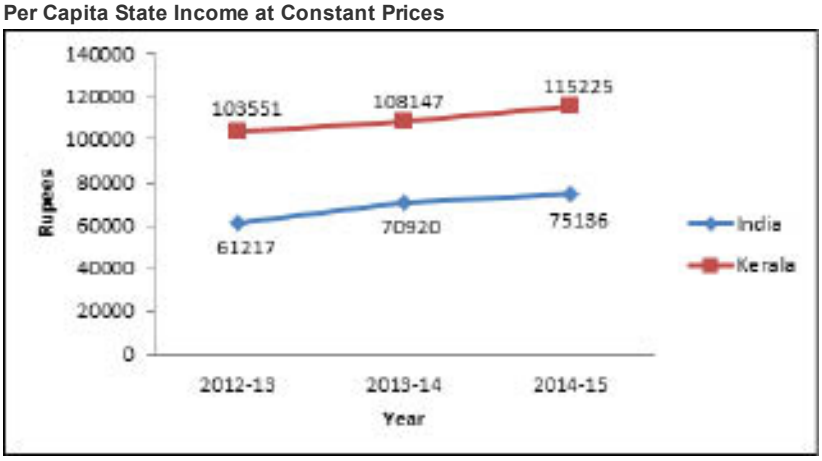
	a) At Constant (2011-12) Prices	115158	119799	127166	4.03	6.15
	b) At Current Prices	122471	136827	152912	11.72	11.75
4	Per Capita NSDP (□)					
	a) At Constant (2011-12) Prices	103551	108147	115225	4.44	6.54
	b) At Current Prices	110314	123564	138390	12.01	11.99

Source: Department of Economics and Statistics
P: Provisional Estimate, Q: Quick Estimate

Per Capita State Income

1.20 As per the quick estimates, the per capita Gross State Domestic Product at constant (2011-12) prices in 2014-15 was □127166 as against provisional estimate of □119799 in 2013-14, recording a growth rate of 6.15 per cent in 2014-15. At current prices, the per capita GSDP in 2014-15 was □152912 compared to □136827 in 2013-14. The best indicator of per capita state income is NSDP divided by the population. At constant (2011-12) prices, the quick estimates of per capita Net State Domestic Product in 2014-15 was □115225 as against provisional estimate of □108147 in 2013-14, recording a growth rate of 6.54 per cent in 2014-15. Fig 1.5 shows that during the period 2012-13 to 2014-15, the per capita state income at constant prices was higher than the per capita national income by over 50 per cent.

Fig 1.5
Per Capita State Income at Constant Prices

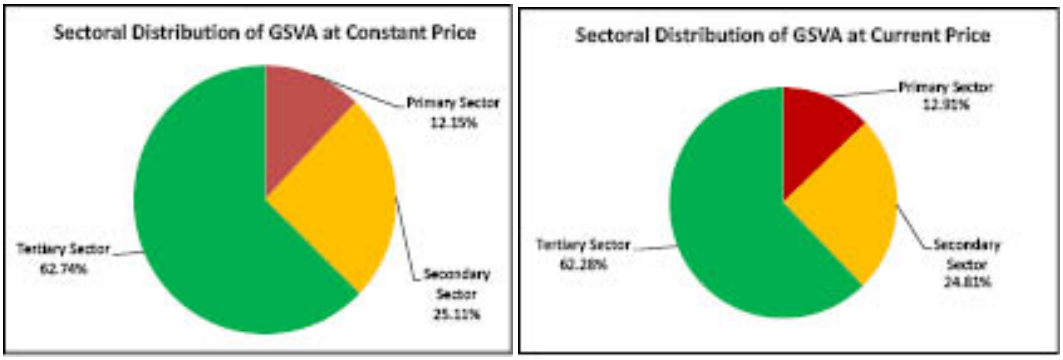


Source: Central Statistics Office and Department of Economics and Statistics

Sectoral Distribution of Gross State Value Added

1.21 During 2014-15, the contribution from primary, secondary and tertiary sectors to the GSVA at constant prices (2011-12) was 12.15 per cent, 25.11 per cent and 62.74 per cent respectively. At current prices, the primary, secondary and tertiary sectors contributed 12.91 per cent, 24.81 per cent and 62.28 per cent respectively to the GSVA during 2014-15 (Fig. 1.6). This difference in sectoral share between constant and current prices shows that inflationary trends in the primary sectors are much higher than in the secondary and tertiary sector.

Fig 1.6
Sectoral Distribution of GSVA 2014-15 at Basic Prices



1.22 While analysing the sectoral distribution of state income for the year 2014-15, it is seen that the contribution from primary sector and secondary sector are decreasing. But tertiary sector is showing an increase to 62.75 per cent from

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

60.89 per cent. The analysis of annual sectoral growth rate of Gross State Valued Added shows that tertiary sector recorded the highest rate of growth 9.42 per cent in 2014-15 at constant (2011-12) prices followed by secondary sector (3.74 per cent) and primary sector showed a negative growth rate of -3.86 per cent. The driving factor for the growth of the tertiary sector is mainly the growth in storage, trade, hotels and restaurant which is showing an increase of 14.72 per cent in 2014-15 compared to 7.10 per cent in 2013-14. Negative growth in agriculture is generally because of the decrease in production of some of the cash crops like pepper, turmeric, cashew, tea, coffee and rubber. At current prices, the tertiary sector recorded a growth rate of 14.43 per cent, secondary sector 9.22 per cent and primary sector with 6.13 per cent in 2014-15.

1.23 The share of primary and secondary sector has decreased during the period 2012-13 to 2014-15 and tertiary sector has increased from 59.06% to 62.75%. The details of sectoral distribution of GSVA with percentage share during the last three years is given in Appendix 1.10, 1.11 and 1.12 and the details of GSDP, NSDP at constant and current prices during 2011-12 to 2014-15 are given at Appendix 1.13, 1.14, 1.15 and 1.16.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

District-wise Gross State Value Added

1.24 District wise distribution of Gross State Value Added at basic prices at current prices shows that Ernakulam District continues to have the highest income of □7308907 lakhs in 2014-15 as against □ 6494347 lakhs in 2013-14 registering a growth rate of 12.54 per cent. At constant (2011-12) prices, this amounts to □6081130 lakhs during 2014-15 compared to □5680292 lakhs during 2013-14. The district wise details are given in Table 1.3.

Table 1.3
District-wise Distribution of Gross State Value Added

Sl. No	District Name	Gross State Value Added at Basic Price (□ Lakhs)					
		At Current Prices			At Constant Prices		
		2013-14 (P)	2014-15 (Q)	Growth Rate (%)	2013-14 (P)	2014-15 (Q)	Growth Rate (%)
1	Thiruvananthapuram	4906613	5531521	12.74	4241687	4521768	6.60
2	Kollam	3888801	4315970	10.98	3330426	3557257	6.81
3	Pathanamthitta	1263905	1342681	6.23	1149559	1164054	1.26
4	Alappuzha	2861282	3213578	12.31	2452281	2629840	7.24
5	Kottayam	2569349	2756034	7.27	2362638	2407431	1.90
6	Idukki	1632253	1903017	16.59	1481562	1598774	7.91
7	Ernakulam	6494347	7308907	12.54	5680292	6081130	7.06
8	Thrissur	3912802	4362645	11.50	3368596	3586517	6.47
9	Palakkad	2912365	3246376	11.47	2540318	2703804	6.44
10	Malappuram	3885258	4434668	14.14	3358850	3611899	7.53
11	Kozhikode	3311731	3730678	12.65	2829553	3004196	6.17
12	Wayanad	785409	887882	13.05	686640	730581	6.40
13	Kannur	3075895	3448484	12.11	2698704	2845478	5.44
14	Kasaragod	1138820	1299119	14.08	999819	1044070	4.43
	GSVA	42638831	47781562	12.06	37180927	39486797	6.20

Source: Department of Economics and Statistics
P: Provisional Q:Quick

District-wise Per Capita Income

1.25 Growth of incomes at current prices confounds the effects of real income growth and price changes. Real NSDP is arrived at by eliminating the effect of price changes.

1.26 The analysis of district per capita income shows that Ernakulam stands at the top with the per capita income of □161472 at constant (2011-12) prices in 2014-15 as against □151210 in 2013-14. The district wise per capita income with corresponding rank and growth rate is given in Table 1.4.

Table 1.4
District-wise Per Capita Income at Basic Price-Constant (2011-12) Prices

Sl. No.	District	2013-14	Rank	2014-15 (Q)	Rank	Growth Rate (%)

		(P)				
1	Thiruvananthapuram	114495	3	122030	3	6.58
2	Kollam	113369	4	121251	4	6.95
3	Pathanamthitta	84900	9	87111	9	2.60
4	Alappuzha	104243	6	111674	5	7.13
5	Kottayam	104424	5	107622	6	3.06
6	Idukki	114708	2	124298	2	8.36
7	Ernakulam	151210	1	161472	1	6.79
8	Thrissur	96647	7	102552	7	6.11
9	Palakkad	79552	11	84461	11	6.17
10	Malappuram	71727	13	76467	13	6.61
11	Kozhikode	82243	10	86919	10	5.69
12	Wayanad	72909	12	77593	12	6.43
13	Kannur	93906	8	98960	8	5.38
14	Kasaragod	65216	14	67579	14	3.62
	STATE	98246		104198		6.06

Source: Department of Economics and Statistics
P: Provisional Q: Quick

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

1.27 Table 1.4 reveals that the districts Alappuzha, Idukki, Ernakulam, Thiruvananthapuram, Kollam, Malappuram, had much higher growth rates than the average growth in per capita income in 2014-15. However, the districts of Pathanamthitta, Kottayam, Kasaragod and Kannur showed lower growth in per capita income than the state average.

1.28 District wise and sector-wise analysis of GSVA reveals that contribution of Ernakulam in primary, secondary and tertiary sectors is the highest. District-wise sectoral distribution of Gross State Value Added from 2012-13 to 2014-15 at current and constant (2011-12) prices are given in Appendix 1.17, 1.18, 1.19, 1.20, 1.21 and 1.22.

Section 4

Poverty

1.29 Poverty is a complex and multifaceted issue which requires numerous activities to be carried out simultaneously to deal with the problem effectively and efficiently. According to the Nobel laureate Professor Amartya Sen “Poverty is not just a lack of money; it is not having the capability to realize one’s full potential as a human being”. The World Development Report (2000) identifies three priority areas for reducing poverty: increasing opportunity, enhancing empowerment and improving security. Opportunity makes markets work for the poor and expands poor people’s assets, empowerment makes state institutions work better for poor people and removes social barriers and security helps poor people manage risk*.

1.30 Kerala’s approach put human development at its centre - it emphasised education and health; upheld gender parity; channelled public funds to schools, hospitals and infrastructure. Individual resources too were directed into areas such as private expenditure on health and education as well as to build health and educational institutions. These broad based policies and investments aimed at the ‘equitable provision’ of public services is the foundation of the celebrated ‘high human development at low per capita income’. This ‘support led’ strategy has also been at the base of the poverty reduction in the State.

1.31 The success of Kerala in poverty reduction is reflected in the sharp reduction in the proportion of poor as shown in Table1.5.

Table 1.5
Proportion of Poor in India and in Kerala, 1973-74 to 2011-12**

Year	Kerala		India	
	Rural	Urban	Rural	Urban
1973-74	59.19	62.74	56.44	49.01
1977-78	51.48	55.62	53.07	45.24
1983	39.03	45.68	45.65	40.79
1987-88	29.10	40.33	39.09	38.20
1993-94	25.76	24.59	37.27	32.36

1999-2000	9.38	20.27	27.09	23.62
2004-05	13.20	20.20	28.30	25.70
Rangarajan Committee Method				
2009-10	9.7	23.7	39.6	35.1
2011-12	7.3	15.3	30.9	26.4

Source: Rangarajan Committee Report (Lakdawala Methodology is used from 1973-74 to 2004-05)

1.32 The challenge before Kerala is to bring it down further and continue the numerous programmes which have made the achievement possible.

1.33 Various strategies adopted by Kerala for alleviating poverty are:
(i) Providing subsidised food to the multitudes of population through universal Public Distribution System (PDS).
(ii) Meeting basic amenities and building capabilities: Poverty also means deprivation of basic amenities, such as housing, sanitation, and water supply. Government had initiated many schemes over a long period to provide these amenities. Panchayati Raj Institutions have continued many of these schemes with renewed vigour.
(iii) Access to credit through the Kudumbashree Programme initiated in 1998 which acts as an informal “bank of the poor”.
(iv) Social security: Assistance to various categories of workers in the informal sector both in agriculture and non-agricultural occupations, cutting across rural-urban and gender differences has been offered through the Welfare Fund Model.
(v) Pension Programme: In the 1980s pensions were introduced for different categories of population groups.
(vi) Social support to the physically challenged: Kerala has gone beyond the affirmative action in government departments by offering employment to the physically challenged as lottery agents and in other similar avenues.

1.34 Various schemes on Poverty Reduction have been dealt with in other chapters of the Review. The participatory decentralized governance is the key instrument for broad based poverty elimination. Eventhough Kerala has made considerable progress in eradicating poverty, there are still several pockets of deprivation in the State, for example among tribal population and fishermen communities. Greater central assistance and appropriate livelihood programmes in these pockets are required to ensure that poverty is reduced throughout the State. More details about Kudumbashree Mission and poverty alleviation programmes are given in Chapter II of the Review.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Section 5

Prices

1.35 In the Indian context, inflation was a major concern of policy makers during 2010-13, especially the persistent high inflation in food and food products. However, from 2014-15, there has been a secular decline in price indices. The reasons for this decline included measures taken by the Government for improving food supply management and persistent decline in global crude oil and commodity prices.

1.36 There has been significant easing of food inflation during the first half of 2014-15 to 6 per cent which further declined to 2.5 per cent in October 2014. WPI food inflation which was a matter of concern in the last few years turned negative in the second quarter of 2015-16 as compared to 5 per cent in the corresponding period last year. The annual rate of inflation based on monthly WPI, stood at, 3.81% (provisional) for the month of October,2015 (over October,2014) as compared to -4.5% (provisional) for the previous month and 1.66% during the corresponding month of the previous year.Inflation in the prices of food articles rose to 5.2 per cent in November 2015 from 2.4 per cent in the preceeding month. This is the third consecutive month of year on year rise in prices of food articles. Fuel& Power group recorded a fall in year on year prices to the tune of 11.1 per cent in November 2015, thus marking the fifth consecutive month of double-digit-deflation. This fall was on the back of year on year fall in prices of petrol and high-speed diesel. Prices of Manufacturing Products recorded a deflation of 1.4 per cent in November 2015 compared to 1.7 per cent in the previous month. As a whole,WPI inflation came down to 2 per cent in 2014-15 from 6 per cent in 2013-14. It has remained negative since November 2014, and averaged (-)3.5 per cent in 2015-16 (Apr-Oct).The fall was on account of fall in the prices of textiles, chemicals &chemical products and basic metals,alloys & metal products.Consumer Price Index (CPI-New Series) inflation, though higher than WPI, also exhibits a similar pattern in 2014-15. CPI-NS inflation for 2014-15 declined to 5.91 from 9.51 in 2013-14. Inflation in terms of Consumer Food Price Index (CFPI) has also come down to 5.2% in October 2015 from 6.9% in February 2015.

1.37 Inflation based on CPI-Industrial Workers for September 2015 stood at 5.1% compared to 7.2% in January 2015. CPI-Agriculture labour and CPI Rural labour based inflation declined to 3.5% and 3.7% respectively in September 2015 compared to 6.2% and 6.5% in January 2015.

1.38 In Kerala, price structure of the essential commodities especially vegetables and meat increased exorbitantly due to inadequate domestic production and supply of these products. Agricultural production has shrunk and demand of the State

is met from the neighbouring states like,Tamil Nadu and Karnataka.

Price Index

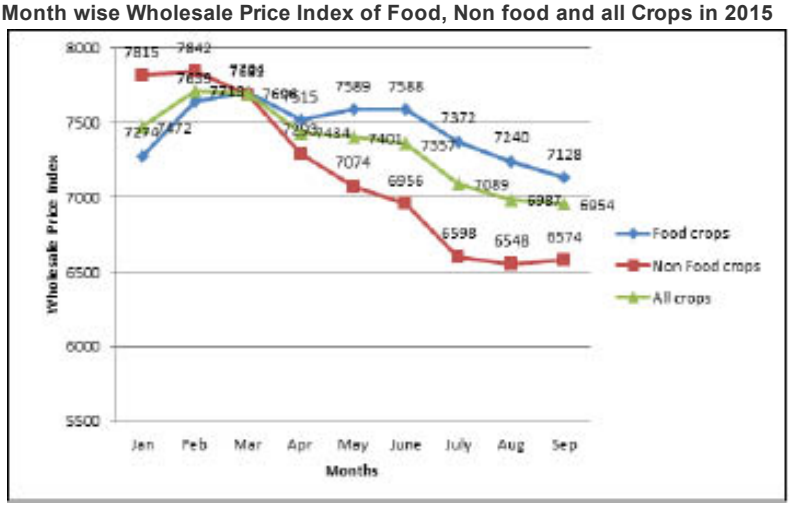
1.39 Wholesale Price Index (WPI) of Food Crops increased to 8021.44 in 2014 from 4999.73 in 2010 and it declined to 7455.33 in September 2015. The reason for decline in of WPI of food crops in 2015 is because price of rice, condiments and spices have reduced by 5 per cent and 1 per cent respectively. On the other hand WPI of Non-Food Crops has increased by 2.4 per cent in 2015 over the previous year. Altogether, WPI of all food crops has fallen by 3.9 per cent from 7642.57in 2014 to 7345.37 in 2015. The Details of Wholesale Price Index of Agricultural Commodities in Kerala are in Appendix 1.23. The details of month wise wholesale Price index of food ,non-food and all crops are given in Appendix 1.24 and Figure 1.7.

1.40 The Consumer Price Index (CPI) ofAgricultural and Industrial workers in Kerala increased to 275 in September 2015 from 263 of the previous year. Eventhough,prices increased, the rate of inflation decreased considerably in 2014 and 2015. Consumer Price Inflation in 2015 was 4.56 per cent against 8.68 per cent in 2014.State wide inflation based on CPI was 12 basis points between 2014 and 2015.Centre wise analysis shows that CPI in Pathanamthitta, increased to 296 in 2015 from 283 in 2014 and the percentage of inflation registered in 2015 is 4.59. CPI of Mundakayam was 287 in 2015 against 275 in the previous year. Meppady in Wayanad registered the highest inflation percentage of 6.48 in Kerala in 2015 followed by Kannur and Ernakulam. Thrissur reported the lowest CPI in Kerala, at 255 and the percentage of inflation is also low at 3.19 in 2015. In Thiruvananthapuram, the rate of inflation is only 4.48 per cent in 2015 against 9.69 per cent in 2014. For all the centres, Consumer Price Index and percentage variation of inflation is shown in Appendix 1.25.

1.41 The prices of essential commodities in Kerala from January 2015 to November 2015 (Appendix.1.26) reveal a mixed pattern. Price of green gram per kg has gone up to □113.24 in October 2015 from □95 during the same month in 2014. Likewise, price of black gram has also gone up to about 90 per cent in November 2015 over the previous year.The prices of dry chilly, onion, vegetables etc have also increased considerably.

Fig 1.7

Month wise Wholesale Price Index of Food, Non food and all Crops in 2015



Source: Economics and Statistics Department, Government of Kerala

Price Parity

1.42 The index refers to the relationship between price received by farmers for their sales and the prices paid by them for their purchases. During 2015, farm expenses (index of price paid by farmers) increased to12008.83 from 11477.67 in 2014. Meanwhile, price received by farmers (income by the farmers) decreased to 7822.67 in 2015 from 8272.25 in 2014. Farm expenses like cultivation cost, transportation cost, etc increased by 531.16 (4.63%) in 2015. On the other hand, income of the farmers reduced by 449 (-5.7%). The details of Price received and price paid by farmers since 2005 is depicted in Appendix 1.27.

Wages

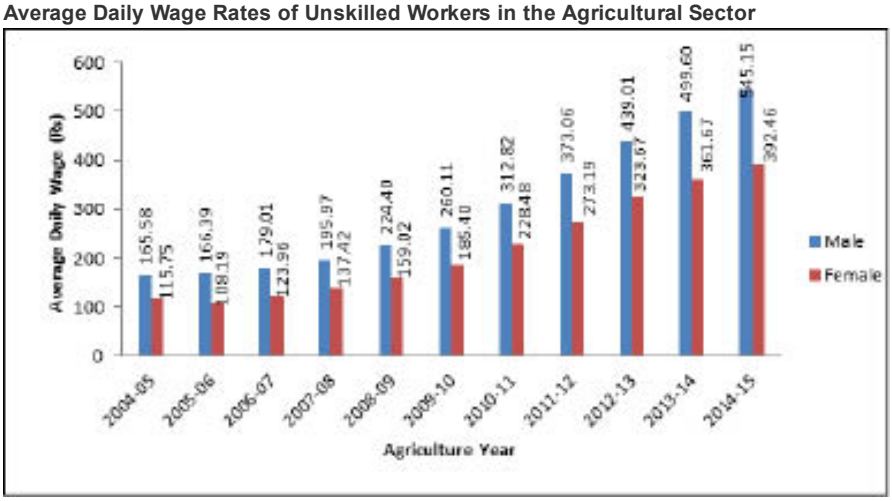
1.43 Wage rates of the skilled and unskilled workers in Kerala have increased every year since 2004-05. In case of skilled workers, average daily wage rate of carpenter has increased to □705.08 in 2014-15 compared to □644.92 in the previous year.Average daily wage rate of mason has also increased to □707.75 in 2014-15 from □635.08 in 2013-14. Average daily wage rates of skilled workers is givenin Appendix 1.28. The Average Daily Wage Rates of Unskilled Workers in the

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

agricultural sector have also increased. In 2014-15 average daily wage rate of male Paddy Field Workers was □545.15 against the □499.6 in 2013-14. The wage rate of female workers was □392.46 and □361.67 respectively during the two yea□ Average Daily Wage Rate of unskilled workers in the agriculture sector(Paddy field) can be seen in Appendix 1.29 and Figure 1.8.

Fig 1.8

Average Daily Wage Rates of Unskilled Workers in the Agricultural Sector



Source: Economics and Statistics Department, GoK

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Section 6

State Finances

1.44 The State Government enacted the Kerala Fiscal Responsibility Act in 2003 to ensure prudence in fiscal management and fiscal stability by progressive elimination of revenue deficit. In the years that followed enactment of the Kerala Fiscal Responsibility Act in 2003 improvement has been witnessed in key fiscal indicators of the State. The revenue deficit which was 4.37 per cent of GSDP in 2002-03 came down to 1.36 per cent in 2010-11. State's fiscal consolidation largely relied on revenue receipts. Deterioration in the buoyancy in revenue receipts due to multiple reasons in recent years has adversely affected State's fiscal performance in achieving the fiscal consolidation targets.

1.45 In pursuant to the State's commitment towards fiscal consolidation, the Budget Estimates 2014-15 envisaged a Revenue Deficit target of 1.53 per cent of GSDP. However severe domestic challenges and external compulsions had an adverse impact on the buoyancy of State revenues and government could not adhere to fiscal consolidation targets set in the budget. In 2014-15, revenue deficit was 2.78 per cent of GSDP against 2.63 per cent of 2013-14. Fiscal deficit during 2014-15 at 3.75 per cent has shown a slight improvement compared to 3.94 per cent during 2013-14. Earnest efforts are being taken for enhanced revenue generation to have better fiscal consolidation including rationalization of expenditure to achieve the fiscal targets. A long term fiscal policy would be necessary to rationalize the expenditure without compromising the quality of spending.

1.46 Even though national economy showed improvements in macro-economic stability, steady growth in State's economy is yet to be achieved. The recent tax reform policies adopted by the State Government would likely play a crucial role in the enhancement of revenue receipts. It is expected that the implementation of Goods and Service Tax (GST) will increase buoyancy in State's tax revenue in the coming years.

1.47 In recent years committed expenditure on account of salaries, pensions, and debt charges have increased considerably. The expenditure on salaries and pensions is likely to increase further consequent on the implementation of the 10th Pay Commission recommendations. Increased devolution to Local Self Governments (LSGs) and enhanced payments for welfare schemes and subsidies have also generated pressure on State's finances. Fiscal constraints created by rise in revenue deficit impacted the growth in capital expenditure during 2014-15.

1.48 The major deficit indicators of the State for the period from 2009-10 to 2015-16 BE are shown in Table 1.6.

Table 1.6

Major Deficit Indicators

(□ Crore)

Year	Revenue Deficit	Fiscal Deficit	Primary Deficit(-) / Surplus (+)	GSDP

	Amount	% to GSDP	Amount	% to GSDP	Amount	% to GSDP	
2009-10	5022.97	2.17	7871.60	3.39	-2579.12	-1.11	231998.67
2010-11	3673.87	1.36	7730.46	2.87	-2040.80	-0.76	269473.79
2011-12	8034.26	2.61	12814.77	4.16	-6521.17	-2.12	307906.00
2012-13	9351.45	2.46	15002.47	3.95	7797.66	2.06	379417.00
2013-14	11308.56	2.63	16944.13	3.94	8678.74	2.02	430211.00
2014-15	13795.96	2.78	18641.73	3.75	8872.14	1.79	496886.00
2015-16 BE	7831.92	1.37	17699.25	3.10	6747.15	1.18	570523.00

Source: Finance Department, Goverment of Kerala

1.49 The revenue deficit shown above is net of revenue expenditure by way of grants for creation of capital assets. In the State's context a significant portion of devolution to LSGs and grants to various autonomous bodies are intended for creation of capital assets of durable nature. The revenue deficit in 2014-15 was □13795.96 crore against □11308.56 crore in 2013-14. If an amount of □4983.32 crore incurred for providing grants for creation of capital assets is deducted, the effective Revenue Deficit would be □8812.64 crore in 2014-15, which is 1.77 per cent of GSDP. Major financial indicators of Government of Kerala are shown in Table 1.7.

Table 1.7
Financial Indicators for Government of Kerala

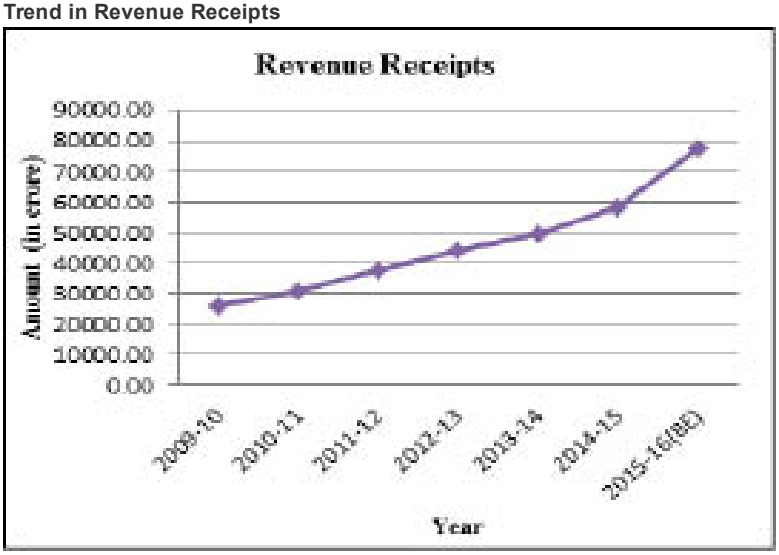
Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Balance from current Revenue (BCR)	-2155	-910	-4973	-4866	-6694	-9037
Interest Ratio	0.20	0.18	0.17	0.16	0.17	0.17
Capital Outlay/ Capital receipts	0.26	0.43	0.31	0.29	0.25	0.23
Return of Investment ratio	0.008	0.020	0.016	0.016	0.018	0.012
Outstanding Guarantees (including interest) / Revenue Receipts	0.29	0.24	0.22	0.22	0.20	0.19
Assets/ Liabilities	0.40	0.40	0.40	0.40	NA	NA

Source: Finance Department, Government of Kerala
NA : Not Available

Revenue Receipts

1.50 Revenue receipts of the State consist of own tax and non-tax revenues, share of central taxes and grant-in-aid from Centre. The revenue receipts of the State recorded an increase of 87 per cent during the period from 2010-11 to 2014-15. The total revenue collection during 2014-15 was □57950.47 crore. The revenue receipts of the State in proportion to GSDP increased marginally to 11.66 per cent in 2014-15 from 11.43 per cent in 2013-14. Growth rate of revenue receipts also showed an upward trend of 17.84 per cent in 2014-15 against 11.42 per cent in 2013-14. The trend in Revenue Receipts from 2009-10 to 2015-16 BE is given in Figure 1.9.

Fig 1.9
Trend in Revenue Receipts



Source: Finance Department, Government of Kerala

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

1.51 Own taxes are the main source of revenue receipts of the State. In 2014-15, contribution from State's own taxes was □35232.50 crore which constituted 60.80 per cent of the total revenue collection. Contribution from the share of central taxes was □7926.29 crore (13.68 per cent), State's own non-tax revenue □7283.69 crore (12.57 per cent) and Grants in aid received from Centre was □7507.99 crore (12.96 per cent) in 2014-15. The details of Revenue Receipts from 2009-10 to 2015-16 BE are given in Appendix 1.30.

State's Own Tax Revenue (SOTR)

1.52 The main sources of State's Own Tax Revenue (SOTR) are Sales Tax including Value Added Tax (VAT), Stamps and Registration fees, State Excise Duties, Motor Vehicle Tax and Land Revenue. The receipt from State's Own Tax Revenue in 2014-15 was □35,232.50 crore, which was 92.03 per cent of the targeted revenue. Receipts from Sales Tax and VAT contributed the major share of SOTR. In 2014-15, receipts from Sales Tax and VAT contributed □27,908.33 crore which was 79.21 per cent of the total SOTR, followed by 7.55 per cent from Stamp duties and registration fees (□2659.02 crore), 6.71 per cent from Taxes on Vehicles (□2364.95 crore), 5.04 per cent from State Excise Duties (□1777.42 crore), and 0.4 per cent from Land Revenue (□139.03 crore).

1.53 The receipts from Sales Tax including VAT showed 12.15 per cent growth in 2014-15 against 10.55 per cent in 2013-14. The receipts from Motor Vehicle Taxes, Stamp duties and Registration fees and Land Revenue recorded a growth of 9.43, 2.53 and 56.60 per cent respectively, while State Excise Duties have recorded a negative growth rate (-8.46 per cent) in 2014-15. The details of State's Own Tax Revenue from 2009-10 to 2015-16 BE are given in Appendix 1.31.

State's Own Non-Tax Revenue (SONTR)

1.54 State's own Non-Tax Revenue (SONTR) mainly consists of receipts from State Lotteries, Forest, Interest & Dividend and receipts from various social developmental services. Receipts from SONTR registered noticeable increase in the last three years. In 2014-15, □7283.69 crore was realized as SONTR, recording growth of 30.65 per cent over 2013-14 (□5575.03). The receipt from State's own non-tax revenue increased to 1.47 per cent of GSDP in 2014-15 from 1.30 per cent in 2013-14. Significant growth in non-tax revenue could be achieved mainly due to the revision of fees and fines for the services rendered by the Government.

1.55 In 2014-15, receipts from State Lotteries comes to □5444.88 crore recording a growth rate of 43.45 per cent. This constitutes 75 per cent of the total non-tax revenue of the State. This was followed by □673.09 crore from Social Developmental Services (9.2 per cent), □300 crore from Forest revenue (4.14 per cent) and □102.15 crore (1.40 per cent) from debt services. The details of State's Own Non-Tax Revenue from 2009-10 to 2015-16 BE are given in Appendix 1.32.

Central Transfers

1.56 Central Transfers comprises of share in central taxes and grants in aid from Centre. The share of States in the net proceeds of shareable central taxes during the 13th Finance Commission period from 2010-11 to 2014-15 was 32 per cent. Out of this, State's share was 2.34 per cent. The central transfers by way of share of central taxes and grant-in aid received was □15434.28 crore.

1.57 The central transfer as percentage of GSDP in 2014-15 was 3.11 per cent. Out of the total central transfers, the receipts under share in central taxes and central grants were □7926.29 crore and □7507.99 crore respectively. In 2014-15, share of central taxes witnessed growth rate of 6.13 per cent only against 9.18 per cent in 2013-14. The receipt from central grant in aid showed considerable increase in 2014-15, it increased to 81.43 per cent against the growth rate of 37 per cent in 2013-14. This substantial growth was due to the release of Central Plan Assistance through State Budget from 2014-15, which was released directly to State Implementing Agencies till 2013-14. The details of Central Transfers from 2009-10 to 2015-16 BE are given in Table 1.8.

Table 1.8
Central Transfers: 2009-10 to 2015-16 (BE)
(□ Crore)

Year	Share in Central Taxes & Duties		Grant-in-aid and other receipts from Centre for Plan and Non-plan		Total Transfers	
	Amount	Annual Growth Rate (%)	Amount	Annual Growth Rate (%)	Amount	Annual Growth Rate (%)
2009-10	4398.78	2.88	2233.38	-16.89	6632.16	-4.75
2010-11	5141.85	16.89	2196.62	-1.65	7338.47	10.65
2011-12	5990.36	16.50	3709.22	68.86	9699.58	32.17

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

2012-13	6840.65	14.19	3021.53	-18.54	9862.18	1.68
2013-14	7468.68	9.18	4138.21	36.96	11606.89	17.69
2014-15	7926.29	6.13	7507.99	81.43	15434.28	32.98
2015-16 (BE)	13121.77	65.55	9946.28	32.48	23068.05	49.46

Source: Finance Department, Govt. of Kerala

The Fourteenth Finance Commission Awards and Kerala

1.58 The Fourteenth Finance Commission award has been acclaimed as a land mark as the recommendations made by it devolves close to 50 per cent of the divisible pool to the states. The Commission awarded 42% of the Divisible Pool (32% by the 13th Finance Commission) as tax assignment to the states. Another 6.84% has been awarded as grants-in-aid under Article 275(I). The devolution formula has been changed to include the 2011 population and for the first time, forest cover has come into the horizontal share formula recognizing the importance of environmental sustainability.

1.59 The horizontal shares of the states have changed significantly. While Bihar (10.917% to 9.665%), Tamil Nadu (4.969% to 4.023%) and Uttar Pradesh (19.67% to 17.959%) have seen a decline in their share of the taxes, Arunachal Pradesh (0.328% to 1.37%), Jharkhand (2.808% to 3.139%), Kerala (2.341% to 2.50%) and Madhya Pradesh (7.12% to 7.548%) have seen an increase.

1.60 As regards the increase in state's share of central taxes, had there been no change in the inter se shares of the states, every state would have got an increase of 55% in 2015-16 over 2014-15. Thus any deviation from 55% would point to gains or losses of the states. The states that receive less than the average of 55% are the losers. The largest gains have been made by Goa and the north eastern states with the exception of Assam. Tamil Nadu at the other end is the worst hit with an increase of only 26%.Assam, Bihar and Uttar Pradesh too have seen increases of between 35 to 45% which are significantly below the average of 55%. Kerala, Karnataka, Jharkhand and Maharashtra have made gains of between 65 to 75%.

1.61 This Commission had brought about major changes in the grants structure. While the previous commission had many channels through which grants would flow, like sector and scheme specific grants, elementary education etc., the Fourteenth Finance Commission has moved decisively away from them, arguing that there has been no continuity between Commissions, they overlap with Plan schemes, the lack of an allocation formula and lack of flexibility in use putting states in difficulties in running the schemes. The Commission found that flow of funds through these mechanisms are best identified, prioritized and financed by the respective states. Therefore, the Fourteenth Finance Commission recommended that grants-in-aid to states flow through only three channels: i) Post-devolution revenue deficit grants, ii) Disaster management grants, and iii) Grants to local bodies. The grants awarded by the Fourteenth Finance Commission have been confined to just three areas: local governments (53.49 per cent), financing disaster management (10.25 per cent) and revenue deficit (36.26 per cent). The local government grants are formula based with 90 per cent of the weight being carried by population and ten per cent by performance.The 90 per cent weight for population makes the award criterion simple and equitable without unnecessarily complicating it with indices of decentralization and so on.Grants in 2015-16, have shown large increases in the case of Andhra Pradesh (□2774 crore to □9538 crore), Kerala (□1378 crore to □5610 crore) and West Bengal (□2665 crore to □10914 crore).

1.62 Except for Haryana and Tamil Nadu for which the increase in the tax share and grant is below 25%, mostly the low income states report below average increases. Kerala stands along with the North Eastern states, Himachal Pradesh and Jammu and Kashmir receiving an increase of over 100% in resource transfer (share of taxes and grants). The Budget Estimate of Kerala's share in Central taxes and duties is shown as □13,122 crore for 2015-16 assuming an increase of 15.83% in the Gross Tax Revenue of the Centre. But tax collection this year has surpassed the 15.83% by more than half and as end of August is running at 22.82%. Kerala would then get a higher amount which could be over □13914 crore. Together with the revenue deficit grant, disaster management fund and local governments grant the total would be over □19,500 crore.

Expenditure

1.63 Expenditure of the State includes two components viz. revenue expenditure and capital expenditure including expenditure on loan disbursements. The total expenditure of the State recorded an increase of 98 per cent during the last five years from □38,790.24 crore in 2010-11 to□76,744.11 crore in 2014-15. Revenue expenditure of the State has grown by 18.6 per cent in 2014-15 compared to 13.08 per cent in 2013-14, whereas capital expenditure and expenditure on loan disbursement has shown a downward trend.

Revenue Expenditure

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

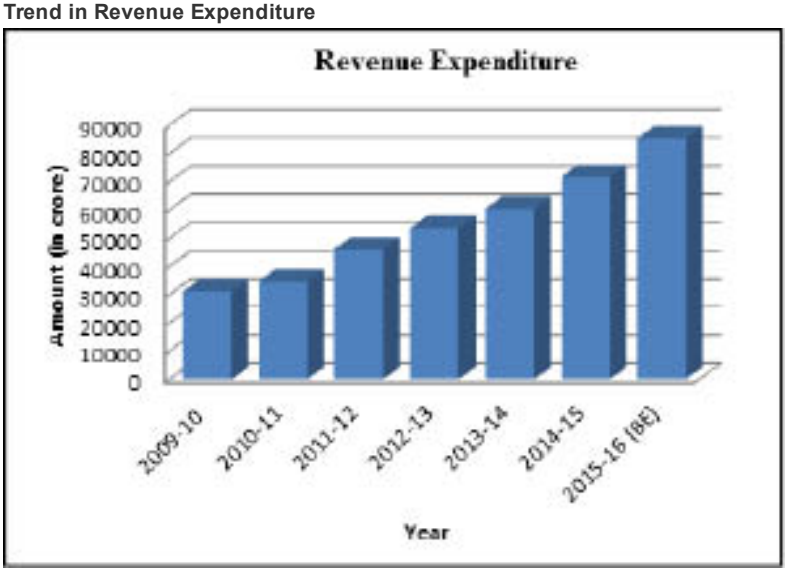
1.64 The revenue expenditure of the State comprises of expenditure on salaries, pension, debt charges, devolutions to the Local Self Government Institutions (LSGI) and subsidies. The operational and maintenance cost for the upkeep of the completed projects and programmes are classified under the revenue account. Grants provided by the State to meet salaries and pension liabilities of employees in the Universities and State autonomous bodies and also the pension liabilities of employees of Panchayat Raj Institutions too are classified under revenue expenditure. Major portion of funds devolved to LSGIs from the revenue account of the State government is utilized for the creation of capital assets of durable nature. Also a significant share of grant-in-aid set apart for universities and autonomous institutions are meant for creation of capital assets.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

1.65 Expenditure on social and economic services together constitutes development expenditure. Funds devolved to LSGIs for expansion and development and maintenance of assets is also reckoned as development expenditure. The thrust on expenditure in the social and economic sector have contributed towards maintaining the human development indicators of the State at a high level which ultimately impacts the long-term prospects of the economy. State Government's priority for social and economic services in the State is clearly evident from the increased trend of development expenditure in recent years. Non-development expenditure of the State constitutes the committed expenditure consisting of debt charges, expenditure on pension payments and administrative services.

1.66 Revenue expenditure has shown more than 100 per cent growth during the period from 2010-11 to 2014-15. Total revenue expenditure in 2014-15 was □71746.43 crore, of which plan expenditure was □10282.59 crore and non-plan expenditure was □61463.85 crore. The ratio of revenue expenditure relative to GSDP has shown signs of stabilization during the last few years and this trend continued in 2014-15 also. This was in the ratio of 14.06 and 14.44 per cent in 2013-14 and 2014-15 respectively. The trend in revenue expenditure from 2009-10 to 2015-16 (BE) is given in Fig.1.10 and Appendix 1.33.

Fig 1.10
Trend in Revenue Expenditure



Source: Finance Department, Government of Kerala

1.67 Expenditure on committed liabilities viz. salaries, pension, interest payments, subsidies and devolution to LSGs constitutes 69.71 per cent of revenue expenditure in 2014-15. 86.30 per cent of the revenue receipts during 2014-15 of the State was used for meeting the above committed expenditure. Important factors contributing to higher revenue expenditure have been government's active intervention to contain rise in prices of essential commodities, policy initiatives to bring all weaker sections of society under social security net and government's priority to impart quality services in health and education sectors.

1.68 In 2014-15, salary expenditure as proportion of total revenue expenditure was 29.75 per cent whereas it was 31.88 per cent in 2013-14. Pension expenditure as percentage of total revenue expenditure was 15.68 per cent in 2014-15 compared to 16.49 per cent in 2013-14. Interest payment as percentage of total revenue expenditure decreased to 13.62 per cent in 2014-15 from 13.67 per cent in 2013-14. The details of revenue expenditure from 2011-12 to 2014-15 are shown in the Table1.9. The item wise details of revenue expenditure from 2009-10 to 2015-16 BE is given in Appendix 1.34.

Table 1.9
Trend in Revenue Expenditure from 2011-12 to 2014-15

(□ Crore)

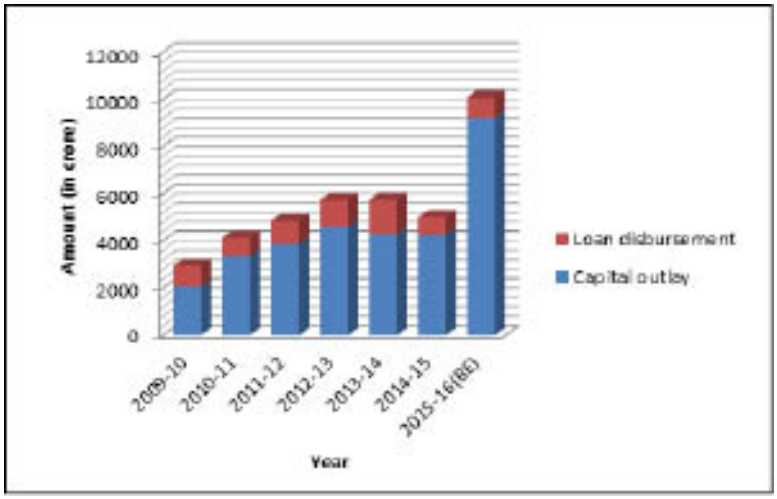
Items	2011-12		2012-13		2013-14		2014-15	
	Expenditure	As per cent of TRE	Expenditure	As per cent of TRE	Expenditure	As per cent of TRE	Expenditure	As per cent of TRE
i. Salaries	16028.82	34.81	17257.41	32.26	19279.78	31.88	21343.50	29.75
ii. Pension	8700.3	18.9	8866.89	16.58	9971.27	16.49	11252.67	15.68
iii. Interest	6293.6	13.67	7204.81	13.47	8265.38	13.67	9769.59	13.62
iv. Devolutions to LSGIs	3896.76	8.46	4739.33	8.86	4971.48	8.22	6398.00	8.92
v. Subsidies	1014.43	2.20	1265.19	2.37	1278.96	2.11	1247.52	1.74
Committed Expenditure total (i to v)	35933.91	78.04	39333.63	73.54	43766.87	72.36	50011.28	69.71
Others	10110.71	21.96	14155.12	26.46	16718.63	27.64	21735.15	30.29
Total	46044.62	100.00	53488.75	100.00	60485.50	100.00	71746.43	100.00

Source: Finance Department, Government of Kerala

Capital Expenditure

1.69 Development of the economy depends on investment in infrastructure. Large Fiscal Deficit is a major impediment to infrastructure financing. Government has therefore adopted the policy of looking at alternative sources for financing major infrastructure projects in the State. The share of government spending on capital projects has increased during recent years. In 2010-11, capital expenditure was □3363.69 crore. In 2011-12 and 2012-13 it increased to □3852.92 crore and □4603.29 crore respectively. In 2014-15 it was □4254.59 crore against □4294.34 crore in 2013-14. In 2014-15, Capital outlay - GSDP ratio marginally decreased to 0.86 per cent from 1 per cent in 2013-14. The public works continued to be the major segment of capital outlay accounting for 34.72 per cent of the total capital outlay in 2014-15 followed by agriculture and allied activities (8.37 per cent), Irrigation (6.35 per cent) and Industries (6.12 per cent). The trend in capital outlay and loan disbursement from 2009-10 to 2015-16 BE is given in Figure 1.11.

Fig 1.11
Trend in Capital outlay and Loan disbursement



Source: Finance Department, Government of Kerala

1.70 The details of capital expenditure and total expenditure and item wise details of capital outlay from 2009-10 to 2015-16 BE are given in Appendix 1.35 & 1.36.

Debt Profile

1.71 Borrowings which are repayable and on which interest accrues are classified as debt. Debt of the State comprises of internal debt, loans and advances from Central Government and liabilities on account of Small Savings and Provident Fund Deposits, etc. Increasing gross fiscal deficit has led to increasing debt liabilities of the State. During the last five years market borrowings and accretions in Small Savings and Provident Fund Deposits have been the main sources available to the State Government to finance the fiscal deficit. The debt GSDP ratio has shown perceptible improvement in recent years. The annual growth rate of debt has come down to the level of 13.81 per cent in 2014-15 from 14.92 per cent in 2013-14. Outstanding debt liabilities of the State at the end of 2014-15 were □135440 crore. The Debt-GSDP ratio in 2010-

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

11 was 29.83 per cent which came down consistently and reached the level of 27.26 per cent in 2014-15.The ratio of debt in terms of revenue receipts decreased to 233.72 per cent in 2014-15 from 242 per cent in 2013-14. The debt of the State from 2009-10 to 2015-16 BE is given in Table1.10.

Table 1.10
Debt of the State
(□ Crore)

Year	Internal Debt	Growth Rate (%)	Small Savings, Provident Fund, Others	Growth Rate (%)	Loans and advances from Central Government	Growth Rate (%)	Total	Growth Rate (%)
2009-10	43368.00	11.73	21296.00	15.44	6305.00	4.93	70969.00	12.17
2010-11	48528.10	11.90	23786.06	11.69	6359.08	0.86	78673.24	10.86
2011-12	55397.39	14.16	27625.10	16.14	6395.69	0.58	89418.18	13.66
2012-13	65628.41	18.47	31310.65	13.34	6621.78	3.54	103560.84	15.82
2013-14	76804.35	17.03	35542.51	13.52	6662.21	0.61	119009.07	14.92
2014-15	89067.91	15.97	39307.28	10.59	7065.05	6.05	135440.24	13.81
2015-16 BE	105111.33	18.01	33763.00	-14.10	7793.00	10.30	146667.33	8.29

Source: Finance Department, Government of Kerala

1.72 The share of internal debt in the total debt liabilities of the State comes to 66 per cent in 2014-15. The growth rate of internal debt in 2014-15 was 15.97 per cent. Internal debt outstanding increased to □89067.91 crore in 2014-15 from □76804.35 crore in 2013-14. The liabilities under Small Savings, Provident Fund etc. comes to around 29 per cent of the total liabilities. The liabilities under Small Savings, Provident Fund etc at the end of 2014-15 was □39307.28 crore. It showed an increase of □3764.77 crore over 2013-14 (□35542.51 crore). Loans and Advances outstanding from the Centre at the end of 2014-15 was □7065.05 crore. The gross and net retention of debt in 2014-15 was □16431.18 crore and □6641.03 crore respectively.

1.73 In recent years major fiscal indicators have shown instability mainly due to low buoyancy in revenue receipts. Slowdown in major sectors of the economy especially the rubber industry have virtually crippled the State's economy and consequently destabilized tax collections. However to mitigate impacts of slowdown and for the revival of the economy, government has raised its public expenditure by making investment in social development sector. Government is also taking policy initiatives to augment funds through alternative sources for investing in major infrastructure development projects. It is expected that these bold measures would help the State to bring back the economy and finances right on track. The debt profile of the State from 2009-10 to 2015-16 BE is given in Appendix 1.37.

Contingent Liabilities

1.74 To overcome the ceiling on fiscal deficit set by the Fiscal Responsibility Act, the State Government stands guarantee to the borrowings of public sector undertakings and other institutions instead of funding them directly through the budget. These contingent liabilities become the debt obligations of the State in the event of default by the borrowing units for which Government is a guarantor. The outstanding guarantees during 2013-14 is □12275.21 crore. The outstanding guarantees of the State Government from 2008-09 to 2013-14 are shown in Table 1.11.

Table 1.11
Outstanding Guarantees
(□ Crore)

Year	Maximum Amount Guaranteed	Amount outstanding (Principal & Interest)
2008-09	11385.54	7603.32
2009-10	10225.78	7495.00
2010-11	12625.07	7425.79
2011-12	11332.11	8277.44
2012-13	11482.25	9099.50

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

2013-14	12275.21	9763.36

Source: Finance Department, Government of Kerala

Section 7

Banking

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

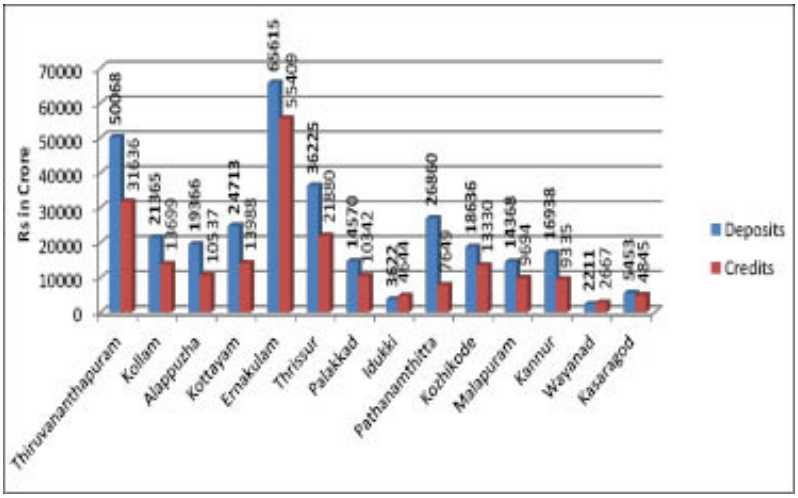
1.75 The financial sector, of which banking is the largest player, has been undergoing a transformation. After the introduction of New Economic Policy, the liberalised banking policies widened the scope and volume of financial activity, which contributed towards economic growth. In India, banking has grown both horizontally and vertically but the branch penetration in rural areas has not kept pace with the rising population and the need for accessible financial services.

1.76 In terms of number of branches, while Kerala has the largest number of bank branches among the semi urban areas in the country, Uttar Pradesh has the largest number of bank branches in rural and urban areas. Kerala has a total of 5981 bank branches as on March 2015 which accounts for 4.75 per cent of the total as against 5602 as on March 2014. During 2014-2015, 379 new branches were opened in the State. The total number of bank branches increased to 6010 by the end of June 2015. Despite Kerala's small land area, it has large number of bank branches, indicating the spread of the financial system in the State (Appendix 1.38).

Deposits

1.77 The total bank deposits in Kerala increased by 15.14 per cent and touched □320010 crore during 2015 from □277,940 crore in 2014. The increase in bank deposits in 2014 was 18.67 per cent compared to 15.14 per cent in 2015. Among the major states, Madhya Pradhesh recorded 22.47 per cent growth in deposits during 2015, higher than the national average of 10.75 percentage (Appendix 1.39). In Kerala, the share of Ernakulam district with its total deposits is the highest (Appendix 1.44). District-wise distribution of deposits and credits of Scheduled Commercial Banks as on March 2015 is shown in Figure 1.12.

Fig 1.12
District-wise Distribution of Deposits and Credits of Scheduled Commercial Banks in March 2015



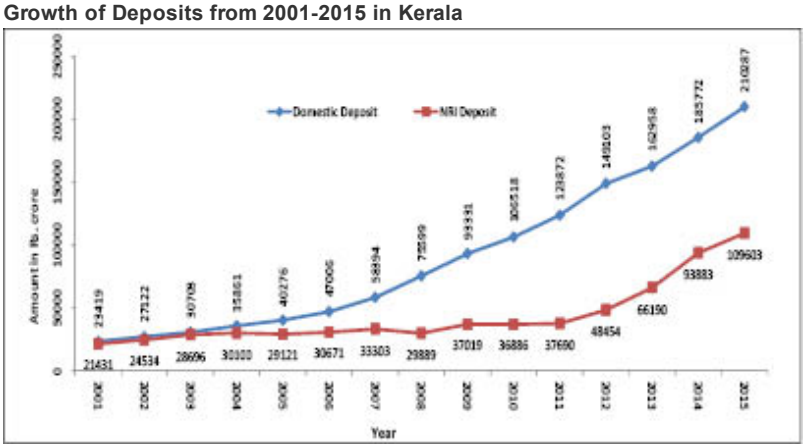
Source: Reserve Bank of India

NRI Deposit

1.78 Remittance from Non-Resident Indians plays an important role in the economic development of the State. The inflow of NRI deposits increased by 17 per cent from □93,883 crore in March 2014 to □1,09,603 crore in March 2015 (Appendix 1.41). Domestic deposits grew 13.20 per cent to□2,10,287 crore during March 2015, as against □1,85,772 core in March 2014. Domestic deposits constitute 65.74 per cent of the total deposits of the State. The bank wise analysis of deposits shows that major share of deposit comes from domestic deposit except for Federal Bank. The Federal Bank attracts more NRI deposits than the other public and private sector banks. During March 2015 the share of NRI deposits to total deposit of the Federal Bank was 51.58 per cent whereas it is less than 50 per cent for all other public and private sector banks (Appendix 1.42).Figure 1.13 shows growth of deposits from 2001 to 2015.

Fig 1.13

Growth of Deposits from 2001-2015 in Kerala



Source:-State Level Bankers Committee, Kerala

1.79 Bank Group wise total deposits and percentate of NRI deposits in March 2015 is shown in Table 1.12.

Table 1.12

Bank Group Wise Deposit - March 2015

(□ Crore)

Bank Groups	Total Deposit	Percentage	NRI deposit	Percentage
State Bank Group	106004	24.89	41159	27.30
Public Sector Banks	204347	47.98	64698	42.91
Private Sector Banks	115543	27.13	44905	29.79
Total	425894	100.00	150762	100.00

Source:- State Level Bankers Committee, Kerala

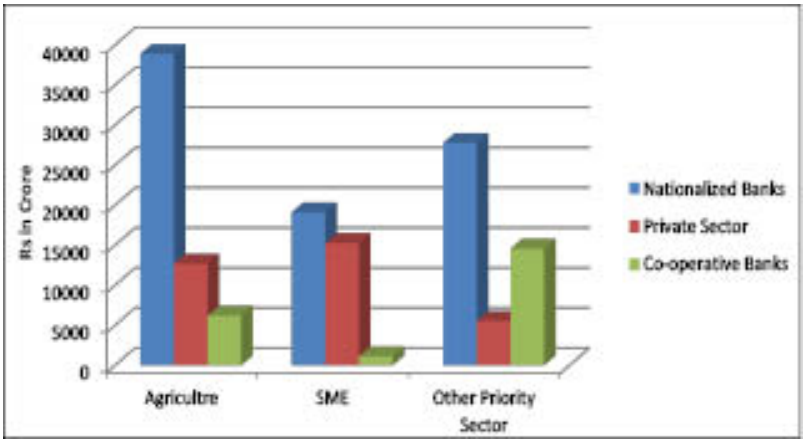
Advances

1.80 Priority sector advances by the banks in Kerala increased to □1,28,655 crore by March 2015 as against □1,13,555 core in 2013-14. The advance to priority sector is 58.83 per cent of the total advances, which is higher than the mandatory norm of 40 per cent. However, there was a marginal decrease of 0.31 per cent as compared to the previous year. Advances to agricultural sector increased from □48,812 crore to □57,656 core. This marks an increase of 0.94 per cent from 25.42 per cent in 2013-14 to 26.36 per cent during 2014-15. Advances to industrial sector increased from □38,479 crore to □54,417 crore in 2015. In 2014-15, advance to Industrial Sector accounted for 24.88 per cent of the total advances. An amount of □47092 crore has been disbursed to weaker sections in the State which is 21.53 per cent of the total advances in the year 2014-15. Analysis reveals that nationalised banks disbursed the bulk of advances to priority sector followed by Co-operative banks. At the national level it is seen that an amount of □6697242 crore has been disbursed as advances by Scheduled Commercial Banks in 2015. Among the major States, Maharashtra (29.44 per cent) stands at the top in disbursement of advances followed by TamilNadu (9.60 per cent) and Karnataka (6.08 per cent). Banks in Kerala disbursed an amount of □2,01,695 crore (3.01 per cent) in 2015 whereas it was □1,81,666 crore (2.97 per cent) in 2014(Appendix 1.40). Bank wise priority sector advances during March 2015 is shown in Figure 1.14.

Fig 1.14

Bank wise Priority Sector Advances in Kerala, March 2015

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters



Source: State Level Bankers Committee

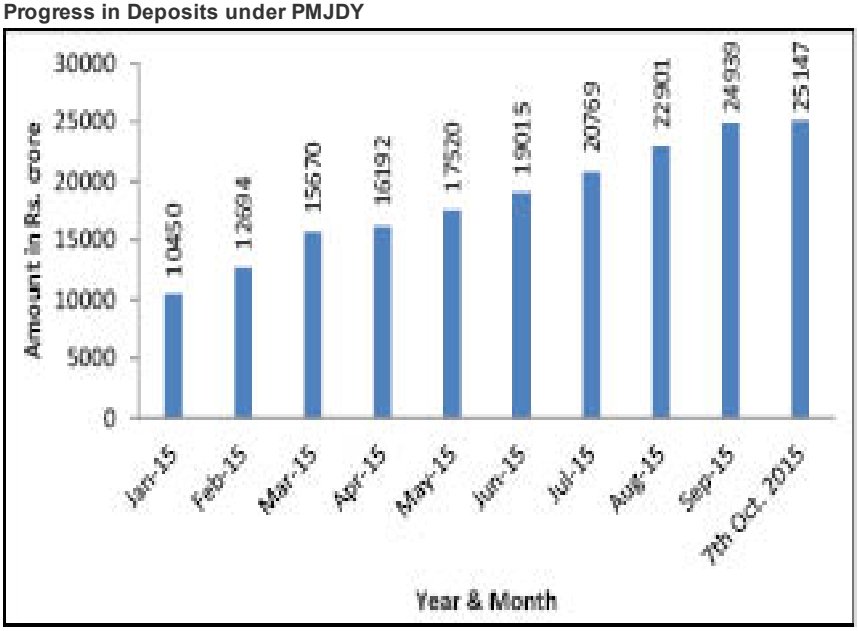
Pradhan Mantri Jan Dhan Yojana (PMJDY)

1.81 The National Mission on Financial Inclusion was announced by the Prime Minister in his Independence Day speech 2014 and formally launched on 28th August 2014 with the main objective of covering all households with at least one bank account across the country.

1.82 The accounts opened under PMJDY are Basic Savings Bank Deposit Accounts (BSBDA) which can be with zero balance as per Reserve Bank of India guidelines. As on October 2015, the deposits collected stood at □25,146.97 crore. The PMJDY accounts having balances in them also now exceed 60 per cent and the zero balance accounts have reduced to less than 40 per cent. The progress in deposits in these accounts shown in Figure 1.15.

Fig 1.15

Progress in Deposits under PMJDY



Source: Press information Bureau, GOI

1.83 Major banks who have contributed to this achievement are State Bank of India (□2989.18 crore), United Bank of India (□2644.77 crore), Oriental Bank of Commerce (□2104.70 crore), Bank of Baroda (□1771.424 crore), and UCO Bank (□1178.17 crore).

1.84 States of Goa, Kerala and Tripura, Union Territories of Chandigarh, Pondicherry and Lakshadweep and nineteen districts of Gujarat have already been declared as having 100 per cent coverage of all households under PMJDY with at least one bank account.

MUDRA BANKS

1.85 Micro Units Development & Refinance Agency Ltd. (MUDRA) is a new institution set up by Government of India for development and refinancing activities relating to micro units and was announced by the Hon'ble Finance Minister in the

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

Union Budget for FY 2015-16. The purpose of MUDRA Bank is to provide funding to the non-corporate small business sector. The biggest bottleneck to the growth of entrepreneurship in the Non-Corporate Small Busi ness Sector (NCSBS) is lack of financial support. Most of this sector does not have access to formal source of finance. To begin with it is being set up as a subsidiary of Small Industries Development Bank of India (SIDBI).

1.86 MUDRA would be responsible for refinancing all Last Mile Financiers such as Non Banking Finance Companies of various types engaged in financing of small business, Societies, Trusts, Section 8 companies, Co-operative Societies, Small Banks, Scheduled Commercial Banks and Regional Rural Banks which are in the business of lending to micro / small business entities engaged in manufacturing, trading and services activities. The Bank would partner with State / Regional level financial intermediaries to provide finance to Last Mile Financier of small / micro business enterprises.

1.87 MUDRA will offer smaller loans up to □50,000/- under the 'Shishu' category, beyond □50,000 and up to □5 lakh under the 'Kishor' category and above □5 lakh and upto □10 lakh under 'Tarun' category. These products have been designed to cater to customers operating at the lower end of the enterprise spectrum. The loans will be extended through MFIs, NBFCs, and Banks etc. An amount of □2996.12 crore has been sanctioned and □2887.79 crore been disbursed under all the three catogories in Kerala (as on 08.01.2016).

Box 1.2
Non-Banking Financial Institutions in Kerala

he Working Group on Non-Banking Financial Institutions in Kerala, constituted by the State Planning Board, has submitted its report in December 2015. The Working Group was constituted broadly with the mandate to a) study the performance of NBFIs sector in the State b) assess the functioning of Money Lenders and c) study the magnitude of Chit business in the State. The Report covers in detail, the role and functions of NBFIs and selected PSUs, Chit Funds, Kudumbasree, KSFE, Money Lenders, Co-operative Societies, Interest Free Banking and Case Studies of major NBFIs in Kerala.

The number of deposit accepting Non-Banking Financial Corporations (NBFCs) in Kerala declined from 23 in 2002 to 12 in 2015. Though the number of NBFCs had decreased over the years, the size of aggregate public deposit had increased from □50.47 crore in 2001-02 to □191.46 crore as on March 31st, 2014 and to □231.59 crore in March 2015. The number of Chits registered in the State by KSFE, Private Chit Funds and Co-operative Societies increased from 8810 in 2009-10 to 13737 in 2014-15. The total revenue to the Government by way of Chit Registration fee and Stamp duty increased from □13.46 crore in 2009-10 to □28.19 in 2014-15. The total number of registered Money Lenders in Kerala has increased from 5696 in 2003-04 to 10656 in 2014-15, an increase of 87 percent. However, the presence of unregistered private Money Lenders is evident in the State. Under Operation Kubera 14757 raids were conducted and 3400 cases registered. Though Idukki, Kottayam and Palakkad districts have lesser number of Money Lenders, large number of cases have been registered in these districts. Kerala Government has floated Cheramon Financial Services Ltd. on the principle of Zero Interest Banking with an authorised financial share capital of □1000 crore which operates in the areas of Equipment Leasing, Equity Funding & Infrastructure Development.

The Working Group, interalia, recommended the establishment of an overriding mechanism to observe and validate the operations of NBFIs under different regulators, to establish an umbrella regulatory frame for right operations in the State. Strengthening Chit business through rationalization of Chit Act/Rules, recognition of micro credit lending through formal and informal channels and adequate legislative mechanism to promote accountability in lending are some of the other measures suggested by the Working Group.

Source: Working Group Report on Non-Banking Financial Institutions in Kerala, State Planning Board, 2015

Credit Deposit Ratio

1.88 The CD Ratio of public sector banks in India excluding Regional Rural Banks by the end of March 2015 was 76.05 per cent. It was 78.20 per cent in 2014. Tamil Nadu occupied topmost position among the major states in the CD Ratio (120 per cent) followed by Telengana (107.82 per cent), and Andhra Pradesh (106.13 per cent) compared to which the CD Ratio in Kerala is only 69.48 per cent. During March 2014, it was 71.01 per cent (Appendix 1.43). The CD Ratio of Idukki (128.22 per cent) and Wayanad (120.62 per cent) remain high. Among the districts, Pathanamthitta stands at the bottom with CD Ratio of 28.48 per cent (Appendix 1.44).

Primary Agricultural Co-operative Societies (PACS) and Financial Inclusion

1.89 The 14 District Co-operative Banks in Kerala have 747 branches across the State and there are1654 Primary

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Agricultural Co-operative Societies affiliated to them. The financial activities of the District Co-operative Banks (DCBs) and its affiliated PACSs reveal the significance of Co-operative Banks in the banking activities at the grass root level in the State. The total deposits and advance in these banks were □40,133 crore and □25,150 crore respectively in March 2015. The total priority sector advances by the Co-operative Societies in the State was □14,661 crore, covering sectors such as Agriculture (□3425 crore), SME (□418 crore) and Housing (□2973 crore).

Advances to SCs/STs

1.90 According to SLBC's banking statistics, an amount of □4390 crore and □1164 crore was disbursed to SCs & STs respectively in March 2015 in the State. The major share of advances to SCs came from State Bank Group (□3237 crore) which accounted for 74 per cent. Private Sector Banks and Regional Rural Banks disbursed □119 crore and □94 crore respectively. □962 crore (83 per cent) by State Bank Group, □158 crore (14 per cent) by Nationalised Banks, □31 crore (3 per cent) by Regional Rural Banks and □13 crore (1 per cent) by Private Sector Banks were distributed to STs.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Section 8

Annual Plan 2015-16

1.91 Annual Plan 2015-16 is the 4th year of the 12th Five Year Plan (2012-17). Several systematic changes were made during 2015 to ensure that the Annual Plan is holistically implemented. Annual Plan for the year is formulated based on specific guidelines. While formulating the plan, critical review of the performance of ongoing schemes were held. Stakeholder consultations were held on different areas of critical importance to the State, with a bottom up approach, to capture information on the ground realities. In order to avoid proliferation of schemes, attempts have been made to reduce the number of schemes and wherever possible schemes having similar nomenclature have been grouped together under a single head as an 'umbrella' scheme.

1.92 Aiming at a qualitative improvement in plan implementation, an Award System for the best performers in Plan implementation was introduced in 2013-14. It has been decided to continue the system. A notable achievement of the system is that a Summary Document on Sector/Sub-Sector/Scheme wise Officer responsible for the implementation of each of the schemes is furnished in the Annual Plan 2015-16 to be tabled in the State Legislature along with the Budget documents for 2015-16.

1.93 In the Annual Plan (2015-16), the Aggregate Budgeted Outlay of the State (BE) is □27686.32 crore which includes the State Plan of □20000 crore and Central Assistance of □7686.32 crore. In the budgeted outlay, Other Central Assistance (OCA), One Time Additional Central Assistance (OTACA) and 13th FC Award schemes constituted □659.62 crore.

1.94 Following the 14th Finance Commission recommendations to discontinue allocations under OCA, OTACA, and FC Award Schemes and consequent to the changes in the funding pattern of Centrally Sponsored Schemes (CSS) in the Union Budget 2015-16, a re-estimation of plan resources became essential. Accordingly, a realistic estimation of the resource requirement under OCA, OTACA, FC Award Schemes and State Share of CSS were made. The revised estimation indicated an increase in the State Plan size from the existing □20000 crore to □21573.51 crore and the Annual Aggregate Plan was reduced to □26270.47 crore from the BE of □27686.32 crore. The reduction in Aggregate Plan is due to the re-estimation of Central Assistance from the BE of □7686.32 crore to the RE of □4696.96 crore. The net impact to the State exchequer has been worked out at □2238.13 crore. Major sector wise comparative statements of the outlays of Annual Plan (2014-15) and (2015-16) are given in Table 1.13.

Table 1.13
Annual Plan 2014-15, 2015-16 (BE) and 2015-16 (RE)
Sectorwise outlay comparative statement
(□ crore)

Sl. No	Sector	2014-15			2015-16 (BE)			2015-16 (RE)			% of increase / decrease over RE	% of increase / decrease over BE
		Outlay	CSS	Aggregate	Outlay	CSS	Aggregate	Outlay	CSS	Aggregate		
I	Agriculture and Allied activities	1664.02	149.09	1813.11	1241.85	627.58	1869.43	1280.08	329.33	1609.41	-11.23	3.11
II	Rural Development	617.23	833.41	1450.64	653.12	2223.08	2876.20	909.73	1968.37	2878.10	98.40	98.27

III	Special Area Programmes	413.76		413.76	467.23	75.20	542.43	491.84	0.00	491.84	18.87	31.10
IV	Irrigation and Flood Control	749.64	160.67	910.31	348.01	223.67	571.68	338.84	223.67	562.51	-38.21	-37.20
V	Energy	1370.04		1370.04	1467.20	0.00	1467.20	1467.20	0.00	1467.20	7.09	7.09
VI	Industry and Minerals	639.40	36.68	676.08	582.20	28.71	610.91	609.10	3.38	612.48	-9.41	-9.64
VII	Transport	1180.87	0.63	1181.50	1300.12	0.00	1300.12	1300.12	0.00	1300.12	10.04	10.04
VIII	Science, Technology and Environment	621.45	42.73	664.18	688.40	67.59	755.99	711.44	47.13	758.57	14.21	13.82
IX	General Economic Services	1651.49	43.25	1694.74	2508.19	137.64	2645.83	2596.03	39.98	2636.01	55.54	56.12
X	Social Services	6334.44	2435.33	8769.77	5873.47	4287.85	10161.32	6992.23	2073.41	9065.64	3.37	15.87
XI	General Services	57.66	30.00	87.66	70.21	15.00	85.21	76.90	11.69	88.59	1.06	-2.79
	TOTAL - I toXI	15300.00	3731.79	19031.79	15200.00	7686.32	22886.32	16773.51	4696.96	21470.47	12.81	20.25
XII	LSGD	4700.00	0.00	4700.00	4800.00	0.00	4800.00	4800.00	0.00	4800.00	2.13	2.13
	GRAND TOTAL	20000.00	3731.79	23731.79	20000.00	7686.32	27686.32	21573.51	4696.96	26270.47	10.70	16.66

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Rationalisation of CSS - Report of Sub Group of CMs

1.95 The Central Government abolished the Planning Commission and constituted the NITI Aayog with all the Chief Ministers as members of its Governing Council chaired by the Prime Minister. In the first meeting of the Governing Council, the Prime Minister announced the constitution of the subgroup of Chief Ministers on Rationalization of centrally sponsored schemes. The subgroup was formed with a view to enhancing the efficiency in implementation of CSS and making necessary modifications so as to make their impact more visible. The Sub-group comprised of Chief Ministers of Arunachal Pradesh, Jammu & Kashmir, Jharkhand, Kerala, Manipur, Nagaland, Rajasthan, Telangana, Uttar Pradesh and Lt. Governor of A & N Islands. The Chief Minister of Madhya Pradesh was designated as the Convener and the CEO (Chief Executive Officer) NITI Aayog was the Co-ordinator.

1.96 On the basis of extensive and wide ranging consultations, the Sub-Group has made recommendations regarding redesigning and implementation of the CSS. Some of the major recommendations include pruning down of the number of existing CSS from the current 66 to a maximum of 30. The revamped CSS will now reflect the priorities set in the National Development Agenda that was unanimously adopted at the first meeting of the Governing Council of the NITI Aayog. The CSS that have been recommended for continuation have been classified as Core of the Core, Core and Optional Schemes reflecting their inter-se importance in furthering the National Development Agenda. The Sub Group has recommended that the participation of the States in the Core Schemes shall be mandatory.

1.97 Ministry of Finance, GoI has intimated that report of Sub Group of CM's has been considered and decided that funding of fully supported schemes (A category) will remain unchanged and that of schemes with changed funding pattern (B category) will be shared in the ratio of 60:40 between the Centre and the State. All other schemes (not listed in the above two categories) will be optional for the States and the funding pattern will be 50:50 between the Centre and the State. The CSS proposed in the Annual Plan 2016-17 of the State is on the basis of revised funding pattern as intimated by the Government of India. The views of State Planning Board/GoK have been taken by NITI Aayog in deciding the funding pattern of CSS.

Box 1.3
Highlights of Annual Plan 2015-16
• Strengthening of Vegetable Development – Support for institutions developed for the promotion of vegetable cultivation.
• Organic farming – For promoting organic agriculture

- 15 Agro Service Centres proposed
- 40 Plant Clinics proposed
- Veterinary Service – Night service proposed for 20 Development Blocks
- Integrated Dairy Development project for Idukki and Kannur districts.
- Adoption of mechanisation and modern technology
- Elevation of 100 Govt schools to international standard over a period of 3 years.
- Modernisation of Film/Digital preservation vault (KSFDC)
- Vajrakeralam– to herald the achievements and development of the State during the last 60 years.
- New Medical Colleges in Idukki, Kasaragod, Pathanamthitta, Malappuram and Wayanad
- Santhwanam Rental Housing Scheme for patients who are undergoing continuous treatment in Medical Colleges of the State
- Awareness creation programme for loading and unloading workers
- Introduction of GPS based Mother and Child tracking system in Mananthavadi Block
- First 1000 days programme for infants in Attappady
- Petcoke based power project (500-600 MW)
- Setting up of Centre for Bio-polymer Science & Technology
- KSIDC projects – Green Financing Scheme, Mega Food Park, Cherthala
- KINFRA projects – Mega Food Park- Palakkad, Foot Wear Park- Ramanattukara, Gem and Jewellery Park- Puzhakkal, Thrissur, Spices Park, Muttam, Thodupuzha, Nano Tech Zone at Hi-Construction of By lane to NH
- Establishment of Modern Slaughter Houses in urban areas
- Establishment of gas crematorium in urban areas
- ATSP Housing for homeless Scheduled Tribes

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace
Top
Other Chapters

Planspace-District Roll Out

1.98 As part of strengthening the plan monitoring and evaluation mechanism, an online plan monitoring software planspace was developed by the State Planning Board with the technical support of IIITM-K (a Government of Kerala undertaking at Technopark, Thiruvananthapuram). Planspace is a web based management information system for monitoring and evaluation of the progress of implementation of all plan schemes in the State. For the first time, the Annual Plan proposals for the year 2015-16 were received online from Heads of Department and Implementing agencies through planspace.

1.99 With a view to strengthen the District Level Plan Monitoring System, planspace has been rolled out to all the districts in the State. As part of it 1089 officers in the districts were trained to familiarize the software for the district level monitoring. The official declaration of District Roll Out of planspace in the State is expected during January 2016. This will enable implementing officers at district and sub district levels to directly input data into the system, thus further enhancing its accuracy and timeliness. As per the information available on planspace, during the current Financial Year the total plan expenditure is 41% per cent as on 31st December 2015 which is expected to improve substantially by the end of the financial year.

1.100 As a further step towards making the monitoring mechanism more effective, it has been decided to introduce digitised documentation of assets created in the Annual Plan. Photographs/images of physical assets created with geographical co ordinates will be uploaded to planspace using GPS, IIITM-K has developed an Android based mobile application for this. In the first phase, this will be introduced on a pilot mode in selected departments and later extended to all departments.

Macro Economic Outlook for Kerala

1.101 The nature of growth in the state has widely been perceived as being vulnerable as consumption led growth is subject to internal and external dynamics. Low value addition, poor infrastructure, high unemployment, inequality and various environmental challenges are the major hindrances to pushing up growth in the State. Rising urbanisation has brought to forefront many daunting challenges before the State. The changes in the funding pattern for CSS has brought about a change in the resource availability in the State. The State needs to improve the quality of its expenditure and also enhance the availability of financial resources to fill the critical gaps observed in the development process. Planning,

prioritisation and performance is the key. The Perspective Plan 2030 charts out the vision and development strategy for the State. Prioritisation of expenditure and effective implementation of the strategies will be instrumental in leveraging the advantage of the state, addressing the challenges and transforming the State to knowledge based economy as envisaged in the Perspective Plan.

Demography
Income
Poverty
Urbanisation
Prices
State Finances
Banking
Annual Plan
Planspace

Top

Other Chapters

Chapter 2

AGRICULTURE AND ALLIED SECTORS

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Introduction

Agriculture remains one of the most important sectors of Kerala Economy. The forces driving the global growth in agriculture and associated risks pose significant challenges to Kerala agriculture. Commodity markets witnessed turbulent times in 2014 & 2015. Most commodity prices in the international market fell significantly and continued the downtrend from their peaks of 2011-12. In the agricultural raw material markets plentiful supply was a major issue. Natural rubber prices experienced a substantial decrease of 30 percent in 2014 resulting from over supply and high stocks (UNCTAD, 2015). It is a great challenge and formidable task to arrest the decline and reverse the slowing growth of agriculture sector.

Performance of Agriculture

At the national level, as against a growth target of 4 per cent for agriculture and allied sectors in the Twelfth Plan, the growth registered for 2012-13 at 2011-12 prices was 1.2 per cent, 3.7 per cent in 2013-14 and 1.1 per cent in 2014-15. The figures were 1.4 per cent for 2012-13 and 4.7 per cent for 2013-14 in 2004-05 series. Thus there is a downward revision in the growth rates of agriculture and allied sectors at the national level as a result of the adoption of the new series by the Central Statistics Office. But even without the downward revision agricultural growth was considerably lower than the target.

2.2 With regard to Kerala, growth performance of the agriculture and allied sectors has been fluctuating across the Plan period. It witnessed a positive growth of 1.8 percent in Xth Plan period but a negative growth rate of -1.3 percent in XIth Five Year Plan. In the Twelfth Plan based on the new series brought out by the Directorate of Economics and Statistics (DES) with 2011-12 as base year, the agriculture and allied sectors recorded a positive growth rate of 1.43 per cent in the first year (2012-13), and a negative growth rate of -2.13 per cent in second year(2013-14). In 2014-15, the sector has recorded a negative growth rate of -4.67 per cent. Consequently, the share of agriculture and allied sectors in total GSDP of the State has also declined from 14.38 per cent in 2011-12 to 11.6 per cent in 2014-15. But, the switch from 2004-05 to new series with 2011-12 as base has resulted in higher share of agriculture and allied sectors in the total GSDP of the State from 8.83 per cent to 12.9 per cent for 2013-14. (Table 2.1)

Table 2.1
Share of Agriculture and allied sectors in GDP
At the National and State level (Base 2011-12)

Sl No	Year	Share of agriculture and allied sectors in GDP (India)	Share of Agriculture and allied sectors in GSDP (Kerala) #
1	2011-12	18.4	14.38 (9.1)
2	2012-13	18.0	13.76 (9.5)
3	2013-14*	18.0	12.9 (8.83)
4	2014-15**	NA	11.6

*Provisional ** Quick # figure with 2004-05 base in brackets
Source: Directorate of Economics and Statistics

2.3 In order to revive the agriculture in the country as a whole, NITI Ayog had asked all the states to constitute Task Force for Agriculture Development. Consequently the Government of Kerala had constituted a Task Force with Vice Chairman, State Planning Board as Chairman and Government Secretaries as Members. The Task Force had accordingly suggested approach and strategies for revitalization of agriculture and allied sectors as well as requested for various support measures from the Government of India. The best practices in agriculture followed in the State were also mentioned in the report. The salient recommendations among them are presented in Box 2.1

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

Box 2.1
Task Force on Kerala Agriculture Development
Recommendations :

A. Support requested from GOI for the revitalization of agriculture in Kerala

Support for Risk Management in Agriculture such as addressing price stability of perennial crops and vegetables, a high density weather station network for effective crop insurance, Credit risk guarantee fund by GoI to encourage banks to extend loan to farmers for short term and investment credit, designing an income guarantee program for the farmers, a new interest subvention scheme for investment credit, announcement of minimum support price for horticulture crops like vegetables, implement pilot projects for the revitalization of agriculture based on the agro ecological delineation of the State, support to set up network of farmers market in the State, support for food processing and value addition.

B. Best practices in Kerala

1. The adoption of online farmer registration data base and e-payment using Direct Benefit Transfer during 2012-13 onwards facilitated faster service delivery in Agriculture by the Department of Agriculture. A data base of 18.77 lakh farmers has been created through the online software developed and maintained by NIC. Assistance worth □. 912.33 crore has been transferred to farmers during 2012-13 to 2014-15, through DBT.

2. Supplyco, the implementing agency for paddy procurement, has developed a web based platform to document the entire activities in the supply chain of paddy procurement scheme, through online farmer registration and paddy receipt sheet computerization for the electronic management of payment process.

3. The extension support to farmers under support to state extension program for extension reforms is provided through Agriculture Technology Management Agency (ATMA) plus model of extension under the overall framework of ATMA.
4. Plant health clinics were established in the State for providing adequate diagnostic and advisory facilities to farmers online to promote diagnostic services along with ecofriendly and scientific pest management strategies.
5. Farmer markets of vegetable and fruit promotion council saves the farmers from the exploitation of middlemen in agriculture marketing. There are 270 farmer markets in the State and it undertook trading of fruit &vegetables worth □259 crore.
6. Kerala State Planning Board has initiated a project on soil based plant nutrient management plan for agro ecosystem of Kerala. The scheme was implemented by Department of Agriculture under the leadership of National Bureau of Soil Survey & Land Use Planning (NBSS & LUP) with the support of other 12 institutions and 27 laboratories. Over 1.75 lakh soil samples had been collected and analyzed for micro, macro and secondary nutrients. Soil test based health cards were generated using the software developed by Indian Institute of Information Technology and Management, Kerala (IIITM-K) and issued to the farmers. Nutrient Management Plan for 900 Panchayats were prepared based on the soil analysis data from each Grama Panchayat and distributed to Krishi Bhavans.

C. Strategies recommended for the revitalization of agriculture and allied sectors

The strategic framework recommended for revival of Kerala agriculture is promotion of green economy based on agro ecology principles, through improving agriculture productivity, investment in infrastructure and strengthening livelihood and assured income through service delivery.

D. Adoption of Agro ecological approach

The core approach in agriculture planning is driven by recognition that growth to a new plateau of performance cannot be achieved by continuing existing approaches and practices in the state. It is essential to prepare strategies and action plan for each Agro Ecological Zone and Agro Ecological Units for the development of Agriculture and allied sectors. The State has been divided into 5 Agro Ecological Zones and 23 Agro Ecological Units based on climate and soil in a recent study coordinated by the State Planning Board. All issues in Agriculture needs to be addressed on Agro Ecological Zone /Agro Ecological Unit wise for the growth and development of the sector

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Source: Task Force on Kerala Agriculture Development, State Planning Board, 2015

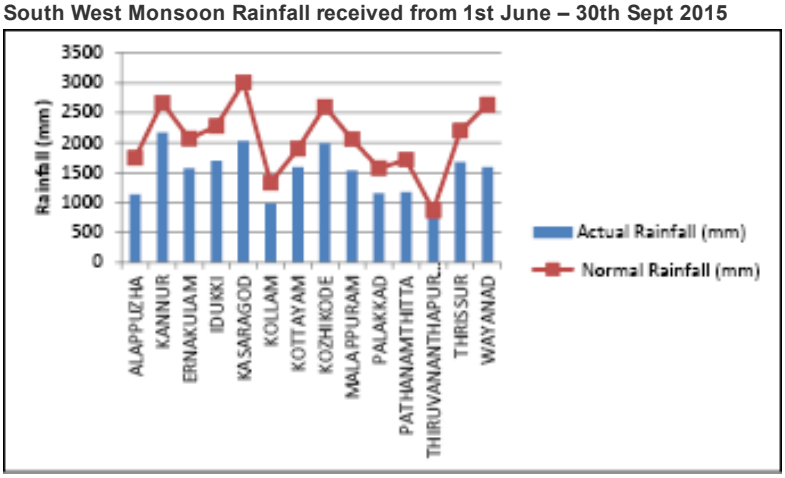
2.4 The implementation of the recommendations of the Task Force report along with substantial financial and policy support from Government of India is expected to revitalize Kerala agriculture to a higher growth trajectory.

Monsoon 2015

2.5 The actual rainfall received in Kerala during southwest monsoon season (1st June to 30th September 2015) was 1514.3 mm as against the normal rainfall of 2039.7 mm in 2015 showing -26 per cent departure from normal.

2.6 This year normal rainfall was received in Kannur, Kottayam and Thiruvananthapuram districts and rainfall received was deficient in all other districts in Kerala from southwest monsoon season. (Percentage departure from normal value: Excess: +20% and above, Normal: -19% to +19%, Deficient: -20% to -59%, Scanty: -60% to -99%).

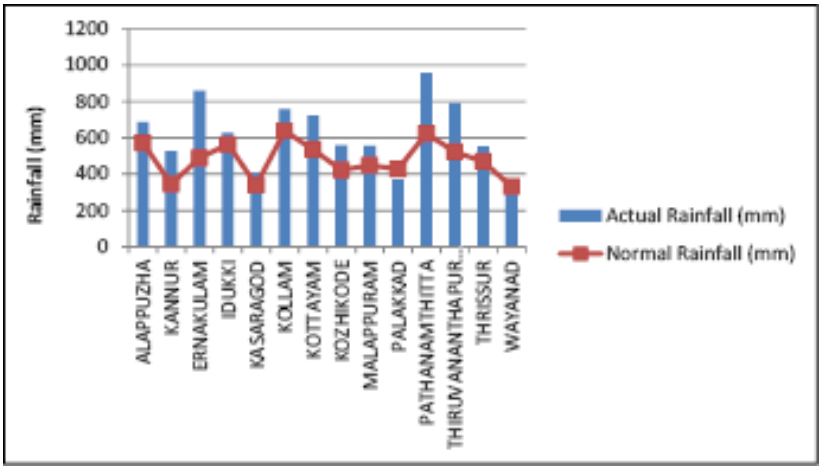
Fig 2.1
South West Monsoon Rainfall received from 1st June – 30th Sept 2015



Source: IMD, Thiruvananthapuram

2.7 During north east monsoon season the actual rainfall received in Kerala was 610.1 mm as against the normal rainfall of 480.7 mm showing excess rainfall from normal (+27%). Among the districts, Idukki, Kollam, Palakkad and Wayanad districts received normal rainfall and all other districts received excess rainfall during the season. District wise rainfall distribution in the State during North East Monsoon season 2015 is given as Appendix 2.1.

Fig 2.2
North East Monsoon Rainfall received from 1st October to 31st December 2015

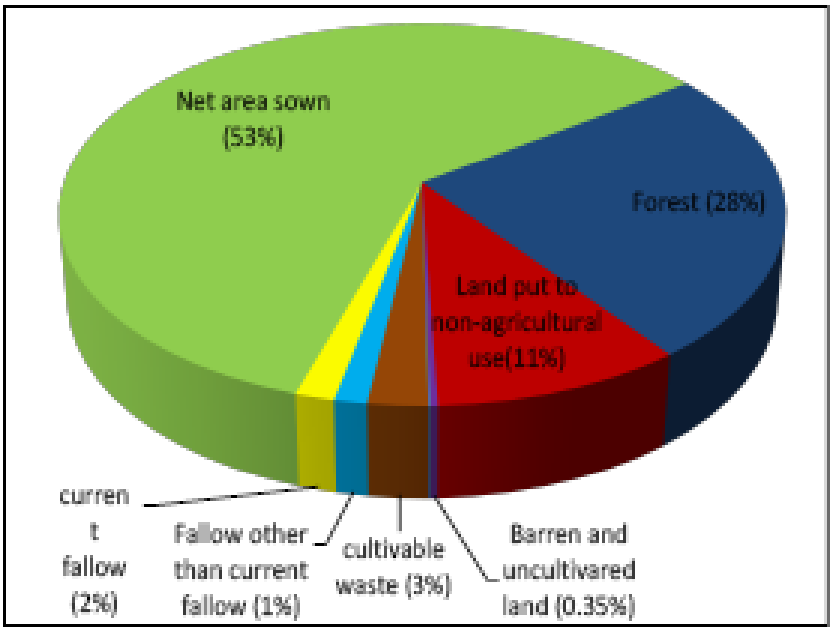


Source: IMD, Thiruvananthapuram

Land Use Pattern

2.8 Kerala is one of those States in India where land resources are put to more intensive use than anywhere else, mainly because of the low per capita availability of land in the State. Data on land use pattern and number of operational holdings for the year 2014-15 is given in Appendix 2.2 & 2.3. Out of a total geographical area of 38.86 lakh ha, little over one fourth was under forests, and one tenth of it was put to non agricultural use. Also, the net sown area which accounts for 53 percent of the total area, did not record any significant changes. Area sown more than once, which accounted for 15 percent of the total geographical area recorded a notable increase of 3 percent from 5.65 lakh ha in 2013-14 to 5.81 lakh ha in 2014-15. As a result, the gross cropped area registered a minor increase of 0.3 percent. Another notable feature is the decline in the area of barren and uncultivated land (-5 per cent), permanent pastures and grazing land (-38 per cent) and the area under current fallow (- 8 per cent). The land use pattern is shown in Figure 2.3.

Fig 2.3
Land Use Pattern of Kerala 2014-15



Source: Directorate of Economics and Statistics, Kerala

Trend in Area, Production and Productivity of Crops

2.9 Data regarding the area, production and productivity of important crops grown in Kerala are shown in Table 2.2. In the gross cropped area of 26.24 lakh hectares in 2014-15, food crops comprising rice, pulses, tapioca occupy 10.5 per cent. In 2014-15, food crops in general showed an increasing trend in production as the production of pulses and tapioca recorded an increase of 13 and 18 per cent respectively and that of rice recorded a marginal decline. This could be more on account of increase in acreage as the area under both pulses and tapioca has recorded an increase of 20 per cent and 11.6 per cent respectively. In the case of spices, pepper showed a tremendous increase in production (contrary to the previous year) mainly due to a productivity increase achieved, while production of ginger and turmeric showed an increasing trend in production (albeit marginally). In the case of plantation crops, coffee, tea and cardamom have shown increase in production while rubber has shown a drastic decline in production. Fruits, banana and other plantains recorded an increase

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

in production whereas the cashew output largely declined.

Table 2.2
Area, Production and Productivity of Principal Crops

Sl. No.	Crops	Area (Ha.)		Production (MT)		Productivity (Kg./Ha.)	
		2013-14	2014-15	2013-14	2014-15	2013-14	2014-15
1	Rice	199611	198159	564325	562092	2827	2837
2	Pulses including Tur	2989	3601	3019	3409	1010	947
3	Pepper	84065	85431	29408	40690	350	476
4	Ginger	4538	4800	21521	22989	4742	4789
5	Turmeric	2430	2470	6253	6820	2573	2761
6	*Cardamom	39730	39730	14000	16000	352	403
7	Arecanut	100008	96686	100018	125925	1000	1302
8	Banana	62261	61936	531299	545431	8533	8806
9	Other Plantains	54512	56761	362395	468320	6648	8251
10	Cashewnut	49105	45436	33375	29715	680	654
11	Tapioca	67589	75496	2479070	2943919	36679	38994
12	Coconut	808647	793856	5921	5947	7322	7491
13	**Coffee	85359	85359	66645	67700	781	793
14	$ Tea	30205	30205	62938	65174	2084	2158
15	# Rubber	548225	549955	648220	507700	1182	923

Production of Coconut in Million Nuts, Productivity in numbers.
Rubber Board, *Spices Board .** Coffee Board . $Tea Board
Source; Directorate of Economics and Statistics

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Crop Wise Analysis

Rice

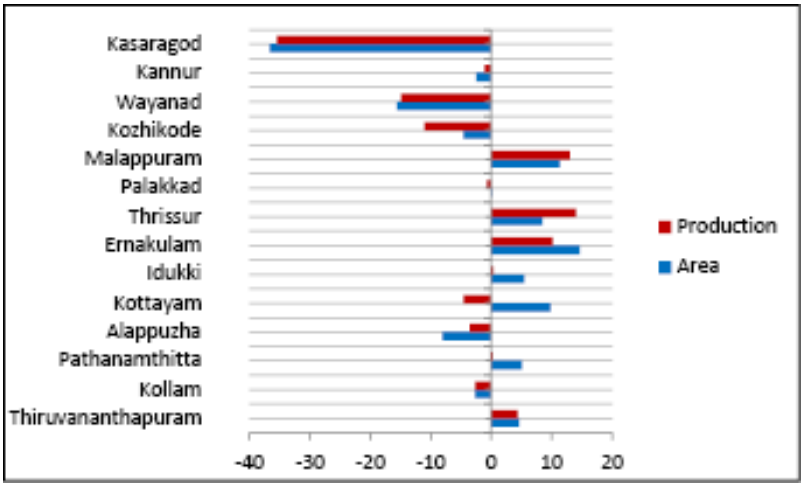
2.10 Rice is the staple food of Kerala and forms an inevitable part of an average Keralites' diet. Unfortunately, the area under rice has been declining consistently since the last three decades. Today rice occupies only third position in area under cultivation way behind rubber and coconut. And though last year the trend was reversed with a marginal increase in area and production, in 2014-15, it again showed a declining trend. Moreover, the productivity of the crop is very low in the State (2837kg/ha), though it is higher than the national average (2424 kg/ha). There has only been a marginal increase in the productivity of rice in the past four decades. China which is the major producer of rice in the world, reports productivity more than three times the productivity of (6744kg/ha) rice in Kerala. The productivity of rice in Egypt is the highest in the world (9088kg/ha) which is nearly four fold of our productivity. Punjab is the State with maximum yield in the country (3952kg/ha). Details regarding area, production and productivity of rice in Kerala is given in Appendix 2.4.

2.11 Meanwhile at the national level, there has been 2.7 per cent increase in area and 1.3 per cent increase in production of rice in 2013-14 over the previous year.

2.12 Season wise production trends reveal that contrary to the previous year, the mundakan crop has shown decline in production while the virippu and puncha crop showed increasing trend. Still the overall production failed to respond positively (Appendix 2.5).

2.13 Area under rice has fallen in all the districts of the State in the period 1996-97 to 2012-13. However, the decline has been sharpest for Ernakulam (93%) followed by Kollam (92%), Thiruvananthapuram,(86%) and Malappuram (78%). On the positive side, in Kottayam and Alappuzha, the major rice growing districts the decline has been much less (13 and 12 per cent respectively). In 2014-15, Kollam, Alappuzha and the northern districts of Kozhikode, Wayanad, Kannur and Kasaragod have shown decline in area as well as production in the State. In Kottayam, despite an increase in area of 9.8 per cent the production has not responded positively. (Details as given in Appendix 2.6 & 2.7) and Figure 2.4.

Fig 2.4
Percentage change in area and production of rice in major districts of Kerala during 2014-15 over 2013-14



Source: Directorate of Economics and Statistics, Kerala

2.14 The decline in area indicates that area under paddy has been increasingly converted into other crops as well as for non agricultural purposes. This is mainly due to low profitability as a result of increasing costs (caused by rising cost of human labour as well as seasonal shortage of labour) as well as relative price change in favour of competing crops. Inspite of focused intervention through state plan and Rashtriya Krishi Vikas Yojana (RKVY) along with enhancing per hectare assistance from □1500 to □4500 in 12th plan and introduction of procurement in all districts, rice production has not responded positively.

Coconut

2.15 Although one of its principal crops, Kerala's share in area as well as production of coconut in the country is declining over time. While it accounted for 69.58 per cent of the area and 69.52 per cent of the production in the country in 1960-61, the corresponding shares declined to 40.2 per cent and 42.12 per cent respectively in 2011-12. However the area and production of coconut in the State has been increasing. From 29.88 per cent of the Net Sown Area in 1980-81 the share of coconut has increased to 41.96 per cent in 2000-01. Although it declined to 37.19 per cent in the start of the next decade, it was made good by 2011-12 to 40.24 per cent .This could be because part of the paddy fields were reclaimed and planted with coconut during the period. The production also increased concomitant to increase in the area during this period. From 3220 million nuts in 1960-61, the production increased to 5536 million nuts in 2000-01. After that the production plateaued and was more or less stagnant in the next decade. Thus the increase in output is more on account of increase in acreage as the productivity of the crop is very low in the State. In 2014-15, there was a marginal increase in the production from 5921 million nuts in 2013-14 to 5947 million nuts. Area, production and productivity of coconut in Kerala are given in Appendix 2.8.

2.16 The main cause for falling productivity is the prevalence of root wilt disease, poor management and existence of senile and unproductive palms. Hence massive replanting of root wilt palms by elite palms and elimination of senile palms, setting up of nurseries for production of quality seedlings and their subsequent distribution is required for increasing productivity. Restructuring of the cluster development programme is also essential for more effectiveness. The attempt made by the Department of Agriculture and Cooperation to restructure two coconut development programmes through convergence approach at the panchayath level during 2014-15 coupled with price advantage is expected to revive coconut production in the State. The isolated attempts of production of dwarf coconut seedlings and hybrids need to be scaled up substantially with the support of Research and Development institutions. Entrepreneurial ventures for the production of value added products like desiccated coconut, beverages, shell based products, coconut cream, neera etc has to be promoted with appropriate tie up with credit and marketing agencies. The coconut procurement system through Krishi Bhavans in association with Kerafed was introduced in 2012-13. The initiative taken by Govt. in promoting neera in 2013-14 is expected to revive coconut economy of the State.

Vegetables

2.17 The per capita consumption of vegetables in Kerala is 160g per day, the annual consumption being 20.78 lakh tonnes. However, the State has been producing much less than the requirement resulting in heavy dependence on neighbouring states. In 2011-12, production of vegetables in Kerala was just 8.25 lakh MT. Considering the heavy dependence as also the heavy content of pesticide residue in the vegetables imported from neighbouring states, the Government of Kerala initiated a Vegetable Development Project (VDP) to augment vegetable production in the State. As a result the vegetable production in the State has increased to 13.55 lakh MT in 2014-15.The area under vegetable cultivation has also increased from 42477 ha in 2011-12 to 90533 ha in 2014-15, the share contributed by VDP being 36 per cent. The Department of

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Agriculture could increase substantially the production of vegetables in the State over a period of three years.

2.18 Considering the heavy content of pesticide residue in the agriculture produce Government of India brings out a survey report on the status of pesticide residues in food commodities every year. The details of the survey report of 2014-15 is given in Box 2.2

Box 2.2

Survey report on Status of Pesticide Residues in India 2014-15 –Major Findings

The Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare had started a central sector scheme, "Monitoring of Pesticide Residues at National Level" in food produce and environmental samples during 2005-06 with the participation of various laboratories representing Ministry of Agriculture, Indian Council of Agriculture Research, Ministry of Health and Family Welfare, Ministry of Environment and Forest, Council of Scientific and Industrial Research, Ministry of Chemical and Fertilizer, Ministry of Commerce and State Agricultural Universities across the country. The main objective of the scheme include: To identify crops and regions having preponderance of pesticide residues in order to focus extension efforts for Integrated Pest Management (IPM) and Good Agriculture Practices (GAP). During the year 2014-15, under this scheme samples of vegetables, fruits, spices, red chilli powder, curry leaves, rice wheat, pulses, fish/marine, meat and egg, tea, milk and surface water were collected from the various markets such as retail outlets and agricultural produce marketing committee (APMC) markets, farm gate and organic outlets located at different parts of the country and analysed by 25 participating laboratories for the possible presence of groups of pesticide residues such as organo-chlorine, organo-phosphorous, synthetic pyrethroids, carbamates and herbicides. • Out of 20,618 samples analysed; no residues were detected in 16,761 samples (81.3%); residues were detected in 3,857 (18.7%) and residues above Maximum Residue Level (MRL) in 543 samples (2.6%) as prescribed by Food Safety and Standards Authority of India (FSSAI). Residues of non-approved pesticides were detected in 12.5% of the samples. • With regard to Vegetables, 10,593 vegetable samples were collected from various markets in the country (retail outlets and APMC markets), farm gate and organic outlets and analysed for the possible presence of pesticides by 22 participating laboratories. The vegetables samples which were collected and analysed were mainly, brinjal, okra, tomato, cabbage, cauliflower, green chilli, capsicum, cucumber, green pea, bitter gourd and coriander leaves Out of this 2253 vegetable samples (21.3%) contained of measurable pesticide residues. In 2.9% of the vegetable samples (306 samples), residue concentrations exceeded the FSSAI MRL. • The total number of 2239 fruit samples namely, apple, banana, pear, grapes, orange, pomegranate, guava and mango were collected from the different markets and analyzed for the possible presence of pesticide residues. Overall, 81.1% of the samples tested were free of detectable residues. While 18.8% of the samples analysed contained measurable residues from which 1.8% of samples (40 samples) contained residues above FSSAI MRL. • A total of 1881cereal samples (1076 rice samples and 805 wheat samples) were collected and analysed by 15 laboratories for the possible presence of pesticide residues. In total, 152 rice samples(14.1%) out of 1076 samples were found with measurable residues and the MRL exceeded in 6.3% rice samples . • Out of the 8,342 vegetable samples collected from the various retail and agricultural produce marketing committee (APMC) markets, in 22.5 per cent of the samples one or several pesticides in measurable concentrations were detected, in 229 samples (2.7%) contained residues exceeding MRL. Most frequently detected pesticides which exceeded FSSAI MRL were chlorpyrifos, ethion, acetamiprid, dichlorvos and cypermethrin. Among all the vegetables samples analysed, capsicum, green chilli and cauliflower samples were found having high number of above MRL residues followed by samples of cabbage, brinjal, tomato, okra, bitter gourd, cucumber, green pea and coriander leaves. Out of the Vegetable samples collected from farm-gate (1846) and organic outlets (405); 69 farm-gate samples (3.7%) and 8 organic samples (2.0%) were found exceeding MRL.

KERALA

• Overall, 1197 samples were collected and analysed by Vellayani centre (Kerala Agricultural University); 26.0% of the sample had measurable concentrations of one or more pesticides; while 7.9% of the samples were identified with exceeding MRL.

• For rice, out of the 72 samples analysed, 19 samples were detected with pesticide residue and in 12 samples, it was exceeding FSSAI MRL levels. In vegetables (market, farm gate and organic together) 25 per cent of the samples contained pesticide residue and 2.72 per cent samples exceeded FSSAI MRL levels. Also its heartening to note that among pulses red chilli powder, milk, meat and egg, and fish products, no sample had residue exceeding FSSAI MRL levels

Source: Ministry of Agriculture&Farmers' Welfare, Government of India, 2015

Pepper

2.19 Pepper production in the country recorded an increase of 25 thousand tonnes from 45 thousand tonnes in 2013-14 to 70 thousand tonnes in 2014-15. Concomitantly, pepper production in Kerala also recorded an increase, from 29408 MT to 40690 MT in 2014-15.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.20 There has been a rally in pepper prices since 2010 which further increased to □663.27 per kg in 2014, an increase of □251.35 per kg compared to previous year.

2.21 In order to revive spices development in the State, the Department of Agriculture had initiated comprehensive pepper development Programme in all districts of the State in 2014-15 . An integrated action plan was prepared for the revival of the crop in the State, covering reorientation of planting material production, expansion of grafting wherever possible, area wide disease management, liming and nutrients management and revival of pepper samithies. The increase in production achieved could be because of this concerted effort by the Government of Kerala.

Cashew

2.22 India continued to be the largest producer of raw cashew nuts in the world. The other main producing countries are Vietnam, Brazil, Tanzania and Ivory Coast. The production of raw cashew nuts increased from 728 thousand MT in 2012-13 to 736 thousand MT in 2013-14. The area under cashew cultivation also recorded an increase from 982 thousand hectares to 1006 thousand hectares in the respective years.

2.23 However in the last one decade, there has been a continuous and considerable decline in both area under cultivation as well as production of cashew in Kerala. Its alarming to note that the production which stood at 60 thousand MT in 2004-05 declined to 33.3 thousand MT in 2013-14 and to 29.71 thousand MT in 2014-15. While area dwindled from 81 thousand hectares to 49 thousand hectares and to 45 thousand hectares during the same period. Productivity of the crop which was around 900 kg per hectare during the late eighties also dwindled to 654 kg per hectare in 2014-15. Details are given in Appendix 2.9.

2.24 Area and production are increasing steadily in other producing states in the country. Eventhough the major share of area under cashew is in Andhra Pradesh (18.3%), Maharashtra is the leading producer with 32.9 percent share in production during 2013-14 whose share was only 10 per cent in 1990-91.

Plantation crops

2.25 Plantation crops in general are either export oriented or import substituting and therefore assume special significance from the national point of view. It is estimated that nearly 14 lakh families are dependent on the plantation sector for livelihood. Each of the four plantation crops of South India has its distinct characteristics and economic problems. Consequent to the removal of quantitative restrictions on import, plantation crops in general are facing the threat of low quality imports.

2.26 Kerala has a substantial share in the four plantation crops of rubber, tea, coffee and cardamom. These four crops together occupy 7.04 lakh ha, accounting for 26.88 percent of the gross cropped area in the State. Kerala's share in the national production of rubber is 72.02 per cent, coffee is 22 per cent and 6.3 percent in tea during the year 2013-14. Details are given in Appendix 2.10.

Rubber

2.27 India produced only 6.45 lakh tonnes of natural rubber (NR) during the year 2014-15, significantly lower by 1.2 lakh tonnes from the previous year. Another major development during the year was the downward revision of production figure by the Rubber Board for the year 2013-14 to 7.74 lakh tonnes in the place of 8.44 lakh tonnes. Thus there was large fall in India's output, continuing the trend that started in 2013. Fall in NR prices coupled with high wages and dearth of skilled labourers, largely compelled farmers to minimize harvesting days, reduce application of essential inputs and stay away from proper maintenance of trees. Productivity has been affected by the abnormally severe summer that was felt in the State during the dry season. Though mature rubber area expanded during the year by 16000 ha to 534000 ha, a portion of this was left untapped due to unattractive prices, shortage of tappers and high operation cost. In contrast to the fall in production, consumption grew by 3.8 per cent to 10.2 lakh tonnes in 2014-15. This is supposedly due to increased demand for rubber by user industries as their end products showed signs of improvement. For instance, it is reported that the overall sale in vehicles during 2014-15 grew at 7 per cent compared to 3.5 per cent in the previous year. As a result India imported 442.1 thousand tonnes of natural rubber during 2014-15, significantly higher than 360.3 thousand tonnes imported in the previous year, largely attributed to favourable relative import prices as the domestic market prices stayed above the international market prices. Two explicit outcomes of the growth in NR imports are the increase in the import intensity of domestic NR consumption to more than 43 per cent and the gradual replacement of conventional sheet grades of NR from domestic market by block rubber with important implications for farm gate prices. However, a major casualty of the convergence of the markets has been fluctuating farm income leading to staggered replanting and resultant growth in the share of area under senile trees to the extent of around 50 per cent of the total tapped area. The production scene was no different in Kerala also, as the total production dwindled from 6,48,220 MT in 2013-14 to 5,07,700 MT in 2015 despite a marginal increase in area of 0.3 per cent in 2014-15. Details are given in Appendix 2.11 to 2.13.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.28 With regard to rubber prices, it has been volatile in both the national and international markets. NR prices after scaling to an all time high during 2011 had fallen significantly, that too at a furious pace which had started threatening the very existence of the growing fraternity. In relative terms the average international price realized during 2014 was lower by 26.5 per cent compared to the previous year. The domestic NR prices also had moved along a falling trajectory during the year under review, but the intensity of decline was slightly less compared to the international prices. The average price realization of RSS 4 during 2014-15 was □132.6 per kg while it fetched □166 per kg in 2013-14. Whereas for RSS-3 it was □155.45 and □112.71 for 2013-14 and 2014-15 respectively.

2.29 The declining rubber production in the year has affected India's ranking internationally as it has been pushed to the fifth position with countries like Vietnam and China occupying the third and fourth position respectively. Thailand continues to be the top producer followed by Indonesia in the second spot in the global rubber scene.

Coffee

2.30 Domestic coffee production for the year 2014-15 was estimated at 327 thousand tonnes which represents an increase of 22.5 thousand tonnes compared to the previous year. However as per FAO estimates, yield in India is 845.6 kg per hectare much below Vietnam (2499.1 kg per hectare) and Brazil (1421.5kg per hectare). Interestingly, a comparison of the productivity levels in 1971 vis-a-vis 2011 suggests that India (-1.8%) and Indonesia (-0.1%) are the only two countries who have reported a decline in yield levels in last 40 years. Lower productivity in India is due to limited mechanization, pest infestation, existence of old/senile plants and labour shortage. Thus on the productivity side much more needs to be done and concerted efforts are required both at the policy and farm level. The only way to address this issue is by providing positive research and development which can directly contribute in achieving higher yield.

2.31 With regard to Kerala the production of coffee registered a slight increase from 66,645 MT in 2013-14 to 67,700 MT in 2014-15. The share of Kerala in total coffee production in the country is around 20 per cent during the year. Major variety grown in Kerala is Robusta with a share of 97.1 per cent in planted area. Productivity of the crop in terms of bearing area in Kerala is 808 kg/ha which is lower than the national level of 852 kg/ha during 2011-12. Among the States, Kerala stands next to Karnataka which produces 70.4 percent of total Indian coffee production.

Tea

2.32 As one of the largest tea producing countries, India accounts for 24.8 per cent of the total world production. The Tea Board had revised the production figures during 2011 by bringing within the net all segments of tea producers, both organized and unorganized, especially in North India many of whom were not reporting their crop statistics earlier, which helped India in breaching the coveted one –billion mark. The domestic tea production during 2014 was marginally higher by 6.9mkg and was placed at 1207m.kg in 2014. North India was mainly responsible for the higher crop, while South India could sustain its surge in production, albeit marginally.

2.33 Kerala accounts for 5.03 per cent of the area and 6.3 per cent of the total domestic production of tea in the country and it has been consistently falling since 2009-10. There was some respite from this in 2012-13 as tea production recorded an increase of 5059 MT as compared to the previous year despite a decline in area of 18 per cent, mainly on account of increase in productivity. In 2013-14, there has not been much change in the area, production and productivity of tea from the previous year. In 2014-15, tea production has increased by 3.5 per cent mainly on account of increase in productivity as area under tea has mostly been stagnant as compared to previous year. Appendix 2.14

2.34 The major issues plaguing the tea industry are stagnant productivity, acute labour shortage, high cost of machines, and lack of indigenous machinery.

Cardamom

2.35 India is the second largest producer of small cardamom and plays an important role in the international trade of cardamom. The output of cardamom is dependent on prevailing climatic conditions as the cardamom plant requires intermittent spells of rains and good sunshine during the growth stage. Cardamom production in the country during 2014-15 was estimated at 20 thousand tonnes compared to 14.8 thousand tonnes in 2013-14, an increase of 5.20 thousand tonnes. The turn around in cardamom prices since 2006-07 continued upto 2010-11 reaching the highest level, but thereafter the prices have fluctuated. During the current season 2014-15(August-June), the prices had increased by □118.53 per kg to reach □761.44 per kg. Meanwhile in Kerala, cardamom production has increased by 14.2 per cent in 2014-15 despite the area under cultivation remaining stagnant.

2.36 Details regarding monthly average farm price of important agricultural commodities and yearly average index number

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

of prices received and prices paid by farmers is given in Appendix 2.15 & 2.16.

Collective farming through Kudumbashree

2.37 Collective farming is an important area of Kudumbashree which aims at food security both at household and community level. The major crops cultivated are paddy, vegetables, banana, pineapple and tubers. In 2013-14 area brought under cultivation of paddy was 15078.60 ha, vegetables contributed 12555.60 ha and 22476.20 ha of area was covered by other crops (banana, pineapple and tubers). Details of area covered are depicted in Appendix 2.17. More hand holding support including facilitation with banks and technology support are essential for improving livelihood of the women groups involved in farming.

Key initiatives of the Department of Agriculture in 2015-16

2.38 Schemes were formulated in 2015-16 based on the thrust areas and strategies for increasing the productivity in agriculture from the current levels. The key initiatives of the Department of Agriculture in 2015-16 for the improvement of agriculture sector are vegetable production programmes through a convergence approach on project mode aiming at self sufficiency, promotion of organic farming, production and distribution of quality planting materials, comprehensive fallow land cultivation with people's participation, Agricultural Technology Management Agency(ATMA) plus model of extension, rejuvenation of spices economy, crop health management covering pests and disease surveillance, safe food production and integrated pest management, institutional mechanism for marketing and development of farmer markets, crop insurance including comprehensive insurance for paddy, GPS enabled soil sample collection and issue soil health cards, establishment of 2 new Mobile Soil Testing Labs (MSTL) at Kasaragod and Pathanamthitta, agricards on a pilot basis at Kalliyoor Grama Panchayat and 15 Agro service centres for service delivery and 59 new plant health clinics.

Performance of Annual Plan - 2014-15 of Department of Agriculture

2.39 During the Annual plan 2014-15, out of □938.32 crore earmarked for Agriculture Department, the expenditure incurred was □666.54 crore (71%) including Wayanad Package. The key achievements of the Department of Agriculture in 2014-15 are the following. Comprehensive vegetable production project was expanded and new technologies were adopted for increasing productivity viz. rain shelter, trial on hybrids and micro irrigation with fertigation. Through the programmes under Agriculture Department, vegetable production increased by 1.39 lakh MT during 2014-15 by the active involvement of all sections of the society including social media. Area under paddy increased by 5200 ha. and reached 2.048 lakh ha, 22253 dwarf coconut seedlings and 40884 hybrid seedlings were produced, 26 keragrams established for supporting planting material production to value addition, Neera project of Kerala Agriculture University was supported, Under Direct Benefit Transfer (DBT) system, subsidy of □329 crore was disbursed to 6.93 lakh farmers through e-payment during the period, 14 Agro service centres established for service delivery, operational support to 200 karshika karmasenas formed during 2013-14, installed biogas plants at 3116 schools. Fallow land rice cultivation in 1807 ha and fallow land vegetable cultivation in 509ha.were undertaken. Established 5 Block level nurseries and 5 Block level federated organisations for the marketing and input support of vegetables, 1.41 lakh soil health cards issued, monitoring of soil health cards initiated, 2832 pest surveillance units covering 276 panchayaths and established 59 block plant health clinics. Application of lime for correcting soil acidity was introduced in 41345 ha and 47793 ha was covered under secondary and micro nutrients. Initiated establishment of Agri Bioparks for value addition of coconut and paddy.

State Horticulture Mission (SHM)

2.40 The State Horticulture Mission was formed in 2005 to implement the programme of the National Horticulture Mission, a centrally sponsored scheme, with 85% central share and 15% State share which has been restructured as the Mission for Integrated Development of Horticulture from 2014-15 onwards. During 2015-16, GOI has changed the sharing pattern as 50% central share and 50% State share. The main objective of the mission is a holistic development of the horticulture sector covering fruits, plantation crops, spices, flowers, aromatic and medicinal plants and mushroom. The important programmes under the mission include production and productivity improvement, post harvest management and marketing.

2.41 An amount of □4000 lakh was released from Government of India during 2014-15 and the total expenditure was □3979.77 lakh. The components are establishment of nurseries for production and distribution of quality seeds and planting material, establishment of new gardens, establishment of integrated pack houses, sorting and grading units, cold storage units, establishment of rural markets, strengthening wholesale markets, market intelligence, extension quality awareness and market led extension activities for fresh and processed foods.

2.42 A project oriented monitoring system has to be evolved for realizing the envisaged outputs. A number of NGOs as well as private sector are also part of the project which needs further monitoring. More convergence of schemes with State plan and RKVY with deliverables are required for improved outputs.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Vegetable and Fruit Promotion Council's Programme (VFPCK)

2.43 Vegetable and Fruit Promotion Council, Kerala (VFPCK) formed in 2001, has been implementing various schemes in fruits and vegetable sector with financial assistance from State and Central Governments. During 2014-15, the council had inducted 7513 farmers and formed 308 new SHG's for the promotion of fruits and vegetables. Now the Council has 179173 registered farmers in 9214 Self Help Groups. The council had initiated 6 new farmer markets and 13 collection centres during the financial year. Now there are 270 Swasraya Karshaka Samithies and 155 collection centres under the purview of the council. During 2014-15, 1,003,43 MT of fruits and vegetables worth □243 crore were traded through Swasraya Karshaka Samithies of the council. To control high prices of vegetables, 111 vegetable retail markets were organized all over the State during July-Sept/2014 and 996 MT of vegetables worth □4 crores were sold through these outlets. Ready to cook vegetables were made available in packets to public through cut vegetable scheme implemented in Thiruvananthapuram, Ernakulam and Calicut districts. 82 lakh vegetable seedlings and 4.59 lakh tissue culture banana plants were produced and distributed throughout the State to promote homestead cultivation. An amount of □54.24 crore was disbursed as agriculture loan to 8084 farmers. A total of □19.79 lakh banana plants and 152800 cents of vegetables were covered under crop insurance. An amount of □53.22 lakh was distributed to farmers as claim amount. During 2014-15, farmers of the council had cultivated vegetables in 20,213 ha, banana in 22,688 ha and tuber crops in 3258 ha during the period. Total production during the period was 2.22 lakh MT vegetables, 2.94 lakh MT banana and 33662 MT of tubers. It is seen that in spite of the fall in area of the above crops compared to 2013-14, production increased due to increased productivity during 2014-15. During 2014-15, the area under vegetables decreased by 2298 ha and banana and tubers decreased by 3257 ha and 973 ha respectively compared to 2013-14. The production of vegetables increased by 78000 MT and that of banana and tubers increased by 24000 MT and 3136 MT respectively during the period. Agro meteorological data have been collected from 26 automatic weather stations installed in different parts of the State. As part of vegetable development programme for the promotion of homestead vegetable cultivation, 6887 grow bag units were distributed to households. VFPCK has initiated Participatory Guarantee System (PGS) to promote organic farming. The Council has received certification and has been appointed as the Regional Council for PGS organic certification for fruits and vegetables in Kerala. The council had implemented "Niravu" scheme in 30 constituencies during 2014-15 with a financial assistance of□371 lakhs under RKVY.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Rashtriya Krishi Vikas Yojana (RKVY)

2.44 In order to incentivize States to draw up plans for their agriculture sector comprehensively, taking agro climatic conditions, natural resource issues and technology by integrating livestock, poultry and fisheries, a new Additional Central Assistance scheme was launched during 2007-08. During 2007-08 to 2014-15, a total number of 1146 projects with an outlay of □1636 crore were approved under the scheme. A total amount of □1338.89 crore was released by Government of India upto 2014-15 and an amount of □1332.61 crore (99.5%) was utilized. During 2014-15 against the budgeted outlay of □425 crore, □300.70 crore was released by Government of India of which □298 crore (99%) was utilised upto March 2015. During 2015-16, Government of India has changed the pattern of funding of the RKVY scheme.

2.45 A number of very small schemes are included for assistance under RKVY in the State like adoption of naturally ventilated green house technology, adoption of precision farming technology, establishment of mushroom cultivation units, popularization of temperate fruit crops in Idukki district, development of cool season vegetables in Kanthaloor and Vattavada, etc. More focused areas with larger projects have to be identified for support under RKVY. The preparation of district and State agriculture plans are a prerequisite for getting assistance for which concrete steps are required. More integrated approach is required for RKVY linkage with State plan. Details are given in Appendix 2.18.

Major programmes during 2014-15

1. Vegetable Development initiative of Department of Agriculture

2.46 Vegetable promotion programmes were implemented over a period of years with relatively small budget support. A significant increase could not be achieved till the end of 11th five year plan. A refocus and reorientation on the approach and strategy for the development of vegetables was introduced in 12th five year plan and it was decided to enhance budget provision by about 12 times in 2012-13, being the first year of five year plan, to that of the provision in 2011-12 to achieve the target of self-sufficiency in vegetable production over a period of time. Accordingly, a major project on vegetable development was prepared by the Department of Agriculture during 2012-13 with a mission mode approach and a multi pronged strategy covering an integrated approach with specified physical targets at Grama Panchayath level. The project aims at sustainability in vegetable area and production giving importance to safe to eat concept from the health aspect of producers and consumers, by advocating an integrated nutrient and pest management principle of cultivation. During 2014-15, an amount of □59.13 crore was utilized for vegetable development by the Department of Agriculture.

2.47 The salient features of the vegetable development project implemented by Department of Agriculture during 2012-13 to 2014-15 are given in Box 2.3.

Box 2.3

Vegetable Development Project of the Department of Agriculture (VDP)

- A total of □.198.27 crore was allocated for this project to the Department of Agriculture from 2012-13 to 2014-15 apart from □. 35.75 crore to other agencies with an expenditure of □. 258.84 crore including market intervention support.
- The total production of vegetables in the State has increased from □. 8.25 lakh MT in 2011-12 to 13.55 lakh MT in 2014 15, an increase of 64 %. Out of this the production share of VDP would be 4.49 lakh MT (33%) which was 17 % in 2012-13.
- The major components of the project are homestead vegetable cultivation, vegetable cultivation in institutions, urbar clusters, cluster development and training, awareness and publicity.
- The physical achievements during the three year period are supply of 88.50 lakh seed kits, supply of 1.54 lakh growbag units, school gardens covered in 7400 schools, Project based vegetable cultivation in 652 institutions, 22 block leve nurseries for the production of quality vegetable seedlings and 22 Block Level Federated Organisations to facilitate the activities of clusters, Development support to 187 A grade clusters and 595 potential clusters, fallow land cultivation in 170 ha, adoption of new technologies for productivity improvement and conduct of 12737 training/awareness/publicity programmes.
- Increased awareness of healthy eating habits has led people to move to safe to eat and organic consumption mode.
- Propagation of improved cultivation practices and new technologies including better IPM practices.
- Marketing support to clusters/ blocks and improved marketing efforts.
- Promoted leased land/fallow land cultivation.
- Reduction in prices of vegetables and substitution of vegetable arrivals from other States.
- Improved social capital and networking capacity, bargaining power, self-confidence and team work among farmers due to team activities in the cluster along with trainings.
- Developed new age entrepreneurs in the sector through cultivation, supply of seed and seedlings, bio-inputs, pest and disease management services, supply chain logistics and marketing.
- Attitudinal changes in students through involvement in school vegetable garden and horticultural therapy for differently abled children.
- Mainstreaming of vegetable cultivation and marketing were incorporated in the agenda of political, social, and service organizations including service co-operative societies.
- The vegetable development project is a model initiative for emulation across the country.

Source: VDP: Quick assessment and way forward, State Planning Board, 2015

Support to State Extension Programme

2.48 The State has experienced considerable changes in Agricultural Extension consequent to institutional, technological and organizational developments. The Lead Farmer Centered Extension and Advisory Delivery Services (LEADS), a new field visit oriented extension system in the State with appropriate linkage with R&D institutions, KAU and KVKs were introduced in four districts of the State - Kollam, Kannur, Palakkad and Wayanad. 798 Lead farmers and Satellite farmers were formed for advisory services under the programme. During 2014-15, 2832 Pest Surveillance units initiated in 276 panchayats for pest surveillance and advisory services and 59 block level plant health clinics were established under the Crop Health Management scheme. 416 farm schools in Krishi Bhavans were established under ATMA programme.

2.49 ATMA plus model of extension system was introduced by integrating ATMA, LEADS and new initiatives identified through Strategic Research and Extension Plan (SREP). Promotion of integrated farming systems, farmer technology development, preparation of success stories, identification of research issues etc. were newly introduced. Model Panchayat extension plan prepared for 14 Grama Panchayats and Farmer extension organization was established in 14 blocks. Preparation of Monthly Technology Advice was streamlined in 14 districts. District and State level awards in excellence in extension was provided for outstanding technical officers with certificate and cash award at State level and district level. Inorder to strengthen ATMA model of extension, new components under ATMA plus were introduced during the period. All extension scheme components under ATMA Plus needs to be implemented in 12th Five Year Plan with more convergence

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

of schemes under Animal Husbandry, Dairy and Fisheries.

Crop Insurance Schemes

2.50 During 2014-15, 1.31 lakh farmers were enrolled under the State Crop Insurance Scheme and an amount of □500 lakhs deposited towards State share in the State crop insurance fund. Under Modified National Agricultural Insurance Scheme (MNAIS), a component under National Crop Insurance Scheme (NCIP), around 20000 farmers were insured covering a total area of 26215 ha of paddy, banana, plantain and tapioca during the Rabi and Kharif season of 2014-15. An amount of □425 lakhs were paid as claims during the period. Under Weather Based Crop Insurance Scheme (WBCIS), a component under NCIP, 11 crops were notified and 29,502 farmers were enrolled covering an area of 22,270 ha and a total claim of □285 lakhs were settled during the period. An amount of □ 471 lakhs was allocated as premium subsidy under the scheme. A total claim of□30 lakhs was settled among 648 farmers under the Coconut Palm Insurance Scheme (CPIS). The farmers pay 25% of the premium and the rest being subsidized by Coconut Development Board (50%) and the State Government (25%) under the scheme. The other insurance programmes implemented through Agriculture Insurance Company are Rubber Plantation Insurance (RPI) and Rainfall Insurance Scheme for Coffee (RISC). Around □98 lakhs were paid as compensation for 468 farmers covering an area of 4379 ha under Rubber Plantation Insurance scheme towards insurance cover against the loss of trees due to insured perils. Under the Rainfall Insurance Scheme for Coffee (RISC), the Coffee Board provides 50% subsidy and the scheme is being implemented in Idukki, Wayanad and Palakkad districts. During 2014-15,120 farmers joined the scheme covering an area of 118 ha and □8 lakhs were disbursed as claims.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Organic Farming

2.51 Around 43.1 million hectares of agriculture land, including conversion areas, was used for organic cultivation in 2013 in the world. The region with largest areas of organic agricultural land are oceanic (17.3%) followed by Europe (11.5%). The area under organic certification (including wild harvest) in India declined to 47.20 lakh ha during 2013-14 as against 52.11 lakh ha during 2012-13. The States occupying top position with respect to area under organic certification are Madhya Pradesh (17.58 lakh ha),Himachal Pradesh (16.68 lakh ha), Rajasthan (5.99 lakh ha) and Uttar Pradesh (1.12 lakh ha). Kerala has 15,162 ha under organic certification. The biofertiliser production in India during 2013-14 increased to 65,528 MT from 46,837 MT in 2012-13. The major production is from Tamil Nadu (14,105 MT) followed by Karnataka (9907 MT). Kerala produced 3520 MT of biofertilisers. The use of pesticides in Kerala decreased during 2013-14. The consumption of fungicides (technical grade) was 477.18 MT during 2013-14 which declined to 401 MT in 2014-15 and the consumption of insecticides (technical grade) declined to 327 MT in 2014-15 from 555 MT in 2013-14. The declining trend of use of pesticides is an indication towards organic movement. During 2014-15, 119 vermi compost units have been established under organic farming by the State Horticulture Mission and an area of 2000 ha has been brought under organic certification The Department of Agriculture has been implementing a comprehensive project on organic farming in Kasaragod district and it is envisaged to cover potential areas in other districts. The details of consumption of fertilisers and average prices of agricultural inputs are given in Appendix 2.19 & 2.20. The selected indicators of agricultural development is given in Appendix 2.21.

Expansion of High Tech Agriculture

2.52 Hi-Tech Agriculture has been given priority in the State during the 12th plan period. The promotion of high tech agriculture covering protected agriculture and open precision farming was initiated in 2012-13 as part of vegetable development programme of the State. Production under protective cultivation becomes the principal way for Isreali growers to ensure a constant, year round supply of high quality products while minimizing the use of chemicals. A total number of about 1200 polyhouses were established during 12th plan including 174 polyhouses under State Horticulture Mission (SHM) during 2014-15. Protected cultivation structures with partially modified environment are useful for combating both biotic and abiotic stress that limit the productivity and quality of produce, and also for production throughout the year. The scheme has evoked good response from the farming community with large number of young farmers actively participating in the programme getting good returns from crops like salad cucumber, cow pea, and capsicum. Issues like marketing and technical support need to be addressed for taking high tech farming forward in the State.

Crop Health Management

2.53 A new approach on crop health management was initiated during 2013-14 to bring together management of sustainable ecosystems and people's health through good plant protection practices (GPPP). Development of pest and disease surveillance system, implementation of area wide integrated pest management demonstration, establishment of plant health clinics and biocontrol laboratories, development of parasite breeding stations etc are the major components of the scheme. Under the scheme during 2014-15, 5772 plots in 481krishi bhavans belonging to 69 blocks were selected for pests and disease surveillance and advisory services for 5 crops, established 60 plant health clinics at block level.

Conducted about 1250 awareness campaigns and workshops including rodent control campaign. District Diagnostic team was constituted as part of pest and disease surveillance project. A PG Diploma programme on plant health management has been initiated for the technical officers of the Department of Agriculture in collaboration with the National Institute of Plant Health Management, Hyderabad. District level as well as plant clinic level pest news bulletin were also published on monthly and fortnightly basis.

Section 2

Livestock Development

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.54 Livestock is a major source of livelihood for the World's poor. It is an integral part of India's agricultural economy and plays a multifaceted role in providing livelihood support to the rural population. Livestock sector apart from contributing to national economy in general and to agricultural economy in particular, also provides employment opportunities, asset creation, coping mechanism against crop failure and social and financial security. Livestock is the main source of animal protein for the population. Small and marginal farmers and landless labourers own majority of the livestock resources. Hence sustainable development of the livestock sector would lead to more inclusive development and empowerment of women. Livestock sector contributed 27.62% of the Agriculture GDP of the State during 2014-15 (at constant price with base year 2011-12), while in 2013-14 the share was 25.25 per cent. Thus in 2014-15 the share of the sector in Agriculture GDP has increased, the sector as a whole recording a positive growth rate of 4.3 percent over 2013-14.

Production of major livestock products
Milk

2.55 India ranks first among the world's milk producing nations. At the national level milk production has increased from 1026 lakh MT in 2006-07 to 1279 lakh MT in 2011-12. Milk production during 2013-14 & 2014-15 was 1376.8 lakh MT and 1463.1 lakh MT respectively with an annual growth rate of 3.96% and 6.27% respectively. Among the major milk producing States in India Uttar Pradesh (252 lakh MT) followed by Rajasthan (169.3 lakh MT) Gujarat (116.9 lakh MT) and Madhya Pradesh (107.8 lakh MT) are at the top. Kerala ranks 14th with 27.1 lakh MT in 2014-15. The per capita availability of milk at national level is around 307 grams per day in 2013-14 which is more than the world average of 294 gm per day.

2.56 Milk production in the State increased from 21.19 lakh MT at the end of the tenth plan (2006-07) to 27.16 lakh MT at the end of the eleventh plan (2011-12). Milk production during 2013-14 and 2014-15 was 26.55 lakh and 27.11 lakh MT respectively, the percentage change being 4.83 per cent and 2.11 per cent respectively. Growth of milk production during 2014-15 in the State is far below that at the national level. During 2014-15, Kerala contributed only 1.85% to the annual milk production of the country.

2.57 The production of major livestock products at the National level and State level are shown in Table 2.3

Table 2.3
Production of Major Livestock Production

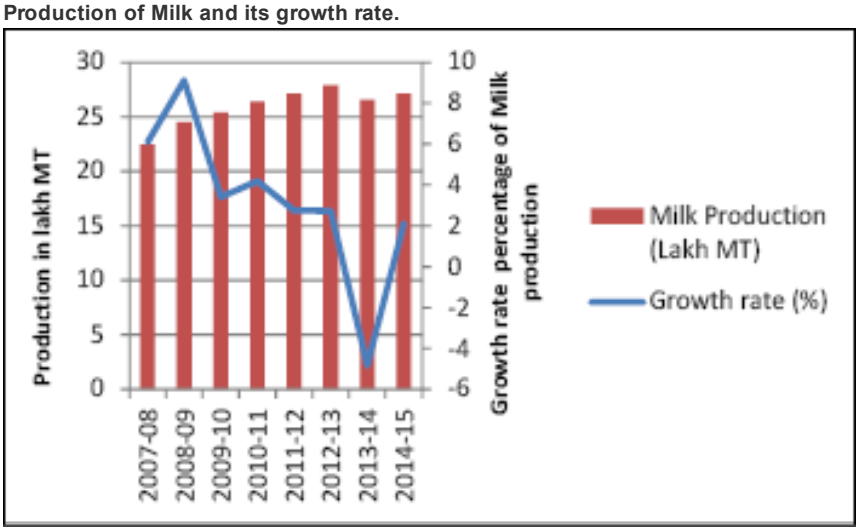
Sl No	Year	Kerala			India		
		Milk (lakh MT) (growth %)	Egg (crore)(growth %)	Meat (lakh MT)(growth %)	Milk (lakh MT) (growth %)	Egg (crore)(growth %)	Meat (lakh MT) (growth %)
1	2006-07 (Xth Plan)	21.19	119.39	1.98	1026	5066	23
2	2011-12 (XI Plan)	27.16 (2.76)	170.48 (1.97)	4.26 (24.91)	1279 (5.01)	6645 (5.44)	55 (14.58)
3	2012-13	27.9 (2.72)	223.7 (33.22)	4.01 (-5.78)	1324 (3.52)	6973 (4.94)	59 (7.27)
4	2013-14	26.55 (-4.83)	247.69 (10.72)	4.16 (3.76)	1376.8 (3.99)	7475.2 (7.2)	62 (5.08)
5	2014-15	27.11 (2.11)	250.36 (1.08)	4.46 (7.16)	1463.1 (6.27)	7848.4 (4.99)	67 (8.01)

Source: Animal Husbandry Department

2.58 The production of milk and annual percentage change from 2007-08 to 2014-15 of the State is shown in Figure 2.5.

Fig 2.5

Production of Milk and its growth rate.



Source: Animal Husbandry Department

Egg/Meat

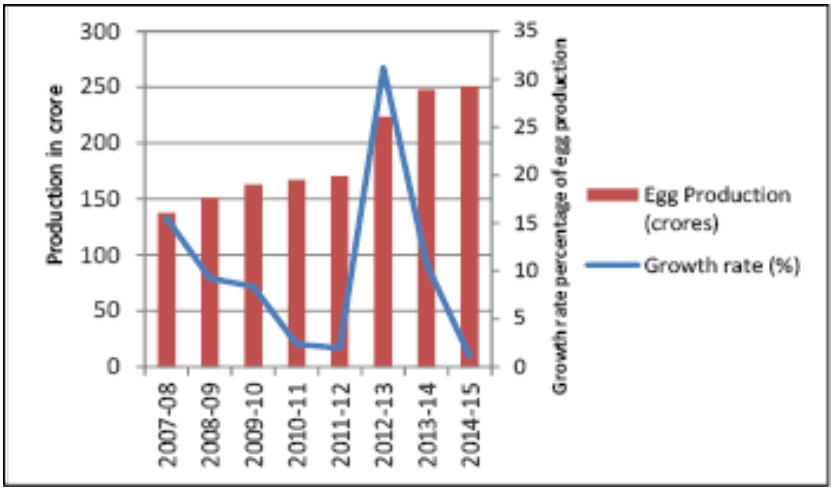
2.59 At the national level egg production at the end of the 10th plan (2006-07) was 5066 crore as compared to 6645 crore at the end of the 11th plan (2011-12). Egg production during 2013-14 & 2014-15 was 7475.2 crore and 7848.4 crore respectively with annual growth rate of 7.2% and 4.99% respectively. Total poultry population in our country was 72.921 crore and the percapita availability of egg during 2013-14 was around 61 eggs per year. Tamil Nadu is the largest egg producing State in India (1592.5 crore) followed by Andhra Pradesh (1309.5 crore), Telangana (1061.8 crore) and Maharashtra (507.9 crore). Kerala ranks 9th with 250.4 crore in 2014-15. At the national level meat production increased from the level of 23 lakh MT (2006-07) to 55 lakh MT during 2011-12. Meat production during 2013-14 and 2014-15 was 62 lakh MT and 66.9 lakh MT respectively with an annual growth rate of 5.08% and 7.9%. India is the second largest exporter of buffalo meat in the world. Among the Indian states Uttar Pradesh is the largest meat producer (13.9 lakh MT) followed by West Bengal (6.6 lakh MT), Maharashtra (6.3 lakh MT), and Andhra Pradesh (5.3 lakh MT). Kerala ranks 7th with production at 4.45 lakh MT in 2014-15.

2.60 Egg production in the State increased from 119.39 crores at the end of the tenth plan (2006-07) to 170.48 crores during the year 2011-12. The egg production during 2013-14 & 2014-15 was 247.69 crores and 250.36 crores respectively with an annual growth rate of 10.72 % and 1.08% respectively. Meat production in the State increased from the level of 1.98 lakh MT at the end of the tenth plan (2006-07) to 4.26 lakh MT during the year 2011-12. The meat production during 2013-14 & 2014-15 was 4.16 lakh MT and 4.46 lakh MT respectively with annual growth rate of 3.76 % and 7.16% respectively. Growth of egg production during 2014-15 of the State is far below the same at the national level. But for meat, the growth percentage during 2014-15 is almost the same as that at national level. During 2014-15 Kerala contributed 3.19% of the annual egg production and 6.67% of the annual meat production to the country.

2.61 The production of Egg and Meat and corresponding growth rates from 2007-08 to 2014-15 of the State is shown in Figure 2.6 and 2.7.

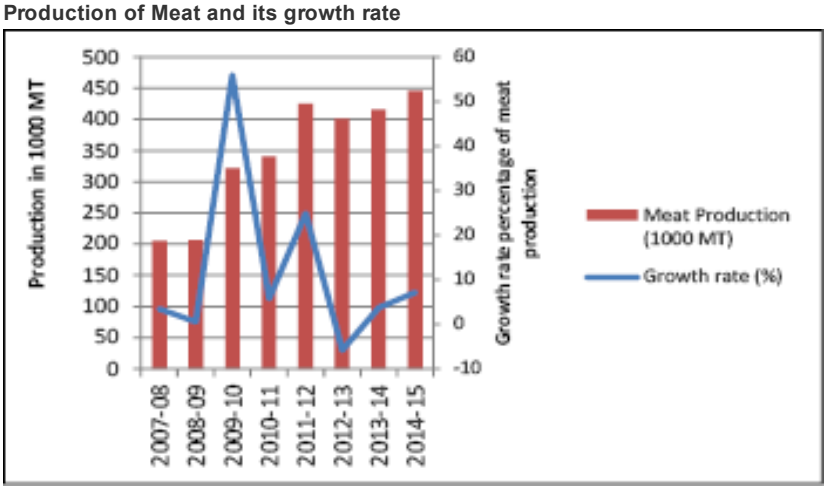
Fig 2.6
Production of Egg and its growth rate

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters



Source: Animal Husbandry Department

Fig 2.7
Production of Meat and its growth rate



Source: Animal Husbandry Department

Dairy Farming

2.62 In the year 2015, State Pollution Control Board has enhanced the number of cows to a maximum of 20 in the green category and above 20 in the orange category while categorising livestock farms based on the intensity of pollution. This decision of the Pollution Control Board was a great support to the dairy farmers in the State.

Milk Marketing

2.63 During 2014-15, a total of 5568.77 lakh litres of milk was procured by the dairy co-operative societies in the State of which 3535.14 lakh litres were sent to the dairies and 2033.63 lakh litres were marketed locally by the societies. The average milk procured per day by APCOS during the year 2014-15 was 1026 MT against the previous year average of 942 MT. The procurement/day/society during 2014-15 was 348 litres and during 2013-14 it was 335 litres. The procurement of milk by Kerala Co-operative Milk Marketing Federation (KCMMF) increased to 3636.81 lakh litres against the sale of 4487.02 lakh litres during 2014-15 which shows a wide gap between procurement and supply. The shortfall between milk procurement and sales was met by arranging milk mostly from State milk federations of Karnataka, Tamil Nadu, Andhra Pradesh and Maharashtra and purchase of skimmed milk powder. Data on procurement and sale of milk by different dairies of KCMMF during 2010 to 2015 is given in Appendix 2.22 and performance of KCMMF during 2008-09 to 2014-15 is shown in Appendix 2.23 and average quantity of milk procured per day by APCOS are shown in Appendix 2.24.

2.64 The procurement and selling price of milk in Kerala was revised by □3.00 per litre w.e.f 21.07.2014 of which □2.40 was passed on to the farmers. Kerala is one of the States offering the highest milk price to the farmers. The price revision and price spread of milk from 2009 onwards is given in Appendix 2.25 & 2.26 respectively.

Weak Feed and Fodder Base

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.65 Special focus has been given to fodder and feed production in Kerala to support development of the livestock sector considering the wide gap in the availability of these two critical inputs. The Dairy Development Department is the nodal agency for fodder development activities in the State. During the year 2014-15, the Department could add 3174 Ha to the existing cultivated area resulting in 5.55 lakh MT more of green fodder to the existing stock. Assistance was provided to farmers for Azolla cultivation, mechanization of fodder cultivation and harvesting, irrigation facilities etc., Fodder exhibitions and workshop etc. were also included in the fodder development activities. Innovative fodder development programs under Integrated Dairy Development Program were implemented in the districts of Kannur and Thrissur. To overcome shortage of raw materials for cattle feed production, maize was cultivated in 318 Ha of land producing 1100 tons of maize grain. The total production of cattle feed during 2014-15 was 3.61 lakh MT as against 3.92 lakh MT during 2013-14. The production of feed and fodder are shown in Appendix 2.27, 2.28 & 2.29.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Breeding Support

2.66 Kerala Livestock Development Board (KLDB) is involved in the production and distribution of frozen semen. Compared to 2013-14, semen production increased from 28.53 lakh doses to 34.45 lakh doses during 2014-15. The distribution inside and outside the State increased from 17.31 lakh doses to 17.55 lakh doses and from 7.59 lakh doses to 11.26 lakh doses respectively during this period. Details are shown in Appendix 2.30.

2.67 The number of Artificial Insemination (AI) centres in the State during 2014-15 was 2510. The number of inseminations done during 2014-15 was 12.77 lakh and calving recorded was 3.2 lakh. The average number of inseminations needed for producing one calf is 4 . The details of AI are shown in Appendix 2.31. The quality of AI is not improving and so measures to improve the quality of semen supplied needs to be taken up immediately. Activities of the KLD Board are given in Appendix 2.32.

Special Livestock Breeding Programme (SLBP)

2.68 Calf rearing in Kerala is an expensive activity. Farmers compromise with the management practices and nutrition to save expenses. Consequently the growth and reproductive performance of the animals are affected adversely. Providing assistance for balanced feeding and scientific management can solve the issue to a major extent. The SLBP was initiated in Kerala in 1976 with the above objective. During 2006-07 the scheme was extended to buffalo calves also as a measure to curtail the drastic reduction in the buffalo population. During 2014-15, 84712 calves were enrolled as against 39500 calves in 2013-14. Year wise details from 2004-05 onwards are shown in Appendix 2.33.

Animal Health Care

2.69 With the improvement in the quality of livestock through cross breeding programs, the susceptibility of various diseases including exotic diseases has increased. The Animal Husbandry Department provides veterinary care mainly through 14 district veterinary centres, 50 veterinary polyclinics, 213 veterinary hospitals and 869 veterinary dispensaries. The Department has taken efforts to introduce emergency veterinary care during odd hours in selected blocks of the State and during the previous year this facility was extended to 50 selected blocks.

2.70 The Department through the Animal Disease control project has successfully taken up massive vaccination campaign to prevent foot and mouth disease (FMD) outbreak and also vaccinations for poultry and ducks against avian diseases. During the past year the State witnessed the attack of the dreadful disease, highly pathogenic Avian influenza (Bird flu) in Kuttanad region, where the duck population was severely affected. As part of the comprehensive preparedness against bird flu the Department is carrying out a massive surveillance program this year. The laboratory network coverage of the Animal Husbandry Department has been strengthened for professional and timely diagnosis of animal diseases and thereby ensuring animal health. Data regarding outbreaks, attacks and deaths of major contagious diseases of animals in Kerala for the period from 2008-09 to 2014-15 are given in Appendix 2.34. Anthrax, Hemorrhagic Septicemia and FMD are reported but as far less numbers compared to previous years. The State has already eradicated the dreadful disease of rinderpest and no outbreak was reported during last year. No outbreak of Black Quarter disease was also reported during 2014-15.

Production of Vaccine in Institute of Animal Health and Veterinary Biologicals, Palode

2.71 The Institute of Animal Health and Veterinary Biologicals, Palode is the sole agency engaged in the production and distribution of animal vaccine in the State. The production details of vaccines manufactured here are shown in Appendix 2.35. During 2014-15, the production of poultry vaccine was 274.70 lakh doses and livestock vaccine was 4.27 lakh doses. Compared to the previous year, production has fallen by 25.26 per cent and 36.27 per cent respectively. Number of vaccinations done during 2014-15 was 21.56 lakh numbers for livestock and 154.57 lakh numbers for poultry. Compared to the previous year, vaccination to cattle decreased by 25.28 per cent and vaccination to poultry increased by 50.70 percent.

Anti Rabies Vaccinations done in dogs increased from 1.27 lakh numbers to 1.79 lakh numbers during 2014-15. Details are given in Appendix 2.36.

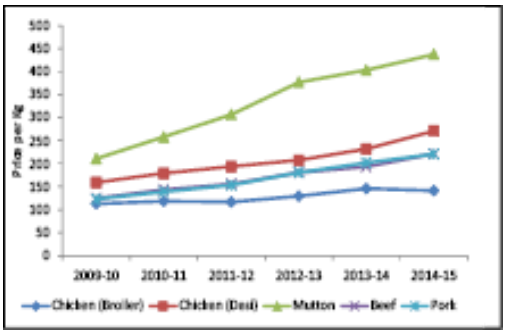
Prices

2.72 Average price of important inputs and products of livestock sector for the last six years is presented in Appendix 2.37 and almost all the products recorded increase in prices during the period. Compared to 2013-14, there was increase in the price of all categories of meat except broiler chicken during 2014-15. The price of chicken (Desi) increased by 16.76 per cent, mutton by 8.46 per cent, beef by 14.48 percent and pork by 9.24 per cent. The price of chicken (broiler) decreased by 3.21 per cent. Compared to 2013-14, the price of fowl-white egg increased by 0.26 per cent, brown egg by 5.08 per cent and duck egg by 0.73 per cent during 2014-15. Compared to 2013-14, the price of cow milk increased by 10.11 per cent and buffalo milk by 11.84 per cent during 2014-15.

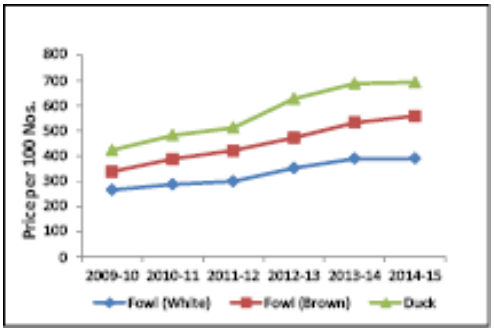
2.73 On the input side, the price of straw decreased by 4.02 per cent and grass remained the same during 2014-15. Compared to the previous year, the price of groundnut cake increased by 8.66 percent, coconut cake by 25.74 per cent and gingely oil cake by 6.96 per cent during 2014-15 and the increase in the price of inputs is a serious threat to dairy farming and hence the possibility of indigenous source of feeds is to be explored. The trend in average prices of livestock products from 2009-10 to 2014-15 is shown in Fig 2.8.

Fig 2.8
Trend in Average Prices of Livestock Products from 2009-10 to 2014-15

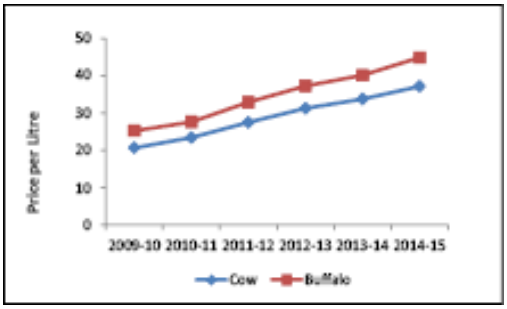
Meat



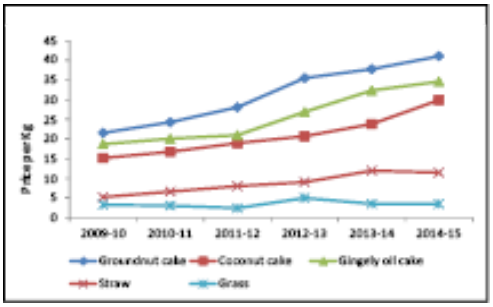
Egg



Milk



Feeds



Annual Plan 2014-15

2.74 Annual Plan 2014-15 earmarked an outlay of □295.16 crore and □70.00 crore for Animal Husbandry and Dairy Development sub sectors and expended □216.40 crore (73.32 per cent) and □66.85 crore (95.5 per cent) respectively. Special Livestock Breeding Programme (SLBP) and Strengthening of veterinary services were two major projects implemented with an outlay of □46.39 crores and □38.69 crore respectively and □46.10 crore (99.37 per cent) and □22.46 crore (58.05 per cent) were expended. Under dairy development, milk shed development and assistance to primary dairy co-operatives are the major schemes implemented with an outlay of □37.50 crore and 20.50 crore respectively and □25.33 crore (67.5 per cent) and □15.48 crore (75.5 per cent) were expended.

Key initiatives in 2015-16

The key initiatives of the Dairy Development and Animal Husbandry Department are shown below:

• Emergency Veterinary service during odd hours extended to 50 selected blocks of the State during 2015-16.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

• Strengthening of infrastructure facilities of laboratories for improved disease diagnosis and surveillance.

• Antirabies vaccination campaign was implemented to control the dog population and eliminate rabies in Kerala by 2020.

• Special Livestock Breeding Programme, an amount of □46.39 crore earmarked.

• Special attention to cattle feed production, cattle feed plant at Thiruvangoor and Idukki.

• Augmenting poultry production through villages.

• Integrated dairy development programme for Kannur, Idukki & Ernakulam districts with a plan outlay of □12.75 crore.

• Assistance for regional labs at Kasargod and Kottayam and State Dairy Lab, Thiruvananthapuram.

• Milk ATM and digital pass book for dairy farmers - established in Wayanad district.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Section 3

Fisheries Development

2.75 Accounting for about 5.4% of the global fish production, India today is the second largest fish producing nation in the world. India is also a major producer of fish through aquaculture and ranks second in the world after China. The provisional figure for total fish production in India during 2014-15 is 10.06 Million Tonnes (MT) with a contribution of 6.57 MT from Inland sector and 3.49 MT from Marine sector. Fish production has shown a steady increase since 1991. From 3.84 MT in 1991, it increased to 10.06 MT in 2014-15. A steady growth has been observed in marine sector since 2008-09. Inland fisheries presently has a share of about 65% in total fish production of the country. The sector contributes about 1% to the overall GDP and around 5.5% of the GDP from Agriculture and allied activities. During 2014-15, export of marine products from India was 10,51,243 tonnes valued at □33,441.61 crore. Compared to the previous fiscal, a growth of 10.6% has been recorded in the value of exports. Details are provided in Appendix 2.43. Fisheries sector contributes significantly to the national economy providing livelihood to approximately 14.49 million people in the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries. It is also a source of cheap and nutritious food besides being a source of foreign exchange. Fisheries is recognized as a promising sub-sector of agriculture and allied activities in India.

2.76 As per the latest estimates, the fishermen population in Kerala is 10.18 lakh, of which 7.83 lakh are engaged in marine fisheries and 2.34 lakh in inland fisheries. Alappuzha (1.89 lakh) has the largest fishermen population, followed by Thiruvananthapuram (1.69 lakh) and Ernakulam (1.35 lakh). The district wise details of fishermen population are given in Appendix 2.38. The fishermen of the State contribute about 8.8 percent of the GSDP from the primary sector which is of significance to the state economy. The Gross State Domestic Product of the State has been increasing over the years, but the share of primary sector and that of fisheries sector has been declining. The share of fisheries sector in the State Domestic Product has declined from 1.12 percent in 2011-12 to 1.07 per cent in 2014-15. The share of Primary Sector in GSDP has declined from 15.20 per cent in 2011-12 to 12.15 percent in 2014-15. The contribution of fisheries sector in GSDP is given in Appendix 2.39.

2.77 Marine fish production of India during the year 2014-15 has provisionally been estimated as 3.49 million tones with an increase of about 0.05 million tonnes compared to the estimate for the last year. As per estimates of 2013-14, among the states, Gujarat was the highest contributor of marine fish production followed by Kerala. In total fish production in 2014-15, Andhra Pradesh was the highest contributor and Kerala stands at 5th position. Marine fish landings in Kerala during 2014-15 were 5.24 lakh tonnes. Though the quantum of fish landings in Kerala has been declining since 2011-12, there is a slight increase in 2014-15, compared to 2013-14. High value species among the fish catch is less. However, significant among them are Seer fish, Prawn, Ribbon fish and Mackerel. The quality of these high value species in the total catch ultimately decides the income of the fishermen. The species wise marine fish landings in Kerala from 2011-12 to 2014-15 are shown in Appendix 2.40.

Trend in Production

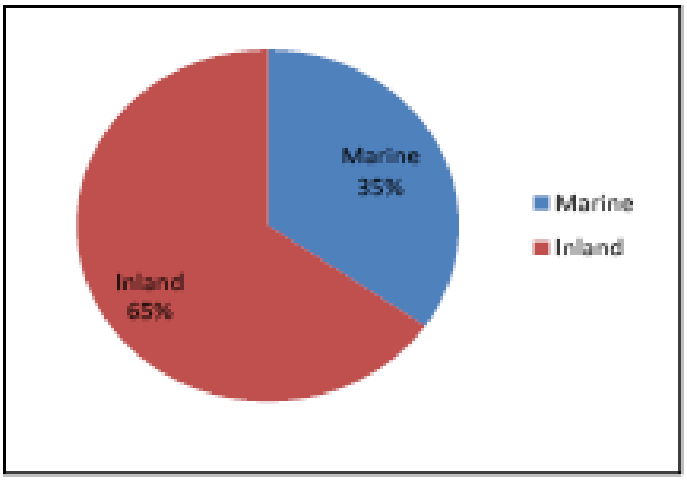
2.78 As per estimates of 2013-14, among the maritime states in India, Kerala occupies the second position in marine fish production. The total fish production in Kerala during 2014-15 was 7.26 lakh metric tonnes. The marine fishery resources of the State have almost attained the optimum level of production. At the national level about 65 per cent of the total fish production is contributed by the inland sector, were as at the State level, the share of inland sector is relatively less than the marine sector. The current level of Inland fish production is 2.02 lakh tones, and it shows an increase of about 8 percent over the previous year. The species-wise inland fish production in Kerala from 2011-12 to 2014-15 are shown in Appendix

2.41.

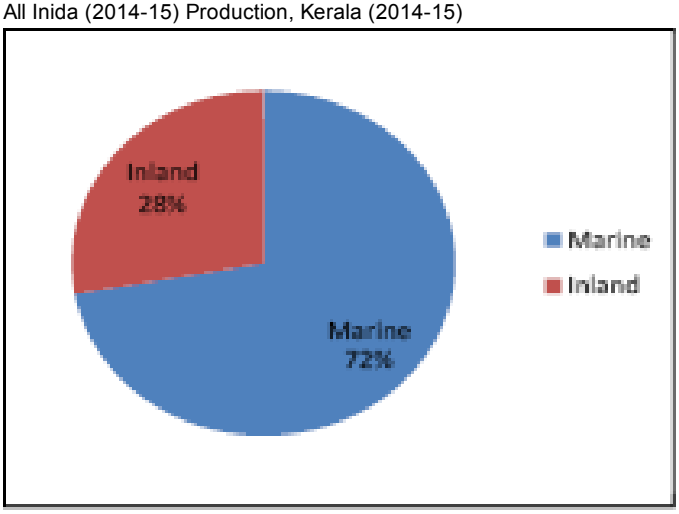
2.79 Indian marine fisheries is also passing through a crisis due to its over capacity and open access nature. During 2014-15, India's total fish production is provisionally estimated to be 10.06 million tonnes of which 3.49 million tonnes was from marine sector and 6.57 million tonnes was from Inland sector (Fig 2.9).

Fig 2.9
Marine and Inland Fish Production in 2014-15 - All India and Kerala

Marine and Inland Fish Production Marine and Inland Fish



All Inida (2014-15) Production, Kerala (2014-15)

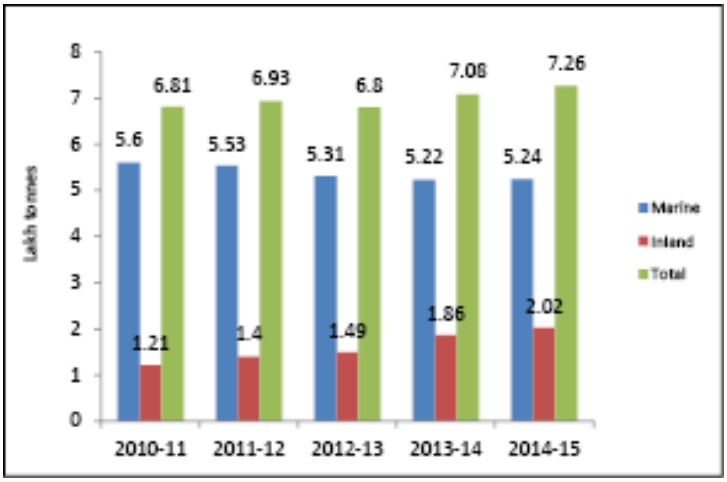


2.80 The marine fish production in Kerala has tended to fluctuate while the inland fish production has shown signs of improvement from 1999-2000. Marine fish production has increased marginally from 5.22 lakh tonnes in 2013-14 to 5.24 lakh tonnes in 2014-15. Inland production has been increasing during the recent years. During 2014-15, the share of inland fish production in the total fish production of the State was 27.8 percent. The details of fish production for the last 5 years are given in Appendix 2.42 and Figure 2.10.

Fig 2.10
Fish Production in Kerala (2010-11 to 2014-15)

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters



Source: Department of Fisheries, Government of Kerala

2.81 The key elements of the 12th Five Year Plan in the fisheries sector are launching of a comprehensive coastal area development project covering infrastructure, housing, sanitation, drinking water and livelihood, action plans for augmenting inland fish production to 2 lakh tonnes by the end of the plan from 1.17 lakh tonnes, enhancement of seed production, strengthening of post-harvest infrastructure like better fish landing and handling facilities, cold chains, storage facilities as well as marketing facilities for the development of the sector and improvement in the production of value added products, micro enterprises, credit support and coverage under social security. Annual Plans are formulated keeping in mind the priorities set under the Five Year Plans, and accordingly, the third year plan programme of the XIIth five year plan was completed in 2014-15.

Performance Review under XIIth Plan and Annual Plan 2014-15

2.82 The total approved outlay during the 12th plan under the fisheries sector was □1471 crore (including Special Area Development) which accounts for 1.44 percent of the total State plan outlay and 16.66 percent of the outlay under Agriculture & Allied Sectors. The actual amount budgeted during the first four years of the 12th Plan from 2012-13 to 2015-16 is □1053 crore and the expenditure reported up to 30/9/2015 is □758.13 crore (71.9%). Year-wise details are given in Table 2.4

Table 2.4
Outlay and expenditure of Fisheries and coastal area development
(□ in crore)

Sector	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16 (till 30/09/2015)		Total	
	Outlay	Exp	Outlay	Exp	Outlay	Exp	Outlay	Exp	Outlay	Exp
Fisheries	142	141	158	130	177	145	178.4	65.42	655.4	481.42
Coastal Area Development	64	49	58	48	87	47	189.3	132.71	398.3	276.71
Total	206	190	216	178	264	193	367.7	198.13	1053.7	758.13

Source: Planspace Kerala and Budget Statements

2.83 The total expenditure under State plan schemes during 2014-15 was □193 crore, which was 73 per cent of the State plan outlay. There are 9 partially aided central sector schemes having an outlay of □ 60.45 crore and the expenditure during this period was □57.10 crore. The outlay and expenditure for various types of schemes implemented in the fisheries sub sector during 2013-14 and 2014-15 are given in Appendix 2.44. An external monitoring mechanism can be adopted for evaluating the impact of major schemes implemented by various agencies. Multiplicity of agencies and schemes pose the threat of overlapping of schemes implemented by various agencies. This may be avoided.

Key Initiatives during 2015-16

2.84 In order to address the relative backwardness of the fisher folk population and the fishing community, the State has initiated a new scheme namely 'Basic infrastructural facilities and human development of fisher folk' in 2015-16 with an outlay of □ 181.97 crore. Backwardness of the community is visible in terms of education, vulnerability to contagious diseases, poverty, lack of basic amenities like quality housing, drinking water, sanitation and hygiene etc. The new scheme targets overall development of the fisheries sector with focus on housing. Housing includes construction of individual houses and flats with land acquisition, renovation of houses, sanitation, drinking water, electrification etc. The scheme also

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

provides for improvements in health facilities, libraries, diversification of employment activities, completion of ongoing fishing harbours and renovation of fish seed farms and hatcheries etc.

Debt Relief to Fishermen

2.85 The burden of debt is a serious issue affecting the fishermen in the State. During the period 2008-09 to 2014-15, an amount of □175.70 crore has been allotted by the government for debt relief measures to fishermen and the expenditure incurred is □174.47 crore.

Major Developmental Programmes

2.86 The Plan schemes of the Government under Fisheries sector can broadly be classified into the following categories –

(1) Marine fisheries development
(2) Inland fisheries development
(3) Extension, Training & service delivery
(4) Modernisation of markets and value addition
(5) Social Security to fishermen
(6) Development of Fishing Harbours and management
(7) Scheme for the Fisheries University
(8) Coastal Area Development

2.87 Under the Matsya Samrudhi Project, 98.33 ha of fresh water area and 2422.75 ha brackish water area was brought under aquaculture. During 2014-15, 25935 MT fish, 2624 MT shrimp and 665 MT Mussel were produced. Under integrated farming, 507.91 ha of unutilized wet land were brought under paddy cum fish culture. For enhancing inland fish production, 183 lakh fresh water fish seeds and 181 lakh brackish water shrimp seeds were released to selected open waters. 147.40 lakh numbers of good quality fish seeds were produced in the Government seed farms at Polachira, Pannivelichira and Malampuzha. 41.51 lakh numbers of shrimp seeds were produced at Regional shrimp hatchery, Azheekode.

2.88 As part of addressing issues prevailing in the housing sector of fishermen, new houses were constructed for 2600 fishermen families. The construction of 2861 houses that was started in the previous year using the assistance under the 13th Finance Commission Award, have been completed. Assistance was given to 1336 fishermen family for the construction of toilets. Using the assistance under 13th Finance Commission Award, infrastructure facilities of 14 colonies were improved. In addition, assistance was given to fishermen families for the construction of 562 new houses and the repair of 904 existing houses. In 2014-15, under the Plan scheme 'Integrated Development of Fishing Villages', Kerala State Coastal Area Development Corporation is engaged in the implementation of 13 drinking water schemes, 14 electrification schemes, 7 library construction, 34 high mast light installation, 193 individual toilet construction, one market construction etc.

Fishing Harbour

2.89 The Government of Kerala has so far completed construction work of 12 fishing harbours and the works of 12 fishing harbours are progressing. The completed fishing harbours include Thankassery, Neendakara, Kayamkulam, Munambam, Beypore, Puthiyappa, Chombal, Moplabay, Azheekal, Ponnani etc. During 2015-16, Plan support was extended to Chettuvai, Cheruvathur, Arthungal, Vellayil, Thanoor, Manjeswaram, Koyilandi and Thalai fishing harbours. The works of Chettuva, Cheruvathur, Thalai and Muthalapozhi will be completed during the current year. Construction of fishing harbours is undertaken with the help of State fund, fund from central government (50% and 75% CSS), fund under central schemes like RKVY, and fund from agencies like NABARD (under RIDF). During 2014-15, □48 crore including central share was allotted for the construction of fishing harbours of which □46.77 crore was expended till September 2015. An amount of □12.22 crore was expended for works under RIDF, during this time. Time bound completion schedules for all ongoing fishing harbours need to be worked out. Recent changes in the funding pattern of CSS schemes put forward by the central government would have a direct bearing on the completion of fishing harbours in Kerala. The State would find funding of such big projects a big hurdle. The progress of ongoing fishing harbours is shown in Appendix 2.45.

2.90 Total revenue collected from fishing harbours and fish landing centres has fallen from □ 510.58 lakh in 2013-14 to □490.96 lakh in 2014-15. Highest revenue collection has been from Neendakara harbour since 2012-13. However, the revenue collection from Neendakara fishing harbour has seen a drastic fall from □338.70 lakh in 2013-14 to □ 154.58 lakh in 2014-15. Another significant contributor to revenue collection in 2014-15 has been Thottappally fishing harbor, whose contribution has increased from 0.44 lakh in 2013-14 to □.132.49 lakh in 2014-15. Together, Neendakara and Thottappally contributed about 58.5 % of the total revenue collection from fishing harbours and fish landing centres in Kerala. The details are given in Appendix 2.46.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

NABARD assisted schemes

2.91 Apart from the construction of Fishing Harbours, NABARD funds have been used for works like construction of Fish Landing centres, roads, bridges, locker rooms, walkways, etc. NABARD under RIDF XV has sanctioned 11 works including Fishing Harbour at Chellanam. Nine works have been completed. Construction of Chellanum fishing harbor will be completed during 2015-16. Ten projects including 7 bridges, fish landing centres and walk way amounting to □.62.91 crore was sanctioned under RIDF XVII. Two bridges and a Fish Landing centre have been completed, and the rest are progressing. Works sanctioned under RIDF XIX include 12 fish landing centres, replenishment of Neendakara fishing harbor, 9 bridge works and 2 road works amounting to □.76.72 crore. 4 Fish Landing centres and one road work have been completed and the rest are progressing. Works for 2 roads and a bridge totaling □ 7.82 crore have been sanctioned under RIDF XX.

Social Security and livelihood support to Fishermen Community

2.92 Government of Kerala has placed emphasis on various schemes implemented to ensure social security and livelihood support to fishermen community. Apart from the Fisheries Department, Matsyafed and Kerala Fisherman's Welfare Fund Board (KFWFB) also implement such schemes. Plan support is also available for many such schemes. Some of these schemes are Centrally Sponsored Schemes. Schemes include those for Housing, Insurance, Pension etc apart from those which enable fishermen to earn livelihood on a continuous basis. Details of such schemes implemented by the Department and KFWFB are provided in Appendix 2.47 & 2.48 respectively. The State has been able to provide greater assistance to the fishermen community and also expand the social security net over the years.

Matsyafed

2.93 Matsyafed is an apex federation of 665 primary level Fishermen Development Welfare Co-operative Societies, of which 340 are in marine sector, 192 are in inland sector and 133 women co-operative societies. The total membership in these societies is 4.86 lakh. The authorised share capital of the federation is □150 crore. Matsyafed has organised 15888 SHGs with 191222 members. The groups have mobilized □88.93 crore as thrift. By providing micro finance and interest free loans, Matsyafed has made a significant impact in the area of micro credit. Matsyafed has also been successful in enabling the fisher folk have access to vital fishing inputs. The achievement of various programmes implemented by Matsyafed is given in Appendix 2.49.

2.94 The 12th plan strategy is to ensure sustainable growth of Fish and Fisheries for nutrition, food security and economic growth by ensuring proper utilization of infrastructure created in the last plan. Special emphasis is being given to conservation and management of inshore fishery resources, enhancement of offshore marine fish production, maximum utilization of harvested fish and value addition.

Section 4

Water Resources

2.95 In most developing countries, agriculture is the dominant user of water, accounting for more than 85 percent of all water use. Irrigation plays an important role in the growth of agricultural income of the State. At the same time, this also raises significant issues for water resource management like problems dealing with water scarcity, competing demands from other sectors, irrigation service delivery and system management, water use efficiencies and so forth. The primary objective in coming years will be to balance water supply and demand among users to ensure adequate water for agriculture and sustainable irrigation system management while satisfying other needs. The basic premise of water resource management is that river basins are best managed and developed as an integrated whole. This is always legally and politically complex due to the challenges of allocation between users and between uses.

2.96 The water availability per capita in Kerala is one of the lowest in the country and has been declining overtime. The water availability of Kerala is dependent on rainfall and other climatic factors, particularly the spatial and temporal distribution of rainfall. Due to poor retention capacity of the soil, water available through rainfall cannot be conserved effectively. Irrigation development in Kerala is mainly centered on the development of major and medium irrigation projects. On analyzing the investment pattern during IXth, Xth & XIth plan period, it is evident that major irrigation occupies a major portion of the outlay. This increased sharing pattern was provided for completing the long pending major irrigation schemes.

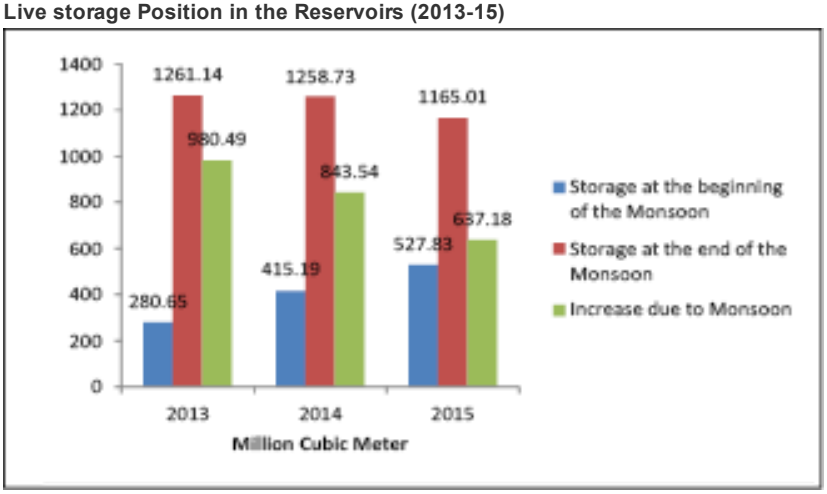
Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Live Storage Capacities of Irrigation Reservoirs

2.97 Surface irrigation constitute major chunk of irrigation infrastructure in the State. There are 18 dams in the State intended for irrigation. Out of this, 14 have storages and remaining are barrages. The live storage position of the reservoirs during the beginning and end of the monsoon period during 2013 to 2015 are given in Appendix 2.50. During 2015, at the beginning of monsoon, the total storage was 527.83 Mm3 and at the end of the monsoon, the level was raised to 1165.01 Mm3, as against the previous year levels of 415.19 Mm3 and 1258.73 Mm3 respectively.

Fig 2.11
Live storage Position in the Reservoirs (2013-15)



Source: Water Resource Department, Government of Kerala

Review of Major Projects

2.98 The overall performance of the major and medium irrigation sector was not encouraging. Details of the progress of implementation of ongoing projects as on November 2015 are given in Appendix 2.51.

Karapuzha Irrigation Project

2.99 Karapuzha Irrigation Project, the first project taken up for execution during Vth Five Year Plan, envisaged construction of an earth dam across Karapuzha stream to create a reservoir of 76.50 Mm3 storage capacity and to irrigate an ayacut of 5221 hectares(net) of land in three taluks of Wayanad district. The project aims to provide irrigation facility during the second crop period of paddy. Karappuzha Irrigation Project was included in the Accelerated Irrigation Benefit Programme (AIBP) under Prime Ministers Relief Package during 2006-07.

2.100 The project was approved by Planning Commission in 1978 with an estimated cost of □7.60 crore envisaging irrigation to Cultivable Command Area (CCA) of 5600 ha and an ultimate irrigation potential of 8721 ha. Now, as per 2010 schedule of rates, the revised estimate is □441.50 crore. The cumulative expenditure incurred up to March 2015 is □305.39 crore. The project has been partially commissioned on 20.6.2010. The up to date CCA created is 601 ha and the corresponding irrigation potential is 938 ha. Head works of the project, works of 8.805 Km right and 16.59 Km left bank canals are completed.

Muvattupuzha Valley Irrigation Project

2.101 The project envisages the utilisation of the tailrace water from Idukki Hydro electric project to irrigate a cultivable command area of 19237 ha in Ernakulam, Kottayam and Idukki districts. MVIP was started in 1974 at an estimated cost of □20.86 crore and the revised estimate amount is□967.00 crore (2012 SOR).Central Assistance had been received under AIBP for MVIP for the period from 2000-01 to 2008-09 for an amount of □154.964 crore. No assistance was received under AIBP after 2008-09.

2.102 Commissioning of the project is lagging due to certain incomplete works. Land acquisition also needs to be completed in some areas. Total expenditure of this project up to March 2015 is □903.00 crore. Works of main canal have been completed. Out of the total length of 57.154 km of branch canals, 54.647 km have been completed (96%). For distributaries, out of the total length of 218.00 km, 190.754 km have been completed so far (88%). By completing the missing links viz aqueduct of Mamalassery distributory and Muvattupuzha branch canal from ch.9800m to10210m, an ayacut of 1119 ha had been achieved during 2014-15. In spite of huge investment, the implementation of the project is

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

lagging for more than three decades.

Idamalayar Irrigation Project

2.103 Idamalayar Irrigation Project is a diversion scheme for diverting water of Periyar river for irrigating 14,394 ha. of cultivable lands in Periyar and Chalakudy basins. The project also envisages the improvement and augmentation of Chalakudy river diversion scheme by linking with the canal of Idamalayar irrigation project. The work commenced in 1981 at an estimated cost of □17.85 crore and has been revised to □750.00 crore as per 2012 SOR. The cost escalation is due to time lag in execution.

2.104 The cumulative expenditure as on March 2015 is □397.86 crore. 100% works of main canal, 86.20% of low level canal, 45.80% of link canal and 96.72% of RBMC works have been completed so far.

Banasurasagar Irrigation Project

2.105 The project commenced in 1979 with an estimated cost of □8.00 crore to irrigate an area of 2800 ha (net) agriculture land for the second and third crops in two taluks of Wayanad district. The revised estimate of the project as per 2010 SOR is □185.5 crores. The work of main canal of length 2.73 Km is completed except from Ch. 1130 M to 1500 M. The work of both branch canals – Padinjarathara branch canal and Venniyode branch canal are in progress. There are 14 numbers of distributaries in this canal system and the land acquisition process of these distributaries is progressing. Total expenditure incurred for the project up to March 2015 is □48.20 crore.

Flood Management Programme

2.106 Although it may not be possible to change certain factors contributing to frequent floods and droughts, like spatial and temporal distribution of rainfall, geology, geomorphology etc, it is definitely possible to have planned land use as well as development and conservation activities. If proper planning is done with regard to land use, soil conservation and developmental activities in a river basin, it may be possible to a great extent to control floods, droughts and high rate of sediment transport. Hence, flood management aims at providing a reasonable degree of protection against flood damage at economic costs.

Kuttanad Package

2.107 The total outlay of the Kuttanad Package as per M.S.Swaminathan Research Foundation (MSSRF) report is □1840.40 crore. Out of this, □1517.90 crore is set apart for the Irrigation sector (82.5%). Projects worth □ 771.11 crore have been sanctioned under Flood management programme. Empowered committee has given approval for □319.74 crore for the four schemes viz, KEL I to IV. Budgeted outlay (25%SS) during 2014-15was □50.00 crore and the expenditure incurred was 47.14 cr. Out of the 75% central outlay of □150.00 crore, the expenditure reported was□9.07 crore. There was no central release during 2014-15. The major issues regarding the implementation of Kuttanad package is slow pace of progress, tender excess, cost escalation etc. Time bound completion of the project is required to avail maximum assistance from Government of India and to develop the Kuttanad wetland ecosystem.

Irrigation Status

2.108 The source-wise area irrigated as on March 2015 is given in Appendix 2.52 & 2.53. As per the assessment of the Directorate of Economics and Statistics, the net irrigated area in the State as on March 2015, is 4.14 lakh ha. and the gross area irrigated is 4.69 lakh ha. The percentage of increase is not significant compared to the previous year. During 2014-15, the percentage of Gross Irrigated Area to Gross Cropped Area was 17.80. The crop which benefitted the most during the period is coconut. It accounted for about 35.18 per cent followed by paddy (32 percent), banana (10.19 percent), arecanut (7.2 percent) and vegetable (5.21 per cent). Details are given in Appendix 2.54 & 2.55. There has been an increase in irrigated area for vegetable cultivation during 2014-15 compared to the previous year.

Minor Irrigation

2.109 Minor irrigation plays an important role in Kerala. The availability of large number of water bodies in the form of rivers, rivulets and ponds and the ease of institutional intervention through user groups makes minor irrigation the preferred option for irrigation development in the state. Some of the advantages of minor Irrigation are lower investment needs per hectare, shorter payback period, easier management, reduced environmental damage and better suitability to agro ecologies.

2.110 During the 12th plan period, focus has been given to this sector with special emphasis on the development of tanks

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

and ponds, lift irrigation and other minor irrigation structures. Though the share of minor irrigation was 13% of the total budgeted outlay for irrigation sector during Annual Plan 2014-15, it accounted for 40% of the total expenditure during the year.

2.111 Physical achievement of Minor Irrigation for 2012-13, 2013-14 and 2014-15 are shown in Appendix 2.56. NABARD has been providing loan assistance for irrigation works through RIDF Phase 1 to XIX. The assistance of NABARD is by way of reimbursement. RIDF I to XII have been closed and the works under RIDF XIII to XX are in progress. Under RIDF XXI, Administrative Sanction has been received for 3 projects for □22.01 crore. DPR of 35 projects amounting to □.97.03 crore are submitted for obtaining Government approval under RIDF-XXI. Details are given inAppendix 2.57.

2.112 Union Government has approved a scheme for the rehabilitation of farmers in the distress affected districts of Palakkad, Wayanad and Kasaragod on 10.10.2006 and □.70.30 crore was allotted for Minor Irrigation sector. Out of the 75 works sanctioned under NABARD RIDF XIII and 62 works under NABARD RIDF XVI, 66 and 46 works were completed respectively.

Ground Water Development

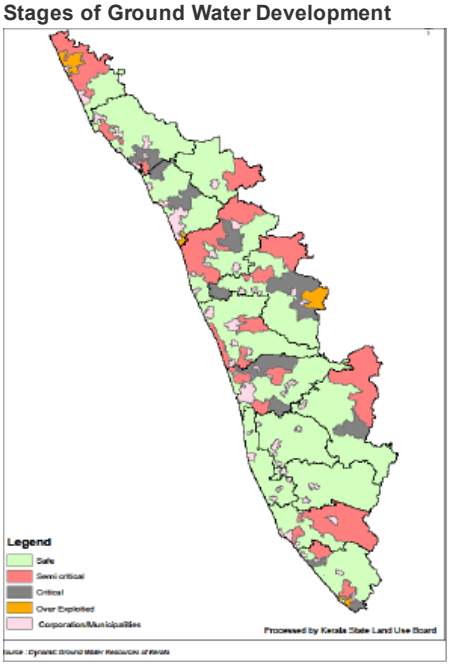
2.113 Ground Water irrigation has grown rapidly over the past 50 years and now supplies over one third of the world's irrigated area. Agriculture is by far the largest user of ground water. It can stabilize small holder farming by buffering droughts, intensifying cropping and allowing farmers to diversify and access markets for high value crops that require year round on-farm water control. Though globally ground water use in agriculture is growing, the drivers of growth differ from place to place with different implications for resource productivity.

2.114 Groundwater has rapidly emerged to occupy a dominant place in India's agriculture and food security and it accounts for over 60 percent of the irrigated area in the country. This is a major source of water in Kerala. As per 2011 census, 65 percent of rural and 59 percent of urban households have wells. The ground water potential of Kerala is limited because 88 percent of the total geographical area of the State is underlain by crystalline rocks devoid of any porosity. There are 10 different principal aquifer systems in Kerala. Groundwater in Kerala has a potential of 34-601 metres below ground level (mbgl) and the yield varies between 0.1 – 38 lps (litres per second) depending on the area.

2.115 The main source of ground water is recharge from rainfall, which contributes about 82 percent of the total annual replenishable resources. As per ground water resource data 2011, the total annual ground water availability and the net groundwater availability in the State is 6.69 Billion Cubic Meter (BCM) and 6.07 BCM respectively. The annual ground water draft for all uses in the State is 2.84 BCM out of which 1.31 BCM is for irrigation purpose. 3.07 BCM is the net ground water availability for future irrigation development in the State.

2.116 The stage of ground water development of our State is 47%. Among the districts, Kasaragod and Wayanad ranks maximum and minimum with 71% and 18% respectively. Details are given in Appendix 2.58.

Fig 2.12
Stages of Ground Water Development



Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

As per 2011 assessment, out of the 152 revenue blocks assessed in the State for groundwater potential, 1 block (Chittur) is categorized as over exploited, 2 blocks (Kasaragod, Malampuzha) as critical, 23 blocks as semi- critical and 126 blocks as safe.

2.117 During 2014-15, □19.32 crore was expended against the outlay of □13.56 crore by the Ground Water department. Noteworthy achievement was accomplished in Ground Water Investigation and Development. Hydrogeological, geophysical and remote sensing studies were done to identify ground water potential areas and to locate sites for ground water extraction structures such as bore well, tube well, filter point well and open well. In the present scenario of ground water exploitation and depletion, ground water conservation and recharge assumes utmost importance. Artificial recharge structures include sub surface dykes, check dams, recharge by open dug wells etc. 80 structures were implemented during 2014-15. Moreover, drinking water facility has been extended to several families under the scheme "Rajiv Gandhi Drinking Water Mission". Detailed physical achievement during the year under report is given in Appendix 2.59.

Performance of Irrigation sector during 2014-15

2.118 During 2014-15, the total outlay and expenditure of irrigation sector was □749.64 crore and □194.68 crore respectively. Details are given in Appendix 2.60. The low expenditure of major and medium schemes was reflected in the overall performance of the Irrigation sector during the year.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

SECTION -5

Forestry and Wild Life

2.119 Forest cover includes all lands which have a minimum area of one hectare and have a tree canopy density of 10 percent and above irrespective of ownership and legal status. The total forest cover of the country as per India State of Forest Report (ISFR) 2015 is 701673 sq.km which constitute 21.34 percent of the geographical area of the country. On comparison with ISFR 2013, it is observed that, there has been an increase of 3775 sq.km. in the country's forest cover. This increase in forest cover is mainly attributed to increase in open forest category. There is an increase of 2402 sq km in Very Dense Forest (VDF) areas and 4744 sq km in Open Forest (OF) areas, while there has been a decrease of 3371 sq km in Moderate Dense Forest (MDF) areas. Maximum increase in Forest cover has been observed in Tamil Nadu (2501sq.km) followed by Kerala (1317 sq.km) and Jammu & Kashmir (450 sq.km). Area wise, the State of Madhya Pradesh has the largest forest cover of 77,462 sq.km followed by Arunachal Pradesh (67,248 sq.km) and Chattisgarh (55,586 sq.km). Mizoram, with 88.93 % of forest cover has the highest forest cover in percentage terms, followed by Lakshadweep (84.56 %). As per the report, 15 states/UTs have more than 33% of the geographical area under Forest cover. Out of these states/UTs 7 states viz; Mizoram, Lakshadweep, A & N Island, Arunachal Pradesh, Nagaland, Meghalaya and Manipur had more than 75% Forest cover while 8 states viz; Tripura, Goa, Kerala, Sikkim, Utharakhand, Dadra & Nagar Haveli, Chattisgarh and Assam had forest cover between 33% to 75%.

2.120 Geographical area recorded as 'Forests' in Government records is "Recorded Forest Area". This consists of Reserved Forests (RF) and Protected Forests (PF). As per 2015 assessment, more than 75 percent forest cover within RFA has been observed in Andaman & Nicobar, Tamil Nadu and Telangana.

2.121 As per 2015 report of Forest Survey of India (FSI), the forest cover in the State of Kerala is 19239 sq.km with 1523 sq.km of very dense forest, 9301 sq.km of moderate dense forest and 8415 sq.km of open forest, the total accounting for 49.50 percent of the total geographical area of the State. Compared to ISFR 2013, the forest area in the State has increased by 1317 sq. km. The main reason for increase in forest cover is the spread of commercial plantations. On comparison with 2013 assessment, it is observed that there has been a decline in very dense forest and moderate dense forest, but the area of open forest has increased by 1423 sq. km. In Kerala, Idukki has the most forest cover (3852 sq.km) and Alappuzha has the least (113 sq.km). In terms of percentage of forest cover to total geographical area, Wayanad has the highest forest cover (83.34 %), followed by Idukki (76.74 %) and Pathanamthitta (66.38%). The district wise details of forest cover in Kerala is given in Appendix 2.61.

Natural Forest

2.122 Forests in Kerala are mainly classified into 5 major categories. The major types of forests in Kerala and species wise area under forest plantation are given in Appendix 2.62 & 2.63. During 2013-14, the quantity of timber production was 32054.971 cum (round log) and 117222 cum (round poles). During the period, there was a decrease in production of timber (round logs) compared to 2012-13. Bamboo and reeds production showed a tremendous increase of 27.52 lakh and 71.40 lakh as against 2012-13 production of 8.74 lakh and 24.24 lakh respectively. Sandal wood production also increased from 58269.07 kg.to 62587.64 kg during the period. The trend in production of major forest produce from 2007-

08 to 2013-14 is given in Appendix 2.64.

National Afforestation Programme

2.123 The National Afforestation Programme funded by Ministry of Environment, Forests and Climate Change (MoEFCC), Government of India has facilitated expansion of participatory forest management through forest development agencies, which are formed by federating Vana Samrakshana Samithies /Eco Development Committees (VSSs/EDCs). Till the end of March 2015, afforestation of 38486.23 ha of degraded forests has been completed utilizing an amount of □7568.20 lakh. During 2014-15, physical achievement was 6270.35 ha against target of 6299.10 ha utilizing □466.39 lakh.

Green India Mission

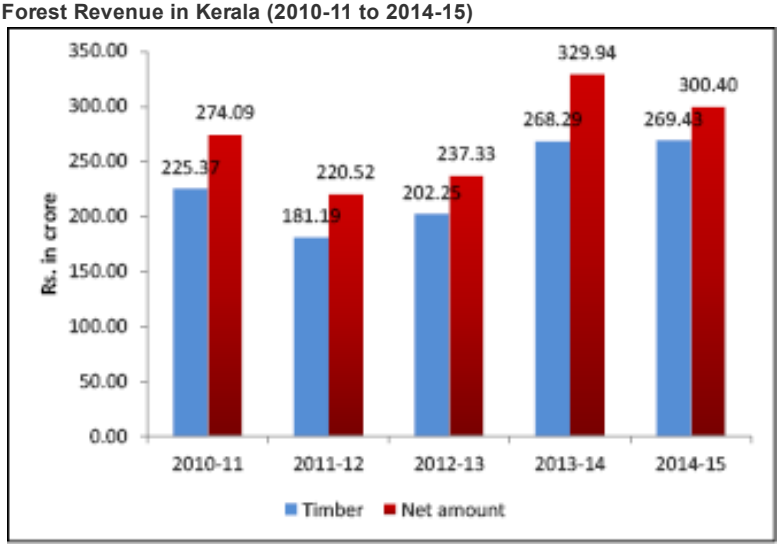
2.124 The Green India Mission aims to address key concerns related to climate change in the Forest Sector viz; Adaptation, Mitigation, Vulnerability and Ecosystem services. To this end the Mission also aims to take a broader landscape approach to address the drivers of forest degradation while supporting communities to meet their basic necessities of fodder, fuel- wood and livelihood. The general body and executive committees of the State Forest Development Agency (SFDA) has discussed the preparation of perspective plan in its meetings and has proposed the perspective plan to be implemented in the landscapes. 24 Forest Development Agencies (FDAs) are coming under these identified landscapes. Micro planning with the active involvement of local grama panchayats, NGOs and other development departments including Agriculture, Soil Conservation and Animal Husbandry have taken place at Joint Forest Management Committee (JFMC) and FDA. The objectives of the plan are to address the environmental issues, improve quality of the forests, conservation of endangered and endemic species, to improve the tree cover, improve soil and moisture condition, improve livelihood by providing more employment to the dependent communities, reduce dependency over forests, conserve the ecosystem, conserve mangroves and sacred groves, combine activities of social forestry and agro-forestry, increase forest cover in urban and semi-urban areas. The major activities proposed under Green India Mission include preparation of village level micro plan, capacity building programme of Vana Samrakshana Samithi/ Eco Development Committee (VSS/EDC), Soil & moisture conservation, Fire protection activities, Rehabilitation of shifting cultivation areas, restoration of mangroves, Bio-fencing, planting of Non-Timber Forest Product (NTFP) species etc.

Forest Revenue

2.125 Forests contributed to the non-tax revenue of the State amounting to □300.40 crore against a revised budget estimate of □383.23 crore during 2014-15. The revenue from the forest products during the period was □289.51 crore. Major portion of the forest revenue is from timber (Figure 2.13). amounting to □269.43 crore which accounted for 89 percent of the total forest revenue. As a part of revitalizing the living standards of tribal people within the forest area, the Department has vested the collection of Minor Forest products with them at free of cost. Details are given inAppendix 2.65.

2.126 The Gross State Domestic Product of the State is calculated with base year 2011-12. The share of forestry in GSDP during the period 2014-15 is 1.07 percent as against 1.15 percent during 2013-14. The share of primary sector in GSDP has decreased from 13.40 percent (2013-14) to 12.15 percent during 2014-15. The contribution of Forestry sector in GSDP is given in Appendix 2.69.

Fig 2.13
Forest Revenue in Kerala (2010-11 to 2014-15)



Source: Forest and Wildlife Department, Government of Kerala

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

Wild Life and Biosphere Reserve

2.127 The 'Malabar Wildlife Sanctuary' was constituted in 2009 with an area of 7421.50 Ha (74.21 Sq.Km). Also a new wild life sanctuary by name "Kottiyoor Wild Life Sanctuary" was constituted in 2011 with an extent of 30.38 sq.km. The list of sanctuaries, National Park, Biosphere Reserves and other Protected Areas in Kerala is shown in the Appendix 2.66. Our State has 3213.24 sq.km of forest under Protected Areas (5 National Parks, 17 Wildlife Sanctuaries and a community reserve). During 2014-15, Wildlife wing has undertaken activities such as management of protected areas, preparation and implementation of management plan/ Tiger conservation plan, conduct of wild life census, implementation of National Conservation projects etc.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

General Forestry

2.128 Natural Forests in Kerala are being managed mainly for sustaining the life support systems and biodiversity conservation. Efforts were made to adopt modern technologies including the use of improved seeds and modern nursery practices in raising the plantations. Plantations of hardwood species of local origin and pulpwood species for supplying raw materials to industries were also raised. Under 'Hardwood' species 203.71 ha of new areas were raised and 1252.76 ha were maintained during the year 2014-15. Regarding industrial raw materials, 514.34 ha were newly planted and 1505.05 ha were maintained. Under Non-Wood Forest species, 224.84 ha new areas were raised and 419.68 ha were maintained.

Performance Review and Key initiatives during 2014-15

2.129 During 2014-15, the expenditure incurred was □115.90 crore against the outlay of □150.00 crore (77.27%). Expenditure details during 2014-15 is given in Appendix 2.67. For the overall development of tribals, Forest & Wild life Department has identified a programme viz "Oorinunarvu Kadinunarvu". Out of □60.00 lakh released, □58.78 lakh was expended during 2014-15. In connection with the implementation of Forest Rights Act 2006, out of the 27537 eligible individual claims passed by Divisional Level Committees, 24621 rights were issued for an area of 33070 acres as on 31.03.2015. 21 titles were also issued under community rights. New schemes/ projects launched during the period –

1. Krishi Raksha Padhathi:- This is a programme under "Mission 676" which will benefit the farmers to protect their agricultural crops from the attack of wild animals. During 2014-15, □1300.88 lakh was expended against the outlay of □1400.00 lakh.

2. Biodiversity Conservation and Rural Livelihood Improvement Project (BCRLIP):- This aims at conserving Biodiversity in selected landscapes, including wildlife protected areas/ critical conservation areas while improving rural livelihoods through participatory approaches. During 2014-15,□77.56 lakh was expended.

Afforestation Outside Forest Area

2.130 The objective of the programme is to increase tree cover in non-forest areas to achieve the ideal target of 33.3 percent of forest cover. The department has embarked on massive afforestation programme outside forest areas since 2007 with novel ideas. The massive afforestation programme launched outside the forest areas are 'Entemaram programme, 'Nammude maram programme, Vazhiyora thanal programme, Haritha theeram programme and Haritha keralam programme'. The total number of seedlings distributed/planted under the various programmes upto 31-03.2015 is □503.45 lakh. The details of seedlings distributed under these programmes are given in Appendix 2.68. The sustainability of the trees planted has to be ensured.

SECTION -6

Environment

Climate Change

2.131 India's contribution to global CO_2 emission is 2.8%. The per capita CO_2 emission in the country increased steadily during 1900-2014. In 1900 it was 582.3 million tonnes and it reached 1954.02 million tonnes in 2014. (Key World Energy Statistics 2014, International Energy Agency). India is one of the countries on course to achieve the voluntary goal of reducing the Green House Gas (GHG) emission intensity of GDP (Emission Gap Report, 2014, UNEP). India's Intended Nationally Determined Contribution (INDC) focuses on reducing the GHG emission intensity of GDP to 35% by 2030, a reduction of 33% from 2005 level. India introduced a clean energy cess on coal as an instrument for dealing with climate change. This contributes to the National Clean Energy Fund and total collection so far under the fund is □.17, 084.45 crore (Economic Survey 2014-15). The country has also made progress in climate change adaptation actions.

Biodiversity Conservation

2.132 The fragile nature of ecosystem in Kerala is a concern and many natural and man-made causes pose a great threat to its biodiversity. The State contains more than 4,500 species of flowering plants of which above 1,500 are endemic in nature. The following conservation initiatives are going on the State

• Peoples Bio Diversity Registers were prepared in 32 Grama Panchayats and 1 Municipality during 2014-15. The total number of registers prepared upto November 2015 is 797 which include 784 Grama Panchayats, 12 Municipalities and 1 Corporation.
• Biodiversity registers specific to two major aquatic systems of the State : Sasthamkotta and Vellayani lakes were prepared
• Marine biodiversity register of Thiruvananthapuram Coast has been prepared as part of mapping of marine biodiversity of the State with the objective of producing a data bank on the state's marine flora and fauna, fish habitats, ecosystem, traditional fishing techniques and indigenous knowledge of the fisher communities.
• Biodiversity clubs were established in 907 institutions.
• For developing green cover and conserving Rare, Endangered and Threatened (RET) plants, manmade woodlot called 'Shanthisthal" maintained by Biodiversity Management Committees/ Biodiversity clubs of educational institutions has been established in an area of 17 acres of land.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

SECTION -7

Co- operation & Agricultural Finance

2.133 The co-operative movement in Kerala has a solid foundation and impressive record in terms of strength and financial stability and it is one of the most vibrant cooperative movements in the country. There are 14896 co-operative societies functioning under the Registrar of Co-operative Societies out of which 11565 are working, 2665 are dormant and 666 are under threat of liquidation. Financial unviability, poor governance and management, lack of professionalism, operational inefficiency and obsolete infrastructure could be probable reasons for dormancy and loss positions of the cooperatives. Also, out of the 14896 societies 30 are apex/federal societies, 3580 are credit societies /banks, 4679 are consumer societies, 576 are marketing societies and 3448 societies come under miscellaneous societies,1127 are women cooperatives, and 832 are SC/ST cooperatives. However, nearly half of the total marketing, processing, SC/ST and health cooperatives are either dormant or running in loss. Details are given Appendix 2.70.

2.134 In the Annual Plan 2014-15, large outlay was assigned for Credit Cooperatives (25 per cent), followed by Miscellaneous Cooperatives (14 per cent), Marketing Cooperatives (5.28 per cent), SC/ ST Cooperatives (7.20 per cent),) and Assistance to Cooperative Academy of Professional Education (10.19 per cent). On the expenditure front, expenditure for Marketing Cooperatives have been low at 1.4 per cent and for Processing Cooperatives it has been nil. The major physical achievements in the sector during 2014-15 are shown in Appendix 2.71.

Credit co-operatives

2.135 The Cooperative credit structure comprises of short term and long term. The short and medium term co-operative credit structure comprises of a three tier system with the State Co-operative Bank at the apex, 14 District Co-operative Banks and 1605 Primary Agricultural Credit Societies at the grass root level. Kerala State Co-operative Agricultural and Rural Development Bank along with 63 Primary Co-operative. Agricultural and Rural Development Banks operating at the Taluk level constitute long term co-operative. credit structure.

2.136 Among the short term credit structure, Primary Agricultural Credit Societies (PACS) are the most important. There are 1642 PACS out of which 558 were running under loss, 30 dormant and 34 societies were under threat of liquidation. The PACS are functioning with a paid up share capital of □1766.33 crores and reserves of □4119.38 crores.
2.137 The performances of PACs during the year under report are not encouraging. The total loan disbursed during 2014-15 was □71301.88 crores in the place of □94881.88 crores issued in 2013-14. Compared to the previous year, there was an increase in the disbursement of medium term and long term loans but the short term loan declined. With regard to performance of the Cooperatives in disbursing agricultural loan, it is unfortunate to note that out of the total disbursement of □71301.88 crores, mere 10.55 per cent was for agricultural purposes. What is even more unfortunate is that out of this only □150.60 crores (0.21 per cent) was meted out for long term agricultural purposes.

2.138 The selected indicators of the credit operations of the Primary Agricultural Credit Societies show that, deposits of the societies increased to □69925.89 crores in 2014-15 against □67785 crores in 2013-14. The average working capital position of the societies increased to □91864.75 crores from □90245.74 crores. Selected indicators and credit operations

of PACS are given in Appendix 2.72 & Appendix 2.73.

Consumer Co-operatives

2.139 These societies act as principal agents in the public distribution system by providing essential and consumer articles to the general public at a reasonable rate. Consumer Cooperatives in the State comprises of the Kerala State Consumers Federation at the State level, 14 District Wholesale Cooperative stores and 643 Primary Consumer societies at the Primary level. The District whole sale stores and primary stores cater to the needs of the consumer through their own outlets, super markets, and departmental stores. The Kerala State Cooperative Consumer Federation is engaged in the wholesale business of textile goods, groceries and stationary items as well as retail business. In addition to this there are various school and college cooperative stores catering to the needs of the students.

2.140 Triveni super markets were started to save the public from the exploitation by middlemen and as of now there are 268 Triveni Super markets with 134 mobile Triveni units, 7 floating triveni super stores, 8 Triveni Coffee houses and 1 unit of Triveni Noon meal scheme.

2.141 Another major project started was to run Nanma Stores in Panchayath and Municipal Wards having no such stores. The scheme aims to distribute 10 items of essential commodities at subsidised rates through the network of 2180 Retail Outlets. 1311 of them are run by selected Co-operative Societies and 869 by the Triveni Wing of Federation. Here the items are sold at prices at least 20 per cent lower than market rates.

2.142 Neethi Scheme for distributing consumer goods at lowest prices, Nanma stores –to distribute 10 items of essential commodities at subsidized rates through network of 2180 retail outlets, Neethi medical stores –providing medicines at subsidized rates, Triveni notebooks-manufacture and sale of note books are other schemes under consumer cooperatives.

SC/ST Co-operatives

2.143 Scheduled Caste/Scheduled Tribes Co-operatives are organized and established for the socio-economic development of the Scheduled Caste and Scheduled Tribes in the State. At present there are 752 scheduled caste co-operative societies and 129 scheduled tribe co-operative societies in Kerala, of which 315 and 54 respectively are satisfactorily working. An apex institution of Primary SC/ST Co-operatives called Kerala State Federation of Scheduled Caste and Scheduled Tribe Co-operatives was also established. 545 Scheduled Caste Co-operatives Societies and 99 Scheduled Tribe Co-operative Societies are affiliated to this federation.

2.144 For the revival of Scheduled Caste/Scheduled Tribes societies an amount of □.600 lakhs was provided during 2014-15 as share and subsidy.

Marketing / Processing Co-operatives

2.145 The co-operative marketing societies in the State have two tier structure, Apex societies at the State level and Primary societies at the base level. There are 3 Apex marketing federations in the State. 1) Kerala State Co-operative Marketing Federation Ltd. (Marketfed) 2) Kerala State Co-operative Rubber Marketing Federation Ltd. (Rubbermark) 3) Kerala State Kera Karshaka Sahakarana Federation (Kerafed).

2.146 567 Primary marketing and 36 Processing co-operatives are at the base level. For the revival of existing processing units, Government / National Cooperative Development Council (NCDC) are giving financial assistance, to the co-operative marketing societies in the form of share, loan and subsidy for marketing & processing activities.

ICDP

2.147 The Integrated Co-operative Development Project (ICDP) with NCDC assistance was successfully implemented in all 14 districts of the State. The second phase of ICDP in Wayanad district was completed in March 2013. Idukki district is implementing the second phase of ICDP at a block cost of □61.24 crores. During 2014-15, the second phase of ICDP was sanctioned for Palakkad district with a total outlay of □61.93 crores and NCDC assistance of □59.74 crores.

Miscellaneous Co-operatives

2.148 In addition to these there are miscellaneous cooperatives which consist of vanitha cooperatives, housing cooperatives, hospital cooperative societies and educational, cooperatives. Out of these the one functioning well are the hospital cooperative societies with 98 hospitals, 6987 beds 939 doctors and 4834 paramedical staff including nurses.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

During the year under review 483595 patients were treated as in-patients and 4338748 patients were treated as out-patients in these medical institutions.

Issue of Kissan Credit Card loans

2.149 During the year, 2014-15 District Co-operative Banks have issued 23412 Kissan Credit Cards through PACS and the total number of cards issued by the Co-operative Societies comes to 7,67,768 with a total loan outstanding amounting to □.2485.32 crores.

Deposit Mobilisation Campaign by Co-operative Societies

2.150 Deposit Mobilisation campaigns by co-operative credit institutions continued during the year also. During the period under review, the co-operatives could mobilize □6232 crore as against the target of □6000 crores, while in the previous year it was □6674 crores. Year wise target and achievement is given in Appendix 2.74.

Support by National Cooperative Development Corporation

2.151 NCDC (National Cooperative Development Corporation) has disbursed a cumulative financial assistance of □5993.089 crore for various cooperative development projects as on 31.3.2015, of which □1524.68 crores is through State government and □4468.40crores is via direct funding. Also, □1480.35 crores comes under long term loan and only □44.73 crores comes under subsidy, □4468 crores comes under working capital. Types of NCDC Assistance are shown in Appendix 2.75. During fiscal 2014-15, Kerala stood 3rd in all India standing for disbursement of NCDC's financial assistance to states. Sanctions and release of NCDC funds to the State for 2013-14 was □907.05 crore and □ 555.09 crores respectively which comes to the tune of 12.67 per cent of the total sanctions and 10 per cent of the total releases made by the NCDC country wide. Cumulatively131 cooperatives in Kerala have benefitted by NCDC funding through State Govt /Direct funding scheme during 2014-15 either through sanctions/ disbursement of funds. Almost all sectors of Agriculture& allied activities including short term agriculture credit, marketing of agriculture produce, distribution of fertilisers & inputs, consumer cooperatives, processing activities, storage/ go downs, infrastructure creation, service sector, industrial cooperatives, labour cooperatives and weaker section programme like fisheries, SC/ST etc. were covered by NCDC finance in the State during 2014-15.

2.152 Activity wise and year wise sanction and release of assistance from NCDC are shown in Appendix 2.76. The year wise amount released by NCDC from 1991-92 to 2012-13 and type of NCDC assistance are given in Appendix 2.77. The interest rate of NCDC loan is ranged from 10.40 per cent to 12.5 percent in 2014-15. The interest rate of NCDC loan is one of the highest rates reported. Reduction in rate seems to be essential to avail more support from NCDC.

Agricultural Finance

2.153 At the national level, agriculture credit flow has consistently exceeded the target set by the government for the general banking sector and commercial banks. During 2014-15, □8,40,643 crore (provisional) credit was disbursed to the agriculture sector, against a target of □8,00,000 crore. Out of this Commercial banks accounted for the highest share of 71 per cent, co-operative banks and RRB disbursed 17 per cent and 12 per cent respectively. For 2015-16 Agriculture credit target has been enhanced to □8,50,000 crores.

2.154 The following measures were taken in 2014-15 for improving agricultural credit flow and bringing down the rate of interest on farm loans: (1) Farmers were eligible to avail crop loans up to a principal amount of □3,00,000 at 7 per cent rate of interest. However, the effective rate of interest for farmers who promptly repay their loans was reduced to 4 per cent in 2011-12. This benefit was continued in 2014-15 also. (ii) Benefit of interest rate subvention made available to small and marginal farmers having KCCs for a further period upto six months (post-harvest) at the same rate as available to crop loan against negotiable warehouse receipts (NWRs) in order to discourage distress sale of crops by farme□ Other farmers have been granted post- harvest loans against NWRs at the commercial rates. (iii) In order to provide relief to farmers on occurrence of natural calamities, interest subvention of 2 per cent will continue to be available to banks for the first year on the restructured loan amount on account of natural calamities and such restructured loans will attract normal rate of interest from the second year onwards as per the policy laid down by Reserve Bank of India (RBI).

2.155 The Interest Subvention Scheme for short- term production credit (crop loans) which was started by the Government of India in 2006-07 was extended to private-sector banks from 2013-14. Presently the total number of loan accounts stands at 5.72 crore. Studies conducted by the RBI and National Bank for Agriculture and Rural Development (NABARD) indicate that the crop loans are not reaching intended beneficiaries and there are no systems and procedures in place at several bank branches to monitor the end-use of funds. According to NSSO 70th round data, as much as 40 per cent of the finances of farmers still comes from informal sources, despite an increase in the flow of institutional credit to agriculture in

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

recent years. Usurious moneylenders account for a 26 per cent share of total agricultural credit. Inadequate targeting of beneficiaries and monitoring/supervision of the end-use of short-term crop loans for which interest subvention scheme is applicable and decline in long-term/investment credit to agriculture are issues that need to be addressed on priority basis.

2.156 In Kerala, the outstanding advances to agriculture sector in the State stood at Rs.57656 crores in March 2015 showing an increase of Rs. 8844 crores compared to March 2014. Also the percentage of agriculture advances to total advances showed a marginal decrease from 26.06 per cent in June 2014 to 24.93 per cent in June 2015, though it is significantly higher than the mandatory norm of 18 per cent fixed by RBI.

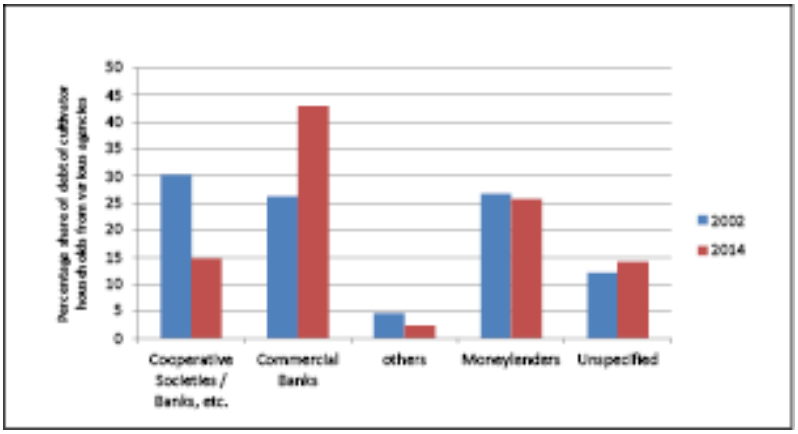
2.157 In 2014-15, 9.3 per cent of the outstanding agriculture advances was contributed by Cooperative Banks, 10 per cent by Regional Rural Bank (RRB) and the rest 80 per cent by Commercial banks. The share of Cooperative Banks in the number of accounts is mere 7.8 per cent while that of commercial banks is 73.5 per cent and that of RRBs 18.6 per cent. Details of agency wise annual credit flow to agriculture in Kerala (2009-10 to 2012-13) are given in Appendix 2.78.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

The Extent of Indebtedness

2.158 The All India Debt and Investment Survey conducted by the NSSO provides insights on the various dimensions of farmer indebtedness in India. This section is devoted to an analysis of their key results and for a comparison with the results of previous survey conducted by NSSO in 2002. In 2002, 48.6 percent of the agriculture households were indebted while in 2014 the figure was 52 percent, implying an increase in the proportion of indebted households.

Fig 2.14
The share of institutional and non-institutional agencies in outstanding debt of cultivator households – AIDIS 2002 and 2014



.Source: NSSO 59th & 70th Round

2.159 In terms of debt of cultivator households from different sources, the share of institutional sources has further declined to 59.8 per sent from 61.1 percent over the last one decade. Among the institutional sources, the share of Cooperative societies has fallen and that of commercial banks has increased. But the shares of money lenders have remained more or less the same accounting for as much as one fourth of the total outstanding debt of cultivator households . This, infact, is a matter of concern that inspite of all the efforts made for the spread of institutional finance it accounted for only two thirds of the farmers' outstanding debt. The efforts towards the institutionalization of rural credit in order to replace informal agencies which charge exorbitant rates of interest have not materialized.

2.160 In Kerala, around 49.5 per cent of the agriculture households were indebted, in contrast to 52 per cent at the national level. Not only has the Incidence of Indebtedness (IOI) increased from 39.4 in 2002 to 49.5 in 2014, it is one among the highest in the country. This high incidence of debt could be because of factors like concentration on cash crops, higher value of assets per household and good network of credit of both formal and informal agencies. The average amount of debt is Rs.1,47,402, the highest in the country showing a tremendous increase from 19,633 in 2002. Also the average amount of outstanding loan seems to increase with the increase in farm size, it being the highest for the largest farm size. To sum up, high IOI, high average Amount of Debt (AOD), high outstanding amount of loan per farmer, high Debt Asset Ratio (DAR) of large number of accounts are some of the key issues.

Kissan Credit Cards

2.161 The Kissan Credit Card (KCC) scheme is one major instrument through which credit was disbursed by various agencies in the State. As per the State Level Bankers Committee (SLBC), 95878 Kisan Credit Cards with an amount

of Rs.1236 crores have been issued during the first quarter of the current fiscal by the banking sector in the state. As on June 2015, the outstanding number of loan accounts under KCC is 15,70,153 with Rs.12311 crores. 667515 farmers were covered under Personal Accident Insurance Scheme (PAIS) linked to KCC. The report of the Committee on Medium term Path for Financial Inclusion has recommended further strengthening of KCC by including higher flexibility for prompt repayment, support for organic certification under KCC etc.

Investment Credit

2.162 Although overall credit flow to the agriculture sector in India has increased over the years, the share of term loan in Agriculture credit or investment credit declined from 39.3 per cent in 2004-05 to 19.5 per cent in 2013-14. But bucking the trend, 2014-15 witnessed an increase in the share of term loan to 24.3 per cent from 19.5 per cent in 2013-14, depicting a growth rate of 47.5 per cent.

2.163 In Kerala also, starting from 2000, the share of production credit (which accounts for major portion of the credit) in the total agricultural credit has been going up whereas the share of investment credit has come down from 21 per cent in 1999-2000 to 11% in 2011-12. (It has picked up albeit marginally to 13 per cent in 2012-13). This is not favourable for accelerating agricultural growth. A balance between short term and long term investment credit ought to be brought in to maintain sustainable agricultural growth. Since investment credit is a major driver of private sector capital formation in agriculture, a persistent decline in its share and the fact that its growth trend is lower than that of crop loan raises concerns above sustainable growth in agriculture production and productivity. The declining share of investment credit indicated that farmers seem to borrow more short term credit in order to meet their input needs to maintain continuity in agricultural operation and do not pay adequate attention to capital formation for agriculture. Lack of landed property for collateral and the fragmented size of holdings, lack of bank wise targets, lack luster performance of long term cooperative credit societies as well as lack of interest rate subvention for investment credit could be reasons for low investment credit in the State. The Working Group to revisit the existing priority sector level guidelines constituted by RBI in 2015 also raised concern regarding long term credit in agriculture, since investment credit is the major driver of private sector capital formation in agriculture.

Table 2.5
Production and Investment Credit to agriculture in the State
(Rs.. in crores)

Year	Production credit	Investment credit	Total
2008-09	14605 (78%)	4224 (22%)	18836
2009-10	18817 (78%)	5307 (22%)	24124
2010-11	23512 (82%)	5141 (18%)	28653
2011-12	30405 (89%)	3901 (11%)	34306
2012-13	32651 (87%)	5059 (13%)	37710

Source: State Level Bankers' Committee

Priority sector lending

2.164 Agriculture is one of the employment intensive sectors of the economy, and as such a sub-target of 18 per cent of ANBC (Adjusted Net Bank credit) is prescribed for priority sector lending inorder to ensure adequate credit flow to this sector. While there have been concerns about non-adherence to this target by banks in general, a further disaggregated analysis shows that only about one fourth of total agricultural credit is going to small and marginal farmers (RBI 2012) Importantly, 13.6 per cent of total agricultural credit was absorbed by corporate, partnership firms and institutions engaged in agriculture, as on the last reporting Friday of March 2011. Data on credit to micro and small enterprises also revealed a bias in favour of relatively bigger enterprises. Thus, within the priority sectors, especially within agriculture and micro and small enterprises, majority of loans are concentrated in relatively larger accounts. There is a need to change credit concentration within the priority sector in order to further facilitate the process of inclusive growth. (Report on Trend and Progress of Banking in India, RBI, 2011-12).

2.165 With regard to priority sector lending in Kerala commercial banks have shown an impressive record in the last decade. From 42 per cent in 1992 and 2000, the share of priority sector advances to total advances has jumped to nearly 60 per cent in 2014. As on March 2015, the total advances outstanding under priority sector was □.1,28,656 crore out of which advances to agriculture was to the tune of □.57,656 crore (44.8 per cent). The banking sector in Kerala has consistently over achieved the targets by advancing 59.14 per cent for the priority sectors in 2014-15 Also within the priority sectors, advances to agriculture is 25.42 per cent while target is just 18 per cent . This has happened after a drastic fall in the nineties when it fell from 16.1 per cent in 1992 to 13.9 per cent in 2000. Moreover, one more positive aspect is that the advances in agriculture have exceeded the targets consistently for the last five years .

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.166 However, the definition of priority sector has undergone a significant change over the years by including housing, education and export credit in addition to agriculture and micro& small enterprises. Moreover, as per the recommendations of the committee constituted by RBI under the chairmanship of Shri. M V Nair to reexamine existing classification on Priority Sector Lending the RBI has revised the guidelines for Priority Sector Lending. Following important activities among others come under Priority sector as per the revised guidelines: Loans to corporates including farmers' producer companies of individual farmers, partnership firms and co-operatives of farmers directly engaged in Agriculture and Allied Activities, Loans up to Rs.5 crore per borrower to dealers /sellers of fertilizers, pesticides, seeds, cattle feed, poultry feed, agricultural implements and other inputs for agriculture and allied activities, Loans for setting up of Agri-clinics and Agribusiness Centres. Bank loans up to □.5 crore per unit to Micro and Small Enterprises engaged in providing or rendering of services and defined in terms of investment in equipment under MSMED Act, 2006, loans to individuals for educational purposes including vocational courses upto □.10 lakh for studies in India and □.20 lakh for studies abroad, Loans to individuals up to □.25 lakh in metropolitan centres with population above ten lakh and □.15 lakh in other centres for purchase/construction of a dwelling unit per family, Loans for food and agro processing units etc. However, it has to be ascertained whether this has led to the dilution of the concept of priority sector by overestimating credit flows to actual agricultural operations and also, whether the overachievement of targets in recent years is mainly due to the inclusion of the specific items.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

2.167 Meanwhile, though public sector banks among the commercial banks have succeeded in achieving the target, private sector banks have failed to meet the same. Also, even though the guidelines does not stipulate any target for the cooperative banks, they too should be encouraged to spend more on agriculture as its is they who cater to largely small and marginal farmers.

2.168 Further a change in definition and approach on priority sector lending is proposed by an internal working group of RBI in 2015, the salient recommendations of which are given in the box below.

Box 2.4
Report of the Internal Working Group (IWG) to Revisit the Existing Priority Sector Lending Guidelines

Major Recommendations:
• The target for lending to the redefined priority sector retained uniformly at 40 per cent of ANBC or Credit Equivalent of Off-Balance Sheet Exposure (CEOBE), whichever is higher, for all scheduled commercial banks. • Foreign banks (irrespective of number of branches they have) also to be brought on par with domestic banks and the same target/ sub-targets may be made applicable to them. Foreign banks with 20 and above branches may be given time up to March 2018 in terms of extant guidelines and submit their revised action plans. Other foreign banks i.e. with less than 20 branches, may be given time up to March 2020 to comply with the revised targets as per action plans submitted by them and approved by Reserve Bank of India (RBI).
Agriculture
• Shift of focus on 'credit for agriculture' from 'credit in agriculture'. Hence , though target of 18 per cent retained , the approach and thrust re-defined to include (i) Farm Credit (which will include short-term crop loans and medium/long-term investment credit to farmers) (ii) Agriculture Infrastructure and (iii) Ancillary Activities and on-lending • Target to be reset every 3 years depending on the function of three variables viz., contribution of agriculture to the GDP, employment and number of credit accounts. • Agri-processing, presently included in MSE Sector, is proposed to be brought into agriculture fold. • Considering the needs of small and marginal farmers and based on their share in the operating area , within the agricultural target of 18 per cent of ANBC, a sub-target of 8 per cent of ANBC is recommended for small and marginal farmers, which may be achieved in a phased manner within a period two years i.e., 7 per cent by March 2016 and 8 per cent by March 2017 • A target of 7.5 per cent of ANBC for lending to micro enterprises to be achieved in stages i.e. achieve 7 per cent by March 2016 and 7.5 per cent by March 2017 Source : RBI 2015

Refinance Support by NABARD

2.169 In Kerala the total refinance disbursement from NABARD was □.1731.15 crores in 2014-15 as against □.2460.31 crores during 2013-14. Contrary to previous years, KSCARDB accounted for the highest share of 66.71 percent in the total refinance disbursed in the State in 2014-15, as against commercial banks which accounted for the highest share in 2013-14. This was followed by RRBs (17.76 per cent) and finally by Commercial banks (15.53 per cent) in 2014-15. Agency wise and purpose wise disbursement of refinance assistance by NABARD in Kerala is given inAppendix 2.79 and Appendix 2.80 & 2.81.

2.170 The purpose-wise analysis of the refinance by NABARD reveals that, the major share of assistance was availed by non-farm sector (75.94 per cent) followed by land development (7.12 per cent) and plantation and horticulture sector

(5.85). Other major schemes which availed refinance support was minor irrigation, SHGs, dairy Development etc. The sectors like fisheries and poultry, which are very important for the rural economy of Kerala, were neglected since 2012-13 from the disbursement of refinance by NABARD.

Rural Infrastructure Development Fund (RIDF)

2.171 The RIDF was set up in NABARD with contribution from the Commercial banks which were not able to fulfill the commitment of channelising at least 18 per cent of their total lending to agriculture. RIDF has been instrumental in strengthening the rural infrastructure in the State. From RIDF I to XX total sanction and disbursement stands □.2,12,451crores and □.1,47,991 crores respectively as on 31-03-2015 in India.

2.172 Kerala has been receiving assistance under RIDF for the last fifteen years. The major projects for which RIDF has been disbursed include watershed development projects, rural bridges, rural roads, reclamation of waterlogged area, inland navigation, tourism oriented roads and rural market yards. In Kerala the cumulative sanction and disbursement as on 31-03-2015 was □.7459.42 crores and □.4192.62 crores respectively. During the XX tranche an amount of □.1200.57crores was sanctioned and □.199.94 crores was disbursed. The tranche wise sanction and disbursement under RIDF are shown in Appendix 2.82.

Section 8

Rural Development Programmes

2.173 Rural development programmes in Kerala are either Centrally Sponsored Projects or schemes and projects implemented by local bodies. A number of centrally sponsored schemes are being implemented in rural areas through the State Government for poverty reduction, employment generation, rural infrastructure development and provision of basic minimum services. A brief review of the financial and physical details of the Schemes are given below.

Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

2.174 The financial achievement under MGNREGS during 2014-15 was □.1617.99 crore and the total employment generated during the year was 5.88 crore mandays. The physical and financial progress of the programme in 2014-15 and financial and employment details of MGNREGS upto September 2015 is given in Appendix 2.83, 2.84, 2.85 & 2.86.

Indira Awas Yojana (IAY)

2.175 Indira Awaas Yojana (IAY) is the biggest and most comprehensive rural housing programme ever taken up in the country. It is a Centrally Sponsored Scheme of the Ministry of Rural Development which provides dwelling units to the homeless Rural Poor belonging to the BPL category. The programme is implemented through the Block Panchayats.

2.176 The unit assistance under IAY, fixed by Government of India, with effect from 01.04.2013, is □.70000 in plain areas and □.75000 in hilly/difficult areas and this has been shared by the Centre and the State in the ratio of 75:25 upto 2014-15. From 2015-16 onwards, funding pattern has been changed to 60:40.

2.177 The State Government has enhanced the unit cost to □.2 lakh for General Category, □.3 lakh for SC Category and □.3.5 lakh for ST Category. The additional amount over and above the unit cost fixed by the Government of India is being met by Grama-Block-District Panchayats in the ratio of 25:40:35. As the three tier panchayaths are not in a position to meet the additional amount, State Government has decided to provide □.75000 per house to all categories during the year 2012-13 and □.50000 during 2013-14, 2014-15 and 2015-16. During 2014-15, 51261 houses were sanctioned. The number of houses completed (including spillover liability) is 50545 (50264 new houses & 281 under upgradation scheme). Distributed among SC, ST, Minority and Others as 18797, 3668, 12779 and 15301 respectively.

2.178 Financial and physical achievements of IAY up to October 2015 are shown in Appendix 2.87 & 2.88.

Rural Infrastructure Development – Pradhan Mantri Gram Sadak Yojana (PMGSY)

2.179 PMGSY is a 100 per cent Centrally Sponsored Scheme to build rural infrastructure with the objective of facilitating a higher degree of rural – urban integration and for achieving an even pattern of growth for the poor and disadvantaged sections of the society. The spirit and the objective of PMGSY is to provide good all-weather road connectivity to the unconnected habitations. The Kerala State Rural Roads Development Agency (KSRRDA) is the nodal agency for implementation of the programme in the State.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

2.180 Government of India funds is utilized for the actual estimated cost of construction of roads under the scheme. The State government supports PMGSY for meeting tender excess, shifting of utilities and maintenance provision for assets already created by including them in the State budget from the financial year 2010-11. During 2014-15, an amount of □.190.59 crore (including opening balance) was expended and 118 roads were completed (345.75 Kms).

2.181 The financial and physical achievements of PMGSY are shown in Appendix 2.89.

Integrated Watershed Management Programme (IWMP)

2.182 Integrated Watershed Management Programme (IWMP) is one of the flagship programmes of Government of India, which aims at sustainable development and conservation of natural resources. From 2015-16 onwards, the Government of India has approved a new scheme called Pradhan Mantri Krishi Sinchai Yojana (PMKSY) (Watershed Component). Rain water conservation, construction of farm pond, water harvesting structures, small check dams and contour bunding etc. are included under this programme. An amount of □.72.27 crore was expended during 2014-15. Details are given in Appendix 2.90.

Swachh Bharat Mission (Gramin)

2.183 With effect from 02.10.2014, Nirmal Bharat Abhiyan has been restructured and renamed as Swachh Bharat Mission (Gramin), which aims at attaining a 100% Open Defecation Free India by 2019.

2.184 The main objective of the Swachh Bharat Mission (Gramin) are:- to bring about an improvement in the general quality of life in the rural areas, by promoting cleanliness, hygiene and eliminating open defecation; accelerate sanitation coverage in rural areas to achieve the vision of Swachh Bharat by 2nd October 2019; motivate communities and Panchayati Raj Institutions to adopt sustainable sanitation practices and facilities through awareness creation and health education; encourage cost effective and appropriate technologies for ecologically safe and sustainable sanitation; and develop where required, community managed sanitation systems focusing on scientific solid & liquid waste management systems for overall cleanliness in the rural areas.

2.185 Under Swachh Bharat Mission (Gramin) construction of 1108225 individual household latrines were completed as on 31st March 2015. Out of the total 144323 latrines were of APL families, 1184 Community Sanitary Complexes, 49,389 school toilets, 5154 Anganwadi Toilets and 91 Rural Sanitary Marts and Production Centre. 959 Grama Panchayats have received the National Award of Nirmal Gram Puraskar (NGP) till 2013 consequent to their effort in eliminating open defecation, providing toilet facilities for all households, schools and anganwadis and creating a neat and clean environment in the Panchayats. The NGP has been discontinued with effect from 6-11-2015.

Kudumbashree Mission and Alleviation of Poverty

2.186 Kudumbashree is a holistic, participatory, women oriented innovative overarching poverty reduction approach launched in the State during 1998-99. 'Kudumbashree' envisages prosperity of the economically backward families in the State with multiple programmes that will provide them information, create awareness, build up their capability and capacity, enhance their confidence and show them opportunity for better social security and empower them physically, socially, economically and politically. Kudumbashree has altered lives of economically backward women in the State, changed their perception, built their confidence, boosted their morale, rediscovered their dignity and honor, and empowered them economically, socially and politically across political ideologies and religious faiths.

2.187 The Community Based Organizations (CBOs) of Kudumbashree encompass 40 lakh families networked into 2.59 lakhs Neighborhood Groups, which is federated in to 19875 Area Development Societies and 1072 Community Development Societies. The three tier Community Based Organisations (CBOs) of poor women provide an effective platform for converging various anti poverty programmes of the State and Central Governments. Various other agencies involved in poverty reduction, such as NABARD, financial institutions, welfare boards and other autonomous agencies and departments are also utilizing this platform for the effective implementation of their programmes.

Strategy

• Identification of poor families using a non-monetary poverty index.

• Organizing the poor in a 3 tier Community Based Organization (CBO).

• Empowerment of women through Community Based Organisations.

• Formation of Informal Bank of Poor women operating round the clock throughout the year, starting from thrift & credit operations.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

- Formation of micro-enterprises.
- Convergent Community Action.
- Strong liaison with LSGs.
- Intervention in Anti Poverty Sub Plan, Women Component Plan, Local Economic Development of local self governments.
- Community monitoring mechanism for local development.

2.188 Some of the Poverty reduction programmes of Kudumbashree Mission are given below:-

Linkage Banking

National Bank for Agricultural and Rural Development (NABARD) SHG- Bank linkage grading procedures are applied while selecting eligible NHGs for availing loans. Banks will provide loans to those NHGs who acquire 80 per cent marks in grading. Under this scheme □.1280 crore has been mobilized and 52397 NHGs have availed the loans during 2014-15. The details of Linkage Banking are given in Appendix 2.91.

Thrift and Credit Societies facilitate easy and timely credit to the unreached. The total thrift collected by NHGs in the State comes to □. 3094 crore and the internal loans generated are to the tune of □.12683 crores. The details are given in Appendix 2.92.

Matching Grant is an incentive provided to NHGs and linked to amount of thrift mobilized, performance of NHG in the Grading and loan availed from Banks. An amount of 10% of the thrift of the NHG subject to a maximum of □. 5000/- is provided as Matching Grant to each NHG. An amount of □.422.14 lakh has been provided as matching grant during 2014-15.

Interest subsidy scheme - NHGs can avail bank loans at 7% and the remaining interest amount will be treated as interest subsidy. This support is only upto the loan amount of □.1 lakh. An amount of □.455.49 lakh was provided as interest subsidy during 2014-15.

Micro Enterprises Activities

Micro enterprise promotion and development is one of the livelihood programme where women of Kudumbashree Neighbourhood groups are encouraged to start enterprises based on their skill and aptitude. It also provides necessary handholding support for the women for the identification of viable livelihood opportunity available in the locality, necessary training, financial assistance and marketing support.

Yuvashree as part of promoting self employment among unemployed youth, helped unemployed youth to start enterprises.

Financial Literacy campaign- conducted two campaigns in each of the 1072 Community Development Societies (CDSs) with the support of Banks, government departments and NABARD.

Tribal special project is an initiative of Kudumbahree in collaboration with the Tribal Department to address the special issues of the tribal population of the State, in a systematic manner. The project primarily targets at bringing the marginalized tribals under the aegis of the Kudumbashree network and provide them with facilities which were otherwise less accessible or denied, as part of its poverty eradication mission.

Collective Farming is an initiative to encourage cultivation by neighbourhood groups. It not only brings in significant changes in the lives of the poor but also helps to increase agricultural production by bringing fallow and cultivable waste land into agricultural use, and has significance as a food security measure.

Major initiatives

Ashraya is an initiative that rehabilitates destitute families and integrates them with mainstream of the civil society. The specific objectives include provision of food for starving, land for home, shelter to the homeless, infrastructure to support for the destitute through medical and care service, educational facilities to children and pension support and income generation activities.

BUDS (Programme for Intellectual Disability) has been started to set up model special schools for physically and mentally challenged children under the leadership of Local Self Government and cater to the developmental, social, and emotional needs of the children whose needs were formerly ignored or neglected. So far 62 BUDS schools and 83 BUDS Rehabilitation Centers have come up in the State.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

Balasabha is a structured neighbourhood network of children. The prime objective of constituting Balasabhas is to prevent inter-generational transmission of poverty through capability enhancement of children. Small Learning Groups for experimental and systematic learning, opportunities for understanding democratic process, participation in conserving environment, enabling children to unfold the intricacies of collectivisation are the basic focal points of Balasabha. The details are given in Appendix 2.93.

Balapanchayats have been formed in gramapanchayats with the support of UNICEF initially. Kudumbashree initiatives of Balasabha and Balapanchayaths enable to impart voice, face and power to children hailing from poor and vulnerable socio economic backgrounds. The idea behind the Bala Panchayath is the creation of a children's forum where children's issues and concerns can be bought to the notice of local development planners- i.e. the Local Self Governments. One such interface has been that of local environmental audits conducted by the children of Kudumbashree.

Gender Self Learning

It aims to create awareness about the rights, status and justice of women by themselves through the discussions of their experience, identify their role in the local development process and equip women to recognize their rights, equality and violence against them. Major gender self learning programme initiatives are given below.

1. Gender Corner
2. Snehitha Gender Help Desk
3. Sreesakthi – The Web Portal
4. Crime Mapping
5. Anti Human Trafficking (AHT)

Samagra Projects is an initiative independently developed by Kudumbashree and being implemented in the State in collaboration with the three tier local self governments and other agencies. It is an attempt to address the entire production – supply value chain holistically, by scaling up productive activity both qualitatively and quantitatively and seeking viable supply opportunities. Some of the Samagra Projects that are implemented in various districts are given below.

1. Kannur Goat Farmers Producer Company
2. Nedumkandam Ksheerasagaram Producer Company
3. Kasargode Saphalam Cashew Project-Collective
4. Gramashree Ornamental Fish Producers Collective in Vaikom Block of Kottayam
5. Unnathi Society of IT Enterprises
6. Amrutham Society of Nutrimix Entrepreneurs

2.189 Kudumbashree is a nodal agency for various centrally sponsored programmes. Some of the major programmes for reducing poverty under Rural Development Sector are described below.

National Rural Livelihood Mission (NRLM)

NRLM seeks to provide self/wage employment opportunities for the rural poor through Self Help Groups. The core objective of the programme is to establish micro-enterprises covering all aspects of self employment viz, organization of the rural poor into self-help groups and their capacity building, planning of activity clusters, infrastructure build up, technology, credit and marketing.

Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU GKY)

'DDU GKY (erstwhile Aajeevika Skills)', the skill and placement initiative of the Ministry of Rural Development (MoRD) is a significant initiative which aims at skilling poor rural youth and providing them with jobs in the organized sector.

Implementation of different Rural Development Schemes and the initiatives taken by Kudumbashree have helped the poor to improve the quality of life in the State. While MGNREGS has generated sizable employment in rural areas, Swachh Bharat Mission (Gramin) has helped to improve sanitation facilities in rural areas. However concrete efforts have to be taken to sustain the present achievements and to improve the standard of living in Rural Kerala.

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Section -9

Food security

2.190 The World Food Summit of 1996 defined food security as existing when all people at all times have access to sufficient, safe and nutritious food to maintain a healthy and active life. Public Distribution System (PDS) assures food

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

security to people, particularly to Kerala, a State which has a very high deficit in production of food grains; Kerala produces only 15 per cent of its requirement. Necessarily, PDS has a critical and functional role in Kerala.

2.191 Public Distribution System was launched in Kerala in 1962 with the implementation of the Kerala Rationing Order. Timely lifting of commodities allocated from the Central pool and ensuring distribution of the same through more than 14,000 ration shops and ensuring that it occurs in time and effectively is a major responsibility of the PDS. Kerala made pioneering achievements in the implementation of a Universal Rationing System. The approach to the Twelfth Five Year Plan stresses reforms to plug the leakages in the PDS such as end to end automation of the entire PDS chain, introduction of GPS tracking, activating vigilance committees and so on across the State.

2.192 Number of ration cardholders in the State reached 83.13 lakh in 2014-15 from 82.73 lakhs in 2013-14 (Appendix 2.94). Similarly number of APL cardholders also increased slightly to 62.52 lakh in 2014-15, which was 62.51 lakh in 2013-14. There are 14.78 lakh BPL cardholders in 2014-15 which was 14.81 lakhs in 2013-14. and 5.83 lakh Anthyodaya Anna Yojana (AAY) card holders in 2014-15 which was 5.85 lakh in 2013-14. There are 0.26 lakh Annapoorna card holders also.

2.193 During 2014-15 rice allotment to APL cardholders was 4.45 lakh MT and BPL card holders 4.31 lakh MT. At the same period rice allotment to AAY card holders was 2.5 lakh MT. Supply price of rice for APL and BPL from 2012-13 was □.8.90 and □.1 respectively and that of wheat is □.6.70 for APL and □.2 for BPL.

2.194 Details of distribution of rice, wheat, kerosene and sugar through PDS from 2007-08 to 2014-15 is shown in Appendix 2.95.

Food grain at □.2/kg and □.1/kg

2.195 In 2011, Government of Kerala approved a scheme for proving food grain at □.2/kg to all prescribed special category of beneficiaries subject to certain condition. All BPL and APL beneficiaries in the State were provided with rice and wheat at □.2/kg in 2014-15. Since 1st September 2011, the State Government has started to implement schemes for issuing rice at □.1/kg to all BPL beneficiaries in the State. Food grain distribution details under PDS for BPL and APL in 2014-15 is shown in Appendix 2.96.

Anthyodaya Anna Yojana (AAY) & Annapoorna Scheme (ANP)

2.196 The scheme is to provide 35 kg of rice per month to the poorest of the poor families under BPL and is being implemented in the State since 25-12-2001. In 2014-15, also the allotment of rice under AAY continued at the level of 250260 MT. Government. of India supplies food grains under AAY to the State at □.3/kg and the State Govt. in turn provides it to the beneficiaries at the subsidised rate of □.1/kg.

2.197 Annapoorna scheme provides 10kg of rice free of cost per month to destitute of the age of 65 years and above who are not in receipt of any of the pensions from the Govt. There are 26,800 ANP cardholders in the State as on 31.3.2015. Details of distribution of food grains under AAY and ANP schemes during 2014-15 are given in Appendix 2.97

Central Allotment of Sugar and Kerosene

2.198 Allotment of sugar to Kerala in 2014-15 was 55,255 MT and that of Kerosene, 94,077 KL. Allotment of sugar is restricted to BPL/AAY card holders.

Kerala State Civil Supplies Corporation (Supplyco)

2.199 Kerala has one of the best Public Distribution System networks in India. Kerala State Civil Supplies Corporation being the second line of Public Distribution System is instrumental in stabilising the prices of essential commodities in the State. It was set up in 1974 to provide food security to the State.

2.200 Kerala, being a consumer oriented State, controlling the undue rise in prices is not possible without a powerful public distribution system that intervenes the open market effectively throughout the year. The system ensures the distribution of essential items through Fair Price shops and Supplyco outlets to reach every person in the State.

2.201 Supplyco has its headquarters in Kochi and operates through 5 regional offices, 56 depots and many outlets. Details of outlet are given in Appendix 2.98. Retailing of Fast Moving Consumer Goods (FMCG) at lower prices, conducting special fairs for arresting the undue rise in prices during festival seasons, retailing of medicines by opening medical stores, procurement of paddy, processing and distribution of wheat and its products, acting as dealer of petroleum products like kerosene, petrol, diesel and LPG and also acting as nodal agency to implement the programmes of Government of India in

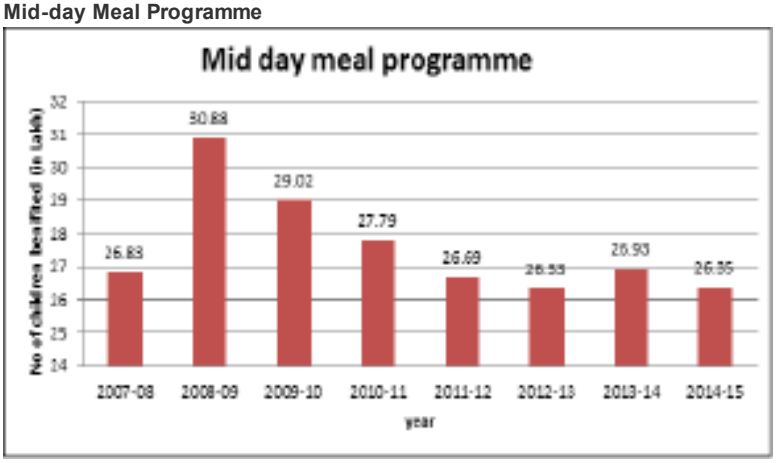
Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top
Other Chapters

the State to start Micro Biology Lab and Food Processing Unit.

Mid-day Meal Programme

2.202 Mid-day Meal Programme in schools is implemented in the State with the financial support of State Government and Central assistance. Supplyco is entrusted with the responsibility of providing commodities to mid-day meal programme in the State. The required quantity of rice is taken from Food Corporation of India. During 2014-15, the Corporation supplied 476527.79 quintals of rice, 125995.03 quintals of special rice benefiting 26.35 lakh children. The cost of the food grains is met through Education Department. Number of children benefitting from the mid-day meal programme is given in Figure 2.15 and details of supply of food grains from 2007-08 to 2014-15 is shown in Appendix 2.99.

Fig 2.15
Mid-day Meal Programme



Source: supplyco

Outlook

Long term forecasting for commodity markets in an increasingly uncertain and dynamic world is a challenging job. From the short term perspective, global commodity prices are expected to remain weak in 2016 due to low international demand and comfortable supply. Prices of commodities could fall further if market rebalancing in response to recent excess supply conditions were to take longer than expected (IMF, 2015). Strengthening of domestic market, agro processing and value addition, safe to eat and organic mode of production are to be supported further to improve income of the farmers.

Expansion of commercial dairy units coupled with marketing network with farm fresh milk supply could be initiated for large scale adoption for a sustainable livestock sector in the State.

Agriculture
Live stock
Fisheries
Water Resources
Forestry & Wildlife
Environment
Co-Operation and Agricultural Finance
Rural Development
Food Security
Top

Other Chapters

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Chapter 3

INDUSTRY, LABOUR AND EMPLOYMENT

Introduction

The rising number of unemployed persons in industrialized economies and need for employment generating activities, point to the central role that productive activity and jobs have in the life of individuals and countries. Employment arises out of the efforts of entrepreneurs and governments generating new businesses and economic activities. Sustained job creation

depends on the ability of an economy to innovate and generate new activities characterized by higher value addition and productivity growth.

One of the key findings of UNIDO's Industrial Development Report 2013 is that countries need to move from lower technology to higher technology sectors, from lower value-added to higher value added sectors and from lower productivity to higher productivity sectors. The report also underlines the critical need for international cooperation to achieve the structural change and economic growth required to combat poverty.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Section 1

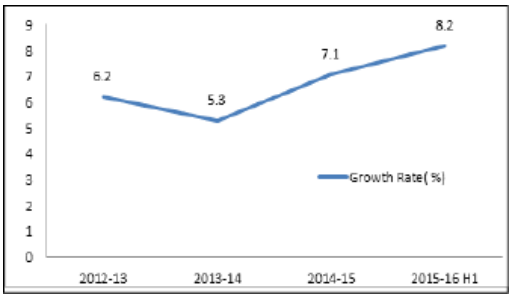
Manufacturing

India accounts for 1.8 per cent of the world's manufacturing output. World manufacturing growth was 3.4 per cent in the first quarter and 3.0 per cent in the second quarter of 2014-15, according to the United Nations Industrial Development Organization's (UNIDO) Quarterly Report on World Manufacturing Production.

3.2 At the national level, the contribution of manufacturing sector to Gross Value Added (GVA) at constant prices (2011-12) during the 1st half of 2015-16 is 9.64 lakh crore. At current prices, manufacturing sector registered a growth of 6.9% for the first half of 2015-16 as compared to the growth of 12.2 percent in the first half of 2014-15. As per the estimates, the share of manufacturing sector to GVA is 17.62% at current prices.

3.3 The trends in growth of manufacturing sector in India as per provisional estimate of GVA by economic activity at constant prices for a period from 2012-13 to 2015-16 (H1) is exhibited in Figure 3.1.

Fig 3.1
Growth of Manufacturing Sector in India

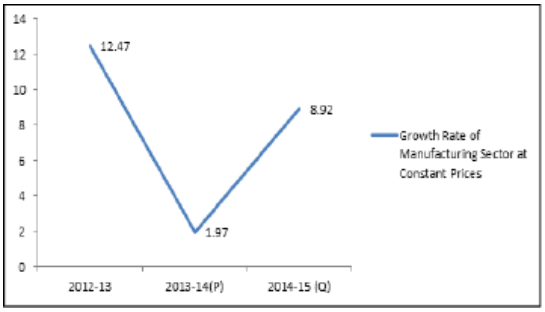


Source: Central Statistics Office

3.4 As per Quick Estimate of Gross Value Added (Economic & Statistics Department) the manufacturing sector of Kerala grew by 12.33 per cent at current prices during 2014-15 compared to 6.92 per cent in the previous year. At constant prices (2011-12), the sector registered a growth of 8.92 per cent in 2014-15 as against 1.97 percent in 2013-14. The share of manufacturing sector to GVA at constant and current prices during 2014-15 was 10.82 per cent and 10.19 per cent respectively. The income from manufacturing sector to GVA from 2011-12 to 2014-15 is given inAppendix 3.1.

3.5 The trend in growth rate of income from manufacturing sector in Kerala on the basis of GVA at constant prices for the period from 2012-13 to 2014-15 is shown in Figure 3.2.

Fig 3.2
Rate of Growth of Manufacturing Sector - Kerala



Source: Directorate of Economics and Statistics

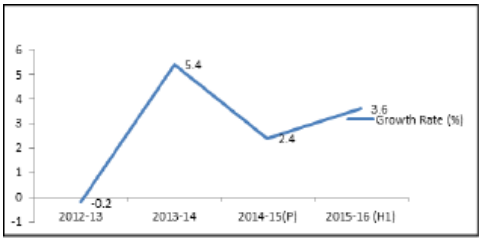
3.6 The income from manufacturing sector in Kerala which registered 12.47 per cent growth in 2012-13 witnessed a decline during 2013-14 (1.97 per cent) and recorded a moderate growth of 8.92 per cent during 2014-15.

Mining

3.7 India is a mineral rich country with large deposits of iron ore, barytes, rare earth and mineral salt. India produced 90 minerals, 11 metallic, 52 non metallic and 23 minor minerals in 2012-13. India was ranked 2nd in the production of Barytes, third in chromite, and coal and lignite, 5th in iron ore and steel (crude), 6th in bauxite ore, 7th in manganese ore and 8th in aluminium (crude) in the world in 2012. The number of mines in India which reported mineral production (excluding minor minerals, petroleum (crude), natural gas and atomic minerals) was 3318 in 2014-15 as against 3722 in 2013-14. The total value of mineral production (excluding atomic minerals) during 2014-15 has been estimated at □267637 crore as against □278150 crore during 2013-14.

3.8 As per Provisional Estimate (PE) of Gross Value Added (GVA) at constant prices (2011-12) for 2014-15, mining and quarrying sector at national level grew by 2.4 per cent as against 5.4 percent in 2013-14.During the period April-September (H1) 2015-16, the mining and quarrying sector contributed □1.37 lakh crore to Gross Value Added (GVA) at constant prices. The sector grew by 3.6% as compared to 3% in the first half of 2014-15. At current prices, the sector contributed □1.43 lakh crore to GVA during 2015-16 (H1) with a minus growth rate of 0.1% as compared with the growth of 4.4% of 2014-15 (H1). The trend in national growth rate of Mining and Quarrying sector at constant prices is shown Figure 3.3.

Fig 3.3
National Growth Rate of Mining and Quarrying Sector
Based on GVA at Constant (2011-12) Prices



Source: Central Statistical Office

3.9 Mining and Quarrying sector at the national level showed a decline by -0.2 per cent in 2012-13, a growth of 5.4 per cent in 2013-14 and 2.4 per cent in 2014-15. In the first half of 2015-16, the sector registered a growth of 3.6 per cent.

Growth of the Mining Sector in the State

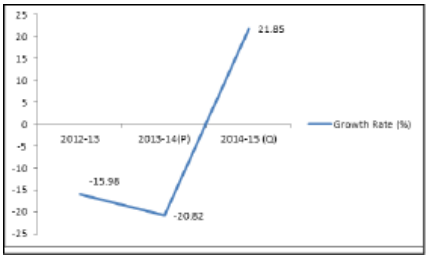
3.10 The contribution of Mining and Quarrying sector to Gross Value Added at constant prices is estimated at □220881 lakh during 2014-15 registering a growth of 21.85 percent compared to the previous year. The share of the sector in GVA at constant prices stood at 0.56 percent during 2014-15 as against 0.49 per cent in 2013-14.

3.11 The growth of income from the sector as per estimate of GVA at constant prices (2011-12) from 2012-13 to 2014-15 is depicted in Figure 3.4.

Fig 3.4
Growth Rate of Income from Mining and Quarrying Sector in Kerala

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters



Source: Directorate of Economics and Statistics

3.12 There are 83 major mineral mines that are operational in the State as on 31st March 2015. During 2014-15, 87 mining leases for major minerals, 532 quarrying leases, 6222 quarry permits in minor minerals and 1549 dealers license were granted. In 2014-15 there were 188 registered metal crusher units in Kerala.

3.13 The total area covered by mining leases as on September 2015 is 2233.37 hectares of which lime shell/seashell accounts for 1350.40 hectares, mineral sand 349.77 hectares, limestone 245.69 hectares, china clay 106.1 hectares. Area covered by graphite and bauxite are 1.25 hectares and 0.72 hectares respectively. Mineral wise details of area covered by mining lease are given in Appendix 3.2.

3.14 During 2014-15, 378.07 lakh tonnes of major and minor minerals were produced in Kerala. Among major minerals,china clay tops the list with 8.89 lakh tonnes followed by limestone (4.27 lakh tonnes), bauxite/laterite (2.98 lakh tonnes) and ilmenite (1.1 lakh tonnes). Among minor minerals highest production is granite building stone (244.44 lakh tonnes) followed by ordinary earth (45.77 lakh tonnes), ordinary sand (22.41 lakh tonnes), river sand (20.51 lakh tonnes) and laterite (15.87 lakh tonnes).

3.15 During 2014-15 an amount of □70.6 crore was received as royalty from minerals, of which □13.91 crore was from major minerals and □56.69 crore from minor minerals. During 2014-15 highest royalty among major minerals is from limestone (□3.05 crore) followed by bauxite/laterite (□3.01 crore), china clay (□2.76 crore) and ilmenite (□1.86 crore). Among minor minerals granite building stone stands first by contributing □39.11 crore as royalty followed by ordinary earth (□9.15 crore) and laterite (□2.54 crore) during 2014-15. The production and royalty of minerals in the State during 2014-15 are given in Appendix 3.3.

3.16 District wise analysis of revenue collection shows that Ernakulam district has the highest collection of □11.74 crore (16.63% of total revenue) followed by Palakkad □8.83 crore (12.51%) and Kollam □6.24 crore(8.84%). The least revenue collection of □1.62 crore (2.29%) is from Wayanad. The district wise collection of revenue from major and minor minerals is furnished in Appendix 3.4.

Section 2

Public Sector Undertakings

3.17 In India, Public Sector Enterprises have been set up with an objective of attaining higher economic growth with self-sufficiency in the production of goods and services with long term stability in economic activities. There were 234 operating Central Public Sector Enterprises (CPSEs) in India as on March 2014 (Public Enterprises Survey 2013-14). Out of these 163 had been profit making and 71 loss making.

Central Sector Investment

3.18 The aggregate real investment in Central Public Sector Enterprises (CPSEs) in India, measured in term 'gross block' increased from □1555575.29 crore in 2012-13 to □1757450.17 crore in 2013-14 registering a growth of 12.98 per cent over the previous year. Though the investment in CPSEs in the State in terms of gross block grew by 7.65 per cent from □31460.19 crore in 2012-13 to □33866.85 crore in 2013-14, its percentage share in total gross block decreased from 2.02 in 2012-13 to 1.93 in 2013-14 (Public Enterprises Survey 2013-14). State wise analysis shows that Maharashtra ranked first with the highest investment of □297280.93 crore (16.92%) followed by Andhra Pradesh □127586.55 crore (7.26.%) and Tamil Nadu □120155.09 crore (6.84%). Details of Central Sector Investment in Kerala from 2011-12 to 2013-14 are given in Appendix 3.5 and Central Sector Investment in selected states as on 31/03/2014 are given in Appendix 3.6.

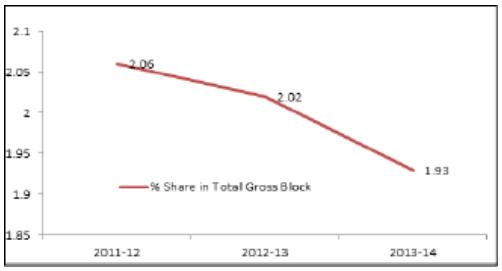
3.19 The percentage share of investment received in Kerala from 2011-12 to 2013-14 is exhibited in Figure 3.5. It may be seen that the share of Kerala has been falling during the last three years.

Fig 3.5

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Investment in CPSEs in Kerala



Source: Public Enterprises Survey 2013-14

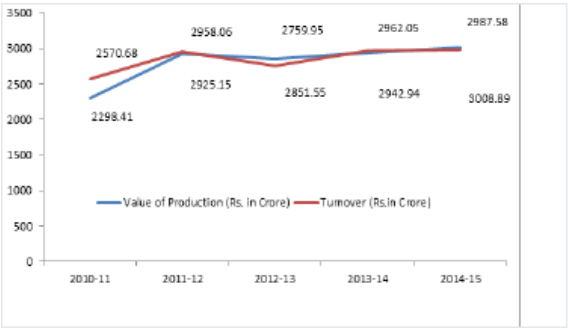
State Public Sector Undertakings

3.20 In Kerala, there are 95 active State Level Public Enterprises (SLPEs) as on March 2014; 87 Government Companies and 8 statutory bodies. Among Government Companies 44 units were reported as profit making. As on March 2014, the total capital investment in public enterprises in the State was □34007.88 crore as against the investment of □29271.01 crore during the previous year.

3.21 Under Industries Department there are 44 SLPEs, of which 37 are in manufacturing sector and 7 in non-manufacturing/service sector. The performance trend of PSUs under Industries Department during the last 5 years is given in Appendix 3.7.

3.22 Total value of production in 44 SLPEs under Industries Department had increased from □2942.94 crore in 2013-14 to □3008.89 crore in 2014-15 registering a growth of 2.24 %, whereas their turnover grew by 0.86 percent only during 2014-15 compared to previous year. Details of PSU-wise turnover and profit/loss during 2013-14 are shown in Appendix 3.8. The performance trend of 44 SLPEs under Industries Department in terms of value of production and turnover from 2010-11 to 2014-15 is shown in Figure 3.6.

Fig 3.6
Value of Production and Turnover of SLPEs under Industries Department



Source: Public Sector Restructuring and Internal Audit Board

3.23 It may be seen that there is no significant variation in value of production and turnover for the last four years.

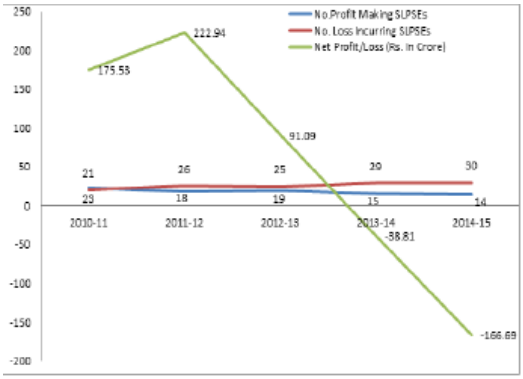
3.24 SLPEs under Industries Department numbering 14 reported profit during 2014-15 as against 15 in 2013-14. The profit made by them decreased from □108.16 Crore in 2013-14 to □74.5 crore in 2014-15. Major profit making units during 2014-15 are Kerala State Industrial Development Corporation Ltd (□29.64 crore), Malabar Cements Ltd (19.28 crore) and Kerala Industrial Infrastructure Development Corporation (□9.70 crore).

3.25 The number of loss making SLPEs had increased from 29 in 2013-14 to 30 2014-15 and the amount of loss from □146.97 crore to □241.19 crore. As a result, the net loss of SLPEs under Industries Department had increased from □38.81 crore in 2013-14 to □166.69 crore in 2014-15. Major loss making SLPEs during 2014-15 are Kerala State Cashew Development Corporation (□33.79 crore), Transformers and Electricals Kerala Ltd. (□27.62 crore), Kerala Minerals and Metals Ltd. (□24.89 crore) Travancore Titanium Products Ltd. (□24.25 crore) and Kerala State Textile Corporation Ltd.(□24.08 Crore). Performance trend of 44 SLPEs from 2010-11 to 2014-15 is depicted in Figure 3.7.
Fig.3.7

Performance Trend of SLPEs under Industries Department

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters



Source: RIAB

3.26 SLPEs under Industries Department which reported an increase in net profit from □175.53 crore in 2010-11 to □222.94 crore in 2011-12 witnessed a drastic decline to □91.09 crore in 2012-13 and then fell into net loss of □38.81 crore in 2013-14 and □166.69 crore in 2014-15. Unhealthy import of Titanium Dioxide from China, lack of modernisation and technology up gradation, tough competition from market etc adversely affected the performance of SLPEs. It is high time to initiate focussed and time bound action for bringing out drastic changes in the sector to improve the performance of SLPEs which will in turn stimulate the economic growth of the State.

Public Sector Restructuring and Internal Audit Board (RIAB)

3.27 RIAB, constituted in 1993, executes State Owned Enterprise Reform Initiatives. Major responsibilities of the agency are performance planning and monitoring of PSUs, enterprise reconstruction, capacity building / recruitments in PSUs and governance advisory support to SLPEs.

Box 3.1
Major Initiatives in PSUs during 2014-15

• As part of modernisation of PSUs, Kerala Electrical and Allied Engineering Co Ltd has initiated a Cast Resin Transformer project at its Eradikoode unit with an outlay of□8.50 crores during the year.
• Modernisation and Expansion projects have been initiated by TRACO Cables Company Ltd,Kerala Drugs and Pharmasuticals Ltd, Steel Complex Ltd,Travancore Cochin Chemicals etc. during 2014-15.
• Keltron and its subsidiary units have initiated various development projects as part of expansion and modernisation during 2014-15 in line with Electronic Manufacturing Policy of Government of India.
• Reopened the Cherthala unit of Malabar Cements Ltd. Clinker was imported for the first time through Cochin Port and trial-run was done during this period.
• As part of performance improvements of PSUs, Performance and Audit Monitoring system have been strengthened through RIAB.
• Implementation of e-procurement with e payment system in PSUs ensured more transparency and competition in purchase.
• As part of corporate social responsibilities, PSUs have initiated various social welfare measures for the development of different sectors of the society.

Source: RIAB

Joint Stock Companies

3.28 There are 25863 Joint Stock Companies in Kerala as on March 2015, of which 24338 (94.10%) are Private Limited and 1525 (5.90%) Public Limited. Also, 1012 companies are newly registered from April to September 2015. During 2014-15, 1607 companies were newly registered (1575 Private Limited and 32 Public Limited) and 330 companies were wound up/dissolved/struck off during this period. Nine public companies were converted to private companies and 5 companies were converted from private to public. Total number of government companies as on March 2015 is 139(95 Public Limited and 44 Private Limited). Details of joint stock companies working in Kerala are given in Appendix 3.9.

Industrial Financing

Kerala Financial Corporation (KFC)

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.29 Kerala Financial Corporation has been playing a major role in industrialisation of Kerala through industrial financing. The main objective of Kerala Financial Corporation (KFC) is to promote rapid industrialisation of the State by extending financial assistance to Micro, Small and Medium Enterprises (MSME), in manufacturing and service sectors. Financial assistance is provided in the form of term loans, working capital loans and special schemes. KFC is a member of Credit Guarantee Fund Trust for Micro and Small Enterprises. Activities of the Corporation are the following.

- Sanction of Term Loans to new Micro, Small and Medium enterprises in the manufacturing and services sector.
- Sanction of Term Loans to existing industrial concerns and services sector units for expansion/modernisation/diversification.
- Sanction of working capital loans to meet working capital requirements of industrial/service enterprises under special schemes.
- Special schemes for Financial Assistance to Civil Contractors.
- Special scheme for Financial Assistance for producing Feature Film and TV serials.
- Special scheme for modernisation, up gradation and expansion of existing cinema theatres and establishment of new multiplexes.
- Special scheme for purchase of laboratory equipments/waste management.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.30 The Corporation sanctioned loan of □947.45 crore during 2014-15 and disbursed an amount of □657.09 crore in 2014-15. An amount of □427.52 crore was disbursed to various SSI units and □229.57 crore to other units during 2014-15. The Corporation reported profit (before taxation) of□30.03 crore during 2014-15 as against □57.10 crore during 2013-14. Performance of KFC during the last five years is given in Appendix 3.10. The details of loan operations and industry-wise classification of loans during 2014-15 of KFC are shown in Appendix 3.11 and Appendix 3.12.

Kerala State Industrial Development Corporation (KSIDC)

3.31 Kerala State Industrial Development Corporation Ltd. (KSIDC), formed in 1961, was established for promotion and development of medium and large scale units in the State. KSIDC also plays a vital role in entrepreneurship development in the State.

3.32 KSIDC has sanctioned 11 projects involving a capital investment of □232.57 crores with direct term loan assistance of □108.76 crores in the financial year 2014-15. Out of projects sanctioned, four are in Ernakulum, three in Thiruvananthapuram, two in Alappuzha and one each in Palakkad and Malappuram districts. The new projects are expected to generate employment for 10,000 persons directly and indirectly. The Corporation has also registered □43.19 crores disbursement and □ 92.90 crores in recovery. The total income of the Corporation has come to □50.25 crores during 2014-15. Majority of projects financed by the Corporation during 2014-15 are from tourism and manufacturing sectors. The Corporation has also sanctioned projects in IT sector, logistics, infrastructure and agro processing sectors etc. Details of investment and employment made in KSIDC units during 2014-15 are given in Appendix 3.13. The physical and financial performance of KSIDC during 2014-15 is given in Appendix 3.14. Details of allotment of land in KSIDC Industrial Parks as on 30-9-2015 is given in Appendix 3.15.

Box 3.2
Major Projects Initiated by KSIDC

- Petrochemical Park, Kochi- to promote petroleum chemical and petrochemical investment.
- Mega Food Park ,Cherthala
- Electronic Hardware Park at Kochi – a world class manufacturing and R&D facility for Electronic Sector.
- Life Sciences Park for setting up state-of-the-art manufacturing and R&D facility for Biotechnology, Nano Technology, Contract Research etc.
- Titanium Sponge Project at Kollam
- Supplementary Gas Infrastructure Project
- Coconut Industrial Park, Kuttiyadi
- Organic Industrial Park, Kodungallor
- Light Engineering Industrial Park, Palakkad.

3.33 KSIDC conducted ‘Young Entrepreneurs Summit” (YES) on 12th September 2014- for promoting young entrepreneurs

especially from student community focusing on sectors in which the State offers significant possibilities for entrepreneurship viz, Food Processing, Marine Processing, Life Sciences, Health care etc. The Corporation also organized Global Agro Meet along with BIOFACH INDIA-2014 at Kochi for creating common platform for farmers, processors and retailers. KSIDC has also initiated a new mission called Women Entrepreneurs Mission (WE Mission) to attract and encourage women entrepreneurship in the State and organized "WE Summit-2015". About 1500 women entrepreneurs from across the State participated in the summit.

3.34 KSIDC has also initiated a special finance assistance scheme known as "Angel Fund/Seed Fund" to promote entrepreneurship among youth making them as job providers rather than job seekers and has made a total disbursement of □1.35 crore to 14 ventures as on 31st March 2015.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Kerala Industrial Infrastructure Development Corporation (KINFRA)

3.35 Development of industrial infrastructure plays a vital role in industrial development of a nation. In order to create conducive infrastructure for accelerating industrial development in the State, Government of Kerala established Kerala Industrial Infrastructure Development Corporation (KINFRA) in 1993. The corporation has been focussing on industrial infrastructure development by setting up industrial parks, townships, zones etc. The Industrial Parks developed by KINFRA have facilities like developed land or built up space, dedicated power, continuous water supply, communication facilities etc., in addition to supporting social infrastructure facilities like administrative block, bank, post office, round the clock security etc. The parks provide a ready-made manufacturing environment for easy start up of industrial units with minimum time and cost.

3.36 KINFRA has completed infrastructure development in 12 key industrial sectors with world – class infrastructure in 19 Industrial Parks, of which 9 are catering exclusively to the Small & Medium Enterprises Sector. Some of the notable achievements are the successful completion of International Apparel Park at Thiruvananthapuram, Export Promotion Industrial Park at Ernakulam, Infotainment Park and the Film & Video Park at Thiruananthapuram and Food Processing Industrial Park at Malappuram.

3.37 KINFRA has promoted investments in the State and created investment friendly climate within its Parks, contributing significantly to the State's economy. As on September 2015, 637 industrial units have been started in the various Industrial Parks of KINFRA with total investment of□1486.50 crore with direct employment of 25754. KINFRA has also implemented a Single Window Clearance system in all the Parks. The Single Window Clearance system operating in the Parks are helping the investors to establish their units without hassles. The details of allotments in KINFRA Industrial Parks as on 30/09/2015 are given in Appendix 3.16.

Box 3.3
Ongoing and New Projects of KINFRA

- Industrial Park, Ottappalam
- Industrial Park, Piravanthoor
- Industrial Park, Mattannur, Kannur
- Gem and Jewellery Park, Thrissur
- Spices Park, Muttom, Thodupuzha
- Nano – Tech Zone, Hi tech Park, Kalamassery
- KINFRA Business Park, Kollam
- Global Ayurveda Village, Thiruvananthapuram
- Mega Food Park, Palakkad
- Foot Wear Park, Ramanattukara
- Trade and Convention Grounds, Ernakulam
- Industrial Development Zone
- Defence Park, Ottapalam (New Project)

Source: KINFRA

Section 3

Micro Small and Medium Enterprises (MSMEs)

3.38 Worldwide, micro, small and medium enterprises (MSMEs) act as the engine of economic growth and for promoting

equitable development. MSMEs play a critical role in innovation and have ability to experiment with new technologies on small scales.

India - Micro, Small & Medium Enterprises

3.39 The MSME sector in India is diverse in terms of its size, levels of technology employed and range of products and services produced. Starting from village industries, the products from the sector span to auto components, micro-processors, electronic components and electro-medical devices. MSMEs have shown a consistent growth of 11% till 2010-11, whereas growth rate was 19% in 2011-12 and 14% in 2012-13.

3.40 As per the Fourth All India Census of the MSME total number of MSM enterprises were 3.61 crore, of which 0.16 crore are registered enterprises. These MSMEs, contribute 37.5 per cent of India's GDP, have a critical role in boosting industrial growth and ensuring the success of the Make in India programme. A number of schemes are being implemented by Ministry of MSME, Government of India, for the establishment of new MSMEs and growth and development of existing ones. These include:
(a) Prime Minister's Employment Generation Programme,
(b) Micro and Small Enterprises-Cluster Development Programme,
(c) Credit Guarantee Fund Scheme for Micro and Small Enterprises,
(d) Performance and Credit Rating Scheme,
(e) Assistance to Training Institutions, and
(f) Scheme of Fund for Regeneration of Traditional Industries

3.41 During Twelfth Five Year Plan an outlay of □24,124.00 crore has been allocated for Ministry of MSME, which represents an increase of 133.53% over the XIth Five Year Plan allocation of □10,330.00 crore.The Ministry of MSME has been allocating outlays of □2251.00 crore, □2610.00 crore and □2612.51 crore for the years 2013-14, 2014-15 and 2015-16 respectively under Plan for promotion of MSMEs in the country.

The Micro, Small & Medium Enterprises Development Act, 2006

3.42 India is one amongst very few countries which has a legal framework for the MSME Sector in the form of MSMED Act 2006, as per which investment limit for Micro, Small & Medium enterprises are specified for Manufacturing and Service enterprises.

Box 3.4
Udyog Aadhaar Memorandum (UAM) a simplified registration format for MSMEs

The Ministry of Micro, Small & Medium Enterprises in September-2015 under the MSME Development Act, 2006 has notified that every MSME unit shall file Udyog Aadhaar Memorandum (UAM). This is a path breaking step to promote ease-of-doing-business for MSMEs in India as the UAM replaces the filing of Entrepreneurs' Memorandum (EM part-I & II) with the respective States/UTs. The entrepreneurs in the MSME sector can file UAM on http://udyogaadhaar.gov.inonline, if they have an Aadhar number and will instantly get a unique Udyog Aadhaar Number (UAN). The UAM can be filed in offline mode (i.e. on paper form), with the General Manager (GM) of the concerned District Industries Centre (DIC).

MSME in State

3.43 In Kerala, the Micro, Small and Medium Enterprises (MSME) sector contributes to the process of economic growth, employment generation and balanced regional development. It has the potential to emerge as a strong, vibrant and globally competitive sector in the State's economy. Kerala, with its excellent connectivity, communication network, availability of highly or average skilled human resources and developing industrial infrastructure, is best suited for the growth of the micro, small and medium scale enterprises.

3.44 The potential of IT industry in the MSME sector is big as the State offers best connectivity with broadband reach in almost all parts of the State. It is estimated that the share of Tier-III cities in the IT industry in India is expected to grow up from 10 per cent now to 80 per cent. Consultancy firm KPMG has suggested that the State can become an economic growth driver of the country by tapping its SME and IT sectors.

3.45 The Micro Small and Medium Enterprises sector help in industrialisation of rural & backward areas, targeting various social groups like SC, ST, Women, Youth, Physically Handicapped etc. thereby, reducing social/regional imbalances, assuring more equitable distribution of income and wealth. This sector contributes enormously to the socio-economic development of the State. As per the MSME survey & Quick Results of 4th Census, 5.62% of all India share of MSME

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

enterprises is in Kerala.

3.46 The industries coming under this sector are handicrafts, Handloom, Khadi, Food processing industries, Garment making and Textile industries, industries related to coir/ wood/ bamboo/ Plastic/ rubber/ leather/ clay/ small scale manufacturing, electronic/electric components, etc.

3.47 The Directorate of Industries and Commerce of Government of Kerala acts as a facilitator for industrial promotion and sustainability of MSME sector and traditional industrial sector in the State with the help of Directorates of Handloom & Textiles, Directorate of Coir and Khadi & Village Industries Board. A total amount of □2373.74 Crore have been provided for the development of Industry and Minerals, during the first four years of 12th plan.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

State Budget –2015-16- Announcements

3.48 Highlights of 2015-16 State budget announcements in industry sector are:
• Encouraging entrepreneurship in the State is one of the seven themes focused on State budget 2015-16.
• The State budget 2015-16 gives priority on new initiatives for the development of a culture of entrepreneurship and establishment of business incubation centres to coordinate entrepreneur promotion activities for creating more employment opportunities, in the industry sector.
• It is proposed to establish Trade Facilitation Centres in selected district industries centres to promote trade in products like Handloom, Handicrafts, Coir etc. to enhance traditional industries sector.

Kerala Perspective Plan 2030 – Vision & Initiatives

3.49 The Mission outlined in Kerala Perspective Plan 2030 under Micro, Small and Medium Sector is “Kerala’s evolution into knowledge–driven competitive economy with spirit of entrepreneurship, innovation, social inclusion, tolerance and diversity”. The measures/schemes initiated in integration with perspective plan is shown in Box 3.5.

Box 3.5
Kerala Perspective Plan 2030 – Initiatives

Measures/Schemes initiated in integration with Perspective Plan 2030

Improving infrastructure in existing DA/DP’s, Construction of multi storied Industrial Estates & Assistance for promoting industrial area/plots in private sector
• Infrastructure investments on PPP mode
• Promoting mutual trust between government and entrepreneurs through partnerships
• Involve real world entrepreneurs
• Promote private investments
• Develop eco –friendly parks

Entrepreneur Support Scheme & Start up subsidy for creation of new employment opportunities
• Encourage technology up gradation and product innovation
• Promotion of microfinance

Business incubation Centres in Handloom, Power loom and DIC.
• Involve real world entrepreneurs
• Promote entrepreneurial learning in an informal learning environment.
• Increase visibility and emphasise the role of entreneurship in creating new jobs.

State Profile of the MSME Sector

3.50 The number of New Enterprises filed Memorandum under MSMED Part II in Kerala during the year 2014-15 was 15455, 3.05% more than that of previous year which was 14997. Out of 15455, 600 (4%) MSMEs were registered by SC, 85 (0.5%) by ST and 3735 (24%) by women. Investment on the sector increased by 7.57% to □238794.75 lakh from □222412.30 lakh in the previous year while employment generated decreased by 5% from 87789 to 83500 numbers. The value of goods and services produced in 2014-15 increased by 5.4% to □711975.39 lakh from□675597.11 lakh in the previous year. The details are given in Appendix 3.17.

3.51 In Kerala, during the current year (as on 30.09.2015) 6915 new enterprises have filed memorandum with an

investment of □157799.62 lakh to provide employment to 38280 persons. The details are given in Appendix 3.18.

3.52 As on 31.03.2015, the total number of working SSIs/MSMEs registered in Kerala is 249696. Out of the total SSIs/MSMEs, 4% were promoted by SCs, 0.7% by STs and 25% by women entrepreneurs. The total investment was □1673851.70 lakh while the total value of goods and services produced was □6444288.56 lakh which indicates an increase of 26% over □50848.27 lakh of previous year. The total number of employment generated was 1274385 as on 31.03.2015. The details are given in Appendix 3.19.

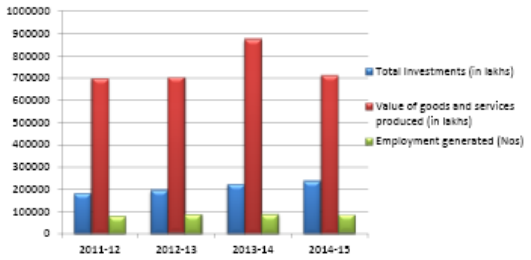
Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Performance of the Sector

3.53 Trends in investment, production & employment in MSME sector over the period from 2011-12 to 2014-15 is shown in Figure 3.8. Number of MSMEs registered for the same period is shown in Figure 3.9.

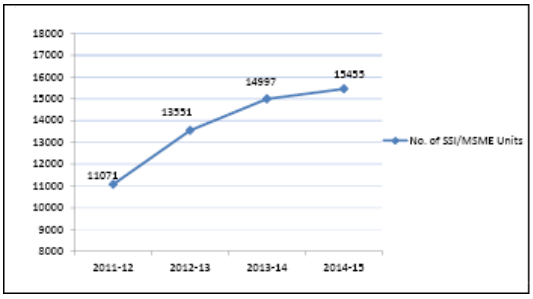
Fig 3.8
Investment, Production & Employment in MSME sector over the last 4 years



Source: Directorate of Industries & Commerce

3.54 The investment in the sector during the period from 2011-12 to 2014-15 has increased on an average by 9.8%. During 2014-15, the investment went up by 7.37% than that of the previous year. The trends shows that there was a significant increase in investment during 2013-14, ie. by 12.38% as against 2012-13. But the value of production shows an enormous increase of 25% during 2013-14 and employment generation shows an increase of 1.6%, against the previous year. The value of production and employment generation were at their peak during 2013-14. This is an outcome of the 'self employment generation' and 'entrepreneur support' programs/schemes initiated in 2012-13 by the State Government with keen focus on enhancing entrepreneurship opportunities and awareness among young skilled generation of the State, in addition to the self employment schemes of the Central Government such as PMEGP, SFURTI etc.

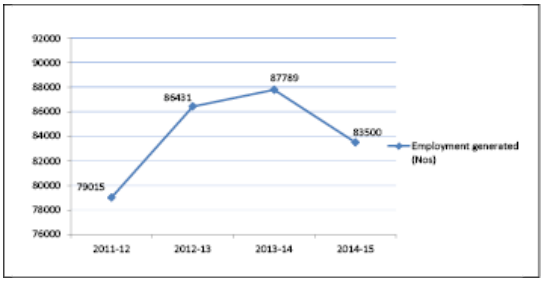
Fig 3.9
MSME units registered in MSME sector over the last 4 years



Source: Directorate of Industries & Commerce

3.55 The number of MSME units has steadily been increasing at a rate of 12.04% on an average during the period 2011-12 to 2014-15 and the total number of units registered as on 2014-15 was 15455 as against 14997 in 2013-14.

Fig 3.10
Employment generated in MSME sector over the last 4 years



Source: Directorate of Industries & Commerce

3.56 Figure 3.10 shows the employment generated over last 4 years. There has been increase in employment generation for the period from 2011-12 to 2013-14. But the employment generated has decreased by 4.88% in 2014-15. This trend shows that the MSME sector in the State is more capital intensive rather than labour intensive. The details of number of units, investment in the sector, value of production and employment generation from 2007-08 to 2014-15 are given in Appendix 3.20.

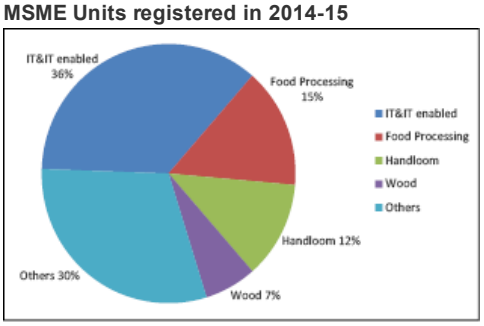
District wise achievements

3.57 District wise analysis reveals that during the year under review, Ernakulam occupies highest position in all aspects with 2248 new MSME units and 15468 numbers of employment generated and Idukki was at the lowest position with 302 new MSME units and 1608 numbers of employment generated. Wayanad District shows the minimum value of goods and services produced of □7837.90 lakh.

Sector wise achievements

3.58 Sector wise analysis shows that IT & IT enabled services units registered higher number of units in the MSME sector at 5546. The number of food processing units is 2315 and number of handloom units is 1876 among a total of 15455 units registered during 2014-15. The details are shown in Figure 3.11. Details of sector wise MSME units registered during 2014-15 are given in Appendix 3.21.

Fig 3.11
MSME Units registered in 2014-15



Major State Plan Schemes and achievements

3.59 During 2014-15 State Government implemented various schemes successfully for improving the industrial environment of the state through development of industrial infrastructure, promoting entrepreneurship and providing skill development. Following are the major schemes and achievements.

Sl No	Scheme Name	Achievements 2014-15
1	Infra- structure Development Schemes	These schemes intend to promote development of infrastructure in the industrial parks, estates, Development Areas/Plots with quality infrastructure like roads, power, water, waste management etc. & develop new multi-storied industrial estates, industrial parks, common facility centres for clusters etc. During 2014-15, the functional industrial estates at Changanasseri & Manjeri were upgraded and road work as part of infrastructure development in the Anthur Development Plot(DP), Kannur was initiated. An outlay of □2430.00 lakh was provided for the year 2015-16 for implementing the schemes.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

2	Entrepreneur Support Scheme (ESS)	The scheme intends to provide extensive support to MSMEs and give one time support to entrepreneurs, with regard to special categories like women, SC/ST, etc., with more flexibility of operation and clear guidelines. During 2014-15, assistance was provided to 785 units/entrepreneurs under this scheme, Trivandrum district is at the top position with 120 numbers. An outlay of 4000 lakh was provided during the year 2015-16 for ESS.
3	Capacity building programme	The scheme intends to promote Entrepreneurial/ industrial promotional activities and skill development training in Micro, Small and Medium Enterprises. Under the scheme following events were conducted • Industries Extension Officer (IEO) induction training & training for Government officers. • Skill development training to fifty youth in each district in selected areas. • 4 training workshops for ED clubs at Kerala Institute of Entrepreneurship Development (KIED) to create in-depth awareness of personal entrepreneurial characteristic. • 420 Entrepreneurs Awareness Programme for 20,000 entrepreneurs in block/ municipality/ corporation. • Organised various industrial promotional activities like seminars, work shops, interactive meetings, Technology clinic in all districts for entrepreneurs. An outlay of 750 lakh was provided during the year 2015-16 for the scheme.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Organized & Unorganized sector

3.60 As per the latest Census, Fourth All India Census of Small Scale Industries (SSI)/Micro, Small & Medium Enterprises (MSME) sector, conducted by Ministry of Micro, Small and Medium Enterprises,the total number of unregistered MSMEs functioning in the country stands at 346.12 lakh. In MSME sector the number of registered enterprises in Kerala was 1.50 lakh while unregistered enterprises was 20.63 lakh and employment in registered sector was 6.21 lakh numbers while in unregistered sector it was 43.4 lakh.

Employment in MSME Sector

3.61 As per the latest Census (Fourth All India MSME Census) as well as data extracted from Economic Census 2005 conducted by CSO, MoSPI, the total number of persons employed in the sector increased to 805.24 lakh in entire country. Kerala was at 6th position with 49.62 lakh people while UP (92.36 lakh) & West Bengal (85.78 lakh) were on top. Employment in MSME sector in Tamil Nadu (at 3rd position) and Karnataka were 80.98 lakh and 45.72 lakh respectively.

Industrial Co-operative Societies

3.62 In Kerala, the total number of working industrial co-operative societies as on 31.3.2015 was 405 against 566 in the previous year (28% fall in the year). Out of 405, 114 Societies were registered by women. The details are given in Appendix 3.22. During 2014-15, 19 societies were registered.

Industrial Development Plot / Areas

3.63 Directorate of Industries and Commerce (DIC) is providing and developing infrastructure facilities for small scale sector in the State. At present there are 37 Development Area / Development Plots under DIC having a total acquired area of 2405 acre, in which one has not yet commenced functioning and another one has not developed. A total of 1797 units are functioning in these DA/DPs in 2014-15 compared to 2176 in the previous year. The details are given in Appendix 3.23.

Mini Industrial Estates

3.64 The total number of mini industrial estates under DIC as on 31.3.2015 is 89 and the total number of SSI units are 777.

The employment in the 683 units that are working is 3400. The details are given in Appendix 3.24.

Industrial Estates under SIDCO

3.65 Kerala Small Industries Development Corporation (SIDCO) provides infrastructure facilities such as land, work shed, water, distribution of scarce raw materials to the units in the small scale sector. There are 17 major industrial estates, which include 830 working units, under the administrative control of SIDCO. These working units provided employment to nearly 7376 people as on 31.03.2015. Besides, there are 36 mini industrial estates under SIDCO in which about 1303 employees are working in 289 units all over the State. Details of industrial estates under SIDCO are given in Appendices 3.25, 3.26 and 3.27.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Promotional Events / Exhibitions – Achievements of the MSME sector during 2014-15

3.66 The Directorate of Industries and Commerce conducted/participated in 27 Exhibitions / Fairs /Expos inside Kerala with 1219 stalls in 2014-15 and generated an income of □11.14 crore. The DIC represented Kerala in one international exhibition outside Kerala with 26 stalls. Details are given in Appendix 3.28. Following are the major activities undertaken by the Department of Industries during 2014-15.

• Conducted Industrial exhibition in 13 districts, Machinery Exhibition in 3 districts & Rubber Expo at CFSC, Manjeri.
• Participated in 34th India International Trade Fair (IITF) -2014 at PragathiMaidan, New Delhi, from November 14th to 27th, 2014.
• Business to Business MEET for MSME conducted at Kochi on 26/2/2014 to 28/02/2014.
• Conducted induction training for IEOs & training for Government officers.
• Imparted skill development training to fifty youth in each district in selected areas.
• Conducted 4 training workshops for Entrepreneurship Development (ED) clubs at Kerala Institute of Entrepreneurship Development (KIED) to create in depth awareness of personal entrepreneurial characteristic.
• Organised various industrial promotional activities like seminars, workshops, interactive meetings etc. for entrepreneurs
• Technology clinic for entrepreneurs conducted in all districts.
• Entrepreneurs Awareness Programme for entrepreneurs conducted in block/ municipality/ corporation wise (420 programmes with around 20,000 participants).
• Organised Entrepreneurs Development Programme for entrepreneurs in 14 districts, District and Taluk level seminars organised for entrepreneurs & seminar for entrepreneurs, on biodegradable plastics, conducted in all districts.
• Potential survey conducted in all districts for updating useful data, local mapping, preparation of reports, project profiles and entrepreneur's guide.
• Conducted Kerala bamboo fest at Cochin.
• Assisted to start new venture under Prime Minister's Employment Generation Program (PMEGP) scheme involving financial assistance of □1052.16 lakh to the entrepreneurs (Employment generated-3942, No of projects-678).

Bank Credit to SSI / MSME Sector

3.67 As per the State Level Bankers' Committee (SLBC) report, the outstanding bank credit to various sectors by the commercial banks in Kerala at the end of March 2015 increased by about 13.9% ie. □218706 crore against □192010 crore in the previous year. The outstanding flow of credit to MSME sector was □35730 crore with an increase of 11.4% over □32069 Crore of previous year. The status of flow of credit to various sectors is given in Appendix 3.29.

3.68 Financing MSMEs, which have been largely dependent on promoter's resources and loans from banks/financial institutions, particularly knowledge based enterprises has some issues as these industries do not create tangible assets. SIDBI has played a critical role in developing the MSME venture eco-system in the country. SIDBI has so far contributed to the corpus of 75 venture capital funds that have catalysed investment of more than □5600 crore to more than 472 MSMEs.

3.69 The total MSME credit of SIDBI as on March 31, 2014 was □61,271 crore, with cumulative financial assistance provided by the Bank aggregating □37 crore, benefiting more than 340 lakh units/persons. Details are given in Appendix 3.30.

Box 3.6
MSME Amendment Bill, 2015

The Ministry of Micro, Small and Medium Enterprises Development (Amendment) Bill, 2015 proposes to (i) enhance the existing limit for investment in plant and machinery considering changes in price index and cost of inputs consistent with the emerging role of the MSMEs in various Global Value Chains, (ii) include medium enterprises apart from small enterprises in section 7(9) to enable the aforesaid category of enterprises to avail the benefits and become competitive, and (iii) empower the Central Government to revise the existing limit for investment, by notification, considering the inflation and dynamic

market situation

Entrepreneurship Development

3.70 Entrepreneurial activity is a pillar of economic growth, across countries. For evidence of the economic power of entrepreneurship, we need look no further than the United States, where young firms have shown to be a more important source of net job creation than incumbent firms. In both developed and developing countries, fostering entrepreneurship for sustainable development could improve and create more sustainable consumption and production systems overall. Educating current and potential entrepreneurs enables them to create viable alternatives to existing production and consumption systems that fail to adequately address sustainability issues, such as environmental deterioration along the supply chain and overall quality of life. Entrepreneurial education fosters innovation and helps entrepreneurs build better products, processes, and services. It is especially effective when it takes into account the social, economic and ecological complexities of development, the values of sustainability, and a long-term perspective.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.71 As per World Bank SME database, where annual data was collected from 136 countries, India is at 6th position in the number of new limited liability companies (98029 numbers) registered during the year 2014. The top 5 countries are UK, Russia, Australia, Hong Kong-China, and Chile. But India stands at 126th position in new business density with 0.12. (Business density is the number of newly registered firms with limited liability per 1,000 working-age people (ages 15-64) per calendar year). See Table 3.2.

Table 3.2
Top ten countries with newly registered limited companies

No.	Economy	New business density	Number of new limited liability companies
1	United Kingdom	12.9	5,37,658
2	Russian Federation	4.2	4,27,388
3	Australia	14.91	2,31,920
4	Hong Kong SAR, China	31.3	1,67,280
5	Chile	8.03	98,406
6	India	0.12	98,029
7	France	2.26	94,927
8	Italy	2.32	91,853
9	Spain	2.97	91,544
10	Korea, Rep.	2.3	84,676

Source: World Bank SME database, 2014

3.72 In Kerala, entrepreneurship is promoted in low knowledge-intensive sectors such as trade, transport and tourism, as well as knowledge-intensive sectors such as IT, IT enabled services, engineering etc. The labour scenario in Kerala is very challenging for entrepreneurs.

Box 3.7
ASPIRE - Central Government Programme
A Scheme for Promotion of Innovation,
Rural Industry and Entrepreneurship (ASPIRE)

ASPIRE was launched on 16.03.2015 with an objective to set up a network of technology centers, incubation centres to accelerate entrepreneurship and also to promote start-ups for innovation and entrepreneurship in rural and agriculture based industry with a fund of □210 crores.

• The planned outcomes of ASPIRE are setting up Technology Business Incubators (TBI), Livelihood Business Incubators (LBI) and creation of a Fund of Funds for such initiatives with SIDBI.

• 1st LBI set up in April-2015 under ASPIRE within a month of launching the Scheme. The first batch of 107 youth has been trained and skilled through it.

• 19 LBIs have been approved till September 2015 and another 9 LBIs & 2 TBI is ready to be approved.

Promoting Skill Development

3.73 Staff training and vocational and continuous on-the-job training ensure a constant upgrading of workers' skills. In India, Ministry of Micro, Small and Medium Enterprises provided entrepreneurship and skill development training to 16,87,324 persons during the 11th Plan and 11,58,562 persons during the first two years of the 12th Plan, through various institutions like MSME-Development Institutes, KVIC, Coir Board, NSIC etc.

3.74 MSME-Development Institute, Thrissur, Kerala (MSME-DI, Thrissur), has conducted 81 tailor made development training programmes in 2014-15 viz., 5 Entrepreneurship Development Programmes, 25 Industrial motivation campaigns, 36 Entrepreneurship Skill Development programmes, 1 Management Development programmes and 14 skill development programmes. 2894 persons benefited through these programmes. Details are given in Appendix 3.31.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Skill Development & Training Institutes in Kerala

MSME Development Institute, Thrissur, Kerala (MSME-DI, Thrissur)	Institute under the Ministry of MSME, Government of India takes care of the needs of MSME sector in the State of Kerala and the Union Territory of Lakshadweep in the area of Techno-economic and managerial consultancy services. It conducts need based development training programme on Entrepreneurship, Business Skill & Management and other awareness programmes.
Kerala Institute for Entrepreneurship Development (KIED)	A Public Sector Training Institute aimed to create awareness for entrepreneurs and sort out the issues for the development of entrepreneurial culture. The institute conducts various programmes for developing the spirit of entrepreneurship among the people such as Entrepreneurial Awareness Campaign, Seminars, Workshops, Research etc.
Kerala Academy of Skill excellence (KASE)	Setup by Government of Kerala to implement focused and specialised skill development programmes in domains from traditional industries to knowledge economy.
Kerala Institute of Labour and Employment (KILE)	Constituted by Government of Kerala for training and research in labour and allied subjects.

Industrial Cluster Development

3.75 Industrial clusters are increasingly recognised as an effective means of industrial development and promotion of small and medium-sized enterprises. For MSME participants, clusters play an important role in their inclusiveness, technology absorption, efficiency improvement and availability of common resources. The Ministry of Micro, Small and Medium Enterprises (MSMEs) adopted the cluster approach as a key strategy for enhancing the productivity and competitiveness as well as capacity building of small enterprises.

3.76 The State has already adopted the cluster development approach for industrialisation to reap the benefits of agglomerations through transformation of the traditional systems of activities or industrial districts to new networks ready for competition and innovation. The State supports cluster development through MSME-DI, Thrissur and K-Bip. The Common Facility Centres which are in various stages of development in the State are in the areas of Wood, Plywood, Furniture, Rubber, Terratile, Rice Mill, Plastic, Printers, Ethnic Food, Agriculture Implements and General Engineering. The State has identified about 75 SME clusters and they are at different stages of development. Central Government agencies like Coir Board, SISI, and NGOs like Federation of Industrial Clusters etc. are also taking initiative in Cluster Development.

Box 3.8
Agglomeration Economies

In urban economics, economies of agglomeration means the benefits that firms obtain by locating near each other ('agglomerating'). This concept relates to the idea of economies of scale and network effects. As more firms in related fields of business cluster together, their costs of production may decline significantly (due to presence of competing multiple suppliers, greater specialization and division of labour). Even when competing firms in the same sector cluster, there may be advantages because the cluster attracts more suppliers and customers than a single firm could achieve alone. Agglomeration economics causes the formation and growth of cities. China, Republic of Korea and Singapore are the countries which reap the benefits of agglomeration.

Financial Package for rural industries - Prime Minister's Employment Generation Programme (PMEGP)

3.77 A national level credit linked subsidy scheme, namely, 'Prime Minister's Employment Generation Programme (PMEGP)'was introduced for generating an estimated 37.38 lakh additional employment opportunities by setting up of micro-enterprises in the non-farm sector in rural as well as urban areas. During the period from 2008-09 to 2013-14, 2.48

lakh units have been assisted with margin money subsidy of □4745.15 crore to create employment for an estimated 22.29 lakh persons in the country. For 2014-15 an outlay of □1418.28 crore has been earmarked for the scheme. During 2015, □860.51 crore has been released by the Ministry as margin money under PMEGP out of which □528.32 crore has already been disbursed by the banks and 24126 new enterprises providing employment to 170983 persons have been benefited under the Scheme. There is more than 50 per cent increase over the previous year in terms of funds disbursed by the banks, no of projects with funds disbursed and the employment generated.

3.78 The Khadi and Village Industries Commission (KVIC) was approved as the nodal agency for implementation of the scheme at national level. In Kerala, State KVIC Directorate, State Khadi and Village Industries Board (KVIB), District Industries Centres (DICs) and bankers are the agencies for implementation of the scheme. A target of 730 number of units were allocated to DICs. As on 31.05.2014, applications worth □1509.28 lakh were pending for subsidy release for want of funds. As per directions of 20th SLMC, DIC had not recommended any applications in 2014-15 except SC/ST applications to meet sub category target. The banks sanctioned 707 applications and provided Margin Money of □1052.18 lakh. Though financing banks had sanctioned 707 applications in 2014-15, margin money has been released for 678 applications only. Details are given inAppendix 3.32. During 2015-16 upto September 2015, 461 applications worth □696.55 lakh were sanctioned by bank. Details are given in Appendix 3.33.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Box 3.9
Cluster branding in China

A cluster economy is made up of professional towns and villages, functioning as production hubs focusing on one product/industry,and creating highly specialised large clusters. In China, the cluster policy focuses on branding clusters on the basis of their speciality. These are, for instance, Shengze textiles, Wujiang Hengshan sewing machines, Ningbo costumes, Wenzhou shoes, Shaoxing synthetic textiles, Haining leather coats, Yiwu small commodities, Yongkang hardware and so on and so forth. Small firms in the cluster are those employing up to 300 workers and medium ones have 300 to 2000 workers. Most clusters are developed such that they have entire value chains augmented within the cluster. Each firm is specialised and is connected with other firms through production networks. This increases efficiency and survival rate and reduces cost. These clusters thus have strong forward and backward linkages through value chains.

Section-4

Food Processing

3.79 The developed world's food basket consists of 80 per cent of processed food, while the share is only 1.3 per cent in India. The Government of India has set a target of raising the share of processed food in the total food basket to 10 per cent in 2015 and 25 per cent in 2025. India's food processing sector ranks fifth in the world in exports, production and consumption. The contribution of the food processing industry to the gross domestic product at 2004-05 prices in 2012-13 amounts to □845.22 Billion. During 2014-15, the sector constituted as much as 9.0 per cent and 10.1 per cent of GDP in manufacturing and agriculture sector, respectively. Food processing sector has grown at 7.1 per cent during this period under review.

Initiatives of Ministry of Food Processing Industries –MoFPI

3.80 The Ministry of Food Processing Industries is implementing various schemes for providing impetus to the development of food processing sector, viz. Infrastructure Development for Food Processing with the components of (i) Mega Food Park (ii) Cold Chain (iii) Setting-up/Modernization of Abattoirs, Scheme for Quality Assurance for setting up of Food Testing Laboratories and Technology Up gradation Scheme.Government has de-linked National Mission on Food Processing (NMFP) in the States from Central Government support with effect from 01.04.2015. However, NMFP is being supported by the Central Government in UTs. Some of the initiatives taken by the Ministry include the following.

• The Scheme of Mega Food Park was launched to provide modern infrastructure for food processing units in the country. Presently, 39 Mega Food Parks have been granted approval, two of which are in Kerala.
• The Cold Chain Scheme was launched to provide integrated cold chain and preservation infrastructure facilities without any break, from the farm gate to the consumer. Government has approved 138 cold chain projects during 2009-2015.
• An allocation of □2800.00 crore has been made for the Scheme of Infrastructure Development for Food Processing during the 12th Five Year Plan.
• A Food map of India identifying surplus raw material has been prepared and uploaded on the Ministry website. Idea is to identify the surplus and deficient areas in the country of various agricultural and horticultural produce so as to plan

processing clusters by means of setting up processing facilities under current schemes.

• The services of pre-conditioning, pre-cooling, ripening, waxing, retail packing, labeling of fruits & vegetables have been exempted from Service Tax w.e.f. 01/04/2015.

• The Indian Institute of Crop Processing Technology (IICPT) which is a pioneer Research and Development and Educational Institution under the MoFPI, Goverment of India, was upgraded as a national institute and called as Indian Institute of Crop Processing Technology.

• National Institute of Food Technology, Entrepreneurship and Management (NIFTEM) located at Kundli, Haryana is an autonomous organisation under the MoFPI, which imparts B.Tech, M.Tech, Ph.D courses and research work in food technology & engineering and also conducts Skill Development trainings and outreach programmes for the benefit of students, farmers and entrepreneurs. It has conducted 104 such programmes skilling 8469 persons. NIFTEM has trained 44 persons under the Pradhan Manthri Kaushal Vikas Yojana (PMKVY) scheme.

• NIFTEM has also initiated a unique initiative “Village adoption program” for linking rural entrepreneurs and farmers. So far, 9 visits have been accomplished under this programme covering 39 villages across 18 States. And recognizing the efforts of this, NIFTEM was awarded the Agriculture Leadership Award for the year 2015 in the area of promoting rural entrepreneurship in the sector.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Food Processing in Kerala

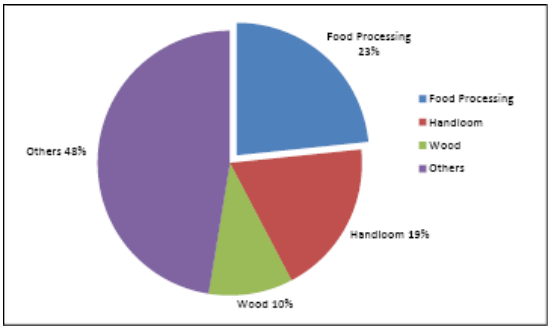
3.81 As per the Kerala Perspective Plan 2030, food processing sector in the State enjoys a revealed comparative advantage among other Indian states. The industry is also one of the largest employment creators, with growth in direct employment in the organised food processing sector standing at 6.05% between 2010-11 and 2011-12. In terms of employment, the total number of persons engaged in registered food processing units in MSME sector was 14.68 lakh. The contribution of food processing sector to GDP has been growing faster than that of the agriculture sector.

3.82 Food Processing has been recognized as a priority sector in Kerala due to its potential for sustainable and more inclusive growth, diversification, possibility of generating substantial employment and further advancement in respect of industrial development in urban and rural areas. Dairy products, fish/meat products, rice & wheat products, ready to eat/ready to cook products and bakery products, masala powder, coconut & other oils, ayurvedic medicines, fruit juices etc. are the major food items produced in the State.

3.83 Food processing sector in Kerala has always made significant contribution to food exports. Kerala has been a major exporter of spices, marine products, cashew, coffee, tea and pickles. Two thirds of Kerala’s export income comes from processed food. Exports of food products from Kerala account for approximately 15 to 20% of the Indian export sector. Marine products lead the list of food products exported from the State, followed by spice products & cashew.

3.84 In Kerala, number of food processing units registered during 2014-15 is 2315, which is at the top position. The share of food processing units in the registered sector is shown in the Figure 3.12

Fig 3.12
Food Processing Units registered in 2014-15



Source: Directorate of Industries & Commerce

3.85 Infrastructure facilities so far developed in this sector are the 3 Food Parks at Kozhikode, Ernakulam, Pathanamthitta districts, Seafood Park in Alappauzha district, Incubation Centre at Kakkancherry, Kozhikode, Proposed Food Parks, Mega Food Park, Wayanad, Spices Park, Idukki and two Quality Control Laboratories. There are food processing units, including catering/canteen units, among 31000 MSME units under Kudumbasree.

3.86 Kerala Industrial Infrastructure Development Corporation (KINFRA) is the state agency engaged in the promotion of food processing industry in the State. KINFRA has set up exclusive Food Processing Parks to suit the specific needs of the

food processing sector and they offer space for food processing units in their 19 Industrial parks, as the demand for space is high. Out of these Mazhuvannur (Ernakulam) food processing park has 30 units with 792 workers and Kakkancherry (Malappuram) food processing park has 23 units with 760 workers. KINFRA Food parks at Malappuram, Mazhuvannur, Adoor and Aroor were approved by MoFPI. Details of KINFRA food parks are given in Appendix 3.34.

3.87 Under the Mega Food Parks Scheme of Ministry of Food Processing Industries, "In-Principal" approval has been accorded to Mega Food Park, Cherthala, Alappuzha under KSIDC and Mega Food Park, Palakkad under KINFRA on 31.03.2015, out of 38 Mega Food Parks in the country.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Quality Management in Food Processing Industries

3.88 The National Centre for HACCP Certification (NCHC) in association with K-BIP has initiated the process of auditing and certification of food processing and allied units from the State and outside the State. NCHC imparted training programmes on Food Safety (HACCP) system to Government officials nominated from various departments.

Section-5

Traditional Industries

Handicrafts

3.89 Handicraft industry is one of the traditional industries of Kerala, providing employment to artisans. Eighty percent of these artisans are from socially and economically backward classes. Kerala has the tradition of making beautiful handicrafts with ivory, bamboo, palm leaves, seashells, wood, coconut shells, clay, cloth, coir, metals, stone, lacquer ware and so on. Many old handicraft classics can be seen in palaces, old heritage homes and museums in the State.

Importance of Handicraft Industry

3.90 Kerala State Handicrafts Apex Co-operative Society (SURABHI), Handicrafts Development Corporation and Artisans Development Corporation are the major promotional agencies in the handicraft industry. SURABHI is the apex organization of primary handicrafts co-operatives established with a view to uplift the artisans by marketing their products through the primary co-operatives and implementing welfare schemes with the assistance from State and Central Governments..The turnover of the society during the year 2014-15 was □337.33 lakh. Apex society received an amount of □100 lakh during the year under the scheme, "Assistance to apex organisation in handicrafts sector". This was primarily used for conducting exhibitions and repair works of showrooms. There are 47 societies and SURABHI made a profit of □11.09 lakh from 12 exhibitions and fairs in the year 2014-15. Details are given in Appendix 3.35. The renovation of marine drive show room and Thrissur show room were completed. The construction of administrative block at craft development centre is entrusted with Construction Corporation and the work is progressing.

3.91 Handicrafts Development Corporation of Kerala (HDCK) is engaged in procuring and marketing handicraft products by giving fair returns to artisans through Sree Moolam Shashtyabdapurthi Memorial Institute (SMSMI) and Kairali emporia spread all over India. At present it is having a net work of 19 such sales emporia other than SMSMI. HDCK has been running a Common Facility Service Centre (CFSC) at Thiruvananthapuram for artisans who engage in development wood crafts. HDCK received an amount of □50.00 lakh during the year 2014-15 under the Scheme "Assistance to apex organisation in handicraft sector" which was utilised for organising exhibitions cum sales . This benefitted more than 5000 handicrafts artisans (both directly and indirectly). HDCK made a profit of □25.99 lakh from 42 exhibitions and fairs in the year 2014-15.Details are given in Appendix 3.36. The Kerala Artisans Development Corporation (KADCO) is one of the State agencies providing assistance to artisans for establishing production units, promoting marketing of products and providing employment opportunities through schemes of trade fairs and marketing centres.

Bamboo Industry

3.92 Bamboo is a highly productive renewable & eco friendly resource and has several applications. It is widely used in environment protection, as a nutrient food, high-value construction material and in about 1,500 other applications. It is estimated that about 2.5 billion people use bamboo in one form or the other at the global level. Advanced research activities are conducted to utilize bamboo for efficient fuel generating system.

3.93 From a raw material known as the "poor man's timber" bamboo is currently being elevated to the status of "the timber of the 21st century". India has a vast diversity of bamboos with 136 species. Next to the North East region, Western Ghats is the area which has the second largest diversity of bamboos. It is estimated that 8 million artisans are dependent on

bamboo craft for their livelihood and the annual turnover of the bamboo sector is estimated to be around 2400 crores, in India.

3.94 In Kerala, 28 species of bamboo are found. Bamboos from the Kerala forest are being supplied mainly to the pulp and rayon units under concessional rates. It is estimated that there are about one lakh people in the State dependent on bamboo for their livelihood. A unique feature of the Kerala bamboo scene is that 67.3% of the extracted bamboo comes from home gardens rather than from the forests. Recent data from the panchayats indicate that there has been a great drain in the number of artisans from the sector to semi skilled and unskilled jobs in the tertiary sectors like construction.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.95 The Kerala State Bamboo Corporation Ltd. was established in 1971 in Kerala to develop and promote industries based on Bamboo, reed, cane and rattan. Kerala State Bamboo Corporation's main activity is collection of good quality reeds from Government forests and distributing these reeds to the registered mat weavers of the Corporation, throughout the State, on credit basis and procuring woven mats made of these reeds at reasonable prices, thus providing employment and regular means of livelihood to these weaver sections of the society. Bamboo mats, Bamboo ply, Flattened board, Flooring tiles are the main products. The artisans in the weaving sector around Angamali region is supported by the Kerala State Bamboo Corporation. An Innovation Centre for Bamboo Development and Development of Premium Designs for Mementos is being set up. The major achievements during the year under review was the introduction of bamboo furniture / fabrication of eco friendly huts on a turnkey basis, participation in National Games by supplying signboards, gazebo, pavilion etc. to turn the event green.

Kerala State Bamboo Mission

3.96 Kerala State Bamboo Mission (KSBM) constituted in the year 2003 is designated as the Bamboo Development Agency (BDA) of the State for implementation of the various schemes of the National Bamboo Mission (NBM), under the Department of Agriculture & Cooperation, Ministry of Agriculture and Farmers' Welfare, Government of India. KSBM has four Sub-Committees namely Propagation of Bamboo, Technology Intervention and R & D, Marketing & Livelihood and Design & Training.For ensuring effective implementation and monitoring of the Schemes, State Bamboo Steering Committee (SBSC) was constituted with the Additional Chief Secretary (Forest & Wildlife) as its Chairman.

3.97 The interventions initiated after the formation of KSBM include promoting cultivation of bamboo, creation of new designs for innovative products in the handicrafts sector along with appropriate skill development, promotion of bamboo based modern industries supported by technology adaptation and development. It is expected that this will bring in greater business opportunities at various levels, especially among women and hence improve the living standards of the rural people, there by contributing to the overall growth of the sector.

Box 3.10

Kerala Bamboo Missions – Major Interventions in 2015 -16

Kerala Bamboo Fest 2015	The Department of Industries & Commerce in association with Kerala Bureau of Industrial Promotion (K-BIP) and Kerala State Bamboo Mission (KSBM) organized the 12th edition of 'Kerala Bamboo Fest' at Marine Drive, Kochi from December 4 to 8, 2015. The fest overall conveyed the importance of using natural items as bamboo in day to day activities.
Facilitated participation of Bamboo artisans / craftsmen in various Regional / National Events	During the financial year 2015 - 16, KSBM facilitated participation of Bamboo artisans / craftsmen in four Regional Events and three National Events as a result of which artisans were able to find new markets for their products.
Trainers Training Programme to Bamboo Artisans / Craftsmen	KSBM organized 6 days residential Quality Enhancement Training Programme at Wayanad, participated by 20 artisans from various Bamboo Groups / organizations. This helped them in achieving better productivity, quality and finishing.
Bamboo Innovation Centre	Kerala State Bamboo Mission (KSBM) in association with Kerala State Bamboo Corporation (KSBC) is setting up Bamboo Innovation Centre at the premises of KSBC, Angamaly, Ernakulam. It aims at the dissemination of need based knowledge, support service, conduct need based training etc. to the bamboo sector.
Development of Supply	Kerala State Bamboo Mission (KSBM) in association with Kerala State Bamboo Corporation (KSBC) is in

chain of treated Bamboo	process of development of Supply Chain of Treated Bamboo to the beneficiaries through the Depots of KSBC to ensure uninterrupted availability of the raw materials.
Providing Tools / Equipments as Common Facilities	The groups represented in the Quality Enhancement Training Programme have trained their groups and provided general tools and equipments as groups Common Facility .This will help them to improve their productivity, finishing and capacity to meet the demands of the market.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Textile Industry

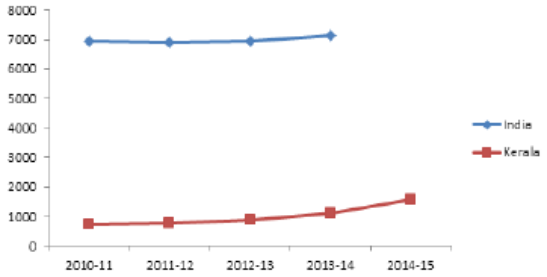
3.98 The textile sector in Kerala is limited in the sense that the spinning mills in Public-Private-Cooperative sectors are concentrating on spinning and weaving. The production and sales of vivid varieties of clothing are basically confined to Handloom and Khadi sectors.

Handloom Sector

3.99 The average handloom cloth production in India from 2008-09 to 2013-14 was 6900 million sq. meters per year with an average growth rate of 1.79 percent. The sector provides employment to 43.31lakh persons engaged in about 23.77 lakh handlooms. The production in the handloom sector recorded a figure of 7116 million sq. meters in the year 2013-14.The total cloth production in the sector till 30th September 2014 is 3547 million sq. meters. (Source: Annual Report 2014-15, Ministry of Textiles, Government of India).

3.100 The average handloom cloth production in Kerala for the period 2011-12 till 2014-15 is 32.65million sq. meters per year with an average growth rate of 12.61 percent. There was a significant increase in the cloth production during 2014-15 as compared to the previous year.ie, 18.27 percent. The status of cloth production, both in India and Kerala for the period from 2010-11 to 2013-14 and Kerala for the year 2014-15 is shown in Figure 3.13.

Fig 3.13
Cloth Production by Handloom Sector (in million sq.meters)



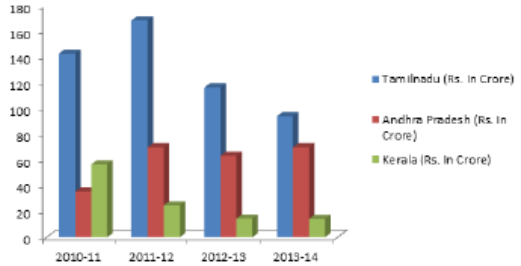
Source: Annual Report 2014-15, Ministry of Textiles.

3.101 The growth rate of cloth production in Kerala is far better than that of the country as a whole. But the contribution of the State to national cloth production is only 0.473 percent. The year wise details of production and productivity under handloom industry in Kerala for the period from 2010-11 to 2014-15 is provided in Appendix 3.37.

3.102 As regards Central Assistance to the States, from the period from 2001-02 to 2013-14, the state of Tamil Nadu occupies first place followed by Andhra Pradesh, Gujarat, West Bengal, Rajasthan, Kerala, Uttar Pradesh, Haryana and Madhya Pradesh. Kerala occupied 6th position till 2013-14.

3.103 The status of Southern states with respect to Central Share released is presented in Figure 3.14. It may be noted that Karnataka does not figure among the top 10 states and thus has not been represented in the figure. 3.14

Fig 3.14
Handloom Sector Central Assistance Released to States

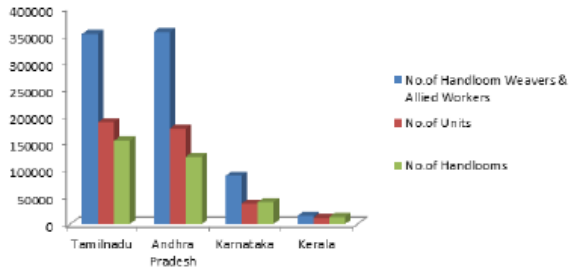


Source: Ministry of Textiles, Various Annual Reports, G.O.I.

3.104 In the financial year 2014-15 too, the State received a Central Assistance to the tune of □14.75 crore and utilized the same. The Central release to the states depends on parameters like number of handloom weavers and allied workers, number of units and number of handlooms. Tamil Nadu and Andhra Pradesh are the leading southern states in terms of these parameters in India.

3.105 The state-wise status of number of handloom weavers and allied workers, units and number of handlooms is exhibited in Figure 3.15.

Fig 3.15
South Indian State-wise details of Handloom Units, Workers and Looms



Source: Handloom Census Report 2009-10, International Journal of Multi Disciplinary Research and Development

3.106 Kerala is lagging behind other southern states in terms of number of handloom weavers, number of units and number of handlooms. Moreover, the number of adult workers as per the Handloom Census 2013 is 14,518 which is only 0.38% of the all India total. Out of the 14,518 adult workers, 74.29% are females whereas the per cent female weavers at all India level is 77.47%. (Source : EPRA Inter National Journal of Economic and Business Review)

3.107 Out of □5540.5 lakh allotted to the handloom sector for the year 2013-14, an amount of □5174.54 lakh was utilized, percent utilization being 93.4%. This is inclusive of □795.40 lakh utilized for the revival reform package, which was a Centrally Sponsored Scheme with central share of 80%. As against the outlay of □4691.50 lakh during 2014-15, the expenditure registered is □4783.62 lakh (101.96%). Out of this, the utilization under revival package was □395.01 lakh. In 2015-16, the expenditure booked as on 05-01-2016 is □3677.38 lakh (92%), against the allocation for the year, □4004.51 lakh. But the revival package has been discontinued with effect from the financial year 2015-16 and is not in force. The year wise details of assistance (□in lakh) extended by way of loan and grant for the development of handloom industry for the period from 2013-14 to 2014-15 is given in Appendix 3.38.

Box 3.11
Major Achievements

1. Under the Revival, reform and restructuring package for handloom sector, 233 PHWCS, Hantex and 5 Individual weavers have benefitted. A total amount of □.209.52 core was provided for this package.
2. Assistance was given for the modernization of Handloom Co-Operative and Apex Societies. In 2014-15, an amount of □.871.56 lakh was utilized under the scheme extending assistance for MDA-71PHWCS, Margin money -7yarn banks, Work shed maintenance-10 societies, Value Added Products-26 Societies, Technology upgradation Assistance-51 societies, Weaving accessory-1888 weavers, Revitalization -5PHWCS and 2 apex societies.
3. Skill upgradation training for handloom weavers was conducted and 110 weavers from different parts of the State have benefitted during 2014-15.
4. Weavers / allied workers motivation programme intends to motivate weavers/allied workers to improve productivity by providing attractive incentives. 15,000 weavers have benefitted under this programme. An amount of □300 lakh had been

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

utilized for this purpose in the year 2014-15.

3.108 Since the data on handloom sector based on the Handloom Census of India 2009-10, (Ministry of Textiles, Govt. of India) and the State Departmental figures differed in terms of the number of handloom households, number of societies, total membership, production etc, a 'Detailed Survey on Handloom Industry in Kerala' has been initiated in Annual Plan 2013-14 and is being conducted by Centre for Management Development. The objectives of the Survey are the following,

• To ascertain both physical as well as financial structure of the handloom sector.
• To obtain the details regarding the number of household and non household weaving units, production of handloom textiles, type of looms, consumption of yarn, number of working days, earnings of the members, bank details and the physical assets of all societies, ownership of looms, sales, exports, wages etc.
• To study the socio economic impact on weavers who benefited from implementation of various developmental activities.
• To study the financial assistance received in each co-operative society under various schemes (loan, share and grant) and present outstanding dues.
• To study problems faced by the primary co-operative societies due to higher rate of working capital interest, blockage of funds with HANTEX/HANVEEV and State Government.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.109 The survey is also intended to ascertain the reasons for the disparity in figures reported by the Directorate of Handloom & Textiles. The survey report is awaited. Category and year wise details of handloom co-operative societies within the State for the period from 2010-11 to 2014-15 as furnished by Directorate of Handloom and Textiles is given in Appendix 3.39.

3.110 Almost all crisis in the Khadi and Village industries sector such as shortage of workers, surplus stock in unsold handloom, lack of product innovation, high cost of production etc are prevailing in this sector too. Problems such as lack of adequate working capital, inadequate availability and increasing price of raw materials, high wage rates on alternative occupation, stiff competition from powerloom sector and low sales turn over were also identified in the sector through the Evaluation Study on Handloom Industry in Kerala, conducted by the Evaluation Division, State Planning Board, October 2014.

Promotional Measures of Handloom Sector

3.111 Promotional measures for handloom sector such as procurement, sales and marketing of handloom fabrics are being undertaken by two state level organisations namely Hantex and Hanveev.

3.112 Hantex, the apex society of around 450 primary handloom societies in the State, was formed in 1961 with the objective of organizing the handloom industry in the State on sound commercial basis. Despite grants and loans being given to the society, the organisation is running at a heavy loss. The year wise working results of Hantex for the period from 2010-11 to 2014-15 is given in Appendix 3.40.

3.113 The Kerala State Handloom Development Corporation Ltd. (HANVEEV) is a Government of Kerala undertaking incorporated in 1968 for the welfare and development of traditional weavers in the unorganized sector and engaged in the manufacturing and marketing of wide range of handloom products depending on the market trends and sale through various outlets in Kerala. At present, the Corporation has 52 own showrooms, 6 exclusive agency showrooms and 33 production centres. This organisation is running in heavy losses. The year wise performance and working results of Hanveev for the period from 2010-11 to 2014-15 is given in Appendices 3.41 & 3.42 respectively.

Suggestions to improve the Handloom Sector

3.114 We have to adopt better measures for modernizing and upgrading the technology to ensure improvements in product quality and productivity in the handloom sector, make use of the possibilities of Information technology to improve the production and marketing of value added handloom products in national and international markets. To improve the productivity of weavers, productivity linked incentives shall be routed through Direct Benefit Transfer System (DBTS). The labour migration and mobility should be reduced in this sector by increasing the wage rate of the labourers in the sector and making it at par with the wage rate prevailing in the State, which in turn can be achieved only through modernization/mechanization in the sector by bringing in cost efficiency.

3.115 As part of the Handloom innovation programme production of organic clothes with 'made in Kerala' branding can also be promoted. The handloom sectors rich traditions should be leveraged to develop tourism potential through showcasing the unique skills and products of this sector, with live demonstrations of the craft along with sales counters at strategic locations within the proposed handloom village.

Textile Sector – Spinning Mills

3.116 The Textile Industry in Kerala is spread over public , private , Co-operative and joint sectors. The textile mill industry in Kerala, however, are not running profitably and mills involved in spinning and weaving are facing problems from demand and supply side. Scarcity of raw material is the biggest obstacle of the textile mills in Kerala, since it constitutes major share of production costs and Kerala although is traditionally regarded as an agriculture state, cotton has never been a prominent among its cash crop in the State. Outdated machinery and stiff competition can be regarded as the other significant problems of the textile mills in Kerala, along with high cost of raw material, low productivity, decreasing profits, lack of working capital and high cost of labour.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Kerala State Co-operative Textile Federation Limited –TEXFED

3.117 Kerala State Co-operative Textile Federation Limited (TEXFED), is the apex body of Co-operative Spinning Mills and Integrated Power loom Co-operative Societies in the State. It integrates all the segments of the textile industry from spinning to weaving, processing and garmenting. There are seven Co-operative Spinning Mills as members of TEXFED. Five of them are administered by the Government and two by elected boards.

3.118 The main handicaps faced by the mills under TEXFED were the lack of working capital and non availability of raw materials. The Government has put in place a centralised purchase system to procure cotton for the entire textile sector through professionally constituted committee comprising of Public Sector Restructuring and Internal Audit Board (RIAB), Kerala State Co-operative Textile Federation Limited (TEXFED) and Kerala State Textile Corporation Ltd (KSTC). The sale of yarn through the depot is also monitored by the committee. Consequently raw material cost has come down heavily, sufficient savings are being generated due to which revenue and turnover has improved.
3.119 Obsolete technology and age old machineries used in the mills also pose another problem. Even though partial modernization has been done in certain units, it was not at par with the industry standards. Therefore, the Government constituted an Expert Committee to study the crisis prevailing in the mills and the committee recommended modernisation of five Co-operative Spinning Mills in the State.

3.120 Initially the Government had taken up modernisation of Malappuram and Cannanore Co-operative Spinning Mills and completed the first phase modernisation processes. The second phase modernisation of the above mills has started with the assistance of the National Cooperative Development Corporation of Government of India (NCDC). Now the Government has been considering the renovation of plant and machinery of Alleppey, Quilon and Thrissur co-operative spinning mills with NCDC loan assistance, to the tune of □3394.15 lakh, □5739.16 lakh and □2997.78 lakh respectively. Out of which □518 lakh was provided in the State budgets in financial years 2013-14 and 2014-15 for the above mills.

Modernisation of Co-operative Spinning Mills

3.121 State Planning Board conducted a study on the revival of spinning industry during 2007-13 and found out that the spinning mills under co-operative sector were profitable only in 2010-11. During the rest of the period under study, all the spinning mills were working under huge loss. The Government took diligent efforts to revive the co-operative sector with scheme, assistance for the expansion of Co-operative Spinning Mills and assistance for K. Karunakaran Memorial Spinning Mills at Mala, Priyadarsini Co-operative Spinning Mill (Prico Mills), and Malabar Co-operative Spinning Mills for upgrading existing machinery and technology for producing export quality yarn were provided.

3.122 The total project cost of K. Karunakaran memorial co-operative spinning mills (Mala) was □2387.55 lakh, out of which an amount of □950.28 lakh has already been provided. The Government has already provided an amount of □2710.09 lakh for the expansion programme of Malabar Co-operative Textile Mills(Malcotex) against the total project cost of □4217.62 lakh and a total amount of □785.00 lakh, had been provided for the technology upgradation and overhauling of machinery attached to Priyadarsini Co-operative Spinning Mills against the total project cost of □3716.00 lakh.

Power loom Industry

3.123 The market for cloth in Kerala is large but around 75% of the textile mills in Kerala are spinning mills which produce cotton yarns. Therefore the Government has set up four integrated power loom co-operative societies in the State to promote the weaving sector as well. Now there are 45 power loom co-operative societies. The co-operative sector owns 594 looms of the total 658 power looms in the State. 95 percentage of cloth production is in the co-operative sector which shows an increasing trend in quantity and value of production in recent years. The year wise details of production and productivity under powerloom industry for the period from 2010-11 to 2014-15 is given in Appendix 3.43.

Khadi and Village Industries

3.124 Khadi & Village Industries has truly grown by leaps & bounds across the country by providing cumulative employment to 1.40 crore people, producing goods worth □26109.08 crore by the end of 2013-14. As on December 2014, the cumulative employment generation at the national level was 1.43 crore people and production was worth, □21675.89 crore.

3.125 But the Kerala Khadi & Village Industries sector has not been performing well. Data on value of production, value of sales and employment generation for the period from 2010-11, till 2014-15, are provided in Table 3.3.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Table 3.3
Production, Sales and Employment generation in Khadi & village industries sector

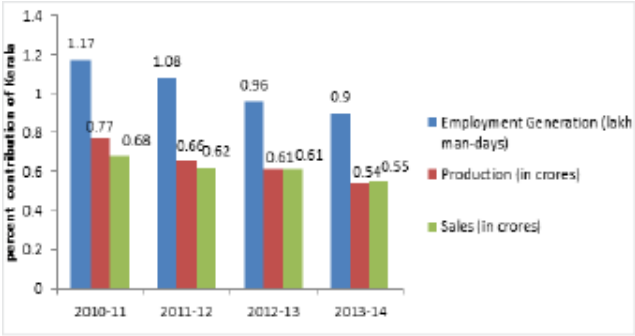
Year	Production in crores			Sales in crores			Employment Generationn (Lakh mandays)		
	National	Kerala	Percentage State Share	National	Kerala	Percentage State Share	National	Kerala	Percentage State Share
1	2	3	4	5	6	7	8	9	10
2010-11	19871.86	152.59	0.77	25792.99	174.55	0.68	113.8	1.33	1.17
2011-12	21852.04	144.73	0.66	26797.13	167.47	0.62	119.1	1.29	1.08
2012-13	24024.24	145.79	0.61	27839.69	170.84	0.61	124.76	1.20	0.96
2013-14	26109.08	139.79	0.54	31152.4	172.55	0.55	140.38	1.17	0.83
2014-15	21675.89	136.35	**	28753.2	170.03	**	143.41	1.09	**

*Data at National level as on 31st December 2014
Source:-Annual Report 2014-15, Ministry of MSME, GOI & Khadi & Village Industries Board, Kerala
** Since the data at National level pertaining to the year 2014-15 is only available up to 31st December 2014, the percent state share is not in picture in the table above.

3.126 The value of production of goods in the sector in Kerala by the fully owned units of K&VI Board as on 2013-14 is □139.79 crore and has come down to □136.35 crore during 2014-15. The cumulative employment generation for the year 2014-15 fell down to 1.09 lakh man-days from 1.17 lakhs man-days during 2013-14.

3.127 The per cent contribution of Kerala with regard to employment generation, production and sales indicators as against those at National Level, from 2010-11 to 2013-14, is shown in Figure 3.16.

Fig 3.16
Employment Generation, Production and Sales Under Khadi & Village Industries Sector



Source: Annual Report 2014-15, Ministry of MSME, GOI & Khadi & Village Industries Board , Kerala.

3.128 The major setback in Khadi & Village Industries Sector, Kerala, is the decline in employment generation. The present production and sales values of the sector within the State is also showing a downward trend and the share of production and that of sales remain constant since 2012-13. The major cause which accounts for the fall in the number of workers engaged in the sector is the migration of workers to more attractive avenues, prosperous endeavors and remunerative employment opportunities in other sectors.

3.129 There are many other causes of significance which also account for this stagnancy prevailing in the sector, viz. surplus stock of unsold khadi, mismatch in khadi production, procedural and technical delays in adoption of project finance approach in place of the existing pattern, shortfall in availing credits and loan from banks, lack of adoption of new market techniques, lack of product innovation, low quality of products,high cost of production, failure in capturing the brand image of traditional khadi etc.

3.130 Non-availability of sufficient raw-materials for large-scale production, Boom in the Textile Industry with power looms across the country and shift in priorities of clothing among public, inefficient and low productive Charkhas, Looms and other Accessories and youngsters opting for higher education in pursuit of salaried jobs in particular also account for this stand still status of this sector in the State.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.131 The allocation of funds from various sources to K&VI Board for the year 2013 -14 and 2014-15 along with expenditure there upon is given in Table 3.4.

Table 3.4
Receipt and Expenditure of K&VI Board (□ in lakh)

Particulars	2013-14		2014-15	
	Receipt	Expenditure	Receipt	Expenditure
State Government Grant – PLAN				
1. Administrative Expenses (Budget provision)	2490	2490	341.6	341.6
2. Income Support Scheme (Fund through DIC)	1800	1800	2200	2200
State Government Grant – Non-Plan				
1. Non – Plan – Administrative Expenses	2930	2930	2812.24	3493.09
2. Non- Plan – Special Rebate	1500	1500	1160	1160
KVIC Grant				
1. PMEGP – Margin Money Grant	820.13	820.13	813.62	813.62
2. Grant for District Awareness Camps and District Level Exhibition of PMEGP	4.40	4.40	5.40	5.40
3. Grant for Stationery, Publicity, TA, expense for the Scheme PMEGP	1.85	1.85	2.15	2.15
Grant Total	9546.38	9546.38	7335.01	8015.86

Source: Khadi and Village Industries Board, Government of Kerala.

3.132 The total budgeted outlay for plan schemes for the financial year 2014-15 for the sector was □1347.60 lakhs and expenditure is □341.60 lakhs (25.35%), till 30th September 2015. The Production / Festival Incentives to Khadi Spinne□ and Weavers to the tune of □151.60 lakhs and □. 20 lakh earmarked for Establishment and Strengthening of Departmental Village Industries Units have fully been utilized, which is 51% of the total utilization. Similarly, the total budgeted outlay for the year 2015-16 is □1347.60 lakhs and the expenditure as on 03.12.2015 is □337.50 lakhs (25.04%). This amount in full has been utilized for the Special Employment Generation Programme as against its targeted outlay, □500 lakh in the Budget 2015-16 for the purpose.

Major Achievements 2014-15

3.133 As regards the major physical achievements for the year 2014-15, one hundred cotton bales have been purchased for the project at Ettukudukka in Kannur District utilizing □20 lakh and transformer installed utilizing □25 lakhs. Ready-made garment unit at Thiruvananthapuram was established and new machinery in hand-made Paper Unit at Elanthoor, Pathanamthitta, installed. The oil unit at Olarikara, Thrissur was renovated. Under the special employment scheme, 91 new units were established, covering all the 14 districts and providing employment to 194 persons. Construction of building to Mini Industrial Park (Village Industries Park) at Pappinissery in Kannur District has been completed and setting up of Village Industries Units with the participation of private entrepreneurs is in progress.

3.134 Moreover, Khadi and Village Industries goods worth □523.16 crores has been produced through the Aided Units of the K&VI Board, including the performance of Rural Employment Generation Programme (REGP) and Prime Minister Employment Guarantee Programme (PMEGP), and goods worth □567.51 crore has been sold, providing Employment to 142925 persons. It is observed that the productivity per person is much higher in K&VI Aided Units than in K&VI Departmental units. The production, sales and wages paid and employment generated during 2013-14 & 2014-15 and District wise details of Departmental sales outlets and sales under K&VI Board for the period referred to are provided in Appendix 3.44 and Appendix 3.45 respectively. Moreover the details of district wise achievement under self employment generation programme for the year 2014-15 is provided in Appendix 3.46.

Coir Industry

3.135 India is the largest producer of coir in the world accounting more than 80 percent of the production of coir fibre. The export of coir and coir products in India reached 1630.34 crore during 2014-15, recording a growth rate of 27 percent in value terms over the previous year. Coir and coir products were exported to 105 countries in during this period and among these countries; China ranked first followed by the United States of America, Netherlands, United Kingdom and South Korea in quantity and value of export.

3.136 Coir and coir products are one of the major agro based traditional export industry in Kerala. This sector is of prime importance in State economy since it is labour intensive and has high employment potential. It provides employment to nearly 3.75 lakh people of which women belonging to BPL constitute 75 per cent. The availability of coconut husks, natural conditions provided by the lakes, lagoons and back waters for retting coconut husk and traditional expertise of the people were the reasons for flourishing the industry in the State, especially in the coastal area. Co- operative sector plays a major role in the coir industry in Kerala.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Directorate of Coir Development and Agencies in Coir Sector

3.137 To give specific emphasis for the sustainable development of Coir industry in the State, Government has constituted a Directorate of Coir Development. Directorate is the major agency implementing schemes and programmes and designing policies for the sector. Kerala State Coir Corporation (KSCC), Kerala State Co-operative Coir Marketing Federation (Coirfed), National Coir Research and Management Institute (NCRMI), Foam Mattings India Ltd. (FOMIL), Kerala State Coir Workers Welfare Fund Board and Coir Co- operatives are the other major institutions in Coir sector. Coir yarn producers, Product manufacturers and exporters in private sector are also stake holders in the industry.

Kerala State Coir Corporation (KSCC)

3.138 Kerala State Coir Corporation (KSCC) was set up in 1969 for the systematic development of coir industry in the State. It caters the needs of the small scale coir manufacturers by providing them manufacturing and marketing facilities. Its diversified operations include curled coir manufacturing and allied products sectors. The value of export of the corporation has increased from 2.44 crore to 2.58 crore during the year 2014-15 compared to previous year.

The Kerala State Co-operative Coir Marketing Federation (Coirfed)

3.139 The Kerala State Co-operative Coir Marketing Federation (Coirfed) is the apex federation of primary coir Co-operative societies spread all over Kerala. It is entrusted with the task of procurement of the entire products of the member societies and marketing the product of these co-operative societies which provides sustenance to workers especially women. The value of export of Coirfed has shown a sharp decline from □4.19 crore to □3.37 crore during 2014-15 compared to previous year.

The National Coir Research and Management Institute (NCRMI)

3.140 The National Coir Research and Management Institute (NCRMI) is a State Government institution set up to strengthen the R&D activities in coir sector to enable the industry in producing more value – added products and products with new designs at reasonable cost. The NCRMI has developed improved version of Defibering Machine with crusher for both green and dry husks with a processing capacity of 600 husks per hour. It has also developed Automatic spinning machine, Willowing machine, Electronic ratt and screener with more productivity, Agri coir cell and fiber softening techniques. It is also developing pneumatic loom for the production of coir geo textiles and acoustic panel for the use in industry.

Foam Mattings India Ltd.(FOMIL)

3.141 FOMIL caters to the needs of domestic and international markets with a wide range of products by its accent on technology; infrastructure and machinery such as its Denmark make Latex Backing Plant producing international quality latex backed mattings, Modern Dye House, Semi Automatic and Fully automatic Power loom, Auxiliary facilities and uninterrupted power system etc. The value of exports from FOMIL has decreased from □0.72 crore during 2013-14 to □0.50 crore during 2014-15.

Kerala State Coir Workers Welfare Fund Board

3.142 Kerala Coir Workers Welfare Fund Board is a statutory body for the welfare of poor and down trodden coir workers.

There are about 4 lakh members in the welfare board. It extends pension and other welfare assistances to members.

Co-operatives in Coir

3.143 Coir co-operative societies play substantial role collecting husk,defibring and producing varities of coir products in Kerala. There are 993 co-operatives registered in coir sector as on March 31st 2015. As per the report of the Coir Directorate 23 new societies were registered in 2014-15. There is also increase in the number of working societies. It increased from 503 to 536, an increase by 33 units. It is evident from the statistics that apart from newly registered 23 societies, the government initiatives turned 10 dormant societies into active production of coir. Details of the societies are shown in Appendix 3.47.

Procurement of Husk and Production of Yarn and Fibre in Co- operative sector

3.144 During 2014-15, the State procured 0.83 crore husk by spending an amount of □1.01 crore, purchased 20634.89 tonnes of fibre at a cost of □29.06 crore and produced 9071.78 tonnes of yarn worth □55.93 crore, through coir co-operative societies. There is an increment in the procurement of husk by coir co-operatives during 2014-15 compared to previous year. Details of the last five years are shown in Appendix 3.48.

Domestic Market Promotion

3.145 Promotion of the sale of coir products in India & elsewhere is one of the important features of Coir Industry. The Domestic Market Promotion includes efforts for enhanced sale of Coir products through various showrooms and sales outlets and also popularizing coir & coir products by way of publicity, organizing exhibition in different parts of the country, through audio and visual media, sales campaign etc.

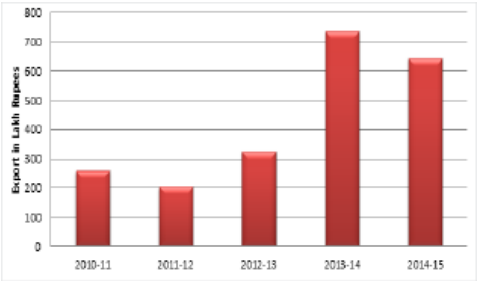
3.146 In Kerala during 2014-15, 420 coir co-operative societies are working in the yarn sector and 68 Working Societies are there in the product sector. (mats and mattings and small scale produce co-operation). The total number of workers in the yarn sector in the year 2014-15 is reported to be 181134 and in the product sector the total number of workers are 6933.

Export of Coir and Coir Products

3.147 The export of coir and coir products from India in quantity during the year 2014-15 was 626666 MT valued at 1630.34 crore as against 537040 MT valued at 1476.04 crore during the previous year. This recorded an overall increase of 17 per cent in quantity and 11 per cent in value over the export of previous year. Curled coir, coir fibre, coir rugs, coir pith, coir rope, coir yarn, coir geo-textile, handloom matting, Power loom Mats, rubberized coir and other sorts constitutes the major export items of the industry during 2014-15.

3.148 The State Government directly supports coir sector in promotion of export of coir products. The exporters collect products from small scale producers' co-operatives through Kerala State Coir Corporation (KSCC). Government support this by Purchase Price Stabilisation Scheme. The State Government supports the public sector enterprises, viz. Kerala State Coir Corporation (KSCC), Coirfed and Foam Matings (India) Ltd. (FOMIL) export large quantities of coir products by participating in various national and international exhibitions and B2B conferences. Coir Kerala– an International event on Coir and Natural Fiber Products aimed at exploring and expanding the international market for coir and coir products in consecutive years since 2011 gives impetus to the export of the industry as a whole and particularly the PSUs. The details of export of Coir and Coir Products during last 5 years by Public sector undertakings / Coirfed in Kerala is in Appendix 3.49 and Figure 3.17.

Fig 3.17
Export of coir & coir products by State PSUs from 2010-11 onwards



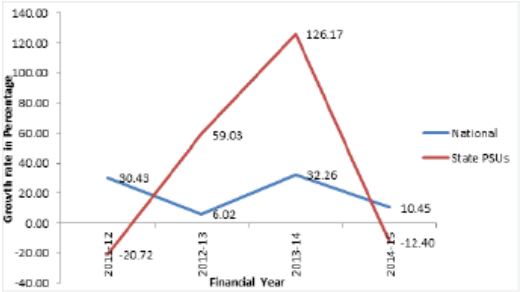
Source: Govt. of India, Directorate of Coir Development, Govt. of Kerala

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.149 The export of coir and coir products of Public Sector Undertaking in Kerala grew considerably in 2013-14. But in 2014-15 a decrease in production and export was registered. At National level growth in production and export is positive, although it fluctuates over years. Figure 3.18 provides the comparison of the growth rates of State PSUs to the nation level of Coir production and export.

Fig 3.18
Comparison of the growth rates of State PSUs to the national level in coir sector



Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.150 The State PSUs were able to increase production at substantial rate in 2012-14 after a negative growth in 2011. But they were not able to consolidate the growth in 2014-15 and registered a negative growth (-12.40%).

Major Initiatives in Coir Sector

Coir Kerala 2015

3.151 The conduct of 'Coir Kerala 2015' at Alappuzha, an International fair on natural fibre and allied products participating buyers from various countries meet, conferences, exhibitions, seminars and B2B meets were arranged in the event. This also serves as a platform for the entrepreneurs, co-operatives, workers from the whole industry, viz., Defibering, Yarn and Product sector, academics and policy makers meet. This gives impetus to the industry as a whole.

Govt. of India Thrust Areas for Development of Coir Industry

3.152 The thrust areas for development of coir sector in the country are modernisation of production infrastructure by means of appropriate technology without displacement of labour, expansion of export of coir and new products through undertaking market promotion measures abroad, promotion of research and development activities like process improvement, product development and diversification & elimination of drudgery and pollution abatement. Development of skilled manpower through training extension of research and development findings through field demonstration and development of coir industry in all coir producing States in association with the State Government are some of other measures for developing coir industry.

National Coir Policy

3.153 Coir Board has evolved a draft National Coir Policy and Vision 2025 with a view to develop coir industry in a holistic manner. The policy broadly defines the vision of Government of India on coir sector development and the targets to be achieved by 2025. The National Coir Policy aims at,

• Enhancing the utilization of coconut husks available in the coconut producing states for coir fibre extraction.
• Improving the quality of coir fibre, yarn and products produced in India.
• Women empowerment through value addition of coir products and coir pith.
• Zero wastage in the extraction of fibre and manufacturing process.
• Inventions in product and process for use in betterment of society and environment
• Modernising equipments so as to eliminate drudgery in the production processes and enhance productivity and quality.
• Addressing the problem of infrastructure bottlenecks
• Supporting modernization and technology up gradation of industry
• Assistance for capacity building in industry
• Providing fuller employment to the existing coir workers and generate additional employment
• Undertaking vigorous research and development activities for finding new areas for coir
• Development of high productivity defibering units and mechanical spinning machines

• Finding new uses for Coir Wood, Coir Pith and explore more business opportunities within India and abroad.
• Augmenting fibre availability in the country and facilitate high growth and competitiveness of the coir sector
• Developing domestic and export of coir products
• Promoting Consortium approach in the production and marketing of coir products
• Implementing schemes for welfare of coir workers.
• Promoting towns of export excellence in coir in areas of coir production.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Skill upgradation Quality Improvement Mahila Coir Yojana and welfare measures

3.154 Coir Board continued to impart training in processing of coir to artisans and workers engaged in the coir Industry through its training centres ie., National Coir Training and Design Centre (NCT &DC) Kalavoor, Alappuzha and Research cum Extension Centre Tenkasi, Tamil Nadu.

Mahila Coir Yojana

3.155 The Mahila Coir Yojana is the first women oriented self- employment scheme in the Coir Industry which presides self-employment opportunities to the rural women artisan in regions producing coir fibre. The conversion of coir fibre into yarn on national ratt in rural households provides scope for large scale employment, improvement in productivity and quality, better working conditions and higher income to the workers. The scheme envisages distribution of motorised ratts in rural households and provides scope for large scale employment, improvement in productivity & quality, better working conditions and higher income to the workers. The scheme also includes distribution of motorised ratts to women artisans after giving training for spinning coir yarn.

Coir Udyami Yojana

3.156 The Ministry through Coir Board is implementing a Central Sector Scheme of Rejuvenation, Modernisation and Technology Up gradation of Coir Industry (REMOT). Under this scheme, financial assistance is provided for replacement of out-dated ratts/looms and for construction of work sheds so as to increase productivity/ productions and earnings of workers. The selling limit for setting up of coir units under this scheme has been increased to 10 lakhs in spinning sectors and tiny / household sector.

Box 3.12
Achievements of Directorate of Coir Development during 2014-15

• State Level and Project Level Coir Awards in Coir Sector
• Market Development Assistance for 23 Coir Mats and Mattings Societies, FOMIL,Coirfed and KSCC
• Assistance for 196 societies under infrastructure development scheme
• Workshop conducted for the Secretary/President/Board Members of coir societies
• Training given to workers of societies on Spinning in Electronic Ratt in Chirayinkeezhu,Kollam, Kayamkulam
• Production and marketing Incentives given to 321 societies
• Assistance for 20 societies under Government Share participation scheme
• Inaugurated Coir Machinery Manufacturing Factory at Alappuzha
• Conducted Coir Dinam -" November 5"
• Pension distributed to coir workers for an amount of □21,68,77,500/-

Major schemes being implemented by Directorate of Coir Development during 2014-15.

3.157 Following are the major schemes implemented in the coir sector during 2014-15.
1. Regulated Mechanization of Coir Industry intended to modernize the industry
2. Marketing, Publicity, Propaganda, Trade Exhibitions and Assistance for Setting up of Showrooms
3. Coir Kerala-2015 – 'an International fair on Natural fibre and allied Products'
4. Price Fluctuation Fund intended to stabilize the price of coir fibre, and yarn
5. Cluster Development Programme.
6. Coir Geo Textiles Development Programme intended to implement pilot projects for including Geo textilles as a standard engineering material.

7. Production and Marketing Incentive aims.
8. Market Development Assistance for the Sale of Coir and Coir Products.

3.158 Major challenges and bottlenecks faced by Coir Industry are from within the industry itself. Since it is natural fibre and return to nature is the slogan of the recent times, the industry has a better prospect in future years if it is able to remedy the bottlenecks like weak procurement of coconut husk, increased cost of production, shortage of coir fibre, pollution in traditional method of ratting and husk beating, competition from synthetic materials, lack of professional management and migration of workers to other areas through innovative /scientific/cost effective solutions.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Cashew Industry

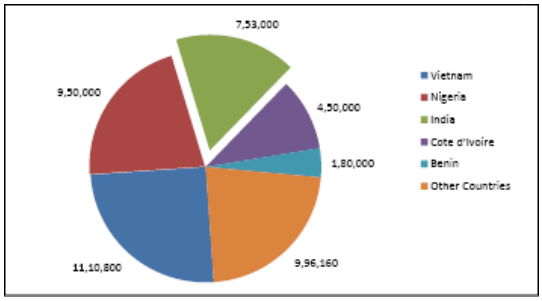
3.159 India is the third largest producer of cashew nuts which is the world's favourite nut and the third widely consumed edible tree nut. In 2013, India's total production was 7,53,000 metric tons, which accounted for 17 percentage of the total cashew production of 4,439,960 metric tons in the world. The World's top 5 producers are Vietnam, Nigeria, India, Ivory Coast and Benin.

Table 3.5
Cashew production – World scenario, 2013

No.	Country	Production (in MT)
1	Vietnam	11,10,800
2	Nigeria	9,50,000
3	India	7,53,000
4	Ivory Coast	4,50,000
5	Benin	1,80,000
	World Total	44,39,960

Source: faostat3.fao.org – website of Food & Agriculture Organization of the United Nations

Fig 3.19
Cashew World Production (in MT)



3.160 India stands first in cashew nut processing and processes around 1.59 million tons of cashew nuts every year though only around half of the cashews processed in the country are produced domestically. More than 50 percentage of cashew processing is in the unorganised sector. Due to large processing capacity, India imports raw cashew nuts from other countries. African countries process least quantity of nuts and more than 90% of the raw nuts produced in the region are exported to India, Vietnam and other processing countries.

3.161 India was the first country to enter the global cashew trade. The cashew kernels produced in India are sold both in the international and domestic markets. The major international markets for Indian cashew kernels during 2014-15 were United States of America, United Arab Emirates (UAE), Netherlands, Japan, Saudi Arabia, Germany, Korea DP Republic, the United Kingdom (UK), France, Italy, Spain etc. Among these, considerable increase was noted in exports to Korea DP Rep (83%). According to DGCI&S figures, the total export of cashew kernels from India during 2014-15 was 1,18,952 MT valued at □5432.85 crore. There has been an increase of 3.62% in quantity and 7.40% in value in comparison to the export of 1,14,791 MT cashew kernels valued at □5058.73 crore during 2013-2014. Cashew kernels exports during 2014-15 is an all time record in terms of value and crossed □5400 crore during the year. Among export commodities from India cashew nuts stands in 6th position based on value, as on 2013. foreign exchange earnings of India from cashew industry for the period from 2007-08 to 2014-15 is given in Appendix 3.50.

3.162 India is the third largest consumer of cashew nuts in the world. On an average 150 to 160 thousand MT of cashew kernels produced in India get absorbed in Indian markets where the demand for cashew for consumption has been steadily increasing over the years.

Cashew Industry- Kerala scenario

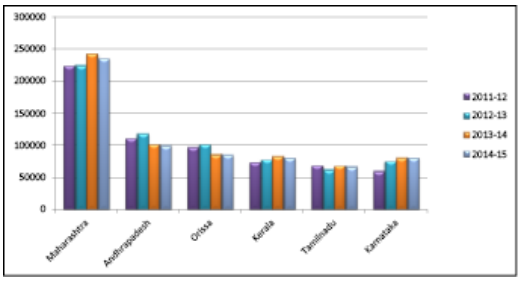
3.163 Kerala's contribution to Indian cashew industry is remarkable in the processing and exporting sectors. With approximately 800 cashew processing units/factories functioning in Kerala, the demand for raw cashew nuts is high. Cashew processing in Kerala started as a cottage industry. This traditional industry is mainly concentrated in Kollam District and is highly labour intensive which employs about 2,50,000 workers, majority of whom are women.

3.164 Kerala during 2014-15, was at the 5th position in production of cashew nuts, after Maharashtra, Andhra Pradesh, Orissa and Karnataka, with a production of 80000 MT. The area under cultivation of raw cashew in Kerala is 84530 ha during 2014-15. Among the states Maharashtra and Andhra Pradesh have the major share of the total area under cashew cultivation. Production and yield of cashew in the states which are new to cashew cultivation, like Maharashtra, Andhra Pradesh, Odisha and Tamil Nadu have been increasing and with the state government's support, these states were adopting high yielding variety seeds for plantation, which gives them high yield per acre in shorter time periods. The production of raw cashew nuts in India for 2009-10 to 2014-15 the last four years is given in Appendix 3.51.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Fig 3.20
State-wise production of Raw Cashewnuts in MT



3.165 Major cashewnut growing belts in the State are Kasaragod, Kannur, Malappuram, Kozhikode, Palakkad, Thiruvananthapuram and Kollam and recommended varieties of cashewnut are Madakkathara-1,2, Kanaka, Dhana, Amrutha, K-22-1 and Vridhachalam-3.

3.166 Exports of cashew kernels from Kerala has increased slightly both in terms of quantity and value, during the year 2014-15. In 2014-15, the export of cashew & cashew kernels through Cochin port was 68150 MT, while it was 65679 MT in 2013-14. The import of raw cashew was 213106 MT as against 188485 in the previous year, which is 212% more than the export. The Export of Cashew & Foreign exchange earnings are given in Chapter 6.

3.167 Cashew processing is a highly labour-intensive activity including roasting, shelling, peeling, grading, value addition, and packaging of finished products, which demands the skills of the workers. Hence, problems/issues in the industry with regard to wage rates, welfare, safety and healthy working environment of the workers are to be addressed. Also the problems like supply-demand imbalance, huge mechanisation cost in processing sector and environmental issues are to be addressed, for the sustainable economic development of Cashew sector in the State.

3.168 The Kerala State Cashew Development Corporation (KSCDC) and Kerala State Cashew Workers Apex Co-operative Society (CAPEX) are the two agencies of the State engaged in cashew processing sector in Kerala. CAPEX with headquarters in Kollam, is the apex body of cashew workers primary societies engaged in the procurement of raw cashew nuts and marketing the processed kernels. As on March 2015, CAPEX owns 10 factories with about 4500 workers. The society could provide employment for 232 days in 2014-15 and the turnover increased from □6347.86 lakh of previous year to □7282.79 lakh, showing a profit of □298.77 lakh. During the period from 2012-13 to 2014-15 the number of workers in CAPEX factories has decreased but the turnover has increased by 9 per cent. This is due to the increase in the value of raw cashew nuts & cashew kernels, depreciation of rupees and increased productivity owing to the partial mechanisation of cashew factories. During the period from 2012-13 to 2015-16, Government has provided a total amount of □8030 lakh to CAPEX towards the modernisation and partial mechanisation of factories. The performance of CAPEX by the last 4 years from 2012-13 to 2015-16, is given in Appendix 3.52.

3.169 The Kerala State Cashew Development Corporation (KSCDC) has 30 factories with about 13000 workers. The Corporation processes raw cashew nuts and produces value added products. The Corporation could provide employment for 190 days in 2014-15 and 38 days during 2015-16 upto September 2015. Turnover of the corporation in 2014-15 is □14690 lakh which is 20 per cent higher than that of the previous year. During the period from 2012-13 to 2014-15 the number of workers in KSCDC factories has decreased by 28 per cent and turnover of the Corporation has increased by 19.5 per cent. During the period from 2012-13 to 2015-16, Government has provided a total amount of □12960 lakh to

KSCDC towards the modernisation and partial mechanisation of factories, but the amount was not fully utilized for the purpose. The performance of KSCDC during the last 4 years is given in Appendix 3.53. CAPEX and KSCDC together employ about 18000 workers which is about 8% of the total workers in the sector. The rest of the workers are employed in private sector.

Kerala State Agency for the Expansion of Cashew Cultivation (KSACC)

3.170 Kerala State Agency for the Expansion of Cashew Cultivation (KSACC) was constituted by Government of Kerala to overcome the crisis of diminishing area under cashew cultivation in the State. Since 2008, KSACC has been organizing promotional activities in cashew cultivation and distributing cashew grafts of high yielding varieties and providing financial assistance to farmers and institutions in the State. KSACC is the nodal agency for the Cashew cultivation activities in Kerala, approved by NHM (National Horticulture Mission). NHM identified northern districts of the State, such as Kasargod, Kannur, Kozhikode and Malappuram, for the expansion of cashew production. Accordingly, an additional 22150 ha has been brought under the canopy of the project and implemented by KSACC during the period 2008-09 to 2014-15. During 2014-15 KSACC distributed about 6.3 lakh cashew grafts of high yielding varieties to farmers and other public, which can achieve cashew cultivation in 3150 hectares land. During the current financial year, the agency distributed 3.00 lakh grafts under cultivation programme upto 30st September 2015. During the period from 2012-13 to 2015-16, an amount of □1810 lakh has been provided to KSACC towards the cultivation of cashew.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Cashew Export Promotion Council of India (CEPCI)

3.171 The Cashew Export Promotion Council of India(CEPCI) was established by the Government of India in the year 1955, with the active cooperation of the cashew industry with the object of promoting exports of cashew kernels and cashew nut shell liquid (CNSL) from India. The Council provides the necessary institutional frame-work for performing the different functions that serve to intensify and promote exports of cashew kernels and cashew nut shell liquid. The Council also serves as a liaison between foreign importers and member exporters and offers investment to producers for the purchase of innovative technology and equipment and operates plan schemes of Government of India. The council has set up a laboratory and technical division of international standards which is recognised as an approved Research Centre for Doctoral research by Kannur University and University of Kerala. The service of CEPC Lab is available to cashew industry as well as entire food processing industry in India and abroad. During 2014-15, 6753 cashew kernels and other samples were analysed in the laboratory

Section 6

Labour and Labour Welfare

3.172 Labourers in Kerala have been protected by intervention of the Government on right to work of one's choice, right against discrimination, prohibition of child labour, social security, protection of wages, redressal of grievances, right to organize and form trade unions, collective bargaining and participation in management. It is accepted that the labour laws and labour welfare schemes implemented by the State go far beyond that in other parts of the country. The Government is of the view that every employee/ worker should be a member in a Welfare Board and they must be protected by the State throughout their lives. Currently around 33 Labour Welfare Fund Boards exist in the State, of which 16 are under Labour Commissionerate.

3.173 Kerala has been facing challenges in terms of high rate of unemployment and under employment, low rate of productive employment, inadequate levels of skill creation and training, low level of labour force participation and low worker population ratio and so on. Essentially, the State has to create employment opportunities and employment-intensive growth and re-allocate labour force from low-value added activities to high-value added activities.

3.174 Existing labour policy envisages the creation of 15 lakh new jobs within five years. Other thrust areas of State labour policy are unified and consolidated legislation for social security schemes, reprioritisation of allocation of funds to benefit vulnerable workers, long term settlements based on productivity, labour law reforms in tune with the times, amendments to Industrial Disputes Act, revamping of curriculum and course content in industrial training and policy progress monitoring.

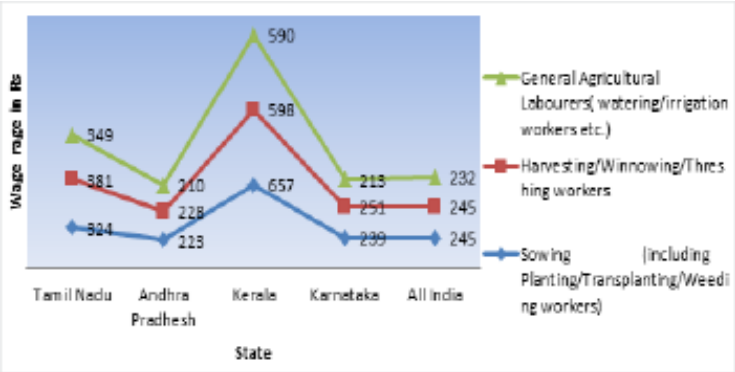
Daily Wage Rate

3.175 As compared with other parts of the country, reported wage rate of workers in both agricultural and non-agricultural sectors to Kerala are higher. Average daily wage rate of agricultural and non-agricultural workers in India published by Labour Bureau, Government of India shows that for male general agricultural workers in rural Kerala it is □590 (as on June 2015). The national average of the wage rate for this category of workers is only □232. The wage rate in Kerala is over 150 percent higher than the National average. Figure 3.21 shows the performance of Kerala in terms of male agricultural

workers in rural area with national average and the southern states.

Fig 3.21

Average Daily Wage Rate of Male Agricultural Workers in Rural Kerala

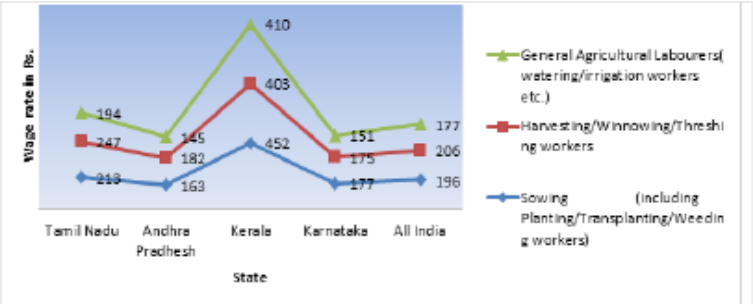


Source: Labour Bureau,Ministry of Labour & Employment,GoI

3.176 For female agricultural workers in rural Kerala, □410 is the average daily wage rate compared to the national average □177. For sowing and harvesting workers, the wage rate in Kerala are 452 and 403 compared to the national average of □196 and □206 which is 130 and 95% higher than the National average respectively. A comparission of daily wage rates of female agricultural workers in southern states as on June 2015 is given in the Figure 3.22.

Fig 3.22

Average Daily Wage Rate of Female Agricultural Workers in Rural Kerala



Source: Labour Bureau,Ministry of Labour & Employment,GoI.

3.177 Even though the wage rates of agricultural labourers in rural Kerala are higher than that in other parts of the country, the wage disparity between the male and female workers is noticeable. The male-female wage gap among the rural workers engaged in harvesting/winnowing/threshing is 33 percent ie. female worker wage rate is equals to 67% of male workers' wage rate. Table 3.6 shows the male-female difference of agricultural workers in Kerala and other southern states of India.

Table 3.6

Wage difference among male and female agricultural workers in Kerala

State	Sowing (including Planting/Transplanting/Weeding workers)		Harvesting/Winnowing/Threshing workers		General Agricultural Labourers	
	Wage rate (Female)	% of women wage rate to men wage gap	Wage rate (Female)	% of women wage rate to men	Wage rate (Female)	% of women wage rate to men
Tamil Nadu	213	66	247	65	194	56
Andhra Pradhesh	163	73	182	80	145	69
Kerala	452	69	403	67	410	70
Karnataka	177	74	175	70	151	71
All India	196	80	206	84	177	76

Note: Wage gap = Wage rate (F) / Wage rate (M) x 100

Source : Compiled data from Labour Bureau,Ministry of Labour & Employment,GoI

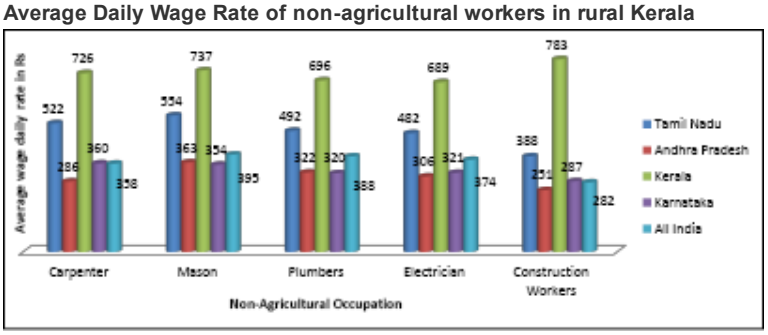
Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.178 Similar to agricultural workers, the wage rate for non agricultural woekers in rural Kerala is also higher than those in other parts of the country. Figure 3.23 shows the average daily wage rates of the non agricultural workers engaged in different occupations in Kerala. The daily wage rate of a carpenter in Kerala is □726, which is 102 % higher than the national average of □358. Likewise, the average daily wage rate of a mason in Kerala is □737 which is 86% higher than the national average of □395.

Fig 3.23

Average Daily Wage Rate of non-agricultural workers in rural Kerala



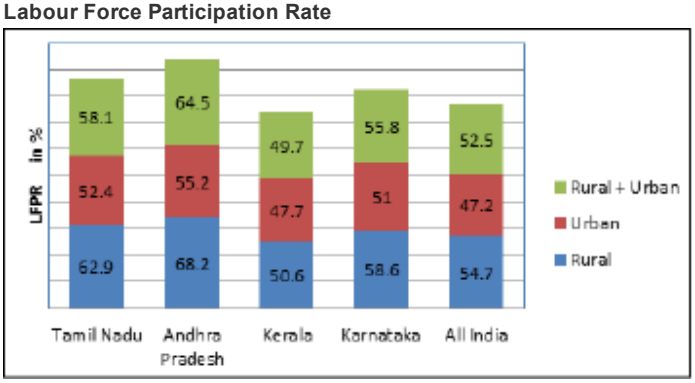
Source: Labour Bureau, Ministry of Labour & Employment, GoI

LFPR and WPR

3.179 Even though labour in Kerala is more literate, the Labour Force Participation Rate (LFPR) and Worker Population Ratio (WPR) for the persons of age group of above 15 are below the national average and this has been a persistent characteristic of the Kerala labour market. The 4th Round of Report on Employment & Unemployment Survey, 2013-14, Labour Bureau, Ministry of Labour & Employment, and Government of India shows that LFPR in Kerala is 49.7% while it is 52.25% for the country as a whole. In rural Kerala LFPR is 50.6% which is one of the lowest among the Indian states. However, in urban Kerala it is 47.7% which is equal or slightly higher than the national average of 47.2%. Among the Indian states, Telangana and Andhra Pradesh report LFPR of 66.3% and 64.5% respectively and are at the top.

Fig 3.24

Labour Force Participation Rate



Source : Ministry of Labour & Employment, Government of India.

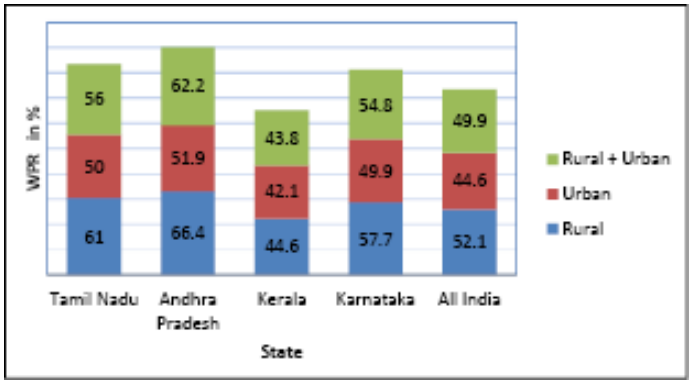
3.180 For Worker Population Ratio, the national average is 49.9% while it is 43.8% in Kerala.This gap is attributed by the low level of rural WPR of 44.6% which is 16 % lower than the national average. Among the southern states, rural WPR in Andhra Pradesh (66.4%) and Tamil Nadu (61%) are higher.

Fig 3.25

Worker Population Ratio

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters



Source : Source : Ministry of Labour & Employment, Government of India.

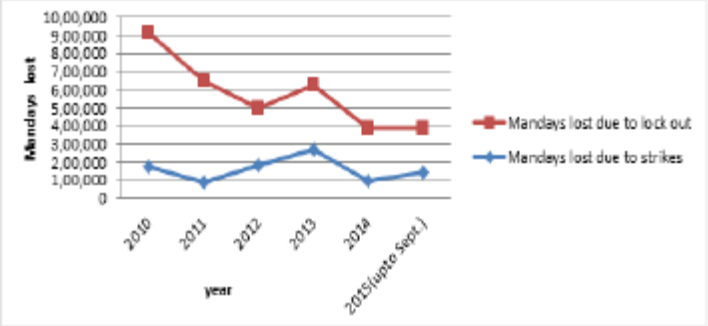
Composition of Workers

3.181 The labour community in Kerala mainly consists of those who are engaged in the informal sector (loading & unloading, casual work, construction work, brick making self employment etc), traditional industries (coir, cashew, handloom, beedi etc), manufacturing sector (small, medium and large industries), IT industry, units in export promotion zones and those who are seasonally employed.

Industrial Relations

3.182 Healthy relation between employer and employee is the key to sustained industrial development. The responsibility of the Labour Department is to aid and maintain a harmonious balance between the labourers and management to maintain conducive atmosphere for achieving the objective of industrial growth and prosperity in the State.

Fig 3.26
Mandays lost due to strikes and lock outs



Source: Labour Commissionerate,GoK.

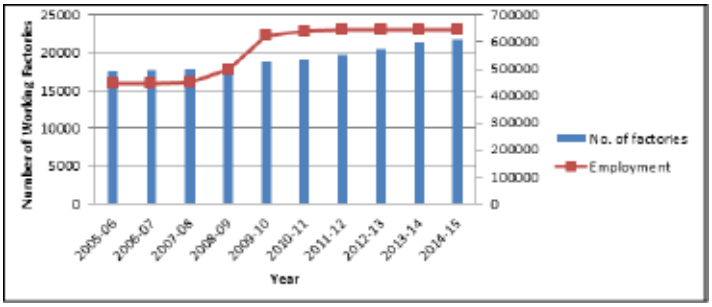
3.183 The man-days lost due to strikes in the State for the year 2014 is 94 thousand against 2.68 lakh in the year 2013. Likewise, in the case of mandays lost due to lock out, the figure for the year 2014 is 2.91 lakh while it was 7.41 lakh in 2010.

3.184 This is despite the fact that for the last ten years, the number of working factories in the state has steadily increased. Appendix 3.54, 3.55 and 3.56 shows the details of man days lost due to strikes, lock outs and layoff in Kerala.

Fig 3.27
Number of Working Factories in Kerala

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters



Source: Factories and Boilers Department, GoK

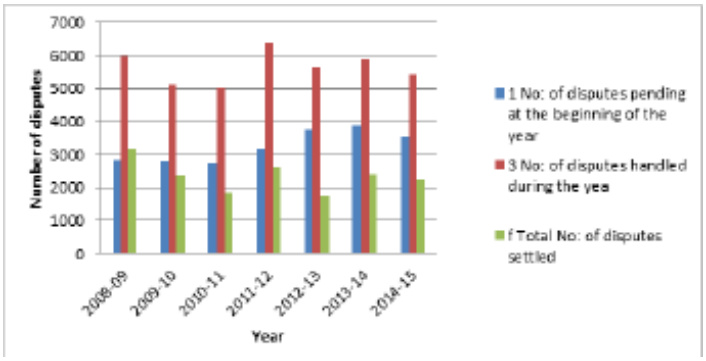
3.185 Number of factories working in the State during 2005-06 was 17486, now it has increased to 21764. Subsequently the average daily employment creation in these factories increased from 4.45 lakh in 2005-06 to 6.46 lakh in 2014. Appendix 3.57. shows number of working factories and employment details in Kerala.

Industrial Disputes

3.186 Providing a platform for raising and settlement of the issues between employee and employer is an essential requirement for ensuring harmonious labour relations in the State. Industrial Dispute Act of 1947 gives the legal framework for the purpose. Number of disputes pending at the beginning of the year increased from 2770 in 2009-10 to 3525 in 2014-15. The total disputes handled during 2009-10 was 5122 and the disputes settled for the same year was 2357.In 2014-15 number of disputes handled is 5445 and settled is 2242. Details of number of disputes in Kerala is given in the Appendix 3.58.

Fig 3.28

Industrial disputes in Kerala



Source: Labour Commissionerate,GoK

Safety of the Factory Workers

3.187 The Department of Factories and Boilers is the statutory authority to ensure safety, health and welfare of all workers in factories and the general public, living in the vicinity of factories. The Department carries out various programmes for the safety of the workers. During 2014-15, 63 priority inspections have been done for studies were completed in hazardous factories, 328 inspections of hazardous factories by specialist inspectors and nine medical examinations of factory workers have been completed. The Department has been conducting training programmes not only for factory workers and employees but also for school children and general public near factory premises.

Employees State Insurance Scheme

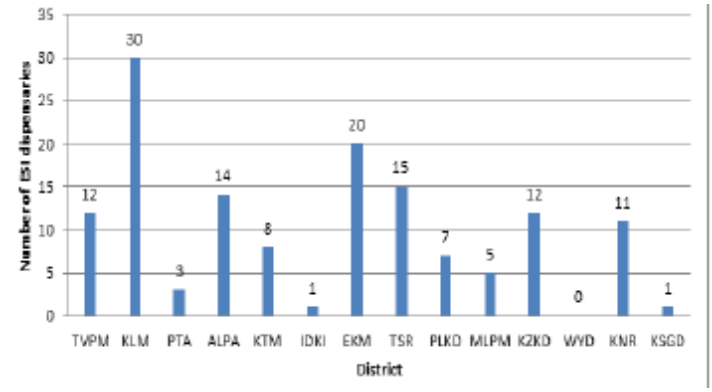
3.188 The Employees' State Insurance Scheme (ESI Scheme) of the Indian Government aims at protecting 'employees' against the hazards of sickness, maternity, disability and death due to employment injury and to provide medical care to insured persons and their families. This scheme covers all the employees working in factories running on non-seasonal power that employ 10 or more persons, and factories not using power that employ 20 or more persons. It also includes those working in shops, hotels, restaurants, cinemas, road motor transport undertakings and newspaper establishments. Each insured employee and their employer are required to contribute a certain percentage of their wages to the ESIC every month. These rates are revised from time to time. The ESI Scheme runs like most of the social security schemes. It is a self-financing health insurance scheme and the contributions are raised from covered employees and their employers as a fixed percentage of wages. The payments are to be made on a monthly basis. An employee covered under the scheme has to contribute 1.75% of the wages whereas the employer contributes 4.75% of the wages payable to an employee. The total contribution in respect of an employee thus works out to 6.5% of the wages payable. However, employees earning less than □50 a day are exempted from making the contribution. All insured persons and dependants are entitled to free,

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

full and comprehensive medical care under the scheme. This medical care is provided through a network of ESI dispensaries, empanelled clinics, diagnostic centres and ESI hospitals. Super speciality facilities are also offered through empanelled advanced medical institutions. Currently, six types of benefits are provided. These are medical, sickness, maternity, disablement, dependants' and funeral expenses.In Kerala there are 139 dispensaries whose distribution across the state is given in Figure 3.29. It is to be noted that there is no ESI dispensary in Wayanad.

Fig 3.29
District wise ESI Dispensaries in Kerala

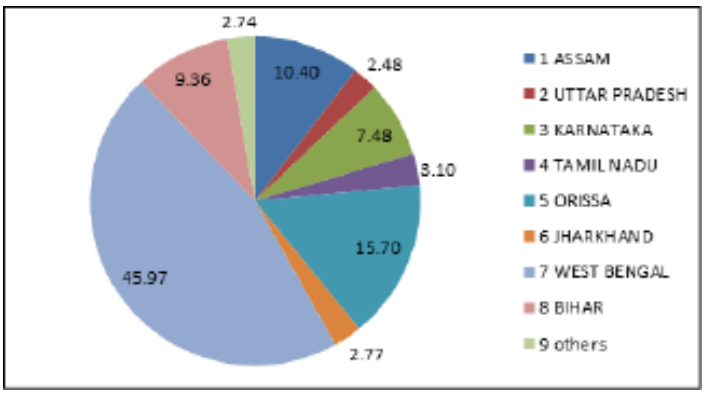


Source: Directorate of Insurance Medical Services, TVPM

Migrant Labour

3.189 The recent trend in the employment sector in the State shows a large inflow of migrant workers from other states such as West Bengal, Bihar, Odisha, Uttar Pradesh, Chhattisgarh, Jharkhand etc. besides the neighbouring State.

Fig 3.30
Origin wise Inter State Migrant Workers in Kerala



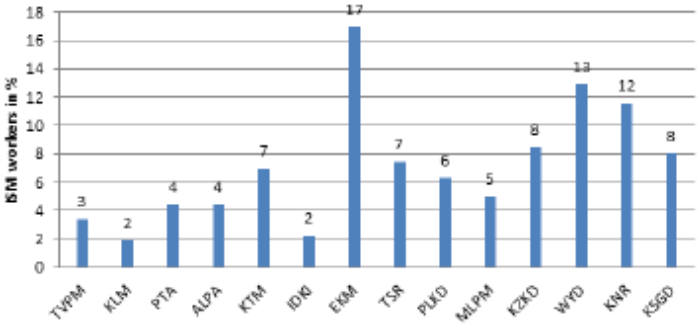
Source: Labour Commissionerate, GoK

3.190 The distribution of migrant workers from different states is given in Figure 3.30. As may be seen out of the total ISM workers 46% are from West Bengal followed by Orissa (16%) and Assam (10%). The distribution of district wise migrated workers in the state shows that Ernakulam has the highest proportion of inter-state migrant workers (17%) followed by Wayanad (13%) and Kannur (12%). Figure 3.31 presents distribution of ISM workers by district. Details are given in the Appendix 3.59.

Fig 3.31
District Wise ISM Workers in Kerala

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters



Source: Labour Commissionerate

3.191 The ISM workers are engaged in different areas such as agriculture, construction, hotel and restaurant, manufacturing and trade. It is seen that 60% of the migrant workers are engaged in the construction sectors,8% in manufacturing, 7% under hotels and restaurants, 2% each under trade and agriculture and the remaining 23% workers are engaged under other activities.

Size and Sectoral Composition of Domestic Migrant Labourers in Kerala

3.192 Kerala has witnessed two major transformations during the last four decades. Firstly, migration of labour to the Middle- East, the current stock of which is of the order of 22 lakh. Secondly, almost universal enrolment of children in schools and the elongation of the duration of education meant withdrawal of entry into the labour force in Kerala, or delayed entry. Those who come out of the educational system do not enter a number of sectors such as agriculture, construction and so on. The two processes together have created demand for labour in the Kerala economy which is being met by migrants from all over India.

3.193 Migration of labour from other parts of the country into Kerala began in trickles in the 1990s and was confined to some pockets of the state. Domestic Migrant Labour in Kerala, a study completed in February 2013 adopted a unique train based survey of Domestic Migrant Labour (DML) to estimate their stock and the annual inflow. The train survey covered all the 63 long distance trains entering Kerala through Kasaragod and Palakkad and generated estimates of the stock of DML of over 25 lakhs, annual arrivals of 2.35 lakhs, and remittances of over □17, 500 crores a year. Currently, 32 lakh labour would be working in Kerala. They are spread over all parts of the state and all sectors of the economy. Migrant labour is not a homogeneous mass. They are differentiated by language, their state and district of origin, the channels through which they reach Kerala, and the place and sector in which they work.

3.194 Over 75 per cent of the DML come from five states, namely Uttar Pradesh, Assam, West Bengal, Bihar and Orissa. The largely male work force aged 18 to 35 years uses friends and relatives as the main channel of migration, and they mostly work under contractors and get employment for six to seven days a week. Whereas 60 per cent of them are employed in the construction sector, their presence is felt in hospitality, manufacturing, trade and agriculture. The skill sets range from unskilled to skilled carpentry, masonry, electrician and the like. Over 70 per cent of them earn wages above □.300 per day, remit □.70, 000 per person annually almost entirely through banking channels.

3.195 DML work long hours and are dedicated and sincere; they put in long hours and are ready to do overtime. The normal working day ranges between 8 to 14 hours depending upon the sector, location and type of contract. But they are denied social security benefits. Many of the DML, who have worked outside their states of origin, have been attracted to Kerala by the higher wage level and the prompt payment. The DML often live in crowded rooms with hardly any space to move around: 42% reported seven or more in a room, 13% reported six, 12% reported five, 13% four and 8% reported three in a room. Only about 5% of all DML reported one or two persons in the room. Further, almost 84% of them congregate and 94% do common cooking among their own language groups.

3.196 The size of domestic migrant labour has grown over the years but an understanding of their employment is poor. Little is known about their employment in establishments and their proportions in total workers. A recent study explored this vast area in terms of the incidence, demographic profile, and work life of the migrant labour in Thiruvananthapuram. The study estimated the incidence of employment of migrant labour in the establishments (proportion of establishments hiring at least one migrant labour) in Thiruvananthapuram to be 30.23 per cent. Among the establishments surveyed, hotels and construction activities report incidence of 100 per cent. In dry cleaning centres, the incidence was 66 percent. In vegetable, fruits, and fish selling establishments the incidence was 60 percent and in furniture and wood works 55 per cent. Fifty percent of the hardware and workshops employ migrant labour.

3.197 There is no incidence of migrant labour in establishments like stationary, provisions, medical shops, electricals, mobile shops, petrol pumps, and jewelry shops. Employment of migrant workers in medical shops and electricals is not to

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

be found, probably because it requires a minimum education and fluency in the vernacular language, which rules out the possibility of employment of migrant workers.

3.198 Turning to the proportion of migrant workers in the total workers, 35.18 per cent of labour working in the establishments in Thiruvananthapuram city are migrant labour. Construction sector is not included in the estimation as it is difficult to estimate the total number of labour working on construction sites. As regards variation in proportion of migrant labour across sectors, the highest proportion is in hotels and restaurants (54.29 per cent) followed by groceries (40 per cent). At 39.98 per cent, bakeries and sweet stalls come third. The group of establishments consisting of sawmills, hire shop, shops selling spices, bore well service, cement shops, tile shops and gas agency, report the proportion of migrant workers in the total at 36.63 per cent.

3.199 West Bengal, Assam and Jharkhand account for nearly 71 percent of the total migrant labour in Thiruvananthapuram. About 19 per cent of the migrant labour are from Bihar, and Uttar Pradesh. And the rest are from Orissa, Tamil Nadu, Gujarat, Manipur, and Nepal. The migrants from West Bengal, Assam, Bihar and Uttar Pradesh are seen in almost all sectors. However, the Tamil migrant workers are seen only in few bakeries, tea stalls, and textiles. The Manipuri migrant workers are seen in beauty parlours and Nepali migrants in hotels and Gujaratis in tailoring. Overall, migrant labourers have become the backbone of Kerala economy.

3.200 With the large inflow of migrant workers, their welfare and protection has to be ensured. The schemes for their protection lag in their implementation following the lack of awareness on the part of the migrant workers. This can be related to the language difference as most of the advertisements regarding Government schemes are in English or Malayalam which are not the language of the migrants. The right to the city, which encompasses rights and access to food, housing, education, health, work, and local democracy, should also apply to migrants. Migrants provide a low-cost flexible workforce for the urban informal economy. They often work long hours in poor working conditions, devoid of social security and legal protection .There is a need to ensure that all migrants and their families have access to services and entitlements as enshrined in policies and law, while ensuring urban settlements become inclusive spaces as they expand in size and diversity

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Section 7

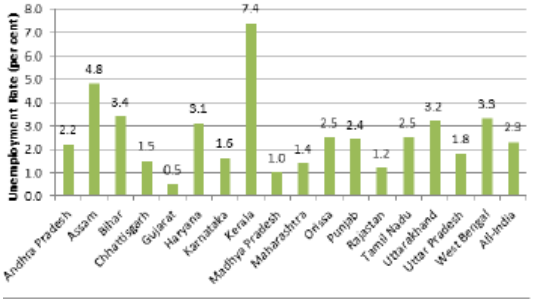
Employment

Unemployment Situation in Kerala

3.201 One of the major problems that exists in Kerala is unemployment. There is an increase in labour supply due to the increase in the number of women job seekers in various sectors since the 1970's, has resulted in rapid rise in unemployment in Kerala. Further the growth of educated manpower has increased the demand for white-collared jobs. As there is a lack of job opportunities in our State, which ensure high wages, many are emigrating especially to Gulf countries. Migration of people to foreign countries results in inflow of remittances into the State, which is one of the important drivers of our economy. However, emigration also has several drawbacks and adverse impacts on the domestic economy.

3.202 The Employment and Unemployment Surveys conducted by the National Sample Survey Office (NSSO) are the prime source of data on labour market in India. These surveys are usually conducted every five years. However, recently NSSO carried out two surveys at two year interval in the years 2009-10 and 2011-12. The reason for conducting a survey in 2011-12 in such quick succession was due to the economic conditions in 2009-10. The world wide recession and drought made 2009 a bad base year for comparisons.
3.203 The State records the highest unemployment among the Indian states. According to the latest Survey, Kerala is having the highest Unemployment Rate (UR) under all approaches (See Appendix 3.60 and Figure 3.32). Only two small States viz; Nagaland and Tripura have a higher UR than Kerala. Unemployment in Kerala is found to be over three times the all India average.

Fig 3.32
Unemployment Rate of major States as per 68th
National Sample Surveys (UPSS) – 2011-12 (Age: 15-59 years)

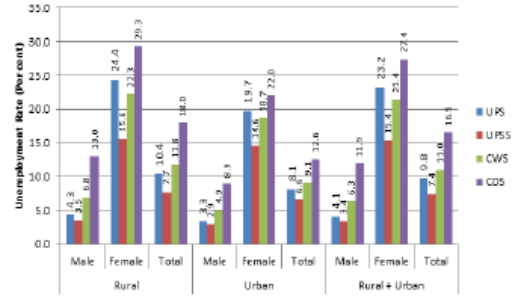


Source: Employment and Unemployment Situation in India, NSS Report No. 554 (NSS 68th Round, July 2011- June 2012)

3.204 As per Usual Principal Subsidiary Status (UPSS) approach, the lowest unemployment rate of 0.5 per cent is estimated in Gujarat. The other major States, which have lower Unemployment Rate than the all India average (2.3 per cent) are Madhya Pradesh (1.0 per cent), Rajasthan (1.2 per cent), Maharashtra (1.4 per cent), Karnataka (1.6 per cent), Uttar Pradesh (1.8 per cent) and Andhra Pradesh (2.2 per cent). Tamil Nadu has an unemployment rate of one-third of Kerala's rate.

3.205 In Kerala, the unemployment rate is higher in rural areas as compared to urban areas under all approaches (See Figure 3.33). While comparing the unemployment rate of male and female, it is seen that UR is much higher among females as compared to males. A comparison between different estimates of unemployment indicates that the Current Daily Status (CDS) estimate of unemployment is the highest. This scenario reflected both in rural and urban areas. The higher unemployment rates according to the CDS approach compared to the Current Weekly Status (CWS) and usual status approaches (UPS and UPSS) indicate a high degree of intermittent unemployment in Kerala.

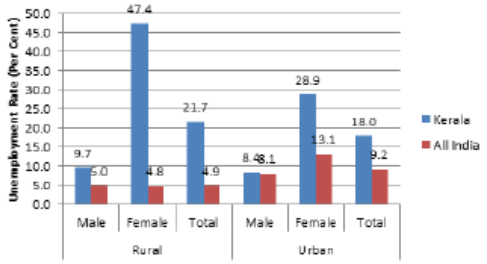
Fig 3.33
Unemployment Rate in Kerala under different approaches as per 68th National Sample Surveys – 2011-12 (Age: 15-59 years)



Source: Employment and Unemployment Situation in India, NSS Report No. 554 (NSS 68th Round, July 2011- June 2012)

3.206 Persons aged 15-29 years is considered as youth and in Kerala the youth accounted for about 23 per cent of the total population. It is seen that during 2011-12 the unemployment rate among the youth in Kerala is much higher as compared to that in the overall population. The UR of the youth is 21.7 per cent for rural areas and 18.0 per cent for urban areas. Further the UR among the female youths is much higher than that of the male youth. For instance, in rural Kerala the female UR is 47.4 per cent as against the male UR of 9.7 per cent. (Figure 3.34).

Fig 3.34
Unemployment Rate of the Youth in Kerala and India as per UPSS approach (68th National Sample Surveys – 2011-12) (Age: 15-29 years)



Source: Employment and Unemployment Situation in India, NSS Report No. 554 (NSS 68th Round, July 2011- June 2012)

3.207 Estimates on key indicators reflecting the prevalence of employment/ unemployment in Kerala for all persons based on the surveys conducted by the NSSO in 2009-10 and 2011-12 are given in Appendix 3.61. All India figures may be seen

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

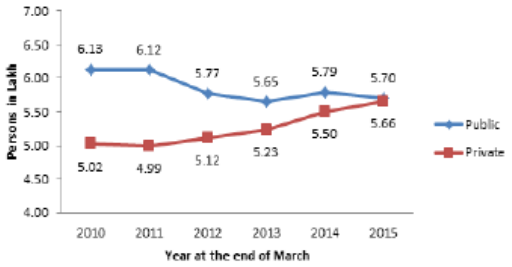
in Appendix 3.62.

Employment in the Organised Sector

3.208 In Kerala, employment in the organised sector is coming down. For instance, persons employed in organised sector decreased from 12.26 lakh in 2000 to 11.4 lakh in 2005 and further to 10.88 lakh in 2013, a reduction of 11.3 per cent over a period of 13 years. This is mainly due to the reduction of persons working in the public sector. However, the number raised marginally to11.29 and 11.36 lakh in 2014 and 2015 respectively.

3.209 The organised sector comprises private and public sectors and it is interesting to note that private sector employment is steadily increasing since 2011in Kerala. For instance, in 2015 out of 11.36 lakh persons employed in the organised sector 5.7 lakh (50.2 per cent) are in the public sector and 5.66 lakh (49.8 per cent) are in the private sector. (See Appendix 3.63 and Figure 3.35). All India figures may be seen at Appendix 3.64.

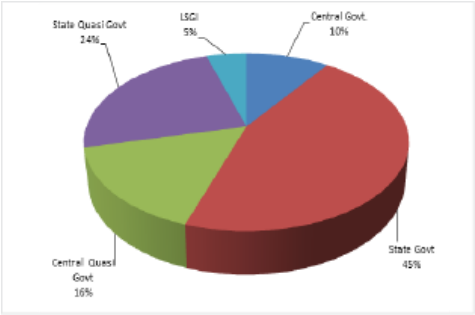
Fig 3.35
Employment in the Organized Sector- Kerala



Source: Directorate of Employment, Govt. of Kerala, 2015

3.210 Within the public sector employment as on December 2015, 45 per cent are employed in State Government and 10 per cent are in Central Government, 24 per cent are in state quasi, 5 per cent in LSGI and 16 per cent are in Central quasi institutions. One interesting feature is the decreasing number of Central Government workers over the years (Figure 3.36, Appendix 3.65 and 3.66).

Fig 3.36
Distribution of Employment in Public Sector- December 2015



Source: Directorate of Employment, Govt. of Kerala, 2015

3.211 Data on district-wise employment as on March 2015 indicate that Ernakulam and Wayanad are the two districts which respectively accounted for the highest and lowest employment both for Public and Private Sectors. Total organized sector employment in Ernakulum District is 2.00 lakh persons, which accounted for 17.6 per cent of the total employment of the State. Whereas in Wayanad the employment under organized sector is 26,173 persons, which accounted for only 2.3 per cent of the total employment. An interesting point is that men outnumber women in public sector employment, about 66.0 per cent of public sector employment is men (See Appendix 3.67 & Appendix 3.68).

3.212 The sectoral distribution of workers in organised sector across different years indicates that the dependence on agriculture continues to decline; whereas dependence on service sector continues to rise. The employment in agriculture (relative to other sectors) gradually fell from 7.5 per cent in 2004-05 to 5.9 per cent in 2014-15. Whereas, the relative share of employment in Community, Social and Personal Services increased from 44.7 per cent in 2004-05 to 50.43 per cent in 2014-15 (See Appendix 3.69). This indicates that nearly half of the employment is in the community, social and personal services. Manufacturing sector accounted for 20.4 per cent of employment. All India figures may be seen in Appendix 3.70.

Employment in Unorganised Sector

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

3.213 Unorganised sector constitutes a pivotal part of the Indian economy. More than 90 per cent of workforce and about 50 per cent of the Gross Domestic Product are accounted for by the unorganized economy. A high proportion of socially and economically weaker sections of society are concentrated in the unorganized economic activities in India and Kerala.

3.214 According to the latest employment and unemployment survey carried out by the NSSO as part of the 68th round during 2011-12 it is estimated, as per UPSS approach, self employed workers in Kerala constituted 37.7 per cent of the total workers. Comparatively the percentage share of regular wage/salaried employee accounted for 22.5 per cent and that of casual labour accounted for 39.8 per cent.

3.215 Department of Employment in Kerala is taking measures to reduce instances of unfair practices that exist. Employment in the unorganized sector is carried out usually through private agencies, who sometimes exploit both the service seekers and service providers by exhorting huge commissions from them. A web based interface is proposed to be launched soon to bring both the service seekers and service providers together without the intervention of middle men.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Employment Exchanges and their Services
Registered Job Seekers

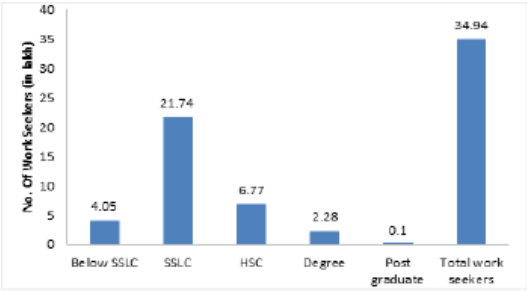
3.216 At the national level, as on 31-12-2013, there were 468.03 lakh registered job seekers at the 956 Employment Exchanges all over India. Out of this, 302.54 lakh are men (65.0 per cent) and 165.49 lakh women (35.0 per cent). Year-wise all India registration, placement, vacancies notified, submission made and Live Register for the period 2002 to 2013 are given in Appendix 3.71.

3.217 The main feature of live registers of employment exchanges in Kerala till 2012 was that the numbers of work seekers were increasing year after year mainly due to non-updation of lapsed registrations. The Employment Department has recently computerized live registers for making verifications. As a result the number of work seekers in the live registers of the employment exchanges in Kerala has decreased significantly.

3.218 According to live registers of employment exchanges in Kerala, the total number of work seekers as on 31st December 2012 was 44.99 lakh. But it has now declined to 36.57 lakh as on 31st December 2015, a reduction of about 8.42 lakh; mainly due to the computerisation of live registers and removal of lapsed registrations. Details of work seekers for various years may be seen at Appendix 3.72.

3.219 Contrary to the all India scenario women are found to be more in the live registers in Kerala. Of the total job seekers 56 percent (20.53 lakh) are women. Number of illiterate persons in the Live Register is 168. Distribution of job seekers by educational level indicates that only 11 per cent have qualification below SSLC. About 59 per cent of the work seekers are in the category of qualifications having SSLC. (Figure 3.37 and Appendix 3.73).

Fig 3.37
Registered job seekers in Employment Exchanges - Kerala
(As on 31st October 2015)



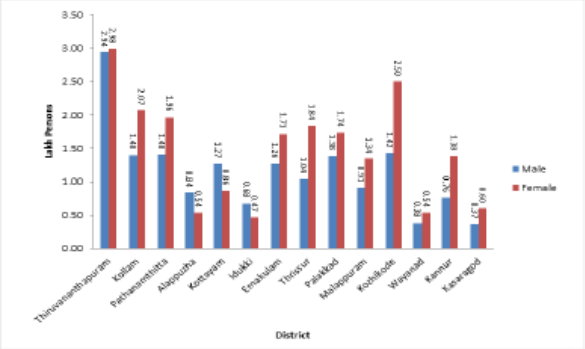
Source: Directorate of Employment, Govt. of Kerala, 2015

3.220 The number of professional & technical work seekers as on 31st October 2015 is 1.63 lakh. Data reveal that ITI certificate holders and Diploma holders in Engineering together constitute 97 per cent of the total professional & technical work seekers. There are 23,984 registered Engineering Graduates (Appendix 3.74).

3.221 A significant and peculiar feature of Kerala is that women outnumber men who seek employment through employment exchanges. This position is reflected in all districts in Kerala except Alappuzha,Kottyam and Idukki. The district-wise work seekers in Kerala is shown in the following graph (See Figure 3.38).

Fig 3.38

Work Seekers in Kerala as on 31-12-2015
(Status of Men and Women)



Source: Directorate of Employment, Govt. of Kerala, 2015

3.222 Thiruvananthapuram District ranks first in the number of work seekers in general and professional/technical categories as on 31-12-2015. The total number of work seekers in Thiruvananthapuram district is 5.9 lakh; of which 2.98 lakh are women and 2.94 lakh men. The second largest number of work seekers is in Kozhikode district with 3.9 lakh persons. The lowest number of work seekers is in Wayanad district with 0.92 lakh persons, preceded by Kasargode District with 0.97 lakh persons. Male work seekers exceed female is only three districts, Alappuzha, Kottayam and Idukki. (Appendix 3.75).

3.223 All registered job seekers cannot be treated as unemployed. Youngsters register their names mainly for Government jobs while many of them may be engaged in some useful productive work or might have migrated to other states or foreign countries for employment. Even though the live registers have been computerized, no effective mechanism is put in place to find out those persons who are engaged in useful productive work. It is essential that live registers reflect the actual unemployment position of the State so as to enable the Government to formulate policies and programmes for the real unemployed persons in a meaningful way. The government conducted a job fair'Niyukthi-2015'during 2014-15, The details are provided in Box 3.13.

Box 3.13
Niyukthi-2015

Niyukthi-2015 was a Mega Recruitment Drive conducted by the Government of Kerala through the Employment Department. Deviating from the traditional way of conducting job fairs, modern technologies like dedicated software, 'whatsapp' technology was used and hitherto-new event-management technology by the government officials, orientation programme for job seekers, pre-employers meet for the employers etc, were held .This mega event in which 42821 jobseekers participated, was held in 5 centers in the State and 17875 candidates got placed.

3.224 In 2015-16, the government launched the Comprehensive Mission on Employment Generation (MEGA), single overarching mechanism designed to provide holistic direction and oversight to self employment programmes implemented by various governmental agencies and Banks. Details of MEGA may be found in Chapter 9.

Self Employment Schemes implemented through Employment Exchanges

3.225 Three self employment schemes are implemented through the Employment Exchanges in Kerala. 'Kerala Self Employment Scheme for the Registered Unemployed' (KESRU) is being implemented since 1999 and is intended for unemployed persons in the live register between the age 21 - 50 years with annual family income not exceeding □.40,000 and individual income below □500 per month. Bank loan up to □1.00 lakh with a 20 per cent subsidy is given for self employment ventures.

3.226 'Multi-Purpose Service Centers/Job Clubs (MPSC/JC) is a group oriented self-employment scheme for development of enterprises in the unorganised sector. Bank loan up to □10 lakh with a maximum of □2 lakh as subsidy is given for starting self-employment group ventures of 2 to 5 members, who are unemployed persons in the live registers in the age group of 21-40 years.

3.227 'Employment Scheme for the Destitute Women' (Saranya) is a scheme for uplifting the most backward and segregated women in the State, namely widows, divorced, deserted, spinsters above the age of 30 and unwedded mothers of Scheduled Tribe. Under this scheme interest free bank loan upto □50,000 with a 50 per cent subsidy (maximum □25,000) is given for starting self-employment ventures.

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Unemployment Assistance

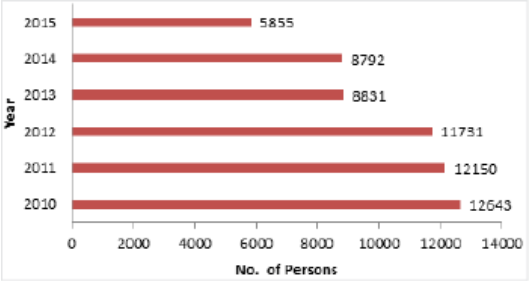
3.228 Government of Kerala has introduced an unemployment assistance scheme in 1982. Under the scheme, unemployed youths remaining in the live registers for over three years (physically challenged two years) after attaining the age of 18 and having passed SSLC (but the SC/ST & physically Challenged candidate need to have only appeared for SSLC examination) and having annual family income below rupees 12,000 and personal income below rupees100 per month are eligible for an unemployment assistance of □120 per month up to the age of 35 years of age. During the year 2015 an amount of □37.37 crore was disbursed to 196123 beneficiaries.

3.229 As per the Kerala Panchayat Raj Act (1994) and Kerala Municipality Act (1994), the scheme of unemployment assistance has been transferred to Grama Panchayats and Urban Local Governments since 1998. The eligible candidates can submit their application for unemployment allowance in the prescribed form to the local government concerned. The Welfare Standing Committee at the Local Governments scrutinizes the application based on the eligibility criteria and decides the eligible candidates.

Placement through Employment Exchanges in Kerala

3.230 The placement through Employment Exchanges in Kerala has been declining since 2010. Total placement has declined from 12643 in 2010 to 5855 in 2015. Reduction in placement may be due to temporary posts either being filled up on daily wage/contract basis or being kept vacant. The placement through employment exchanges in Kerala since 2010 is shown in Figure 3.39.

Fig 3.39
Placement through Employment Exchanges –Kerala



Source: Directorate of Employment, Govt. of Kerala, 2015

Outlook

There are not the best of times for industry and labour. In a situation of slide in growth following the global financial crisis emerging economies were a counter force. But crisis has overtaken the emerging economies too, almost all of them at the same time. The euphoria surrounding Indian high growth too has come under a cloud. Kerala never had great strength in manufacturing. But some of the traditional industries have shown better performance this year. Bad times for industry are bad times for labour as well. Kerala has taken some major steps is upgrading the skills of labour and for boosting entrepreneurship. Skill training has begun making strides in the State. A boost to entrepreneurship is the Comprehensive Mission on Employment Generation. When the tides turn for the better our workers who are better prepared will be the first to take advantage of it. The State needs to promote its small and medium enterprises and enhands its competitiveness. Entreperneurship, Innovation and skill development are the buzzwords to develop a strong industrial base in the State.

Top

Manufacturing
MSME
PSUs
Food Processing
Traditional Industries
Labour welfare
Employment
Top

Other Chapters

Chapter 4

SOCIAL SERVICE

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Introduction

Kerala's development and achievements on social front has been lauded in both national and international circles. The progress made in the realm of education, health and gender development have been noteworthy. The State has been much ahead of the rest of the states in terms of access to basic services including education and medical care and in improving the socio-economic conditions of SC/ST. This has been achieved mainly through large scale intervention and targeted efforts by the Government. However, the efforts needs to be sustained to maintain and even achieve higher levels of social development. Further the emerging challenges in each sector needs to be addressed to make the growth process more inclusive.

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Section 1

Education

The development experience of Kerala has always invoked long and interesting discussions about the links between economic and social development in the context of third world countries. Kerala's achievements in human development indicators are often considered unparalleled in the whole developing World and is often compared with the development

indices of advanced countries. Kerala's particular development experience of high human development achievements against low per capita income level was mainly attributed to the State's public intervention in health and education sectors.

4.2 Throughout the discussion on the State's achievements in human development, education has occupied a prime place. In fact, education has always had a central role in determining Kerala's performance in social development. The early attempts during the 19th and early 20thcenturies – much before India became independent – made by the princely states and Christian missionaries to open schools in the different parts of the region were the first steps in Kerala's journey towards a glorious educational development of the State. The network of educational institutions established during the early modern period coupled with other factors such as the social reform movements and the Government intervention helped the State to strengthen its foundation in this regard. In the early 1990s Kerala became the first ever State in the Indian union to attain universal literacy. The State has also managed to implement policies effectively to make elementary education accessible for its whole population, much ahead of other Indian States.

4.3 Inspite of its remarkable achievements in the education sector in the State, there are prominent gaps when it comes to quality of education being imparted in the State. The same remains true while considering the achievements of the State in the higher education sectors. In this context the State of Kerala is re-orienting its approaches and the institutional arrangements. The State Planning Board has constituted two expert committees. The first Committee, constituted under the chairmanship of Prof. N.R. Madhva Menon, examined the Plan Programmes of the State with a view to maximise access to central schemes and plan resources and prepare an action plan suggesting steps to remove barriers in accessing resources and difficulties in implementation particularly in the areas of higher and technical education. The committee has submitted its report.The second Committee constituted under the chairmanship of Prof. P.O.J. Lebba, looked into the various aspects of the quality of school education in the State and submitted its report with several recommendations to improve the quality of school education.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Expenditure on Education

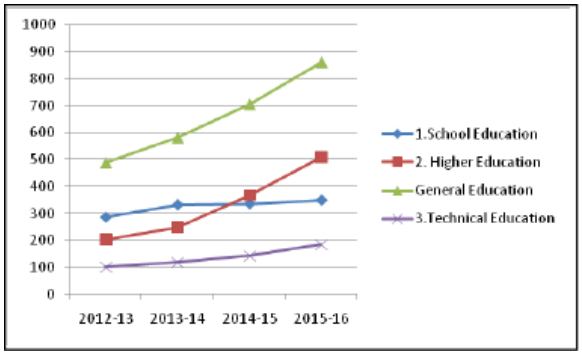
4.4 During the first year of the XIIth Plan an amount of □.. 590.24 crore had been earmarked for Education sector of which 98.78 % was expended and the outlay has increased significantly during these four years with an outlay of □.1044.62 crore in 2015-16. The percentage share of higher education has significantly increased over these four years whereas outlay of technical education has slightly increased during this period. General education gets more than 80% of the total allocation in all these four years. It is also seen that the percentage allocation for technical education is lower, but its percentage expenditure is better. Though the total outlay for all the three sub- sectors is increasing over these four years (See Figure 4.1), the percentage share of school education shows a declining trend during this period. It decreased from 56% in 2012-13 to 33% in 2015-16. This may be due to the fact that the State had achieved most of the primary targets in school education and it has yet to find out new areas of public expenditure for improving the quality of school education. Average Plan Outlay & Expenditure during the first four years of XIIth Plan is given in Table 4.1

Table 4.1
Average Plan Outlay & Expenditure during the first four years of XIIth Plan
(□. in Crore)

Sectors	Annual Plan 2012-13			Annual Plan 2013-14			Annual Plan 2014-15			Annual Plan 2015-16		
	Outlay	Exp.	% of Exp	Outlay	Exp.	% of Exp	Outlay	Exp.	% of Exp	Outlay	Exp up to Nov 2015	% of Exp
1.School Education	287.15	286.54	99.79	333.15	220.2	66.1	336.81	226.63	67.29	349.75	78.37	22.41
2. Higher Education	202	154.15	76.31	247.99	154.15	62.16	367.97	207.29	56.34	510.42	98.15	19.23
General Education	489.15	440.69	90.09	581.14	374.35	64.41	704.78	433.93	61.57	860.17	176.52	20.52
3.Technical Education	101.09	142.33	140.95	117.86	96.95	82.33	143.22	106.44	74.32	184.45	48.75	26.43
Total	590.24	583.02	98.78	699	471.3	67.42	848	540.37	63.72	1044.62	225.27	21.56

Source: Annual Plan Document

Fig 4.1
Trend of sector wise outlay for Education for the first four years of 12th Plan
(□. in Crore)



Source: Annual Plan document, 2016

Literacy

4.5 Literacy and education are important indicators in a society and play a central role in human development. As regards literacy, Kerala ranks first in the country with literacy rate of 93.91% closely followed by Lakshadweep (92.28%) and Mizoram (91.58%) (Census of India, 2011). Kerala's literacy rate, which was only 47.18 % in 1951, has almost doubled by 2011. The male, female literacy gap which was 22% in 1951 has narrowed down to 4.41% in 2011. Kerala holds the first place in the country in female literacy with 92% and Rajasthan records the lowest female literacy rate (52.66%) (Census of India, 2011). Literacy rate of the State from 1951 to 2014 is shown in Appendix 4.1.

4.6 Variation in literacy rate among the districts of Kerala is low. While Pathanamthitta district (96.93%) reports the highest literacy rate in the State followed by Kottayam (96.4%) and Alappuzha (96.26%), Palakkad district has the lowest literacy rate in the State (88.49%). The low rate of literacy of Palakkad district may be due to the prevalence of substantial percentage of Scheduled Caste (SC) and Scheduled Tribe (ST) population in the district. 11.01% of the ST population in the State reporting an average literacy of 74.44% is residing in the district. (The share of ST population in the district population is 1.67%). The share of SC population in the district population is the highest in the State. Literacy rate by sex for districts in 2003 and 2015 is given in Appendix 4.2.

4.7 Kerala State Literacy Mission has been implementing literacy and equivalency programmes by appointing 'Preraks' (representatives of centre for propagating and continuing literacy programmes). Details of the number of people benefiting from equivalency programme of Literacy Mission from 2005 to 2015 are given in Appendix 4.3. It is seen that the number of persons attending up the 7th equivalency examination is steadily decreasing. Over these 10 years, it decreased from 11631 in 2005 to 3492 in 2015. The indications are that illiteracy has almost been eradicated.

Right to Education Act

4.8 The Right of Children to Free and Compulsory Education (RTE) Act, 2009, was enacted by the Parliament of India, which came into existence on 1st April, 2010. The Act describes the norms and standards of the free and compulsory education for children between 6-14 in India under Article 21-A of Indian constitution. By enacting this Act, India became one of the countries to make education a fundamental right of every child. The Act gives every child the right to quality elementary education. It requires the private schools to reserve some seats for poor categories and it also prohibits all unrecognised schools from practice, and makes provisions for no donation or interview of child or parent.

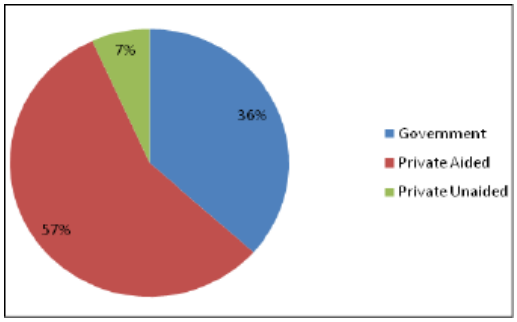
School Education

4.9 There were 12615 schools in Kerala in 2014-15: 4619 (36%) government schools, 7145 (57%) aided schools and 851(7%) unaided schools (Figure 4.2). More Government schools are functioning in lower primary section than upper primary or high school sections. Aided schools outnumber government schools in all sections.

Fig 4.2
Management wise share of schools in the State-2014-15

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters



Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

4.10 Malappuram District has the largest number of schools (1489) in the State followed by Kannur (1289) and Kozhikode (1237). Malappuram also has the largest number of government (546) and unaided schools (162) in the State. But the largest number of aided schools are functioning in Kannur district (959). Details of district-wise, management wise and stage-wise number of schools in Kerala during 2014-15 are given in Appendix 4.4.

4.11 There are 1373 schools in the State which are offering syllabi other than the one prescribed by the State government. These include 1178 CBSE schools, 148 ICSE schools, 33 Kendriya Vidyalaya and 14 JawaharNavodayas. One Jawahar NavodayaVidyalaya school each is functioning in all the districts. District-wise details of schools with syllabi other than state syllabus in the year 2014-15 are given in Appendix 4.5.

Box 4.1
Expert Committee on School Education

Inspite of the high educational attainments in terms of literacy, enrolment, gender parity in educational indicators, school infrastructure etc., the quality of education has been deteriorating in Kerala since recent years. In this context, as per the decision of 12th Board Meeting held on 14-05-2014, Kerala State Planning Board constituted an Expert Committee under the Chairmanship of Prof P O J Lebba for making recommendations for improving the school education system. The Committee met five times and several stakeholders meetings were held. The Committee submitted its recommendations in December, 2015 by addressing several aspects related to the quality of education.

Specific recommendations have been made on (i) teaching, assessment and learning outcomes, (ii) recruitment of teachers, (iii) school governance, (v) school infrastructure and teaching materials, (vi) synchronization of different agencies, (vii) pre-school education, (viii) children with special needs, (viii) arts, crafts and physical education and (ix) approval and accreditation to schools.

Source:State Planning Board 2015.

Physical Infrastructure and Facilities in Government Schools

4.12 All the Government Schools in Kerala are functioning in pucca buildings. Own buildings have to be constructed for 128 government schools which are now working in rented buildings. District-wise details of government schools having building facilities are given in Appendix 4.6.

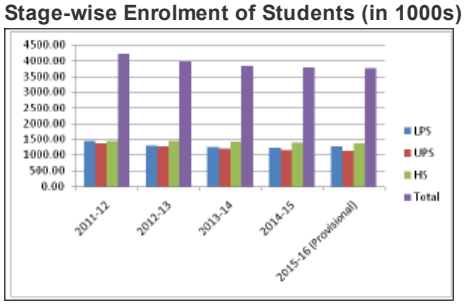
4.13 Local Self Government Institutions and programmes like Sarva Shiksha Abhiyan (SSA) have contributed much to the overall development and improvement of physical infrastructure and common facilities in government schools in the State. Data show that 98.55% of government schools have access to drinking water and 99.7% have urinals/latrine facilities. District–wise details of government schools having drinking water/latrines/urinal facilities in Kerala in 2014-15 are given in Appendix 4.7.

Enrolment of Students

4.14 Enrolment of students in the State has been declining in recent years; the number has declined from 37.9 lakh in 2014-15 to 37.7 lakh in 2015-16 (provisional). Change in demographic pattern of the State due to low birth rate is the main reason attributed for this phenomenon. The decline in the number of students in Lower Primary (LP) section is 11782 numbers in 2014-15 from 2013-14. While the decline in Upper Primary (UP) section is 38406 numbers in 2014-15, and the High School (HS) section shows a decrease of 8652 students over the previous year. The stage-wise enrolment of students in schools in Kerala from 2011-12 to 2015-16 are given in Appendix 4.8. Details of management-wise and standard wise enrolment of students in schools in Kerala during 2015-16 are given in Appendix 4.9. District-wise stage-wise and sex-wise enrolment of students in schools in the State during 2015-16 is given in Appendix 4.10. The section wise decrease in the

enrolment of students in schools is shown in Figure-4.3.

Fig 4.3
Stage-wise Enrolment of Students (in 1000s) in Schools in Kerala



Source:Directorate of Public Instruction

Enrolment of Girl students

4.15 Girl students constitute 49.43% of the total student enrolment in schools. Boys outnumbered girls in all the districts, except Thiruvananthapuram and Alappuzha. In Thrissur, more girls are enrolled in the LP and UP sections. The gender gap exists in Kerala also in terms of enrolment, though the gap is narrow compared to other parts of the country.

Strength of Scheduled Caste and Scheduled Tribe Students

4.16 In 2015-16, Scheduled Caste (SC) students constitute 10.82% of total students in the State. The percentage of SC students in government schools, private aided schools and private unaided schools are 13.66%, 10.59% and 4.03% respectively. It is seen that the percentage of SC students in government schools is higher than that in private aided and private unaided schools. But the number of Scheduled Caste students in private aided schools is 50 percent higher than those in government schools.

4.17 ST students constitute 2.1% of total enrolment in schools in the year 2015-16. The percentage of ST students in government schools, private aided schools and private unaided schools are 3.92%, 1.47% and 0.35% respectively in 2015-16. The standard-wise strength of SC/ST students in the State in 2015-16 is given in Appendix 4.11. Out of the total number of SC/ST students in the State, only 4% of SC and 1.8 % of ST students are enrolled in private unaided schools. The rest are admitted in government and private aided schools. Percentage of Enrolment of SC/ST students in Schools is provided in Table 4.2.

Table 4.2
Percentage of Enrolment of SC/ST students in Schools

Management	Others	SC	ST	Total
Government	82.42	13.66	3.92	100
Private Aided	87.94	10.59	1.47	100
Private Unaided	95.62	4.03	0.35	100

Source: Directorate of Public Instruction

Drop-out rate

4.18 Kerala has achieved the distinction of having the lowest dropout rate of school students among the Indian states. In the year 2013-14, dropout ratio among school students in Kerala was 0.27%. The dropout ratios in Lower Primary stage and High School stage are higher compared to that of the UP stage. Dropout rate is highest among high school students.

4.19 Among the Districts, Idukki has the highest dropout ratio in the lower primary section (0.89%). In upper primary section and high school, Wayanad has the highest ratios with 0.98% and 2.62% respectively. The high dropout ratio may be attributed to the higher population of Scheduled Tribe students in these districts. District-wise/stage-wise dropout ratio in schools in 2013-14 is given in Appendix 4.12. Drop-out ratio among SC students in Kerala during 2013-14 was 0.28% and that of ST students was 2.63%. District wise and stage wise details of drop out among SC and ST students in Kerala for the year 2013-14 are given in Appendix 4.13 & 4.14.

Number of Teachers

4.20 The number of school teachers in Kerala, including Teachers Training Institute (TTI) teachers, during 2014-15 was 164154. Of the total, 97875 (59.62%) teachers are working in aided schools and 12431 (7.57%) teachers are working in

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

private unaided schools. The remaining 32.8 % of teachers are working in government schools. 51.79% of total teachers in the State are teaching in high schools, 24.74% in upper primary schools, 23.03% in lower primary schools and the remaining (0.44%) in TTI's. 71.85% of total teachers in the State are women. Stage-wise and management-wise number of teachers in Kerala during 2014-15 is given in Appendix 4.15.

Uneconomic Schools

4.21 Schools with insufficient strength of pupils are termed as uneconomic schools. In 2014-15, there were 5573 uneconomic schools in the State, which was an increase of 161 schools over the previous year. Out of these, 2586 were government schools and 2987 were in the aided sector. District-wise analysis shows that highest number of uneconomic schools was in Kannur (743) followed by Kottayam (554), Kozhikode (528) and Pathanamthitta (523). The highest number of uneconomic schools in aided sector is in Kannur (599) followed by Kozhikode (379). In the government sector, Thiruvananthapuram has the largest (306) number of uneconomic schools followed by Ernakulam and Kottayam (267). Among the government uneconomic schools, 73.63% are lower primary schools. In the aided sector also 79.5% of uneconomic schools are from lower primary section. District wise details of uneconomic schools in the State in 2014-15 are given in Appendix 4.16.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Box 4.2
Ente-School - A model project on Comprehensive Education, Thaliparamba Constituency

As an initiative to impart quality and comprehensive education in government and aided schools, "Ente School" project is being implemented in 115 schools in Thaliparamba constituency. The problems of schools which are situated in remote places and deprived of infrastructural facilities are addressed through convergence of MLA and MP funds, fund from local bodies, PTA initiatives and other sponsorships. Attractive school buildings and class rooms, clean toilets, access to drinking water, computer labs, libraries etc. have been made available in all 115 schools. The Information and Communication Technology is well introduced in the elementary classes and changes have been made in the class rooms in order to equip the challenges of ICT. Instead of teaching ICT as an isolated subject, it is incorporated to all subjects. Digital technology is used to impart ideas in languages, mathematics and science so that each student gets moulded in to an individual with unique personality. English language is given more importance and as a part of it, 'English Theatre' has been incepted in all schools. A Large Format Visual Display System is given to the schools through 'IT @School'. Dramas and short films based on English text books are prepared and performed by the students. "Ente School" is a model project as it is implemented in all the schools in a comprehensive manner.

Source: Report from District Planning Office, Kannur

Sarva Shiksha Abhiyan (SSA)

4.22 Sarva Shiksha Abhiyaan was introduced in 2000-2001 as a flagship programme of Government of India to provide useful and relevant elementary education for all children in the age group of 6 to 14 by 2010. The programme seeks active participation of the community in the management of schools without social, regional, economic and gender barriers. It comprises all activities of school education-providing physical infrastructure, free text book for children, encouraging enrolment of girls and teacher training. The sharing of funds between the central and the state governments was 75:25 in the Tenth Plan. The funding pattern has been modified to 60:40 now.

Higher Secondary Education

4.23 Higher Secondary courses were introduced in the State during 1990-91 to reorganize the secondary level of education in accordance with National Education Policy. Higher Secondary Course is the turning point in the entire school education in our State. There were 2071 Higher Secondary Schools in 2015 in the State. Out of these, 832 (40.17%) are Government schools, 850 (41.04%) are Aided schools and the remaining 389(18.78%) are Unaided and technical schools. Among the districts Malappuram has the largest number of Higher Secondary Schools (246) in the State followed by Ernakulam (209) and Thrissur (204) respectively.

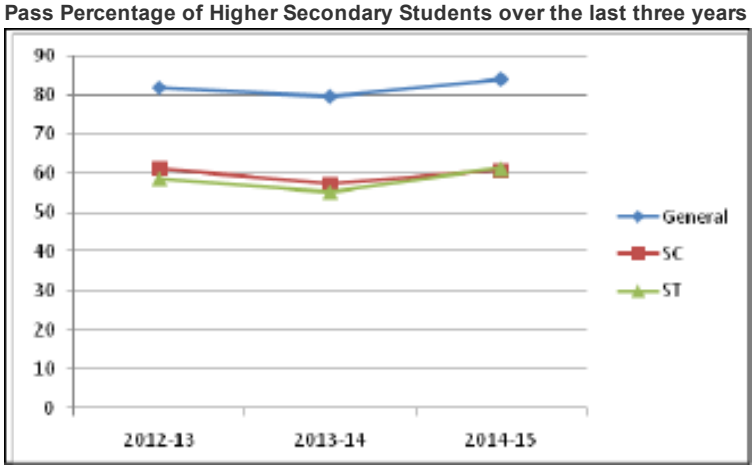
4.24 There are 7237 batches of higher secondary classes in 2015. The enrolment in Higher Secondary Schools was 3,79,880. Malappuram had the largest no of batches (1076) with an enrolment capacity of 53,129 students. District wise/Management-wise number of Higher Secondary Schools and number of batches are given in Appendix 4.17 and District wise enrolment of students in Higher Secondary Schools are given in Appendix 4.18.

4.25 The pass percentage of students in higher secondary courses increased to 74.89% in 2014-15 from 72.85 % in 2013-

14. During 2014-15, 11,173 students secured A+ for all subjects and 2,88,642 students were eligible for higher studies. The details are given in Appendices 4.19 & 4.20. The pass percentage of SC and ST students in Higher Secondary Schools also increased in 2014-15 compared to 2013-14.The pass percentage of SC students increased from 57.29% to 60.84% and ST students from 55.28% to 61.39% during 2014-15. Details are given in Appendix 4.21 & 4.22.

Fig 4.4

Pass Percentage of Higher Secondary Students over the last three years



Source: Directorate of Higher Secondary Education

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Vocational Higher Secondary Education

4.26 Vocational higher secondary education was introduced in the State in 1983-84. Vocational higher secondary education in the State imparts education at plus two level with the objective of achieving self/wage/direct employment as well as vertical mobility. There are 389 Vocational Higher Secondary Schools in the State with a total of 1100 batches. Out of these 261 are in the Government sector and 128 in the Aided sector. Kollam (52) followed by Thiruvananthapuram (41) has the largest number of Vocational Higher Secondary Schools in the State. District wise details of Vocational Higher Secondary Schools and courses during 2015-16 are given in Appendix 4.23.

4.27 The percentage of students eligible for higher education in Vocational Higher Secondary examination in March 2015 is 80.54% registering a fall from 89.16% in March 2014. The number of students who appeared and those who passed Vocational Higher Secondary examination from 2010 to 2015 and the results of school going students are given in Appendix 4.24 & 4.25.

University and Higher Education

4.28 The US politician and educationist Ron Lewis once stated that “Ensuring quality higher education is one of the most important things we can do for future generations”. The statement makes fine sense in the context of growing realization of the significance of higher education in any society. In the absence of a well-educated workforce, an economy is bound to show a downward slide in the long run. Having sufficient opportunities for higher education is an essential element for any economy to do well. However, the significance of higher education can’t just be restricted to the sphere of economy and workforce; rather it should be understood against the broader possibility of conditioning future citizens who are not only competent as a workforce but are also responsible citizens who can address the social needs in a mature and responsible manner.

4.29 Systems of higher education have also a critical impact in sustaining social integrity and a larger sense of social brotherhood. This is the context in which the XIIth Plan Document issued the statement that ‘higher education needs to be viewed as a long-term social investment for the promotion of economic growth, cultural development, social cohesion, equity and justice’. It is viewed that there must be a strategic shift from mere expansion to improvement in quality higher education. As a consequence, enrolment in higher education would have to be significantly increased in a demand driven manner.

4.30 Government of India has proposed a new scheme named Rashtriya Uchchatar Shiksha Abhiyan for funding the State Universities and Colleges. The scheme is envisaged as a prime vehicle for strategic funding of state institutions to ensure that issues of access, equity and quality are addressed in an equitable manner with the state as a composite unit of planning.

4.31 There are 14 universities functioning in the State. Out of these, four universities viz. Kerala, Mahatma Gandhi, Calicut and Kannur are general in nature and are offering various courses. SreeSankaracharya University of Sanskrit, Thunchath

Ezhuthachan Malayalam University, Cochin University of Science and Technology, Kerala Agricultural University, Kerala Veterinary and Animal Science University, Kerala University of Health Sciences, Kerala University of Fisheries and Ocean Studies, Kerala Technological University offer specialized courses in specified subject areas. Besides these, the National University of Advanced Legal Studies (NUALS) established in 2005 and a Central University incepted in Kasargod district are also functioning in the State.

Autonomous Colleges in Kerala

4.32 The affiliating system of colleges was originally designed when their number in a university was small. The university could then effectively oversee the working of the colleges, act as a body conducting examination and award degrees on their behalf. The system has now become unwieldy and it is becoming increasingly difficult for a university to attend to the varied needs of individual colleges. The colleges do not have the freedom to modernize their curricula or make them locally relevant. The regulations of the university and its common system, governing all colleges alike, irrespective of their characteristic strengths, weaknesses and locations, have affected the academic development of individual colleges. Colleges that have the potential for offering programmes of a higher standard do not have the freedom to offer them. Highlighting the importance of autonomous colleges, the UGC document on the XI Plan profile of higher education in India clearly states that: “The only safe and better way to improve the quality of undergraduate education is to delink most of the colleges from the affiliating structure. Colleges with academic and operative freedom are doing better and have more credibility. The financial support to such colleges boosts the concept of autonomy.”

4.33 The Committee on autonomy for institutions of higher education in Kerala stated in its report that there are colleges in Kerala in the Government and private sectors which deserve autonomy and which can prove their full academic potential if only greater freedom is given to take risks with responsibility. The Committee strongly recommended that Kerala should introduce this reform without further delay. In the Budget speech of 2013, the Finance Minister of the State has announced the policy decision of granting autonomy to the deserving colleges in the State. The University Grants Commission (UGC) has granted autonomous status to nine colleges in the State for the 2014-15 academic year. The colleges are Maharaja’s College, Ernakulam; Mar Ivanios College, Thiruvananthapuram; Fatima Mata National College, Kollam; SB College, Changanassery; St. Teresa’s College, Ernakulam; Sacred Heart College, Thevara; Rajagiri College of Social Sciences, Kochi; St. Thomas College, Thrissur and St. Thomas College, Devagiri.

Arts and Science Colleges

4.34 There are 210 Arts and Science Colleges in the State comprising of 152 Private Aided Colleges and 58 Government Colleges. In 2014-15, Ernakulam (25) had the largest number of Arts and Science colleges in the State followed by Thiruvananthapuram, Kottayam and Thrissur (22). Thiruvananthapuram and Kozhikode have the largest number of Government colleges (10) in the State. District-wise number of Arts and Science colleges in the State in 2014-15 is given in Appendix 4.26.

Enrolment of Students

4.35 Total number of students enrolled in various Arts and Science colleges (excluding unaided colleges) under the four general universities in Kerala during 2014-15 is 2.27 lakh. Of this 1.56 lakh (68.66%) are girls. Number of students Enroled in Arts and Science Colleges is given in Table 4.3.

Table 4.3
Enrolment of Students in Arts and Science Colleges

Course	Total Students	Girls	Boys	% of Girls
B.A	97415	64993	32422	66.72
B.Sc	91038	66676	24362	73.24
Bcom	38047	23851	14196	62.69
Total	226500	155520	70980	68.66

Source: Directorate of Collegiate Education

4.36 Out of the total students enrolled for degree courses, 43.01% are enrolled for BA degree courses, 41.35 % enrolled for BSc and 15.57% enrolled for B.Com degree courses.

4.37 Twenty seven subjects are offered for BA degree courses. Among the subjects, Economics has the largest number of enrolment of students. 31 subjects are offered for BSc course and Mathematics has the largest number of student enrolment. Details of enrolment of students in Arts and Science colleges for BA, BSc and B.Com are given in Appendix

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

4.27, 4.28 & 4.29. 30294 students are admitted to post graduate course in the State in 2014-15. 75.54% of those enrolled in PG courses are girls. Details of enrolment of students in Arts and Science colleges for MA, MSc and M.Com courses are given in Appendix 4.30, 4.31 & 4.32.

Box 4.3
Honours Degree Course in Govt. Colleges

As per the recommendations of the State Planning Board, Govt of Kerala have accorded sanction for starting Honours Degree Courses in four Colleges in the State. The bachelors' degree courses are offered in the subjects of English, Economics, Commerce and Mathematics. The qualification for applying for the course is a pass in Higher Secondary or equivalent course with a minimum of 70% marks for general, 60% for SC, and 55% for ST category students.

Honours Degree courses are introduced in Women's College, Thiruvananthapuram (English), Victoria College, Palakkad (Commerce) and Brennan College Thalassery (Mathematics) during 2013-14 academic year itself and in Maharajas College, Ernakulum (Economics) during 2014-15. This is an attempt to impart quality education at higher level and it is expected that after this course, students can go to renowned institutions for higher studies. Internships and exposure visits for students in renowned organizations, interaction with well-known persons in the areas concerned, public lectures etc. are designed in the course.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Scheduled Caste /Scheduled Tribe Students

4.38 The enrolment of Scheduled Caste (SC) students in degree and post graduate courses in the State is 30036 and 3981 respectively. SC students constitute 13.25 % of total students in 2014-15. Girls constitute 69.93% of total SC students in Arts and Science colleges. Percentage of SC/ST students in higher education is given in Table 4.4.

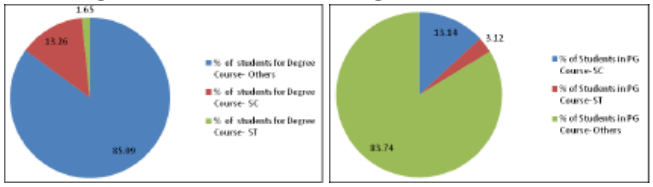
Table 4.4
Percentage of SC/ST students in higher education

Course	Total Number of Students	Number of SC Students	% of SC students	Number of ST students	% of ST students	Total number of SC-ST students	% of SC/ST students
B.A	97415	12905	13.25	2222	2.28	15127	15.53
B.Sc	91038	11730	12.88	851	0.93	12581	13.82
Bcom	38047	5401	14.2	672	1.77	6073	15.96
Total Degree students	226500	30036	13.26	3745	1.65	33781	14.91
M A	11433	1653	14.46	486	4.25	2139	18.71
M Sc	14077	1710	12.15	350	2.49	2060	14.63
M Com	4784	618	12.92	109	2.28	727	15.20
Total P G Students	30294	3981	13.14	945	3.12	4926	16.26
Total degree & PG	256794	34017	13.25	4690	1.83	38707	15.07

Source: Directorate of Collegiate Education

4.39 The number of Scheduled Tribe students enrolled for courses in Arts and Science colleges in 2014-15 is 4690. The enrolment of ST students in degree and post graduate courses are 3745 and 945 respectively. Girls constitute 64.76% of the total in Arts and Science colleges. Enrolment of SC and ST students in Arts and Science Colleges in Kerala during 2014-15 is given in Appendix 4.33 & 4.34.

Fig 4.5
Percentage of SC/ST students in Degree and PG Courses



Source: Directorate of Collegiate Education

Scholarships

4.40 Central and state sector scholarships of 14 types are given to students. Various scholarships including Kerala State Suvarna Jubilee Scholarship (3000) and post metric scholarships (93264 nos.) were given during 2014-15. The Directorate of Collegiate Education has set up LED display board giving the details of scholarships offered by the Government of Kerala and India. The details of number of scholarships offered from 2012-13 to 2014-15 are given in Appendix 4.35

Teachers

4.41 The number of teachers in Arts and Science colleges in the State in 2014-15 was 9838, out of whom 54.64% are women. University-wise number of teachers in Arts and Science colleges in the year 2012-13 to 2014-15 is given in Appendix 4.36. 3218(32.71%) teachers in Arts and Science colleges in the State have Ph.D degree. Details are given in Appendix 4.37. A total of 1938 Guest Lecturers were working in Arts and Science colleges of the State in 2015. Details are given in Appendix 4.38.

Kerala Council for Historical Research (KCHR)

4.42 Kerala Council for Historical Research is an autonomous academic institution, established in 2001, committed to scientific research in archaeology, history and social sciences. It is a recognized research centre of the University of Kerala and has academic affiliations and bilateral academic and exchange agreements with leading universities and research institutes in India and abroad. KCHR is to publish a comprehensive volume on the scientific history of Kerala from pre-historic to the present times.

4.43 A sustainable/historical tourism project is conceived in the Kodungallur-Parur zone and KCHR is identified as the nodal agency to provide technical assistance. From 2006-07 onwards KCHR has successfully undertaken the multi disciplinary excavation at Pattanam. The excavation has yielded significant evidences for re-conceptualizing the early history of Kerala.

Technical Education

4.44 The Twelfth Five Year Plan document proposes to encourage the private sector to establish larger and higher quality institutions and Public–Private Partnerships (PPP) in higher education particularly in the establishment of research and innovation institutions. The State of Kerala has entered into MOUs with some of the leading global industrial enterprises and is going to implement some schemes in the technical education realm where skill development is a matter of concern. The State has entered into an MOU with Bosch Group which is a global company with wide network of operations in Automotive, Industrial and Consumer goods and building service sectors. Bosch Rexroth will setup one Centre of Excellence in Automation Technologies at College of Engineering, Trivandrum and one Centre of Competence in Automation Technologies at Government Polytechnic at Kalamaserry. These centres will work on Dual education system centres that will provide in depth knowledge on automation technologies.

4.45 The following courses are implemented under the technical education department in Public–Private Partnerships (PPP) mode.
a. Advanced Diploma in Automotive Mechatronics (ADAM) and Establishment of Centre of Excellence in Mechatronics at Government Engineering College, Barton Hill.
b. Centre of Excellence in Automation Technologies in College of Engineering Trivandrum.
c. Centre of Competence in Automation Technologies in Govt. Polytechnic College,Kalamassery.
d. Two year MS Course in Translational Engineering in Government Engineering College, Barton Hill, Thiruvananthapuram.

4.46 Directorate of Technical Education is the nodal department for technical education in the State. As envisaged in the 12th Plan, the basic objective is to achieve faster, sustainable and more inclusive growth. The details of technical institutions under the administrative and financial control of Directorate of Technical Education is given in Appendix 4.39

Box 4.4
E-Governance Initiatives in Technical Education

An online file management system of Digital Document Filing System (DDFS) has been implemented in the Directorate of Technical Education for the smooth and easy management of files. The files are received and processed online.
The GATE scholarship of PG students are disbursed using software application. An online Budget Monitoring and Management System is being implemented. The video conferencing facility is being utilised on a regular basis by the Higher Education Department and DTE for convening meetings with Principals of various institutions and an 'A View' server is being setup for the video conferencing applications. As part of computerisation of the departmental

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

activities, a Management Information System (MIS) providing information on vacancy position, transfer, report of work status, admission to various courses etc. has also been implemented.

Source: Directorate of Technical Education

4.47 Various projects are being undertaken through funding from different agencies like Ministry of Human Resource Development, All India Council for Technical Education, Technical Education Quality Improvement Programme (TEQIP), Trivandrum Engineering Science and Technology (TREST) Research Park, Technology Business Incubators (TBI), Department of Science and Technology (DST), and University Grants Commission etc. Apart from this, up gradation of laboratories in various institutions are being taken up under Modernization and Removal of Obsolescence (MODROBS) scheme of AICTE.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Box 4.5
Indian Institute of Technology, Palakkad

The Union Finance Minister in his Budget speech 2014-15 has announced the setting up of a new IIT in Kerala along with those in the states of Chhattisgarh, Goa and Jammu & Kashmir. The establishment of an IIT in Kerala will help the State to take a leap forward in the educational front. The new IIT was established in Palakkad district vide G O (MS) no. 229/2015/H.Edn dtd 3/6/2015. It is expected that the new IIT can overcome the qualitative and quantitative backwardness in technical education and Research & Development in the State. The inception of new IIT can facilitate strong linkage with industries and thereby the overall development of the State. Government of Kerala has provided land and allocated fund for developmental activities of the IIT.

Source: Press Information Bureau, MHRD, GOI.

Engineering Colleges

4.48 There are 164 engineering colleges in the State with a sanctioned intake of 58237 students in 2015. Out of these engineering colleges 152(92.68%) are self financing colleges (unaided), 9 (5.49%) are government colleges and 3 (1.83%) are private aided colleges. Largest number of the unaided engineering colleges are functioning in Ernakulum (32) followed by Thiruvananthapuram (25). There is no government engineering college in Kollam, Pathanamthitta, Alappuzha, Ernakulam, Malappuram and Kasargod Districts. The District wise and management wise details of engineering colleges and sanctioned intake are given in Appendix 4.40. The sanctioned intake of Govt. colleges during 2015 was 3343 (5.7%), aided colleges 1700 (2.9%) and unaided colleges 53194 (91.34%).

4.49 Of the engineering colleges in Kerala, the largest number of branch wise seats was in Electronics and Communication (12045) followed by Mechanical Engineering (10451), Civil Engineering (10037) and Computer Science and Engineering (10005). Branch-wise distribution of seats in engineering colleges in 2015-16 is given in Appendix 4.41. 6370 students were enrolled in government and aided engineering colleges for graduate courses in 2015-16 of whom 36.86 % are girls. 1375 students have been admitted in government and aided engineering colleges for post graduate courses in 2015-16 and 1438 students in 2014-15. Girl students constitute 55.86% of total students in government and aided engineering colleges studying for post graduate courses. Details are given in Appendix 4.42 & 4.43.

Box 4.6
K- Base system

The K-base – Knowledge/learning management system supports the creation, organization, storage, decimation and preservation of the digital information assets of the engineering colleges and other institutions under the Department of Technical Education.

K-base is an e-learning initiated by the Directorate of Technical Education, Government of Kerala. The repository was established to facilitate deposit of the digital content of a scholarly nature created by the faculty, staff and students under the Directorate of Technical Education for a group of institutions. This is intended to be shared among the departments as well as to preserve the contents in a managed way. K-base includes materials such as research articles, before (pre-prints) and after (post prints) undergoing peer review and digital versions of theses and dissertations, administrative documents, course notes for learning objects etc. 9 Engineering colleges, 49 polytechnics, college of fine arts, technical high schools, Govt. Commercial Institute, tailoring and garment making training centres and vocational training centres which are under the Department of Technical Education have benefited from K-base.

Source: Directorate of Technical Education

Academic Excellence in Engineering Colleges

4.50 The academic excellence in Government Engineering Colleges is high and appreciable and this was due to the high pass percentage and increasing placement of students in reputed firms. The placement record of the students in various government institutions is relatively high. A large number of students are also being qualified for higher studies through competitive examinations like GATE, CAT etc. Most of the students get placement in multinational firms like WIPRO, TCS, and BOSCH etc. Placement details of students of various Govt. Engineering Colleges during 2014-15 is given in Table 4.5.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Table.4.5
Placement Details of Students of Various Engineering College during 2014-15

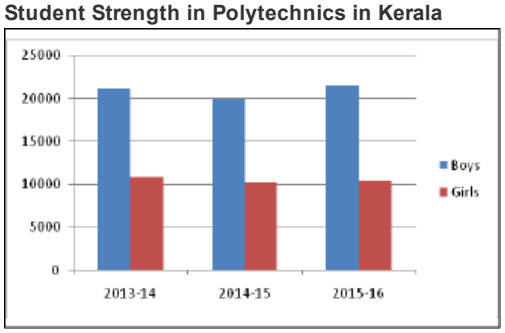
Sl No.	Name of College	No. of offers
1	College of Engineering, Thiruvananthapuram	430
2	Govt. Engineering College, Barton Hill	239
3	RIT, Kottayam	142
4	Govt. Engineering College, Idukki	15
5	Govt. Engineering College, Thrissur	191
6	Govt. Engineering College, Palakkad	46
7	Govt. Engineering College, Kozhikode	39
8	Govt. Engineering College, Wayanad	26
9	Govt. Engineering College, Kannur	102
	Total	1230

Source: Directorate of Technical Education

Polytechnics and Technical High Schools

4.51 Forty three Government polytechnics and six private aided polytechnics were functioning in Kerala. The annual intake of students in government polytechnics and private aided polytechnics during 2015-16 are 10333 and 1543 respectively. The total number of students in government polytechnics during the year 2015-16 is 27600 and that of private aided polytechnics is 4505. Details of annual intake and student strength in polytechnics for the year 2013-14 to 2015-16 are given in Appendices 4.44 & 4.45. Details of trade-wise annual intake of students in polytechnics of the State in 2015-16 are given in Appendix 4.46. Student intake is highest in the trade of Mechanical Engineering (2520) followed by Computer Science and Engineering (2210), Electronics Engineering (2170) and Civil Engineering (2070).

Fig 4.6
Student Strength in Polytechnics in Kerala



Source: Directorate of Technical Education

4.52 Total number of teachers working in polytechnics of the State is 1756. Women teachers constitute 28.87% of the total number of teachers in polytechnics. Student- teacher ratio is high in Government Polytechnics for both the years. Student-Teacher Ratio in Polytechnics is given in Table 4.6

Table 4.6
Student- Teacher Ratio in Polytechnics

Type of Institutions	2014	2015
Government	21	20

Private (Aided)	11	10
Total	19	17

Source: Directorate of Technical Education

4.53 Details of number of students and teachers in polytechnics are given in Appendix 4.47. Number of SC/ST students and SC/ST teachers in polytechnics in the reporting year is given in Appendix 4.48. Percentage of SC/ST students admitted in Polytechnics is shown in Table 4.7.

Table 4.7
Percentage SC/ST students in Polytechnics

Type of Institution	2014-15				2015-16			
	SC	ST	Others	Total	SC	ST	Others	Total
1. Government	8.19	1.01	90.80	100	7.08	0.86	92.06	100
2. Private (Aided)	9.84	0.47	89.69	100	5.46	0.38	94.16	100
Total	8.40	0.94	90.66	100	6.86	0.79	92.36	100

Source: Directorate of Technical Education

4.54 Thirty nine Government technical high schools are functioning in the State. Total number of students in technical high schools in the year 2015-16 is 8872, and 794 teachers are working in technical high schools of the State in the corresponding period. Women teachers constitute 23.93% of teachers in technical high schools. Number of students and teachers in technical high schools in 2013-14 to 2015-16 are given in Appendix 4.49. Compared to the previous year, the percentage of SC and ST students in technical high schools have declined from 12.76% to 9.36% and from 0.96% to 0.63% respectively. Details are given in Appendix 4.50 & 4.51.

4.55 The higher and technical education in Kerala has to be capable of taking advantage of the increasing opportunities generated by globalization, for which the State has to introduce various industry based courses on PPP mode, Autonomous Colleges, Deemed Universities and Off Campus Centres. There are plans to involve foreign universities through off-campus centres, in addition to using the assistance of local autonomous colleges and other deemed universities. Opening up the sector in this direction will enhance the possibilities of healthy competition among the universities which will automatically increase the quality levels. This way of expanding higher education is expected to generate more placement opportunities.

4.56 However, while such plans are being contemplated, the consistent fall in the quality of higher education in the State continues to be a major concern. The situation continues to remain dismal, if not becoming worse, even as education experts every year send out warning signals. The situation compels the government to immediately address the issues and take urgent action. In this context it would be useful to revisit some of the measures adopted in the past when similar concerns were voiced. Starting vocational courses at the higher secondary level was one such attempt which could not deliver expected results. Although courses were started with a focus on skills oriented towards specific occupations with the intention of achieving self/wages/direct employment as well as vertical mobility, it remained unsuccessful for various reasons. The curriculum developed for the courses thus planned proved to be a failure in equipping students with traditional or modern skills.

4.57 Kerala faces a paradoxical situation where the number of job seekers rises alongside a “scarcity of labour”. In other words the education that is being imparted at schools result in a “de-skilling” – where the students are no longer capable of performing the traditional occupations. This is often coupled with the despised opinion developed at schools for manual jobs. Attempts have to be made in order to revise the syllabi at schools in order to rectify this situation and change students’ attitude towards traditional occupations. Another major issue confronting the educational system of Kerala is the mismatch between the courses available and the courses required. This mismatch between demand and supply is more pronounced in the area of higher and technical education. There exists lack of interaction between educational institutions and industry. Collaboration of our leading technical institutions with leading industrial concerns may change the situation.

Section 2
Medical & Public Health

4.58 The foundation for a medical care system accessible to all citizens was laid before independence in the state. Some of the hospitals in Kerala are more than 50 years old. Democratic decentralization since 1994 in Kerala improved the infrastructure facilities and equipment in primary and secondary healthcare institutions and widened healthcare delivery. Easy accessibility and coverage of medical care facilities has played a leading role in influencing the health status of Kerala. In Kerala, both Allopathy and AYUSH systems play a crucial role in providing, universal accessibility and availability even to

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

the poorer sections of society.

4.59 Kerala has made significant gains in health indices like Infant Mortality Rate, Birth Rate, Death Rate, expectancy of life at birth etc.The State is facing difficulty to further improve upon these achievements andto sustain the gains made. Further, the State is facing problems of life style diseases like diabetes, coronary heart disease, renal disease, cancer and geriatric problems. Communicable diseases like chikungunya, dengue, leptospirosis, swine flu etc. are also major concerns. Other than these, there are new threats to the health scenario of the State, like mental health problems, suicide, substance abuse and alcoholism, adolescent health issues and rising number of road traffic accidents which have emerged as major problems. To tackle these, concerted and committed efforts with proper inter sectoral co-ordination is essential.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Health Indicators of Kerala

4.60 Comparative figures of major health and demographic indicators at State and National level given in Table 4.8.

Table 4.8
Demographic, Socio-economic and Health profile of Kerala as compared to India

Sl. No.	Indicator	Kerala	India
1	Total population (In crore) (Census 2011)	3.34	121.06
2	Decadal Growth (%) (Census 2011)	4.90	17.7
3	Sex Ratio (Census 2011)	1084	943
4	Child Sex Ratio (Census 2011)	964	919

Sl. No.	Indicator		Kerala	India
1	Birth Rate #		14.70	21.40
2	Death Rate #		6.90	7.00
		Male	7.90	7.50
		Female	6.00	6.40
3	Natural Growth Rate #		7.80	14.40
4	Infant Mortality Rate #		12.00	40.00
		Male	10.00	39.00
		Female	13.00	42.00
5	Neo Natal Mortality Rate*		7.00	35.00
6	Perinatal Mortality Rate*		13.00	35.00
7	Child Mortality Rate*		2.00	15.00
8	Under 5 mortality Rate*		14.00	69.00
9	Early Neo-natal Mortality Rate*		5.00	27.00
10	Late Neo-natal Mortality Rate*		2.00	8.00
11	Post Neo-natal Mortality Rate*		4.00	18.00
12	Death Rate*			
	(a) Children (0-4)		3.10	20.70
	(b) Children (5-14)		0.20	1.00
	(c) Children (15-49)		2.50	3.70
	(d) persons (60 and above)		42.10	46.60
	(e)Percentage of death receiving medical attention*			
		Government	38.00	17.40
		Private	33.40	12.10
		Qualified professional	12.20	37.90
		Untrained/others	16.40	32.60
13	Still Birth Rate*		7.00	8.00
14	Total Fertility Rate*		1.70	2.60
15	General Fertility Rate*		52.00	88.00
16	Total Marital Fertility Rate*		3.50	4.30

17	Gross Reproduction Rate*		0.80	1.20
18	Female age at effective marriage*			
	(a) Below 18		16.70	16.30
	(b) 18-20		19.20	19.00
	(c) Above 21		24.40	23.90
	(d) All age		24.40	20.70
19	Couple Protection Rate		62.30	52.00
20	Maternal Mortality Ratio**		66.00	178.00
21	Expectancy of Life at Birth*	Male	71.40	62.60
		Female	76.30	64.20

Source: Directorate of Health Services
SRS 2014
* SRS 2009
**Special Bulletin on MMR 2010-12

Expert Committee Report on Health for 12th Five Year Plan

4.61 The State Planning Board had constituted an Expert Committee on Health under the Chairmanship of Dr.K.Mohandas, Former Vice Chancellor, Kerala University of Health and Allied Sciences to prepare an action plan for the Twelfth Plan. The Committee deliberated on the various challenges faced by the State's Health System and the strategies to be adopted during the Twelfth Five Year Plan. Expert committee identified six priority areas in Health Sector for the 12th Five Year Plan.The report gave primary importance to prevention of disease & promotion of health and subsequently prioritized health management for speedy and complete recovery. The priority areas identified are as follows.

1. Ensuring Financial Risk protection to the population
2. Prevention of communicable and non-communicable diseases
3. Human Resource Planning in Health
4. Improving the Quality of Health Services
5. Improving services for the Elderly, Mental Health and Disability
6. Generating Evidence for Policy

4.62 The recommendations of the Committee have been incorporated in the schemes of the health sector viz Arogyakiranam, E-health programme, Mental Health Programmes, Public Health Protection Agency, Prevention of communicable & non-communicable diseases, etc

Major Initiatives of the Twelfth Five Year Plan of Government of India-relevant to Kerala

4.63 The Major Initiatives of the Twelfth Five Year Plan of Government of India relevant to Kerala are the following;
1. Access to Medicines, Vaccines and Technology
2. Human Resources for Health
3. Health Service Norms
4. Management and Institutional Reforms
5. Gender and Health

Draft National Health Policy 2015

4.64 India has drafted The National Health Policy twice, once in 1983 and in 2002, which has guided the approach towards the health sector in five-year plans.Thirteen years after the previous health policy, the draft National Health Policy 2015, has addressed the issues of universal health coverage, reducing maternal mortality and infant mortality, access to free drugs and diagnosis and changes in laws to make them more relevant.Salient features of the draft National Health Policy 2015 are;

1. Improve the care delivery system
2. A National Health Rights Act to make health a Fundamental Right
3. Denial of health care will be justiciable
4. Raise public health expenditure to 2.5% of GDP (..3800 per capita) from current spending of 1.04 % of GDP (..957 per capita)
5. Creation of health cess on the lines of educational cess

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

6. Ensure universal access to free drugs and diagnosis in government hospitals
7. States may voluntarily opt to adopt the Act through a resolution in the Legislative Assembly

Draft State Health Policy 2013

4.65 The draft health policy of Kerala Government lays emphasis on improving the health of women and adolescent girls. It recognises that government should engage the private sector healthcare providers within a regulatory framework. The other major proposals in the draft policy include a unified Kerala Public Health Act, combining the existing Travancore-Cochin Public Health Act and the Madras Public Health Act and current needs; the setting up of a Public Health Cadre and Public Health Protection Agency; strategies to reduce maternal and infant mortality through a framework developed with the support of the Kerala Federation of Obstetrics and Gynaecology and the National Institute of Clinical Excellence, United Kingdom; strengthening of cancer care and prevention systems; systems for better trauma care management with dedicated trauma care teams at district and taluk levels apart from extension of the 108 Ambulance services across the State; a Medical Establishment Bill 2013 covering registration and regulation of all healthcare institutions; a data management system leading to an Electronic Health Record; quality in the medical education sector; research and documentation and quality assurance systems for promotion of Ayurveda and Homoeopathy systems; and proposals for continued engagement with the private sector for purchasing services.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Perspective Plan 2030

4.66 The vision of the Perspective Plan 2030 is health for all by 2030. It envisages to provide health security to each and every one by 2030, to have a highly innovative, affordable, and accessible health system that all Keralites can trust and to have a health system that is accessible when people need it, regardless of their ability to pay.The main goals of the Perspective Plan 2030 are;

• Increase the health expenditure to GSDP ratio from 0.6 % in 2012 to 4−5 % by 2027−31.
• Reduce MMR from 66 to 12 per 1 lakh live births.
• Reduce IMR from 12 to 6 per 1,000 live births.
• Eradicate communicable diseases.
• Prioritise health areas to include mental diseases, alcoholism, and suicides.
• Increase the number of hospital beds from 34.6 per 10,000 in 2004 to 70 by 2030.
• Increase the number of nurses from 12.4 per 10000 in 2004 to 65 by 2030.
• Increase the number of doctors from 9.9 per 10,000 population to 17.2 in 2030.
• Provide Health insurance cover to all.

For achieving the above goals the following measures are suggested to be undertaken.

1. Systematic upgradation of Government Hospitals for quality accreditation.
2. Private health care providers under a regulatory framework
3. Financial risk protection.
4. Local Government at the centre of health planning.
5. Public health prioritization
6. Health care of vulnerable population
7. Behavioral change to reduce alcohol consumption

Public Health Protection Agency

4.67 All developed countries have health protection agencies and they have given importance to public health as separate entity. This has helped them to control the communicable diseases and manage other public health issues. There is no such agency in India or Kerala. Kerala with its good health indicators which is on par with the developed countries has the challenge of dual burden of communicable and non communicable diseases. Hence there is an urgent need for developing a well-functioning agency which will coordinate and regulate the ongoing activities and also strengthen the public health system in the State.A proposal for registering it as a society along with bye-laws of the society is in the draft stage.

Health Sector Financing during Twelfth Plan

4.68 Health has been a major area of allocation in the budget in the State in the past years. Government healthcare expenditure has been showing a steady increase in recent years. During the first year of Twelfth Plan (2012-13) an amount of □.47000 lakh had been allotted for Health Sector. Of which 82 % was expended. During the second year of the Twelfth Plan (2013-14) an amount of □. 54100 lakh wasallocated for Health Sector, it was 15 % increase over 2012-13 outlay and 94.72% was expended. In the third year (2014-15), an amount of □.62940 lakhs has been allocated and 87.76% expended. Department wise plan outlay and Expenditure during the Twelfth Plan and total outlay and expenditure upto November 2015 (2015-16) is given in Table 4.9.

Table 4.9
Department wise Outlay and Expenditure for the XIIth Plan (Annual plan 2012-16)
(. in lakh)

Department	Annual plan 2012-13		Annual plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16 (upto October)		
	Outlay	% Exp.	Outlay	% Exp.	Outlay	% Exp.	Outlay	Exp.	% Exp.
Directorate of Health Services	20564	90.15	24530	97.67	29693	78.90	32216	15882.09	49.30
Directorate of Medical Education	20220	81.15	22665	93.85	25750	97.40	26699	9586.82	35.91
Indian Systems of Medicine	1665	101.38	2330	95.11	2545	78.15	2670	721.12	27.01
Directorate of Ayurveda Medical Education	1760	59.16	2300	94.04	2567	84.10	2567	1011.3	39.40
Directorate of Homoeopathy	1721	40.66	1475	61.80	1440	88.76	1440	526.05	36.53
Homoeo Medical Education	1070	32.01	800	90.50	945	97.60	945	690.42	73.06
Total	47000	82.38	54100	94.72	62940	87.76	66537	28417.80	42.59

Source : Plan Space

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Financial Protection against Catastrophic Health Care Expenditure

4.69 Rashtriya Swasthya BimaYojana (RSBY) is a Health Insurance Scheme, sponsored by the Government of India, for providing free and quality inpatient care to the families falling below poverty line (BPL) in the society. The scheme promises inpatient treatment facility upto ..30,000/- on paperless, cashless and floater basis to a maximum of five members in a family, for a period of one year through selected public and private hospitals with a prefixed medical and surgical rates for treatment in general ward. RSBY does not cover outpatient treatment cases. Minimum period of 24 hour inpatient treatment is required for getting the benefit under the scheme. More than 1100 surgical procedures with prefixed rates are included in the benefit package.

4.70 The Government of Kerala while adopting RSBY in 2008 decided to implement it in all the districts of the state simultaneously whereas the Government of India had proposed a staggered implementation. It decided to empanel all the government hospitals in the scheme by updating the facilities and providing incentives to the medical personnel so that responsive treatment could be obtained by the enrolees to the scheme. It was also decided to involve the local governments to raise the enrolment rate. Thus, the State rolled out the RSBY with over 80 per cent of the eligible families enrolled and over 50 per cent of all empanelled hospitals hailing from the government sector.

4.71 RSBY is a cashless scheme operated through a smart card with a chip embedded in it. The readable zone of the card carries the photo and name in English and vernacular language of the head of the family. The non-readable zone has the name and address of all the other members in the family with a group photo of all the members in the family and impressions of their left and right thumbs.

4.72 The scheme is implemented through an insurance company selected through a tender process for a period of one year. Government of India pays 75 per cent of the premium and the State pays the rest. Three important features of RSBY are (i) there is no age limit for joining the scheme; (ii) it covers existing diseases; and (iii) a transport allowance of .100 is being paid in cash to the patient at the time of discharge from the hospital. Maximum transportation allowance payable in a year is restricted to ..1,000. It has a component to pay the wages foregone as well.

4.73 The Planning Commission norms for categorising a family as BPL was too restrictive and it covered only around 11.79 lakh out of the total 75 lakh families in the State. RSBY coverage was restricted to these families. The restrictive definition of poor was not acceptable to the State as protection of the families against catastrophic expenditure needs necessarily to cover a larger population above the poverty line and in due course the entire population. The Scheme implemented in the State was thus broadened to include other categories of households to make it a universal health insurance scheme. Kerala is the only State with such a facility. As the BPL population according to the definition adopted by the State is over and above the Planning Commission estimate by more than 10 lakhs, the State Government formulated its own Scheme for catering to the needs of the additional 10 lakh population. These two schemes are being jointly run under the banner COMPREHENSIVE HEALTH INSURANCE SCHEME (CHIS). A special purpose vehicle by name CHIAK (Comprehensive Health Insurance Agency, Kerala) has been formed and entrusted with the task of running the schemes.

4.74 The scheme began with the coverage of the BPL population (as per Planning Commission norms). In Kerala, it covered 11.79 lakh families. Gradually, Government of India extended the scheme to cover families of the participants of Mahatma Gandhi National Rural Employment Guarantee Scheme who have worked for more than 15 days in the previous

year, street vendors, and domestic workers etc. Overall, workers in the unorganised sector are being covered by the scheme in increasing numbers. The State has been trying to bring other categories of population into the CHIS net. In 2014-15, the Government sought to bring the members of the various welfare fund boards and its pensioners, all Scheduled Caste and Scheduled Tribe population, and families engaged in fishing and workers of various unorganized sectors. Collection of data of these families has been made through Akshaya Kendras, the Government of Kerala Undertaking set up for spreading e-literacy and e-governance, numbering around 2000 spread all over the State. The two schemes together cover a sizeable proportion of the population in the State.

4.75 The progress of the scheme is presented in Table 4.12. The number of families covered has steadily increased to reach 32 lakh by 2014-15. The total claims as a proportion of the premium has crossed 100 per cent from the very first year. The premium too rose as the insurance company was incurring losses from the first year. The premium has increased from □. 435 in the first year to □. 745 in the third year to over □. 1000 in the fourth year. The premium came down in 2013-14 because a different insurance company entered the scene.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Table 4.10
Progress of the Scheme

Year	Number of Families Enrolled (Lakh)	Premium Paid (□.. crore)	Number of Claims (Lakh)	Claims Paid (Rs.. crore)
2008-10	11.78	51.27	1.64	56.00
2010-11	18.75	82.14	3.65	125.00
2011-12	28.12	210.00	6.99	211.00
2012-13	28.28	311.00	7.00	198.00
2013-14	29.68	218.00	5.57	172.15
2014-15	31.92	235.77	5.87	191.18

Source: CHIAK

4.76 One of the issues highlighted in the context of the increasing use of the private facilities by the lower income classes is the poor quality and poor response of the institutions in the Government sector. Financial protection in the form of RSBY offered the option of using the private sector by all those enrolled in the scheme. Interestingly, instead of the proportion of users of the private institutions increasing over the years, the share of the government hospitals in the total has steadily increased (Table 4.11). The proportion which stood at 60:40 between private and government initially has changed to 30:70 by the fifth year. The large investments and the incentives to the medical personnel in the government institutions have brought about a change increasing their utilisation.

Table 4.11
Utilisation of CHIS by Sector

Year	Claim Settlement by Sector (Count in lakh & amount in □. crore)							
	Govt. Hospitals			Pvt. Hospitals			Total	
	Count	Amount	%	Count	Amount	%	Count	Amount
2008-10	0.48	18	40	0.95	27	60	1.43	45
2010-11	1.44	52	46	2.16	61	54	3.60	113
2011-12	3.78	119	56	3.20	93	44	7.00	212
2012-13	4.82	125	70	2.18	56	30	7.00	181
2013-14	4.02	143.13	72	1.56	55.9	28	5.58	199.03
2014-15	4.16	158.7	70	1.7	69.36	30	5.86	228.06

4.77 The nodal agency for implementing the Scheme in Kerala is the Comprehensive Health Insurance Agency, Kerala that operates with a nucleus of six personnel in Thiruvananthapuram and a district coordinator in each of the 14 districts of the State. The implementation of RSBY/CHIS in the State has brought various awards and appreciations to the State from the Central Government from the first to the fifth year. The 1st year award was for the best scheme Implementation. The second to 5thyears were for maximum utilization percentage.

4.78 A new scheme for providing tertiary care treatment with a benefit package of maximum □.70,000 for critical illness like cancer, cardiac and renal failure to all the RSBY and CHIS card holder families was designed during 2010-2011. The scheme, named as CHISPLUS, was launched by the middle of February 2011.The Coverage of CHISPLUS has been extended by including diseases relating to Liver, Brain and treatment of Accident Trauma care during 2012.

4.79 The scheme is implemented through all the five Government Medical Colleges in the State, Regional Cancer Centre, Thiruvananthapuram, Malabar Cancer Centre and all Government District Hospitals, General Hospitals, and Taluk Hospitals. The scheme is monitored by CHIAK with the help of software developed by Keltron. The scheme, implemented through a non-insurance route, has benefited 204,799 patients till end September 2015 and the claims have totalled □.238.40 crore (see Table 4.12).

Table 4.12
Utilisation of CHIS PLUS

Year	Number of Patients	Amount (□.. crore)
2010-11	158	0.29
2011-12	14453	26.08
2012-13	42228	56.94
2013-14	50945	53.08
2014-15	66737	68.02
2015-16*	30278	34.00

Source: CHIAK; *till end September 2015

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

4.80 The ageing society of Kerala with a heavy burden of terminal diseases would need tertiary care treatment. The RSBY benefit package does not cover tertiary care. The CHIS Plus covers limited tertiary care for the population groups registered under the scheme. This leaves out the other groups for whom tertiary care treatment becomes unaffordable. Many among them would appeal for assistance. Perceiving such a felt need the Finance Minister of the state designed a scheme called Karunya Benevolent Fund (KDF) to meet the tertiary care expenditure of deserving individuals. Unlike the CHIS, which is a cashless scheme, the KBF requires a prior authorisation in the form of an estimate of expenditure to be obtained from the consulting doctor and countersigned by the authorised person of the hospital concerned where the treatment to be obtained. The estimate of expenditure form duly signed by the consulting doctor and the authorised person has to be submitted along with the prior sanction form indicating the family characteristic (BPL/APL), annual income etc. the committee headed by the district collector authorises treatment and the amount as per the details furnished in the Pre-sanction form. The amount is paid to the hospital which has to submit the utilisation certificate. In addition, there is also provision to provide a one-time assistance of □ 3000 per family. Treatment can be availed at all government hospitals and empanelled private hospitals.

4.81 KBF is funded by earmarking the revenue from the weekly Karunya lotteries. The KBF has provided assistance to over 110,000 households and the disbursements have crossed □ 800 crore by September 2015. The beneficiaries hail from all the districts. But interestingly, most of the beneficiaries have availed treatment in Government Medical College hospitals, Regional Cancer Centre, Malabar Cancer Centre and Sri Chitra Thirunal Institute of Medical Sciences.

Major Health Problems in Kerala
Communicable Diseases

4.82 Kerala is witnessing an increasing burden of communicable and non communicable diseases. Although the State has been successful in controlling a number of communicable diseases earlier, the emergence of Dengue, AIDS, Malaria, Leptospyrosis, Hepatitis, Chikungunya, H5N1, in recent years has led to considerable morbidity and mortality.

Bird Flu

4.83 The bird flu, highly infectious H5N1 virus strain has affected largely the southern districts of Kerala viz. Pathanamthitta, Kottayam and Alappuzha the most. There have been no reports of the virus affecting humans. Avian influenza, commonly called bird flu, is an infectious viral disease of birds. Influenza viruses circulating in animals pose threats to human health. Humans can become ill when infected with viruses from animal sources. Controlling the disease in animals is the first step in decreasing risks to humans.According to the World Health Organisation, while millions of fowls have died due to the Avian Influenza, only 393 human deaths (zero in India) have been recorded globally between 2003-14.

Leptospirosis

4.84 Leptospirosis has been causing a large number of deaths for the last few years in the State. Out of the 510 Leptospirosis cases reported in 2012, 11 deaths were reported. The numberof cases increased to 613 with 15 deaths during 2013. During 2014, a total of 717 cases were confirmed resulting in 19 deaths. During 2015 (upto September) 666 casesand 15 deaths have been reported. The details of district wise patients treated for leptospirosis and death reported

during 2015 is given in the Appendix 4.52

HIV/AIDS

4.85 It is estimated that around 2.4 million people in India are currently living with HIV. Kerala State Aids Control Society is the pioneer organization in the State working with the objective of controlling the spread of HIV as well as strengthening the State's capacity to respond to HIV/AIDS. It was formed to implement the National Aids Control Programme in the State.

4.86 In Kerala, the prevalence of HIV / AIDS is 4.95% among injecting drug users (IDU), 0.36 % among men having sex with men (MSM) and 0.73% among Female Sex Workers (FSW). The HIV prevalence among FSWs and MSM is nearly 1%, but the prevalence among IDUs is 4.95% (though it shows downward trend from 9.57% in 2007 and 5.3% in 2008). Current data suggest that the HIV epidemic in the State is largely confined to individuals with high risk behavior and their sexual partners.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Chikungunya

4.87 During 2006, Chikungunya emerged as a major epidemic in India affecting 151 districts in 8 States including Kerala. During 2011, while 58 chikungunya cases were reported in Kerala, it increased to 169 cases during 2013. Among the districts, highest number of cases (149) were reported in Thiruvananthapuram and 11 cases were reported in Idukki. During 2014, out of the 139 cases of chikungunyareported 106 were from Thiruvananthapuram. During 2015 (upto September), 104 cases were reported and 99 were from Thiruvananthapuram district alone. A total of 2046455 viral fever cases were reported in Kerala during 2014 and in 2015 it was 1925690 cases.The details of district wise patients treated for Chikungunya and viral fever during 2015 (upto september) is given in the Appendix 4.53.

Leprosy

4.88 The National Leprosy Eradication Program (NLEP) of the Government of India is implemented throughout the State for the control and eradication of leprosy. Drugs are supplied free of cost by WHO. From the 12th Five Year Plan onwards it has become 75% centrally sponsored program.

4.89 Kerala is a low endemic state for leprosy. The Annual New Case Detection Rate (ANCDR) is 1.966 per lakh population and Prevalence rate (PR) of 0.21/10,000 (as on March 31st 2015). Kerala contributes 0.79% of the total annual case detection in India. Total number of leprosy cases under treatment in Kerala as on 31st October 2015 is 751.

4.90 There are three leprosy sanatoriums in Kerala with bed strength of 1153 and the details of leprosy cases during 2015 are given in Table 4.13

Table 4.13
District wise distribution of Leprosy unit in Kerala- 2014

Sl No.	District	Institutions	Sanctioned Bed Strength	IP as on 31st Oct. -2015
1	Alappuzha	Leprosy Sanatorium, Nooranadu	267	237
2	Thrissur	Koratty Gandhi Gram Govt. Dermatology Hospital	660	199
3	Kozhikode	Govt. Leprosy Hospital, Chevayoor	226	110
Total			1153	546

Source:Directorate of Health Services

Box 4.7
Anti-rabies programme

An Anti-rabies programme has been initiated in Kerala by the State Planning Board with the support of Animal Welfare Board of India and NGOs during the12th Plan Period. Control of stray dogs,Animal Birth Control (ABC), Anti-rabies Vaccination and immunoglobulin's are the main objectives.It is an integrated programme of the Departments viz Health, Animal Husbandry, Tourism and Urban Affairs.Control over growing population of stray dogs is particularly necessary for a tourism dominated economy like that of Kerala and the initiative has been handed over to the concerned departments for effective implementation.

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Non Communicable Diseases

4.91 Common non–communicable diseases causing great threat to life are cancer, diabetes, cardio vascular diseases and lung diseases. Unless interventions are made to prevent and control non-communicable diseases, their burden is likely to increase substantially in future, due to ageing population and changes in life style .Considering the high cost of medicines and longer duration of treatment, this constitutes a greater financial burden to low income groups.

Cancer

4.92 Cancer is a major disease that affects all sections of human population. Every year, 35000 new cases of cancer are getting detected in Kerala .Nearly 1 lakh people are under treatment for this disease annually. Apart from Medical Colleges, Regional Cancer Centre, and Malabar Cancer Centre are the hospitals in Government sector which offer treatment for cancer patients. Delay in early detection, huge treatment cost, minimal treatment centres and lack of awareness contribute to high mortality of the disease.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Malabar Cancer Centre

4.93 Malabar Cancer Centre, Kannur an autonomous centre under the Government of Kerala, that has been established with the aim of providing oncological care to the people of north Kerala. The Centre has bed strength of 200 and many latest facilities for the treatment of cancer patients. During 2014-15, a total of 59045 patients were treated in Malabar Cancer Centre including 8249 in Patients and 4277 new cases.

Indian Institute of Diabetes

4.94 The Indian Institute of Diabetes (IID), at Thiruvananthapuram is an autonomous institution under the Government of Kerala. It has been functioning for the last two decades and is the only institution under the Government offering services exclusively for Diabetes Mellitus and its complications. IID made operational in the year 2001, functions with main centre at Pulayanarkotta near Akkulam in Thiruvananthapuram city and one sub centre at Public Health Laboratory Campus, in Pattoor, Thiruvananthapuram. The major activities of this institute are to investigate the genetic basis of diabetes, to provide adequate training for physicians and paramedical staff, provide research support to develop novel methods of treatment, endow academic chairs in diabetes, and organize state-of-the-art conferences in India on various aspects of the disease.

Prevalence of other public health diseases during 2014 and 2015

4.95 A comparative analysis of the prevalence of public health diseases during 2014 and 2015 is given in Table 4.14.

Table 4.14
Prevalence of Public Health Diseases during 2014 & 2015

Sl.No.	Diseases	2014		2015 up to September	
		Attack	Death	Attack	Death
1	Diarrheal Diseases	442104	5	352886	3
2	Enteric fever	1956	0	1332	0
3	Measles	920	0	1253	1
4	Chickenpox	17028	18	15162	11

Source:Directorate of Health Services

Mental Health

4.96 As per Census of India 2011, 0.20% of the population of Kerala suffers from mental illness and 0.20% suffers from mental retardation compared to a national average of 0.06% and 0.12% respectively. Although Kerala reports higher levels of mental illness compared to all India, less importance is given to the field of mental health in Kerala.

4.97 A mental health policy was approved by the State government in May 2013.The policy suggests that the treatment for mental illness should start from the primary health centres making the mental hospitals and the Department of Psychiatric Medicines as referral centres by upgrading them.Research should be encouraged for prevention and cure of mental illness.An awareness programme among the general public about the mental illness has also been suggested in the policy. Proper training should be imparted to the doctors free of cost whether they come from public or private sector if they show their willingness to undergo the training.

4.98 In Kerala three mental health centres are functioning with bed strength of 1342. District Mental Health Programme is functioning in all the districts. Rehabilitation facilities are offered through these centres. Lack of awareness, attitude of

general public, neglect of family members, lack of proper follow up etc are the major problems noticed. State Government has started care homes for mentally ill persons for whom there is no family support.The centre for males is at Nallanadu, near Venjaramoodu, Thiruvananthapuram. It is a joint venture of District Panchayat, Thiruvananthapuram, Social Welfare Department, Health Department and the NGO, Saigram. The centre for females is at, ThachottuKavu, Thiruvananthapuram which is a joint venture of the Social Welfare Department and the NGO Abhaya.

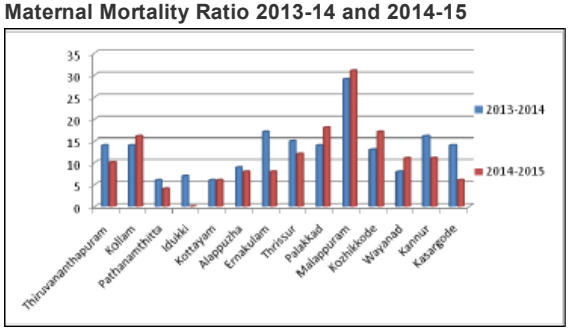
Kerala State Mental Health Policy 2013

4.99 The specific context of Kerala needs to be taken into account in the discussion of mental health. Kerala reports relatively higher suicide rates compared to the other States. Alcohol use, breakdown of marriage and family, problems of ageing, strain due to unmatched parental aspirations and children's achievements in studies, high rates of migration and single parent families are some other factors. The mental health policy for Kerala 2013 came into existence effecting amendments to the Kerala State Mental Health Policy 2000.The new State mental health policy envisages convergence of various departments for the care and rehabilitation of the mentally ill. It covers health care delivery systems, health care services (public& private sector), voluntary sector and administrative aspects.

Delivery, Maternal Death and Maternal Mortality Ratio

4.100 On the basis of the reports of DHS, the number of deliveries during 2013-14 is 493534 and maternal death reported is 182 and MMR 37 which is high compared to the maternal death 165 and MMR 33 of 495613 deliveries during 2012-13.Total number of deliveries during 2014-15 is 494479 and maternal death is 158 and MMR 32. Maternal death and MMR has reduced during 2014-15 compared to previous years.Graphical representation of District wise Maternal Death in 2013-14 and 2014-15 is given in Figure 4.7.

Fig 4.7
Maternal Mortality Ratio 2013-14 and 2014-15



Source : DHS

Modern Medicine –Allopathy

4.101 Out of the total 1281 health care institutions under DHS, 852 are Primary Health Centres (PHCs), 230 Community Health Centres (CHCs), 79Taluk Head Quarter Hospitals, 16 District hospitals,18 General hospitals, 3 mental health hospitals, 8 W& C Hospitals, 3 leprosy hospitals, 17 TB clinics, 2 TB hospitals, 4other specialty hospitals and 49 other hospitals.Category wise major medical institutions and beds in Kerala, details of IP, OP cases, major & minor operations conducted and Medical & Para medical personnel under DHS during 2015 are given in Appendix 4.54, 4.55& 4.56.

Health Care Institutions under DHS

4.102 At present there are 1281 health institutions with 38400 beds and 5061 doctors under Health Services Department consisting of 852 Primary Health Centres, 230 Community Health Centres, 79 Taluk Head Quarters hospitals, 16 District hospitals, 18 General hospitals and specialty hospitals for Mental illness, Leprosy and Tuberculosis.Primary health centres are institutions providing comprehensive primary care services including preventive cure and curative care. CHCs and Taluk level institutions form the basic secondary care institutions. District hospitals, General Hospitals and Maternity Hospitals provide specialty services and some super specialty services. In the 12th Five Year Plan focus will be for the implementation of the specialty cadre in all health care institutions up tothe level of community health centres andmodernisation of the functioning of the institution.The bed population ratio in Kerala is 873 & the average Doctorbed ratio is 7.56.

National Health Mission

4.103 The Government of India has launched the National Health Mission (NHM) which includes two sub missions NUHM & NRHM. NHM would have six financing components, namely (i) NRHM/RCH Flexi-pool, (ii) NUHM Flexi-pool(iii) Flexible pool

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

for Communicable Diseases, (iv)Flexible pool for Non Communicable Diseases including injury and trauma, (v) Infrastructure Maintenance and (vi) Family Welfare Central SectorComponent.Under the component of 'infrastructure maintenance',support has been given overseveral Plan periods, to States to meet salary requirement of Schemes viz. Direction & Administration (Family Welfare Bureaus at State & district level), Sub Centres,Urban Family Welfare Centres, Urban Revamping Scheme (Health Posts), ANM/LHV Training Schools, Health & Family Welfare Training Centres, and Training of Multi-Purpose Workers (Male).

4.104 NHM is functioning in the State for the development of health institutions with Central Government funding. 40 % of the total Central Government fund has to be given to the NHM by the State Government as State share. NHM is supporting the Health &Family Welfare Department, Directorate of Medical Education and AYUSH. National Rural Health Mission aims to provide accessible, affordable and accountable quality health services to the poorest households in the remote rural regions. Under NRHM, the focus is on a functional health system at all levels, from the village to the district.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

PradhanManthriSwasthyaSurakshaYojana (PMSSY)

4.105 Pradhan ManthriSwasthyaSurakshaYojana is a Government of India supported scheme to improve infrastructure facilities and technology in Government Medical College, Thiruvananthapuram (Phase I) and Kozhikode (Phase III). Medical College Alapuzha is included in the PMSSY Phase III with a total outlay of □.150 crore of which Rs.30 crore is the State share. The project for Government Medical College, Thiruvananthapuram (Phase I) has already been completed.

State Institute of Medical Education and Technology (SI-MET)

4.106 State Institute of Medical Education and Technology (SI-MET) was established in the State in 2008 to promote medical education and research. There are six nursing colleges functioning under SI-MET with an annual intake of 280 students.

Child Development Centre (CDC)

4.107 Child Development Centre (CDC) is an autonomous centre established by the Government of Kerala as an autonomous centre of excellence in Early Child Care & Education, Adolescent Care & Education, Pre-marital Counseling, Women's Welfare and other related fields to reduce childhood disability through novel scientific initiatives.It aims to create a generation of prospective and responsive parenthood through healthy children and adolescents.

Drugs Control Department

4.108 The responsibility of the Drugs Control Department is to ensure the availability of quality drugs to the public and see that the market is free from counterfeit, spurious and substandard drugs and no drugs are sold at a price higher than the retail price marked on the container. The Department has 6 Regional Offices, 11 District Offices, 4 Ayurveda Wing Offices and 2 Drugs Testing Laboratories. Drug testing laboratories are functioning at Thiruvananthapuram and Ernakulam. The works of the new Drug testing laboratories at Thrissur, Kozhikode and Pathanamthitta are under progress.

Medical Education

4.109 In Kerala, Medical Education is imparted through 11 Medical Colleges at Thiruvananthapuram (2), Alappuzha, Kozhikode, Kottayam, Manjeri, Idukki, Ernakulum, Konni, Kollam and Thrissur districts and Nursing Education through 6 Nursing Colleges in Thiruvananthapuram, Kozhikode, Kottayam, Alappuzha, Ernakulam and Thrissur districts. Five Dental Colleges are functioning at Thiruvananthapuram, Kozhikode, Alappuzha, Thrissur and Kottayam districts. Besides, four colleges of Pharmacy and one Paramedical Institute is functioning under the Department.

4.110 Medical and Para medical courses conducted in Government Medical Colleges with annual intake of students, details of clinical and non clinical personnel in Medical Colleges under DME, during 2015-16are given in Appendix 4.56, 4.57 & 4.58. A comparative analysis of the status of medical college hospitals and attached institutions during 2014 and 2015 is given in Table -4.15.

Table 4.15
Status of Medical College Hospitals and Attached Institutions during 2014 & 15

Medical College Hospitals	Beds		Inpatients		Outpatients		Major Operations conducted	
	2014	2015	2014	2015	2014	2015	2014	2015
Medical college Thiruvananthapuram	2625	2637	90394	89826	1047261	1043789	15980	16716
SAT Hospital Thiruvananthapuram	1100	1100	39432	39841	297318	296823	7236	7427

Medical college Alappuzha	1125	1125	61247	62398	903517	912092	1672	1743
Medical college Kottayam	1463	1463	72030	73126	774356	769027	5342	5623
ICH Kottayam	203	203	9872	9614	161080	162454	1407	1289
Medical college Thrissur	800	800	34319	35427	191847	193124	14922	15450
ICD Thrissur	475	475	28333	29146	314718	325039	Nil	Nil
Medical college Kozhikkode	2200	2200	80435	81324	483439	484651	8451	8671
IMCH Kozhikkode	1200	1200	42926	41290	91147	92456	2039	2198
ICD Kozhikkode	140	140	4137	4218	57843	58901	Nil	Nil
Medical College Idukki	130	192	1500	7830	21185	139185	237	928
Medical College Ernakulam	500	500	12302	4057	189606	66818	2429	1244
Total	11961	12035	476927	478097	4533317	4544359	59715	61289

Source : Directorate of Medical Education

4.111 An increase of 74 numbers of beds in bed strengthhas been effectedduring 2015 in Medical College institutions compared to previous year.The number of inpatients & outpatients and major operations conducted has increased during 2015. Major achievements of Medical Education Department during 2015 include;

1. Started New Medical Colleges at Thiruvananthapuram and Konni (Pathanamthitta).
2. Drug Testing Laboratory started functioning at Thiruvananthapuram&Alappuzha.
3. Dental College started functioning atAlappuzha.

Kerala University of Health and Allied Sciences

4.112 Kerala University of Health Sciences was established as per the Kerala University of Health Science Act 2010 with the aim of ensuring proper and systematic instructions, teaching, training and research in Modern medicine, Homoeopathy and Indian System of Medicine and allied health sciences in Kerala. Academic activities of the University has commenced in academic year 2010-11. The number of institutions affiliated to University is (upto September 2015) 272 with 36 Government colleges, 5 Government Aided Colleges & 241 Self-financing Colleges. The colleges fall under all systems of medicine such as Allopathy, Ayurveda, Homoeopathy, Sidha, Unani, Yoga, Naturopathy, Nursing, Pharmaceutical Science and Paramedical courses. The annual intake of students in Government Colleges is 3528, 276 in Government aided colleges and 15654 in self-financing colleges with a total of 19458 students. More than 60% of the students of affiliated colleges are girls.

Indian System of Medicine

4.113 Ayurveda is a science dealing not only with treatment of some diseases but also a complete way of life. The Department of Indian System of Medicine renders medical aid to the people through the network of Ayurveda hospitals and dispensaries, grant-in-aid Ayurveda institutions, Sidha- Vaidya, Unani, Visha ,Netra and Naturopathy. Specialty hospitals such as Mental Hospital, Panchakarma, Nature cure and Marma are functioning under this Department. At present there are 127 hospitals and 815 dispensaries under the department. The State Medicinal Plants Board co-ordinates matters relating to the cultivation, conservation, research & development and promotion of medicinal plants in the State. List of major institutions and district wise distribution of institutions, beds and patients under ISM department during 2014 & 2015 is given in Appendix 4.59.

AYUSH (Ayurveda, Yoga & Naturopathy, Siddha, Unani and Homoeopathy)

4.114 Government of India has set up two regulatory bodies to set standards of medical education. The Central Council of Indian Medicine (CCIM) under Indian Medicine Central Council (IMCC) Act 1970 regulates educational institutions and practitioners in respect of Ayurveda, Unani and Sidha systems of medicines. The Central Council of Homoeopathy (CCH) under Homoeopathy Central Council Act, 1973 regulates educational institutions and practitioners in respect of Homoeopathy system of medicines. At present Yoga & Naturopathy, being drugless systems, are not regulated.

National AYUSH Mission

4.115 Department of AYUSH (Ayurveda, Yoga & Naturopathy, Siddha, Unani and Homoeopathy), Ministry of Health and Family Welfare, Government of India has launched National AYUSH Mission (NAM). The basic objective of NAM is to promote AYUSH medical systems through cost effective AYUSH services, strengthening of educational systems, facilitate the enforcement of quality control of Ayurveda, Siddha, Unani and Homoeopathy drugs and medicinal plants. The funding pattern will be 60:40 by Centre and State.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Ayurveda Medicine Manufacturing- OUSHADHI

4.116 OUSHADHI is the largest manufacturer of Ayurvedic medicines functioning in India in the public sector. It is one among the few profit making public sector undertakings. Oushadhi is the exclusive supplier of Ayurvedic medicines to Government Hospitals and dispensaries of AyurvedaDepartment. In Kerala, Oushadhi supplies medicines each year to State ISM department at 30% less than market price and ISM Department supplies this medicine to the poor patients in the State free of cost. The company also caters to the demand of the public through a network of 492 exclusive agencies spread all over the State.

Ayurveda Medical Colleges

4.117 There are 3 Government Ayurveda Medical Colleges situated at Thiruvananthapuram, Thrippunithura and Kannur having bed strength of 1355with total number of inpatients treated as10564 and outpatients 460756(upto October 2015). Panchakarma hospital and Women &Children hospital are also functioning under the Government Ayurveda Medical College Thiruvananthapuram. There are two aided colleges,11 self financing colleges and a self-financing Siddha college for imparting Ayurveda medical education. Annual intake of students for UG Degree is 800 and PG Degree is 131.

HOMOEOPATHY

4.118 There are 660 homeopathic dispensaries and 33 hospitals with total bed strength of 975 under Homoeopathy Department in the State. In addition, Kerala State Homoeopathic Co-operative pharmacy (HOMCO) Alappuzha, a medicine manufacturing unit is also functioning under the Directorate of Homeopathy. District wise distribution of institutions, beds and patients treated under Homoeopathic Department during 2014 & 2015 is given in Appendix 4.60.

Box 4.8
Major Achievements of Homoeopathy Department during 2015

- Pain and cancer palliative care services
- Epidemic control & prevention by Rapid Action Epidemic Control Cell in Homoeopathy
- AYUSH Holistic Health Care for prevention & management of life style diseases.
- Adolescent health care & behavioral management (SADGAMAYA)
- Solace for suffering womenfolk through 'Seethalayam'
- Healthy mother and happy child campaign activities
- Geriatric care services
- Special clinics for infertility & de-addiction centres to correct substance abuse
- Specialty clinics for endocrine disorders
- Mobile / floating homoeopathic health care services
- Comprehensive quality health care service

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Source : Directorate of Homoeopathy

Homoeo Medical Education

4.119 Homoeo Medical Education is imparted through two Government Homoeopathic Medical Colleges, at Thiruvananthapuram and Kozhikode. In addition to this 3 aided colleges & one unaided college are functioning under this Department. Annual intake of students and courses in Homoeo Medical Colleges are given in Appendix 4.61.

Immunization Coverage

4.120 Immunization is one of the most successful and cost effective health interventions and prevents debilitating illness, disability and death from vaccine preventable diseases such as diphtheria, hepatitis A and B, measles, mumps, pneumococcal disease, polio, rotavirusdiarrhoea, tetanus etc. The coverage of immunisation programmes in Kerala during six years from 2010-11 is given in Appendix 4.62.

Section 3
Social Security and Welfare

4.121 Kerala has several achievements to its credit in introducing social security measures to address economic and social

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

distress. Successive Five Year Plans of the State as well as the Plans of the LSGIs have evolved social security strategies. The Social Justice Department (SJD) is the nodal agency implementing policies of social security and welfare. The Departments and Agencies implementing social security measures and their major activities are given in Appendix 4.63.
The social security programmes in Kerala can be grouped into two:

A. Institutional Care.
B. Social Assistance Programme.

A. Institutional Care

4.122 In the State, Government as well as NGOs/VOs provides institutional care and protection to the weaker sections. There are 78 welfare institutions under the aegis of SJD. Out of this, 32 institutions are for children, 17 for women, 11 for aged people and 18 for disabled. About 2932 persons benefited in 2014 through the network of these 78 institutions. Apart from this, 2207 registered welfare institutions run by NGOs and VOs provided benefits to 88603 persons. Of which, 17315were old people, 918 women, 15727disabled, 472 abandoned children, 52300 orphaned children, 703 beggars and 1168 others. The district wise coverage of beneficiaries in major welfare institutions run by SJD is given in Appendix 4.64 and that of registered welfare institutions in Appendix 4.65.

B. Social Assistance Programmes

4.123 Social assistance programmes comprise of a series of social security pension schemes and welfare schemes. Review of various social assistance programmes are listed below.

Pension Schemes

4.124 The major pension schemes implemented in the State are: Agriculture labour pension, Indira Gandhi National Old Age Pension, and pension for disabled, pension for unmarried women above 50 years and widow pension. During 2014-15, the total number of pensioners except agriculture labour pensioners was about 24.98 lakh. The largest categories are of old age pensioners followed by widow pensioners. Among the districts, Malappuram is at the top with most number of beneficiaries and Wayanad the least. The district wise coverage of major pension schemes is presented in Appendix 4.66.

Social Security and Welfare of Unorganized Sector Workers

4.125 Social security coverage to workers in the unorganized sectors is given through the Welfare Fund Boards (WFBs). As on 2014, there are 33 Welfare Fund Boards, out of which16 are under the direct control of the Department of Labour. The total number of members enrolled in these Boards was about 47.25 lakh, of which 65 percent were from the agriculture sector including fisheries and dairy. The Boards are functioning under different departments and the rate of assistance varies. Bringing all these Boards into one umbrella helps to improve their delivery mechanism and improve cost effectiveness and better monitoring of programmes. Details of workers enrolled in the WFBs are shown in Appendix 4.67.

Welfare of Senior Citizens

4.126 The evolution of Kerala's ageing population is a complex phenomenon. Among the Indian states, Kerala has the largest proportion of Senior Citizens (people aged 60 years and above) in its population. Currently it is assessed as 12.6 percent (11.3 percent among males and 13.3 percent among females) compared to National average of about 8 percent. According to the projections of the National Commission on Population, the proportion of elderly population in the State is likely to increase to 18.3 percent by the end of 2026.

4.127 Also, Kerala has the highest Old Age Dependency Ratio, while Dadra and Nagar Haveli has the lowest. Addressing the challenges associated with these demographic shifts has become a major challenge to the State and society. The old age dependency ratio of top 5 and bottom 5 States/UTs in the country as per Census 2011 is shown below.

Table 4.16
Old Age Dependency Ratio as per Census 2011

Top 5		Bottom 5	
Name of State/UTs	Population in %	Name of State/UTs	Population in %
Kerala	196	Dadra & Nagar Haveli	63
Goa	168	Daman & Diu	64
Himachal Pradesh	161	Arunachal Pradesh	77

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Punjab	161	Meghalaya	84
Tamil Nadu	158	Nagaland	86

Source: Annual Report 2014-15, Ministry of Women and Child Development, GOI

4.128 The policies and programmes for senior citizens aim at their welfare and maintenance, especially for indigent senior citizens, by supporting old age homes, day care centres, mobile medicare units, etc. These programmes are implemented through the SJD in close collaboration with non-governmental organizations and civil society.

Institutional Services to Senior Citizens

4.129 During 2014, there were 15 Government Old Age homes with 602 inmates against the sanctioned strength of 1000. Also there were 17315 inmates in 558 registered Old Age homes run by NGOs under the board of control of orphanages and other charitable homes. In addition, a number of private Old Age homes (free and pay-and-stay) are functioning in the State. Many of these homes are running with poor infrastructure and health care facilities. Revamping the homes on par with the State Old Age Policy is obligatory for creating a healthy, physical, social and family environment.

National Old Age Pension Scheme

4.130 It is a monthly pension scheme shared by both State and Centre for BPL persons aged 60 years or above. During the reporting period the scheme benefited 10.64 lakh aged persons. The percentage increase of pensioners compared to 2013-14 is 180. The maximum coverage is from Thiruvananthapuram district and the least is from Pathanamthitta.

Integrated Programme for Older Persons (IPOP)

4.131 As per the scheme, financial assistance up to 90 per cent of the project cost is provided by Government of India to State Government / NGOs/PRIs etc. for establishing and maintaining old age homes, day care centres and mobile medicare units. In 2014-15, only one project in Kerala received the financial assistance whereas 43 projects in Andhra Pradesh, 8 in Karnataka and 26 in Tamil Nadu received financial assistance from Central Government. Identification of more eligible NGOs and other supporting agencies in the State are necessary for getting more financial support from Centre.

Box 4.9
Arogyakeralam Palliative Care Project: A unique model of palliative care

The Arogyakeralam project was launched by the State Government in 2008 with the aim of providingmedical care and support to every citizen in need of palliative care. Arogyakeralam emphasises a community-based approach to healthcare and considers home-based medical care to be the cornerstone of palliative care services. As of March 2014, theproject had provided primary-level palliative care to an average of 48,339 and secondary-level care to an average of 2,419beneficiaries each month since 2008.

The primary objective of the Arogyakeralam project isto provide palliative care to all the patients who are inneed of this service. Its larger objective under National Rural Health Mission is to ensure that palliative care becomes entirely self-subsistentand community-based.The other major objective of the project is to ensure thatpalliative care becomes an integral part of the state's public health system.

TheArogyakeralam palliative care project has been formulated in consonance with thePain and Palliative Care Policy launched by the State Government in 2008. As per this policy, palliative care has been declared as part ofprimary healthcare and developmentof community-based homecare initiatives under theleadership of local self governments has been facilitated.This project saw an active involvement of Gram Panchayats and atleast 5% of the Panchayat Plan Fund had to be allocated to this project. The LSGIs also took additional stepsto procure external contributions to the projectand elicit greater community participation.

Source:Social Sector Service Delivery: Good Practices Resource Book 2015, NITI Aayog

Vayomithram Programme

4.132 Kerala Social Security Mission (KSSM) is implementing this programme in 5 Corporations and 29 Municipalities of the State providing welfare services to persons above 65 years. Free medicine, palliative home care, medical camps and help desk facilities are the services made available under this programme. During 2014-15, the programme assisted nearly1.28 lakh aged persons.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Age - friendly Panchayats

4.133 As a bottom up approach to eliminate abuse and neglect of the elderly, the State Old Age Policy, 2013 has been visualized introducing old age-friendly panchayats for ensuring good health, participation and assuring quality life to the elders. As a beginning, the Manickal panchayat in Thiruvananthapuram district has been selected as the first integrated age-friendly panchayat in the State. The activities to make the panchayat age friendly are being carried out by the Vridha Jana Sabha headed by the panchayat president.

Welfare of Women

4.134 According to 2011 census, 52 percent of Kerala's population is women. There has been an endeavour made on the part of the Government to specially focus on this target group in the existing plan schemes. The present status of women in Kerala is given in the chapter on gender development. However, the activities of the statutory bodies for women empowerment and major schemes promoting social and economic rehabilitation of women are as follows.

Indira Gandhi Matritva Sahyog Yojana

4.135 This centrally sponsored scheme provides financial assistance to pregnant women of 19 years and above for the first two live births. This scheme was implemented in Palakkad district. The scheme assisted 13116 beneficiaries in 2014-15.

Snehasparsham

4.136 This scheme implemented by Kerala Social Security Mission aims to address the problem of unwed mothers. Monthly assistance of □..1000/- is given to all unwed mothers which has benefited 1817 women in 2014-15.

Kerala Women's Commission

4.137 The Commission has taken steps to enhance the status of women and to enquire into unfair practices affecting women by conducting seminars and adalaths. In the reporting period the Commission had conducted 97 legal workshops/seminars, 63 counseling programmes to panchayat Jagrathasamethis, 131 adalaths, 13 DNA tests and 4 research/evaluation studies. Under gender awareness programme, the Commission undertook 30 pre-marital counseling and awareness creation in 406 schools/colleges.

4.138 In 2014, the Commission received 6621 complaints and 4042 cases were disposed. The district wise data shows that Thiruvananthapuram filed the most number of complaints while Kasaragod the least. The district wise details of complaints received as on March, 2015 are given inAppendix 4.69.

Kerala State Women's Development Corporation

4.139 Self-employment schemes for women, flagship programme on gender awareness and construction of She- toilets are the major programmes of the Corporation. During 2014-15, the Corporation assisted 4904 women and 20000 students through various schemes. The "Suraksha @ school" project implemented in Thiruvananthapuram district ensuring safety, security and continuous monitoring of girl students while they are in school and in transit was a novel one.

Welfare of Persons with Disabilities

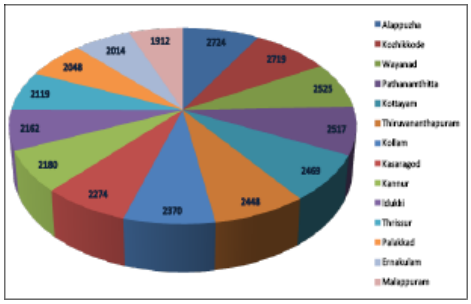
4.140 Disability has been recognized as one of the major causes of social exclusion. According to Census 2011, over 26.81 million people in the country equivalent to 2.21 percent of the total population are suffering from one or the other kind of disability. In Kerala this is 2.28 percent of the total population. Among the rural population, 2.37 percent are disabled and in urban it is 2.18 percent. Further, the disability rate (the prevalence of disability per one lakh population) of India is 2215. It is 2281 in Kerala and is higher among males (2463) compared to females (2113). Also it varies among the districts of the State showing highest in Alappuzha and lowest in Malappuram.

4.141 As regards types of disability, movement is highest at 22.53 per cent for both sexes and disability in speech is lowest at 5.43 per cent.

Fig 4.8
District wise Disability Prevalence Rate (per lakh population) in Kerala

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters



Source: Census2011

4.142 Kerala has transitioned from the earlier welfare based approach to a rights-based approach in the comprehensive rehabilitation of the disabled. Major policies and programmes in the disability sector are listed in Box 4.10.

Box 4.10
Kerala State Policy for Persons with Disabilities (PwDs)-2015

The policy envisages the following key strategic focal dimensions:
• Development dimension in the participation of PwDs in developmental processes.
• Liberation dimension for the rights of PwDs to respect their capacities.
• Protection dimension rights from abuse and participation.
• Accessibility dimension for making a positive and dynamic inter-actionable environment and attitude for inclusive development and empowerment of PwDs.

Inclusive development, enhanced individual competence and increased personal autonomy of PwDs are the broad objectives of the policy. Strategies identified for achieving these objectives are:
• Facilitation of the inclusion of disability rights, values and practices into Government developmental strategies and programming.
• Integrated management system for the coordination of planning, implementation and monitoring.
• Capacity building strategies at all levels to implement recommendations contained in the policy frame work.
• Comprehensive plan of action for strong public education and awareness aimed at changing the fundamental prejudices in Kerala society.
• Formation of state level structures such as Department of Disability Affairs, Kerala State Disability Council etc. for link strategy and policy development.
Self-representation, comprehensive approach and sustainability are the three guiding principles upon which the strategy is based.

Disability Survey

4.143 This new initiative was started based on the recommendation of the stakeholders meeting on social welfare conducted by State Planning Board during 2013-14. The primary and secondary enumeration of the survey has been completed. It is expected to publish the report by mid-2016.

Issuing Disability Certificate to Differently Abled

4.144 According to the Persons with Disability Act, 1995 it is mandatory to provide disability certificate to the disabled. From 2009 to March 2015, Kerala Social Security Mission conducted 1495 disability certification camps and distributed 283,277 identity cards.

Ashwasakiranam

4.145 The scheme implemented by KSSM provides monthly assistance to the caregivers of severe mentally challenged persons and bed ridden persons with severe physical disability. During the current year up to August 2015, assistance was given to 68,315 caregivers.

Box 4.11
State Initiatives on Disabilities (SID)

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

This is a special initiative of the Govt. for prevention, detection, early intervention, education, employment & rehabilitation of the persons with disabilities. This initiative is implemented by Social Justice Department in collaboration with the Department of Education and Health. The major achievements of the programme are

- MMR vaccination programme started free of cost to new-born from January, 2014 in Govt. Maternity Hospitals.
- District Early Intervention centres in 14 districts.
- Training to Anganwadi teachers in early detection of disability.
- 40 Oto Acoustic Emission Screeners were provided to Govt. Maternity Hospitals to conduct hearing screening of new- born. An average of 10,000 neonatal babies is screened every month through this programme.
- Rubella vaccination were provided to around 5 lakh adolescent girls in Govt./ Govt. aided schools

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

National Institute of Speech and Hearing (NISH)

4.146 The NISH set up with the objective of rehabilitating the hearing impaired persons in the State was declared as National University in the Union Budget, 2015-16. The early intervention programmes and extension services of NISH benefited 232 students. From April 2014 to March 2015, 11632 cases were attended under the hearing and speech language disorders programme and 2660 cases under medical, psychology and allied services.

State Commissionerate for Persons with Disabilities

4.147 The State Commissionerate was set up under the Act of Persons with Disabilities Act, 1995 to monitor the implementation of the Act and to redress the complaints of differently abled. The other functions of the Commissionerate are conducting awareness camps, redressal of the complaints of disabled persons through adalaths, inspection of institutions for disabled etc.

Kerala State Handicapped Persons Welfare Corporation

4.148 The Corporation is established for promoting and implementing the welfare schemes for differently abled persons. Supplying aids and appliances to disabled, self- employment scheme, financial assistance to self- help groups, vocational training to SC/ST disabled persons, etc. are the major activities of the Corporation. In 2014-15, the Corporation supplied aids and appliances to 1553 differentially abled persons and distributed 35 motorized scooters.

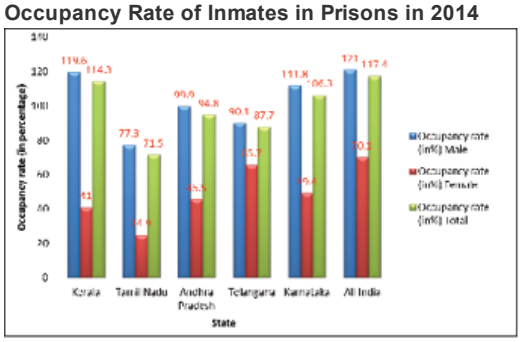
Ex-Servicemen & War Widows Welfare

4.149 The Department of Sainik Welfare is looking after the welfare and rehabilitation of ex-servicemen and their dependents. As on 30th March 2014, there are 167,077 Ex-service men, 53,426 widows and 295 war widows holding identity cards issued by the department. Financial assistance to Second World War veterans and their widows, construction of houses for disabled ex-servicemen, computer training to ex-servicemen/widows/dependents for re-employment and self-employment are the major activities. In 2014-15, the computer training centres at Thiruvananthapuram, Kozhikode and Thrissur rendered rehabilitation training to 157 persons.

Prisoners Welfare

4.150 In Kerala, the jail infrastructure consists of 52 jails. As on March 2015, there were 7508 prisoners, of whom 187 were women. The proportion of women prisoners in Kerala (2.49%) is lower than that in other southern states where the proportion ranged from 4 to 6 percent. Overcrowding in jails of Kerala is the major problem as it is very difficult to accommodate more prisoners. The occupancy rate (ratio of inmate population to available capacity) in prisons in Kerala is higher than that of the southern states

Fig 4.9
Occupancy Rate of Inmates in Prisons in 2014



Source: Prison Statistics India-2014

4.151 Modernization of prisons and welfare of prisoners are the two major plan schemes implemented by the Department of Prison. Installation of EPABX system, CCTV in prisons, recycling of waste water units for agro use in central prisons, vocational training to prisoners on various trades like high-tech farming, plumbing &wiring, driving and jewel making were the major achievements.

4.152 Apart from this, the 13th Finance Commission awarded an amount of □..154crore for the development of prisons and welfare of the prisoners. Out of the 177 projects undertaken, 146 projects were completed. Establishment of high security prison, Viyyur, installation of solar energy system and energy saving measures in prisons, measures to reduce overcrowding in jails, and providing water supply arrangements in jails were the major projects. Details of prisoners in jails are given in Appendix 4.68.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Welfare of Children

4.153 Kerala's child population (0-6years) is on the decrease. As per 2011 census, the children between the ages 0-6 years constitute only 10 percent of the total population of Kerala. Compared to 2001 census, the fall in growth rate of child population is (-16.46) percent. This decrease in child population is seen in all districts. Since children are the future human resource of the country, much remains to be done for them to enjoy their rights fully.

4.154 The 1989 UN Convention on the Rights of the Child (UNCRC) clearly specified that survival, development, protection and participation are the four parameters which constitute the rights of children.

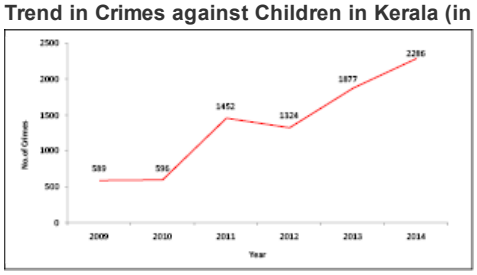
Child Protection and Welfare

4.155 Child protection means to create a safety environment to all children from neglect, violence, abuse and exploitation. Compared to other states, Kerala is much better in protecting children from all kinds of ill-treatment and violence. Major programmes in the area of child protection are detailed below.

Crimes against Children

4.156 In Kerala, the crimes against children continue to show an upward trend with rising figures for kidnapping, sexual abuse, trafficking, etc. As per the report published by the State Crime Records Bureau, crimes against children in the State have increased by 288 percent from 2009 to 2014. Also the rate of total cognizable crimes (the incidence of crimes per one lakh of children) in the State is increased to 25.6 percent during 2014 (NCRB's report). Whereas this rate for Andhra Pradesh is 13.1, Karnataka 17.4, Tamil Nadu 11.7 and Telangana 17.3 respectively.

Fig 4.10
Trend in Crimes against Children in Kerala (in numbers)



Source:Kerala State Crime Records Bureau

Kerala State Commission for Protection of Child Rights

4.157 The Commission started functioning in the State on 3rd June, 2013 as a statutory body under the Protection of Child Rights Act, 2005 and the Kerala State Commission for Protection of Child Rights Rules, 2012. It has the mandate to examine and review the existing laws for the protection of child rights and suggest remedial measures. In 2014-15, the Commission has conducted enquiry into 833 complaints involving violation or denial of Child Rights and disposed 403 cases.

Integrated Child Protection Scheme (ICPS)

4.158 ICPS provides preventive, statutory care and rehabilitation services to children who are in need of care and protection and children in conflict with law as defined in Juvenile Justice Act 2000 and its amendments in 2006. In the State, Child Protection Units, Child Welfare Committees, Special Juvenile Police Units and Juvenile Justice Boards have already been established in the entire district to speed up implementation of the provisions contained in the Juvenile Justice Act.

Adoption Services

4.159 As regards adoption services, 18 specialized adoption agencies, 5 recognized adoption placement agencies for inter-country adoption and 20 licensed adoption placement agencies are functioning in the State. From 2011-12, 627 in–country and 66 inter-country adoption took place. Under in-country category 315 were female and inter-country 34. Details of adopted children are given in Appendix 4.70.

Childline Services

4.160 Child line system is a 24-hour toll free telephone service (1098) for children in distress. The service is now available in 278 cities in India and 15 in Kerala (3 in rural and 12 in urban).

Institutional Services to Children

4.161 There are 32 Government welfare institutions in the State for the care and protection of children consisting of 14 observation homes, 8 children's homes, 3 special homes, 5 special children's homes attached to observation home and 2 after care homes. Apart from this, there are 1228 registered welfare institutions run by N.G.Os and Voluntary Organizations for children which has benefited nearly 0.50 lakh children. Special courts have already been notified in the State to expedite the trial of cases registered under POCSO Act, 2012.

Kerala Social Security Mission (KSSM)

4.162 The Mission was established in 2008 under the Department of Social Justice, the first organization in the country for providing social security to the weaker sections. During 2014-15, the Mission has carried out the following welfare programmes for children.

a. Cancer Suraksha for Child Patients

This flagship programme of KSSM offers free treatment to the child patients below the age of 18 through Government approved hospitals. During 2014-15, the scheme assisted 258 child patients.

b. Cochlear Implantation

The project provides cochlear implantation to the children in the age group of 0-5 years. During 2014-15, the project assisted 70 children.

c. Snehapoorvam

The scheme provides financial support to children who lost both parents or the one who is alive is not in a position to look after the child due to financial crisis. The programme implemented by KSSM
has benefited 37140 children till September, 2015.

Child Development

4.163 Kerala has always been in the forefront for promoting physical, mental, emotional and social development of children. However, mental health problems of adolescents, nutritional security issues, learning and educational problems, development delays and disabilities etc. faced by them are huge challenges. The review of major programmes and schemes implemented under child development are given below.

Integrated Child Development Services (ICDS)

4.164 ICDS is one of the flagship programmes of Government of India for early childhood development. As on March, 2015, 258 ICDS projects and 33,114 Anganwadi centres are operational across the State, covering 10.14 lakh beneficiaries under supplementary nutrition and 4.44 lakh children in the age group 3-6 years under pre-school education. The district wise beneficiaries of ICDS in Kerala are given in Appendix 4.71.

4.165 Though nutrition is provided generally through Anganwadi centres, most of these centres are operating with lack of infrastructural facilities. As per the information available, about 46 percent AWCs are functioning in rented buildings and temporary sheds. 43 percent AWCs are having drinking water facilities and 17 percent AWCs have child friendly toilet facilities. Basic infrastructure facilities and availability of play materials need to be improved in these centres for better contribution to the physical and mental development of children.

Rajiv Gandhi Scheme for Empowerment of Adolescent Girls

4.166 As a centrally sponsored scheme, launched in Kollam, Idukki, Malappuram and Palakkad districts, it aims at empowering the nutritional and health status of adolescent girls in the age group of 11-18 years through 84 ICDS projects

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

of the districts. Extending the scheme to the districts covering coastal and tribal areas of the State was the latest development. During 2014-5, the scheme assisted 2.17lakh beneficiaries.

Psycho Social Services for Adolescent Girls

4.167 The scheme provides counseling and guidance support to adolescent girls. So far the adolescent health clinics had been covered in 807 schools across the State with the support of concerned Parent Teachers Associations and Local Self Governments.

Child Survival and Nutrition

4.168 According to District Level Health Survey-4(DLHS-4), the current rate of IMR in Kerala is 12 per thousand live births. Although, Kerala ranks first in reduction of IMR, the report of National Institute of Nutrition in 2013 reveals the IMR in Attappadi was 66 per thousand live births. Further, the target of the State Plan of Action for Children-2004 to reach IMR of 7 by 2012 has not been realized.

4.169 The problem of low birth weight babies and the prevalence of anaemia among children are other areas of concern, especially among tribal and coastal communities. In the State, 21 percent (DLHS-4) of the children between 0-5 years are underweight and 48.5 percent of children between 6-59 months have anaemia. The prevalence of malnutrition among children of all the vulnerable communities in districts likes Palakkad, Wayanad, Kozhikkode and Kasaragod is yet another matter of concern that require focused intervention in these areas.

4.170 In full immunization coverage, the State's position is third (NHFS -3) among all states. However, the coverage has significantly dropped in recent years. As per DLHS-4, 17.5 percent of the children between 12-23 months have not received all the recommended vaccinations. The children less than 3 years, who were exclusively breastfed in the first 6 months, remain at 70 percent, and children (6-9 months) who receive breast milk and semi-solid and solid food have dropped from 85 percent to 57 percent. Appropriate intervention, close monitoring and publicity in certain segments of society are needed to address all these issues.

Box 4.12
Nutrition Policy of Kerala-2015

Government has released the Nutrition policy of the State with a view to eradicate malnutrition and achieve nutrition for all. The vision is to build a healthy State by intervention for holistic development of nutritional status of the people in a life cycle approach.

Goals
• Ensure food security and adequate nutrition for all the people.
• Reduce health inequalities.
• Eliminate undernutrition among adolescents and women.
• Provide effective therapeutic feeding for sick and malnourished children.
• Develop good nutrition status for adults and control nutrition related non communicable diseases.
• Curb the incidence of overweight by communication strategies to facilitate behavioral change for better nutrition practices.
• Adopt multi-sectorial, gender–sensitive and community based systems to promote the nutritional status of the people.

Targets
• Reduce by one-half - the prevalence of underweight and anaemia among children and women.
• Reduce by one-half - the low birth weight cases and prevalence of post-partum obesity and adult obesity.
• Eliminate iodine deficiency and vitamin–A deficiency.
• Universal access to treatment for malnourished women and sick children.
• Increase the per capita consumption of fruits and vegetables by 25 percent and halt the increase in prevalence of diabetes and cardiovascular diseases.
• Reduce by two-third - the prevalence of underweight and anaemia in SCs and STs.

Child Participation

4.171 Right to participate in decision making provides children with an environment to express their views freely. Organizing

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Bal Panchayats is considered one of the most effective and unique means of promoting child participation with maximum outreach.

Child Participation Programmes in Kerala

4.172 Kerala is one of the states in the country that has made substantial progress in child participation in local planning. In the State, the Bala Sabha, Bala Samathis and Bala Panchayats ensured the participation of children in the planning process at the local level. 946 Bala Panchayats and 66743 Bala Sabhas involving 10.59 lakh children were constituted in the State up to September, 2015.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Section 4

Drinking Water

4.173 There is a wrong notion that Kerala has abundant water resources. Low consciousness about the scarcity of water and its life sustaining nature, and inadequate comprehension of its economic value has resulted in its mismanagement, wastage, and inefficient use. Due to rapid urbanization, increased economic activity, changes in land use pattern and higher standard of living, the gap between the demand for and supply of water has been widening. To meet this demand, augmentation of existing water resources by development of additional sources of water or conservation of the existing resources through impounding more water in the existing water bodies and its conjunctive use is required. An integrated water management system is essential to ensure sufficient water in the entire system. Rain water harvesting and ground water recharge programme must be effectively implemented to reduce the consumption of potable water and sustainability of ground water resources.

4.174 Primary responsibility of providing drinking water facilities in the country rests with the respective state governments. However, central government formulates policies to supplement the state government initiatives through Ministry of Drinking Water and Sanitation. Accelerated Rural Water Supply Programme (ARWSP), now renamed as National Rural Drinking Water Programme (NRDWP) is the major programme of Government of India, which formulates guiding policy, sets standards, and provides funds and technical assistance to the states for rural water supply and sanitation. The 73rd and 74th amendment to the constitution has been a landmark policy shift from a supply-based approach to demand-driven strategy by providing greater role for community participation.

Status of Sources

4.175 While the State receives rainfall during both South West monsoon and North East monsoon seasons, there is a large spatial and temporal variation in the rainfall. Normal rainfall in the state is around 300 cm per year. About 85 per cent of the annual rainfall is received during the monsoon period, of which 70 per cent is received during the South West monsoon (June to September) and 15 per cent during the North East monsoon (October to December). The remaining 15 per cent rainfall is received during the non-monsoon period between January and May. However, large spatial and temporal variation in the rainfall system often leads to the paradox of abundance of water resources in one season and shortage in the next season. Moreover, due to the undulating topography with steep terrain, rainwater is quickly discharged into the sea.

4.176 As regards sources of water for drinking, Kerala depends on both surface water and ground water. Surface water sources include rivers, canals, streams, ponds, lakes, reservoirs etc. Kerala has 41 west-flowing and 3 east-flowing rivers originating in the Western Ghats. As per the national classification, none of these are major rivers. Four of them are medium rivers, whose combined discharge is less than half of that of river Krishna. The remaining 40 are minor rivers, and their combined discharge is only about one third of that of Godavari. The total annual yield of all these rivers together is 78041 Million Cubic Meters (MCM) of which 70323 MCM is in Kerala. The total storage in reservoirs of completed projects is 1133.76 Mm3. It is estimated that Kerala has approximately 995 tanks and ponds having summer storage of more than 15000 Mm^3. It needs to be noted that, 67.29% of the surface water area of 3.61 lakh hectares is constituted by brackish water lakes, backwaters and estuaries.

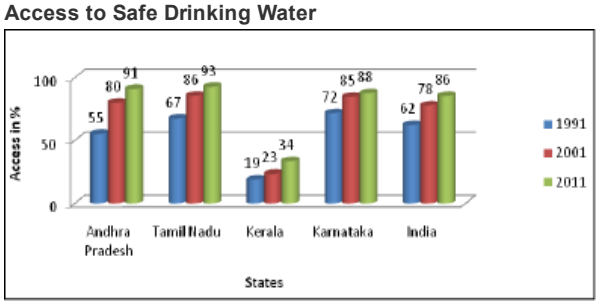
4.177 Groundwater has been the main source for meeting the domestic needs of majority of the population besides, fulfilling a large portion of the irrigation needs of agriculture. In contrast to our neighbouring states, the availability of annual replenishable ground water and extraction of potential ground water are low in Kerala. The availability of annual replenishable ground water in Kerala is 6840 MCM and the net ground water availability is 6229.03 MCM, of which 59.25 per cent is utilized for irrigation. Present drinking water demand is at 645 million litres / day. The projected water requirement by 2021 in the industrial sector is 4270 Mm3 and for domestic requirement it at 3230 Mm3. The potential utilization of available ground water resource in Kerala is 43.24 per cent. Open well density in Kerala is perhaps the highest in the country with 200 wells per sq.km in the coastal region, 150 in the midland and 70 in the high land. Natural springs

occurring in the highland regions of the state have the potential to be developed as good sources for drinking water supply and also for limited small scale irrigation, especially in remote and under developed areas.

Access to safe drinking water in Kerala

4.178 Kerala has been a model of both growth and improved income distribution through human development. Unfortunately, Kerala has not done well in the drinking water segment. Only 29.3 per cent of the houses in the State are serviced by the water supply network and just 33.5 per cent gets safe water supply which is 52 per cent less than the national average and 57 and 59 per cent less than our neighbouring states of Andhra Pradesh and Tamil Nadu.

Fig 4.11
Access to Safe Drinking Water



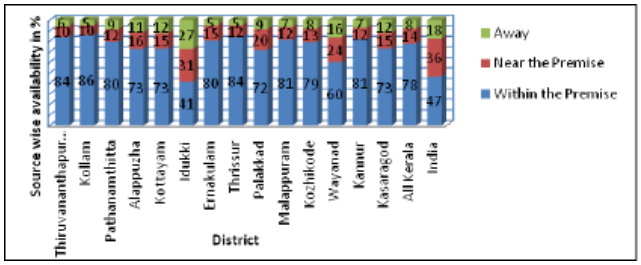
Source: MOSPI, Government of India

4.179 In Kerala 62 per cent of the households depend on wells for drinking water, 1.4 per cent of houses rely on springs, 0.2 per cent on rivers and canals and 0.7 per cent on tanks, ponds and lakes, exposing themselves to bacterial and chemical contamination. While 0.7 per cent apply hand pumps to draw water, 3.7 per cent are serviced by tube wells.

4.180 Based on the distance of water source available, Census of India 2011 classified water availability into three categories such as Within the premise, Near the premise and Away from premise*. In Kerala 78 percent of the people availed drinking water from their own premises, 14 percent of the people depending upon Near the premises and 8 percent Away from the premises (Appendix 4.72 & 4.73). However, in Idukki district, the situation is worse as 27 % avail drinking water away from the premise which is worse than the all India scenario of 18 %. The source wise drinking water availability for all district is shown in Figure 4.12.

** within the premises assigned if sources are located where household lives. Near the premise is within a range 100 mtrs. from the premises in urban areas and within a distance of 500 mtrs. in rural areas. Away from the premises is located beyond 100 mtrs. from the premises in urban areas and beyond 500 mtrs in rural areas.*

Fig 4.12
Source wise drinking water availability in Kerala



Source: Census of India 2011

4.181 In rural Kerala, 72 percent of people are having drinking water within the premises. District wise analysis shows that Kollam has the highest access of 85 percent and Idukki has the lowest access of 39 percent. Among urban regions, Thiruvananthapuram, Kollam and Pathanamthitta have the highest levels of more than 86 per cent of households having drinking water within premises and Wayanad has the lowest level of 74 percent.In Alappuzha nearly 11 percent of urban people do not have drinking water access within or nearby premises.

4.182 Rural drinking water is one of the six components of Bharat Nirman, the rural infrastructure programme of the country. Even if the existing schemes have greatly increased the coverage of safe drinking water in the rural areas of the country, the provision of drinking water to rural areas is fraught with problems. Many habitations which once came under

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

the “covered” status have been found to slip down to the “partially covered” or even “uncovered” status. As per the Ministry of Drinking Water and Sanitation, Government of India, there are 11883 habitations in Kerala, of which 934 habitations have slipped back in 2011-12.The highest incidence is reported in Thiruvananthapuram at 19 percent, followed by Palakkad at 18 percent and Kasaragod by nearly 14 percent among the total slipped back habitations of the State.

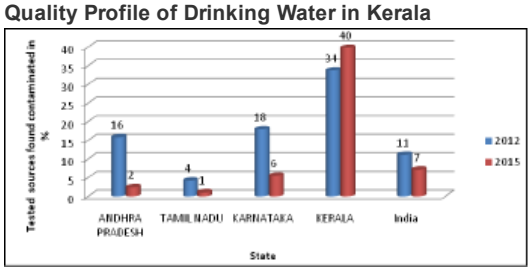
Quality of Drinking Water in Kerala

4.183 Kerala is one of the most vulnerable states in the country, in terms of water quality. Quality of water varies from source to source and even place to place. In general, ground water is held to be of better quality than surface water. However, it cannot be generalised. Data available from the results of Field Test Kit under the National Rural Drinking Water Programme, Ministry of Drinking Water and Sanitation indicate 40.2% of the sources tested under the scheme NRDWP in rural Kerala have been contaminated with chemical contaminants like iron, fluoride, salinity, nitrate, arsenic, and biological contaminants like faecal coliform. About 3.6 % of the contaminated sources had multiple contaminations. Unscientific waste disposal, unplanned construction of toilets in high population density areas, discharge of industrial waste etc. are the major reasons. Most of the states which had chemical and bacterial contaminations have been successful in reducing the contamination level over the years. However, Kerala’s performance in the regard has been poor. The quality profile of drinking water in Kerala and other southern states is shown in Figure 4.13.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Fig 4.13

Quality Profile of Drinking Water in Kerala



Source: Ministry of Drinking Water and Sanitation,GoI,(FTK Test)

4.184 Among the districts, Alappuzha and Palakkad are fluoride affected regions; and Thiruvananthapuram dominated in bacteriological contamination of faecal e-coli. Many cases with multiple contaminations were seen in Palakkad, Thiruvananthapuram, Kollam and Alappuzha.

4.185 ‘Environmental Monitoring Programme on Water Quality’ is a project initiated by Kerala State Council for Science, Technology and Environment in 2008, and implemented by Centre for Water Resources Development and Management. Water quality monitoring is done on a river basin scale. Both surface and ground water sources are tested and detailed analysis is done. It aims to create a database on water quality and to use the derived information for practical applications in the management of water resources and their effective utilisation. The objective is to cover all 44 river basins in Kerala. Five reports have been brought out so far.

Table 4.17

Reports of Environmental Monitoring Programme on Water Quality

Report Number	Year	Basin covered
One	2009	Kabani, Periyar, Neyyar
Two	2010	Karamana, Meenachil, Kadalundy
Three	2011	Pamba, Chalakudy, Bharatapuzha, Anjarakandy, Thalasseri, Mahi
Four	2012	Kuttiyadi, Chaliyar, Kallai, Achencoil
Five	2013	Valapattanam,Kallada, Keecher-Puzhakkal, Chandragiri

Source: Kerala State Council for Science, Technology and Environment

4.186 The reports highlight physical, chemical and microbiological contamination in water which could pose concerns for the population dependent on them. Many of the parameters in water analysed, were found to be beyond the BIS limits.

Water Quality Standards

4.187 Depending on the impact of concentration of various ions in water on human health various standards have been laid down by different agencies. These standards are useful for deciding the suitability of water for drinking purpose. The drinking water standards laid down by Bureau of Indian Standards (BIS) and Indian Council of Medical Research (ICMR) are presented in Table 4.18.

Table 4.18

Drinking water standards

Sl. No.	Parameters	Prescribed by			
		BIS (IS 10500-91)		ICMR	
		Desirable Limit	Max. permissible Limits in the absence of alternate source	Desirable Limit	Max. permissible limits
1	2	3	4	5	6
1	PH	6.5 to8.5	No relaxation	7.0 – 8.5	6.5 – 9.2
2	Total dissolved solids mg/L	500	2000	500	1500-3000
3	Total hardness as CaCO3 mg/L	300	600	300	600
4	Calcium as Ca mg/L	75	200	75	200
5	Magnesium as Mg mg/L	30	100	50	-
6	Chloride as Cl mg/L	250	1000	200	1000
7	Sulphate as SO4 mg/L	200	400	200	400
8	Nitrate as NO3 mg/L	45	100	20	100
9	Iron as Fe mg/L	0.3	1	0.1	1
10	Fluoride as F mg/L	1	1.5	1	1.5
11	Arsenic as As mg/L	0.05	0.05	-	0.05
12	Manganese as Mn mg/L	0.1	0.3	0.1	0.5
13	Zinc as Zn mg/L	5	15	0.1	5
14	Copper as Cu mg/L	0.05	1.5	0.05	1.5
15	Chromium as Cr mg/L	0.05	0.05	-	-
16	Lead as Pb mg/L	0.05	0.05	-	0.5
17	Mercury as Hg mg/L	0.001	0.001	-	0.001
18	Cadmium as Cd mg/L	0.01	0.01	-	0.01
19	Cyanide as CN mg/L	0.05	0.05	-	0.05
20	Minerals Oil mg/L	0.01	0.03	-	-
21	Phenolic compounds mg/L	0.001	0.002	-	-
22	Total Coliform MPN/100 ml	1	10	-	-
23	Residual free chlorine mg/L	0.2	-	-	-
24	Aluminium as A1 mg/L	0.03	0.2		
25	Boron as B mg/L	1	5		
26	Selenium as Se mg/L	0.01	-		
27	Pesticides	Absent	0.001		

Source:Central Ground Water Board

Note – Indian Standard, Drinking Water Specification (Second Revision) BIS (IS 10500:2012) has also been recently published by the Bureau of Indian Standards

Water Supply System in Kerala

4.188 The drinking water system in Kerala can be classified broadly into three categories:-

1. Water supply through the schemes owned and operated by the government via Kerala Water Authority (KWA) and Local Self Government Institutions.

Kerala Water Authority (KWA) is the primary drinking water supplier in the State. KWA operates throughout the State and is involved in both urban and rural water supply. Apart from state schemes, schemes receiving funds from Govt of India, NABARD and LSGs are also implemented by KWA.

Box 4.13

Accelerated Rural Water Supply Programme

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Accelerated Rural Water Supply Programme (ARWSP) was introduced in 1972 to assist states and union territories to implement drinking water supply schemes in villages. The programme was changed to a Mission approach when the Technology Mission Scheme on Drinking Water Management, called the NDWM was introduced in 1986.NDWP was renamed as Rajeev Gandhi Rural Drinking Water Programme. Objective of the scheme is to meet the emerging challenges in the rural drinking water sector related to availability, sustainability and quality of water. Components pertaining to the State under this programme are coverage, sustainability, quality, natural calamities, operation and management (O&M) and support activities. The funding pattern will be 47 per cent for coverage, 20 per cent for water quality, 15 per cent for O&M, 10 per cent for sustainability, 5 per cent for support activities and 3 per cent for water quality monitoring and surveillance (WQM&S). For coverage, O&M and quality the cost sharing is 50:50 between the Centre and the State. In the case of sustainability, support activities and WQM&S funds are received as 100 per cent grant in aid from central government. As per the guidelines of National Rural Drinking Water Programme (NRDWP), Government of India has instructed the state governments to share the total project cost of the ongoing/ new schemes under ARWSP approved by the State Level Sanctioning Committee (SLSC) in the ratio 50:50 between the centre and the state governments. There are 178 ongoing schemes in Kerala that use ARWSP funds.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Source:Ministry of Drinking and Water Sanitation, Government of India.

4.189 As on 31.03.2015, the number of water supply schemes run by Kerala Water Authority is 1263. Out of which 49 are urban water supply schemes and 1214 rural water supply schemes. Among the rural schemes, 137 are multi-panchayat schemes and 1077 are single panchayat schemes Appendix 4.74 to 4.82 gives the details of water supply schemes run by Kerala Water Authority in the State.

JICA Project

4.190 JICA (Japan International Cooperation Agency) assited Kerala Water Project envisages the implementation of five water supply projects in Thiruvananthapuram, Cherthala, Meenadu, Kozhikode and Pattuvam at a total estimated cost of □.2987.40 crores. Physical progress as on March 2015 is 94% and the full distribution is expected during the year 2016-17.

Jalanidhi

4.191 Jalanidhi is a World Bank aided rural water supply and sanitation project. It is based on the cardinal concept of sector reform like demand responsiveness, community ownership and sustainability of investment through cost recovery. Kerala Rural Water and Sanitation Agency (KRWSA) is the implementing agency functioning under the Department of Water Resources, Govt. of Kerala. District wise population covered by water supply schemes implementeed by KRWSA is given in Appendix 4.83 Activities under Jalanidhi are Small Water supply schemes, comprehensive water supply scheme,construction of latrine, ground water recharge and drainage works.Jalanidhi – II is targeted to complete the entire project within 5 ½ years from 01-01-2012 to 30-06-2017.Physical target of the scheme is to cover about 18 lakh rural people for water supply and sanitation services. The project will cover 200 Grama Panchayats of Kerala. Grama Panchayats are selected from among the neediest eight districts of Kerala.Physical achievements of Jalanidhi are given in Appendix 4.84 and Appendix 4.85.

Box 4.14
Mazhapolima: An innovative approach to water security

Mazhapolima is a participatory climate change adaptation initiative launched by the State Governmentin Thrissur district in 2008 to address the problem of water scarcity. The project helps in water conservation by harvesting rainwater from rooftops and feeding it into open dug wells, which traditionally form the water security mechanisms of the State. A notable feature of this initiative was the active participation of Gram Panchayats, private agencies and beneficiaries which led to installation of over 10,300 Mazhapolima units with governmentsubsidy.

Mazhapolima was started in May 2008 under the leadership of the then District Collector with the objective to enhance the water table andincrease water availability in open dug wells throughout the year; improve the quality of water in open dug wells; reduce public spending on water tankers, and reduce saline intrusion into open dug wells along the coastalline.

Under this model, rainwater from rooftops is collected and filtered before being routed down to recharge open dug wells. This also leads to the formation of a fresh water zone atthe source of the dug wells. Mazhapolima units adopted two types of techniques. One technique is roof-top harvesting with sand filter,where PVC gutters are fixed to

collect roof-top water, which is then diverted to the filter using a PVC pipe.The filter consists of sand, metal and charcoal. Thistechnique costs □.. 2,500-3,750 per unit. The secondtechnique is roof-top harvesting with ordinary nylonfilter, through which the roof-top water is harvestedand diverted to the well through a nylon or clothfilter using a PVC pipe. This option reduces the costto □.. 1,250-2,500 per unit.

There are many stakeholders involved in the project –households and institutions facing water scarcity, the DistrictCollectorate, the District Rainwater Harvesting Mission, the Revenue Department, Arghyam, Panchayati RajInstitutions (PRIs), the Department of Education, the State Planning Board, the Department of Rural Development,the State Bank of Travancore, the Thrissur Pooram City Chamber, and the Malayalam Manorama Group.

The concept of rain harvesting is not new. But Mazhapolima clearly demonstrated the ability to respond to a common need with a simple but effective solution that covers four key components – innovation, awareness generation, grievance redressal and trainings. It represents a low cost and an effective climate adaptation strategy which is suited for adoption in other parts of the State.
Source:Social Sector Service Delivery: Good Practices Resource Book 2015, NITI Aayog

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Issues and Concerns in the sector

4.192 The primary concern regarding drinking water is whether there is enough water to address the consumer demand, both at present and in future. Kerala Water Policy 2008 recognises the fact, and has accorded the highest priority to the domestic use of water. Kerala is perceived to be abundant in water, but due to multiple factors, it is also occasionally faced with the problem of scarcity, especially in the case of drinking water.

4.193 Rivers form a major source of our drinking water supply schemes. Large scale pollution & contamination, changes in the flow patterns, fall in the level of water etc are issues posing challenges. Water bodies like ponds and lakes are also under threat. Changes in land use pattern have lead to the abandoning of water bodies leading for less water storage facility. Many such water bodies are encroached, filled and the land used for other purposes. Some others have been turned into sites for dumping waste. It is observed that the rate at which ground water is being replenished is falling in Kerala. Fall in the cultivable land particularly paddy field is one of the major reasons for the low level of ground water recharge in the State. This has had an adverse impact on the water levels of wells in the State. Water levels in wells have been declining over the years. Recharge of potential resources through the conservation of wetland is a pre-requisite for meeting the long term need of the State.

4.194 Urbanisation poses a major challenge to the provision of safe drinking water. These challenges emerge for two reasons: one from the ever increasing demand both from domestic as well as industrial needs and second, the dependence on water sources which are located at faraway places. The pace of urbanization in Kerala is high as compared to other states in India. Percentage of Urban Population is 31 in India, while it is 47 in Kerala. Major problems associated with rapid urbanization are lack of universal accessibility of drinking water, ineffective distribution of water supply, high level of pollution, water shortage, wastage due to old leaking pipes etc. Primary source of pollution in the urban region is the untreated industrial and domestic wastewater. Even if technical solutions have brought significant changes, wastewater treatment is still a problem in Kerala. Industries discharge hazardous pollutants like phosphates, sulphides, ammonia, fluorides, heavy metals and insecticides into the rivers. Kerala State Council for Science, Technology and Environment estimated that nearly 260 million litres of industrial effluents reach the Periyar estuary daily from the Kochi industrial belt. It is noticed that rivers such as Chalakudy, Muvattupuzha, Meenachil, Pamba and Achenkovil are highly polluted with bacteriological contamination.

4.195 It is generally observed that, Water Supply Schemes for Drinking water which can address the concerns of the State involve huge costs and often have long gestation period. Funding and financing such projects is a major issue. Acquisition of land for projects is also a major hurdle. Timely maintenance and upgradation of the existing infrastructure is another area calling for greater attention. Many of the schemes in Kerala supplying water for only part of the day. It means that water supply is available for only part of the day. Enhancing the capacities, to provide 24 X 7 water supply is challenge. Issues in specific regions like hill areas, coastal areas, and quality affected areas cannot be addressed with the traditional methods. They need to be solved through unconventional yet modern technological interventions which are not forthcoming.

Box 4.15
National Workshop on Issus and Challenges of Drinking Water Management in Kerala

In order to identify methods and measures for integrated and sustainable drinking water management in different

hydro -climatic areas of the state and to see certain pockets of interventions through the pilot projects, a national workshop was organised by Kerala State Planning Board, in association with Kerala State Council for Science, Technology and Environment (KSCSTE).The workshop was designed under three key themes viz. i) Water Quality Management and Conservation, ii) Integrated Water Resource and Management and iii) Water Governance and Institutional Mechanism. Some of the recommendations emerged in the workshop are given below.

• Water Safety Plan of World Health Organisation has to be adopted. Foreseeable harm is to be identified, prevented and reasonable measures are to be taken to protect the consumer.
• For long term water security, water management and land management should go together.
• Paradigm shift needed from supply augmentation to demand management and water conservation.
• Scientifically verified database. Every person who is paying tax should be able to verify the data base.
• Pricing system must be more realistic.
• Existing reservoirs are to be integrated and first priority should be given for drinking water.
• Co-existence of traditional & modern technology should be adopted.
• Location specific approach for water security and management is essential
• Inclusive aspect is necessary. Still nearly 22 % of population is not having any kind of water source. These people must be covered with adequate service level. There is also an inter-district and intra district variations in the state which calls for an active intervention to reduce the gap.
• Shift needed from asset creation to asset management. It is essential to maintain minimum fund for asset management for life cycle of the water supply projects.
• Quality hit areas should be identified first for intervention
• Certification of well water is vital.Some people can be trained to study or certify as per Bureau of Indian Standard,WHO etc.
• Post construction support for community management schemes is crucial. Technical handholding is essential for community management schemes. Proper capacity building for beneficiary groups is essential.
• A holistic knowledge management strategy is needed to inform the decision making process which needs to be institutionalized in the government structure.

As an initial intervention, two schemes pertaining to inclusion aspect and the asset management for life cycle water supply projects have been incorporated in the Annual Plan 2016-17.

Source: Social Services Division, State Planning Board

Effective Water Management

4.196 Sustainable management should be the strategy for Kerala's endeavours in the sector in the future. It is now being recognised that management of water in the State needs a holistic and integrated approach. This is visible in Kerala Water Policy 2008. However, the State needs to work more in some areas of water management.
4.197 Of foremost importance is a co-ordinated action plan for the state involving specific and measureable steps in terms of targets for the wide spectrum of stakeholders. The fact that water, waste management and sanitation go hand-in–hand needs to be accepted. Rather than providing water, the emphasis must shift to conserving water and promoting the 3 R's – Recover, Reuse and Recycle. Greater emphasis on demand management is also the need of the hour. Many of the developed nations have introduced steps to reduce their overall water consumption across sectors by 2050 through better water management measures and reduction in per capita water consumption. Kerala has to device mechanisms to promote efficiency in the use of water. The best practices in management have to be introduced for utilisation of water. Greater social awareness about the rights and responsibilities in the use of water and enhanced people's participation in water management can bring about a sea change in Kerala. Social Audit is a good tool. Pricing of water is an issue which need greater attention. Rain water harvesting, an effective process to utilize water, has to be implemented with more vigour in the state. The 'polluter pays' principle can be enforced to curb the menace of pollution. The state can also accord greater priority for promoting & supporting the development, adaptation and dissemination of new and appropriate technologies for water management.

4.198 Water, which was till recently considered a free good, has become scarce and unless carefully managed, can become a highly priced economic good in future. All efforts should be made to ensure that the basic human entitlement of safe and adequate drinking water is available to all. Priority should be given to sound water management through active participation of all users and effective regulation by government.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Section 5

Gender Development

4.199 Questions involving the status of women and gender disparities prevailing in societies have become subjects of debate and action in recent years. Governments and policy makers have begun to recognise the demands for basic rights of a segment that constitutes half of the total population. All over the world, women are being accepted as active and potential agents in all public realms. Since 1995, UNDP has been publishing gender disaggregated Human Development Indices such as Gender Development Index (GDI) and Gender Empowerment Index (GEM). The indices capture gender specific status of health, education, economic participation, control over economic resources, political participation etc. and UNDP ranks the countries according to the values of these indices.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

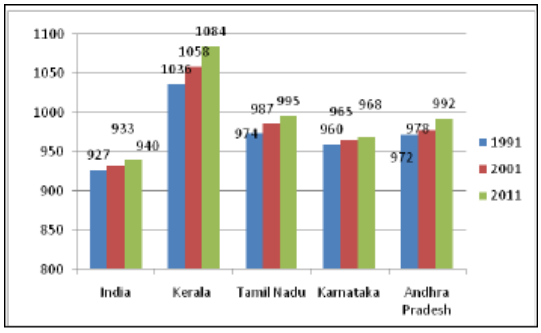
4.200 The Gender Inequality Index (GII) is the latest index for measurement of gender disparity which was introduced by UNDP in Human Development Report, 2010. Gender inequalities in three important aspects of human development are measured by this index. The three aspects are 1) reproductive health (which is measured by maternal mortality ratio and adolescent birth rates), 2) empowerment (measured by proportion of parliamentary seats occupied by females and proportion of adult females and males with secondary education) and 3) economic status expressed as labour market participation. The GII of 155 countries has been calculated and according to the value of GII, these 155 countries have been ranked. India's rank in Gender Inequality Index is 130 and the GII value of India is 0.563 while that of top ten countries is below 0.05. The indicators "highlight areas in need of critical policy intervention and it stimulates proactive thinking and public policy to overcome systematic disadvantages of women" (Human Development Report, 2015).

4.201 Among the Indian states, Kerala is known for its impressive human development achievements. With regard to the GII components, the indicators of maternal mortality rate, adolescent birth rates and proportion of adult females with secondary education are impressive in Kerala. But the indicators of labour market participation and proportion of parliamentary seats occupied by females show that, Kerala's performance is poor and is below all India average. Hence, a paradoxical situation of high achievements and equality in health and education dimensions with poor performance and inequality in terms of economic and political participation exists in the State.

4.202 Women constitute 52% of the state's population. The overall sex ratio of Kerala is 1084 females per 1000 males. A comparison of Sex Ratio across States are given in the following figure.

Fig 4.14

Sex Ratio in Kerala in comparison to neighbouring States



Source: Census of India, 2011

Literacy and Education

4.203 The Female Literacy Rate in Kerala (92%) is the highest among Indian states. However, the Male Literacy Rate in Kerala is still higher at 96%. Hence a small gender gap exists.

Table 4.19

Literacy rate- Kerala 1951-2015

Year	Persons	Male	Female
1	2	3	4
1951	47.18	58.35	36.43
1981	78.85	84.56	73.36
1991	89.81	93.62	86.17

2001	90.92	94.20	87.86
2011	93.91	96.02	91.61
2012	93.95	96.21	91.99
2013	94.01	96.41	92.09
2014	94.36	96.67	92.65

Source: Kerala State Literacy Mission Authority

4.204 In the case of education, enrolment is universal at the primary level and gender parity has been achieved. Girl students constitute 49.4 % of total student enrolment in schools, showing more or less uniformity. Girls outnumbered boys in terms of enrolment in higher secondary education at 52.73%. Dropout rates are low for both boys and girls. At the tertiary level also, the enrolment of girls is higher than boys. For example, girls constitute 68.66 percent of total enrolment for degree courses in various Arts & Science colleges under the four general universities in Kerala during 2014-15. When Post Graduation is considered, the girls' position is highest with 75.54%. Hence, girls are well off in terms of education in Kerala. But when the intake of girls in engineering colleges and polytechnics is considered, the situation is different. Out of the total enrolled students, girls constitute only 40.23% in engineering colleges and 32.76% in polytechnics.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Table 4.20
Girls' in Enrolment- at Different levels-2015-16

	Boys	Girls	Total	% of Girls
School Education	1907811	1864910	3772721	49.43
Higher Secondary	168191	187606	355797	52.73
Graduation	226500	155520	70980	68.66
Post Graduation	14029	22883	30294	75.54
B Tech	4022	2348	6370	36.86
M Tech	607	768	1375	55.85
Total Engineering	4629	3116	7745	40.23
Polytechnic	10518	21587	32105	32.76

Source: DPI, DCE and DTE, 2015

Health Status of Women in Kerala

4.205 Most of the health indicators in Kerala are highly favourable to women. Life Expectancy at birth of women in Kerala at 76.9 years is the best in India. It is much higher than than the national average at 67.7 years. As per the figures released by Registrar General of India in Dec 2013, the Maternal Mortality Rate for India in the period 2010-12 was 178 per 1,00,000 live births. Corresponding figure for Kerala is much lower at 66 per 1,00,000 live births.

Table 4.21
Health Status of Women

Sl. No	Indicator		Kerala	India
1	Death Rate		6.9	7
		Male	7.9	7.5
		Female	6	6.4
2	Infant Mortality Rate		12	40
		Male	10	39
		Female	13	42
3	Female age at effective marriage			
	(a) Below 18		16.7	16.3
	(b) 18-20		19.2	19
	(c) Above 21		24.4	23.9
	(d) All age		24.4	20.7
4	Maternal Mortality Ratio	66	178	
5	Expectancy of Life at Birth	Male	71.4	62.6
		Female	76.9	67.7

Source: Directorate of Health Services

Women's Participation in Employment

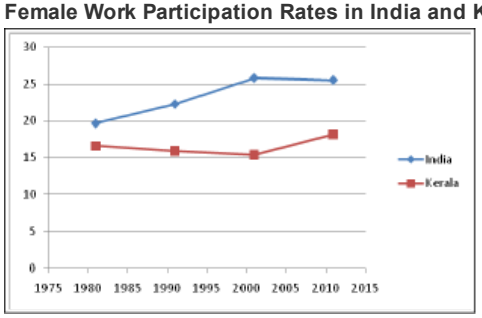
4.206 Women of Kerala outperform their counterparts in many developmental indicators. But in the case of economically active persons, the indicator is not favourable to women. In countries with high human development, the share of economically active women seems to be high. Labour Participation Rate (LPR) of women in 10 countries having highest Human Development Index is around 60 and that of men is around 70 (Human Development Report, 2015). But as per the 68th Round of NSSO, a wide gap between male and female LPRs. is seen in the State. The female LPR in Kerala is 35.4 and that of male is 82.4. Consequently the difference between Male and Female LPR in Kerala is very high.

4.207 As per Census 2011, the FWPR of the state has increased by 2.8 points in the last decade. Four districts of the State namely: Kannur, Kozhikode, Malappuram and Pathanamthitta have FWPR which is lower than that of the State as a whole. Moreover, the performance of Kozhikode and Malappuram is too poor. Two districts, namely Wayanad and Idukki have FWPR which is higher than the all-India rate. Idukki has the highest FWPR in the State as the women in the rural sector of the agrarian district are more economically active. The district-wise comparison is provided inAppendix 4.87.

4.208 It is surprising to note that Female LPR is much higher in some of our neighbouring countries, whose HDI rank is lower than that of India. For example Female LPR in Bhutan is 66.4, in Cambodia is 78.9, in Bangladesh is 57.3, in Nepal is 54.3, and in Myanmar is 85.7 (Source: Human Development Report 2014). It is often argued that, it may not be possible to increase the LPR of a country beyond a particular level due to various educational and family commitments of persons. So a very high FLPR of this kind may not be feasible. However, it cannot be ignored that less women in labour force means under-utilization of human resources that holds back productivity and economic growth.

4.209 Likewise, when we consider the Work Participation Rate (WPR) of women in Kerala, it is lower than that of many states in India as well as all India average. According to Census 2011, the average WPR is 25.21 in India and that of Kerala is only 18.23. A comparison of FWPR in Kerala and India as well as WPR of males and females in Kerala is shown in Figure 4.15. The FWPR of Kerala is one of the lowest in the country, and far below the national level.

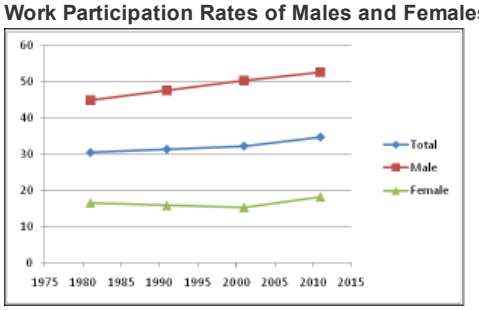
Fig 4.15
Female Work Participation Rates in India and Kerala



Source: Census 2011

4.210 Moreover, WPR of females in Kerala is much lower than that of males. FWPR has been increasing in India and Kerala, but the growth of FWPR in Kerala is very slow. Kerala stands first in human development among the Indian states. But the wide gender gap in the WPR pulls down our gender equality in human development.

Fig 4.16
Work Participation Rates of Males and Females in Kerala



Source: Census 2011

4.211 Himachal Pradesh with a female workforce participation rate of 44.82 is the best performer. It is surprising that the North-eastern states like Nagaland, Sikkim, Manipur, Mizoram, Arunachal Pradesh and Meghalaya have higher FWPR than Kerala (NSSO Report, 68th Round). Hence it is high time to have a relook at our strategies in this direction and perhaps learn from experiences elsewhere.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

4.212 Role of self employment in enhancing the share of economically active women is very important in a state like Kerala where the educational level of women is very high. Surprisingly, even with a large number of opportunities for self employment, the share of female self employed workers seems to be significantly lower in Kerala than many other states in India. The percentage of female self employed workers (FSEW) in Kerala is 36.4 in rural area and that in urban area is 36.3. But in rural areas, percentage of FSEW is 89.5 in Arunachal Pradesh, 87.9 in Himachal Pradesh, 94.9 in Nagaland and 90.2 in Sikkim. In all these North Eastern states, FWPR is above 35% (NSSO Report, 68th Round).

4.213 Gender disaggregated data on employment can capture a clearer picture of women's economic empowerment. The sectoral distribution of employment of women in Kerala presents in Table 4.22 shows that women are more engaged in agriculture but more males are engaged in service and industry.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Table 4.22
Sectoral Distribution of Employment in Kerala

Persons	Agriculture	Industry	Service
Male	22.8	32.4	44.8
Female	31.9	30.4	37.7
Total	25.5	31.8	42.7

Source: NSSO Report, 68th Round

4.214 Membership of females in different Welfare Fund Boards in Kerala shows the participation of women in some specific industries (Appendix 4.86). It is clear that women's participation in traditional industries is very high in which wage/ remuneration is comparatively low. For eg., among cashew workers and beedi workers, women constitute 95% and 99% respectively.

Inequality in Wage Rates

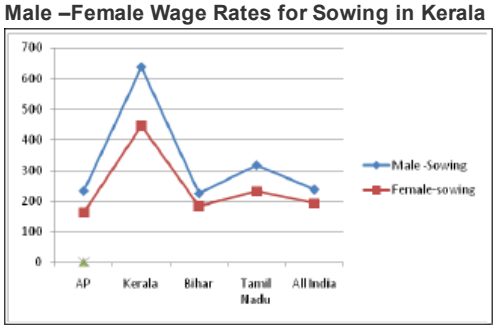
4.215 Women are engaged in agricultural work as well as in traditional industries (which are mainly coming under informal and unorganized sector) in India as well as in the State (Census, 2011). But in terms of wages and remuneration, significant gender inequality exists in the unorganized sector. Table 4.23 shows average daily wage rates in agricultural occupations in the State in comparison to all India.

Table 4.23
Average Daily Wage Rates in Agricultural Occupations in Rural India during March, 2015

State	Sowing (including Planting/ Transplanting/ weeding workers)		Gender Attainment* Index	Harvesting/Winnowing/ Threshing workers		Gender Attainment Index
	Male	Female		Male	Female	
AP	233.87	163.46	0.70	235.32	192.42	81.77
Kerala	638.29	446.88	0.70	582.14	439.1	75.43
Bihar	225.5	185.51	0.82	218.13	196.3	89.99
Tamil Nadu	317.72	233.51	0.73	393.55	201.72	51.26
All India	238.67	194.32	0.81	238.43	203.16	85.21

Source: Wage Rates in Rural India, Ministry of Labour & Employment, Govt of India
• Gender attainment index of wage rate is calculated by female wage rate /male wage rate.

Fig 4.17
Male –Female Wage Rates for Sowing in Kerala



Source: Wage Rates in Rural India, Ministry of Labour & Employment, Govt of India

4.216 Though, the wage rates of women in Kerala is higher than that in other states and all India average, it is much lower than that of males. (see Figure 4.18)

4.217 For Gender Development to be effective, the women of Kerala should be empowered economically and socially. Economic empowerment and social empowerment are complementary to each other. The economic empowerment of the women is attained only when they become an integral part of labour force and ultimately be gainfully employed.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Women in Political Leadership

4.218 Political representation is taken as an important dimension to measure Gender position in many of the Indices currently being used. For example, Gender Inequality Index developed by UNDP measures empowerment, by the proportion of parliamentary seats occupied by females. The Global Gender Gap Report brought out by World Economic Forum measures political empowerment in terms of percent of women in parliament, percent of women holding ministerial positions, and years of women in executive office.

4.219 Achievements in health and education have empowered the women of Kerala and enabled them to take part in the practices of democracy. It is an essential condition for Equal Democratic Citizenship but not a sufficient one. Equal Democratic Citizenship will be complete only when the women get equal participation in direct decision making too. It is in this regard that the representation of women in legislative bodies becomes important. Political participation must not be restricted to casting votes during elections to decision making bodies. Rather women must occupy leadership positions in decision making bodies. Women of the state can be empowered through their direct participation in policy making. A fitting example is the local governments in Kerala, where 50% of the seats are reserved for women.

4.220 Gender empowerment is meaningful only if women have decision making powers in high bodies like Parliaments. The developed nations with high HDI levels have a much higher representation of women in their legislative bodies. When the top 8 countries of Norway (39.6%), Sweden (44.7%), Iceland (39.1%), Denmark (39.1%), Belgium (38.9%), Finland (42.5%), Netherlands (37.8%) and Cuba (48.9%) are considered, it can be seen that the percentage of women in legislative bodies is above 37% (The figure in parenthesis is the percentage of women in national parliament in the respective country).

4.221 However the accomplishment of the State with respect to women's representation in the Central and State Legislative bodies is poor. The same is the case when we take women in India as a whole. It is quite surprising that the women's status in the State in this regard is lower than that of many states in India and all India average.

Table 4.24
Elected Women in Lok Sabha- India and Kerala

Year	All India			Kerala		
	Total No. of Seats	Women	% of Women	Total No. of Seats	Women	% of Women
2009	543	58	10.7	20	0	0
2014	543	62	11.5	20	1	5

Female Representation in Legislature – Kerala

Sl No.	Name of Legislature	Number of Women	Total no of seats	%
Kerala Legislative Assembly				
	2006	7	140	5
	2011	7	140	5

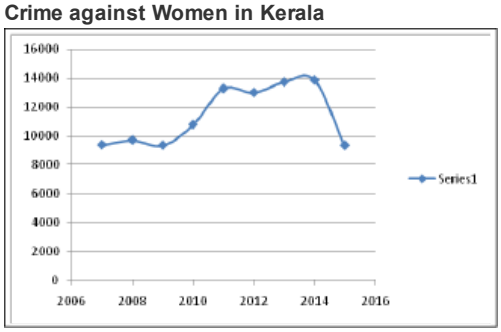
Source: Worked out from data available at the Website of the Lok Sabha, Rajya Sabha & Chief Electoral Officer, Kerala

Crimes against Women

4.222 As per the figures brought out by the State Crime Records Bureau, the total reported cases of crime against women for the year 2015(upto September) is 9344 which registers a decline from 10690 in 2014 (For details see Appendix 4.89). It is surprising that 'cruelty by husband/relatives' still constitutes a major component in crime against women. As per data from National Crime Records Bureau, Kerala is a state where 'Rate of total cognizable Crimes' (incidence of crime per one lakh female population) is much higher than the national level. Even when we want women to come out of their homes and take up employment, the insecurities within the family remains. Greater efforts are required in this direction, to enable women to take up meaningful economic activities outside the purview of their families.

Fig 4.18

Crime against Women in Kerala



Source: State Crime Records Bureau

Gender Budgeting

4.223 As policies and programmes have a differential impact on women and men, it is necessary to strengthen Gender Responsive Budgeting. The Gender Budget Statement is an important tool for bringing together all information regarding allocations for women. It is now considered as an instrument to address gender inequality and reallocate the resources in favour of women. It serves as a reporting mechanism and provides an indication of funds flowing to women. It is a major step in strengthening inclusive growth.

4.224 To institutionalize the process of Gender Budgeting, the Gender Budget Statement had been introduced in the Union Budget 2005-06. In Kerala Budget, conscious efforts have been taken to make the budget Gender Responsive and Gender Sensitive. With the inclusion of Women Component Plan (WCP) in local bodies' annual plan and by making it mandatory, a gender-responsive budget was introduced in the state of Kerala at the time of 9th Plan itself. . With the devolution of 35-40% of funds from the state to the Local Self-Government Institutions (LSGIs), the first form of Gender budgeting was seen in the state in 1996 where each Panchayat was directed to prepare a chapter on the status of women in their development plan document. WCP was introduced during 9th plan wherein 10% of the plan outlay of the local bodies had to be set apart for needs of women or women specific projects. Plan allocation and expenditure of total plan and WCP of local bodies during 11th and 12th (first three years) are given in the following Table. (For sub sector wise details see Appendix 4.90)

Table 4.25

Percentage of Allocation and Expenditure of WCP Projects to the Total Allocation and Expenditure

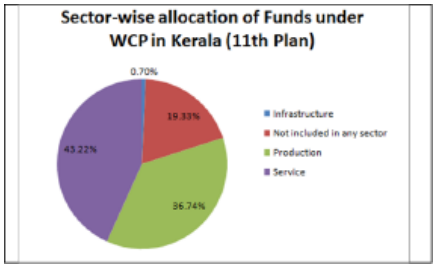
Five Year Plan	% of WCP allocation	% of WCP Expenditure
11th Plan	13.22	12.35
12th Plan- first three years	10.63	10.7

Source: IKM

4.225 Compared to 11th plan, percentage of WCP allocation and expenditure have fallen during 12th plan. Allocation fell from 13.22% to 10.63 and expenditure from 12.35 to 10.70. While sector wise allocation of fund is taken, it is seen that more fund is allocated to service sector under WCP during both the plans. But share of production sector has come down from 36.74% during 11th plan to 25.1 % during 12th plan.

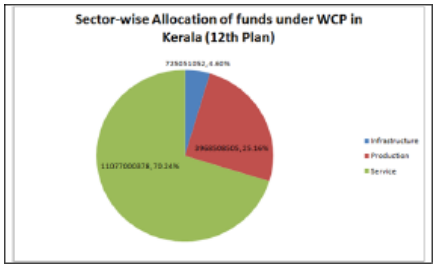
Fig 4.19

Sector-wise allocation of Funds under WCP in Kerala (11th Plan)



Sector-wise allocation of Funds under WCP in Kerala (12th Plan)

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters



4.226 The Women Components identified in Annual Plan 2014-15 and 2015-16 are provided in Appendix 4.88. Agriculture & allied activities, Industries, Labour & Labour Welfare, Social Security & Social Welfare etc are some sectors with major allocations under the Women Component.

4.227 Gender continues to be an important component in Kerala's development. After all the measures that the State has taken in these years status of women in the society still remains a problematic area requiring urgent attention and serious interventions. The buzzword in Gender and Development in the contemporary times is "empowerment" and Kerala is definitely lagging behind in this area. Women's status is directly related to questions of power that women actually possess in social and economic situations. It is high time that serious measures are adopted in this direction so that women in the state have a prominent role in all walks of life.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Section 6

Welfare of Scheduled Castes, Scheduled Tribes, Other Backward Classes and Minorities

4.228 One of the major concerns in post Independent India has been the welfare and development of weaker sections of the society, especially that of the Scheduled Castes and Scheduled Tribes. These groups have, for historical reasons, remained socially and economically backward, and hence concerted efforts have been made under the Plan to raise their social and economic status, as required by the Directive Principles of Article 46 of the Constitution. Other disadvantaged groups needing special support are Other Backward Classes (OBCs), Minorities and other marginalized and vulnerable groups.

4.229 Unlike Scheduled Castes who are dispersed throughout the state, Scheduled Tribes have traditionally been concentrated in limited geographical areas, mainly forests, hills, undulating inaccessible areas. The fact that most of them live in isolated groups in relatively remote areas has made it more difficult to deliver essential services to them and has also made it much more difficult for them to benefit from the acceleration of overall growth than the Scheduled Castes.

4.230 Comparatively the Scheduled Castes in Kerala are leading a better social life than the Scheduled Castes in other parts of India. Deprivation is also much less here. This is due to the commendable achievements made by Kerala in the field of social, cultural, educational activities as well as in the areas of health and land reforms. .

4.231 Article (46) of the Constitution states that the State shall promote with special care for the educational and economic interest of the weaker section of the people and, in particular, of the Scheduled Castes and Scheduled Tribes and shall protect them from social injustice and all forms of exploitation.

4.232 Despite Constitutional directives and a number of legislative and executive measures taken by the Government since independence, there are large gaps between the living conditions of the general population and those of Scheduled Castes and Scheduled Tribes. Successive Five Year Plans have attempted to reduce these gaps. The persistence of socio-economic backwardness of Scheduled Castes and Scheduled Tribes, in spite of the development efforts warranted a special and focused strategy, interalia, to enable them to share the benefits of overall economic growth in a more equitable manner.

4.233 Other Backward Classes (OBC) is a collective term used by the Government of India to classify castes and communities who are socially and educationally disadvantaged. Kerala state has high concentration of OBC population. The Central and State Governments had undertaken many welfare schemes and programmes for the upliftment of OBC and as a result, the backwardness has been minimized to a great extent. In order to improve the economic and social status of OBC to the desired level, Government felt the need for more focused state spending and effective intervention and thus a separate department named Backward Communities Development Department (BCDD) was constituted in the year 2011 with the basic objective to formulate policies, laws, regulations and programmes for the welfare and alround

development of OBC. The Directorate of Backward Communities Development Department has started functioning at Thiruvananthapuram on 21-11-2011. There are two regional offices functioning at Ernakulam and Kozhikode.

4.234 The Government of India has taken several steps for the overall development of minority communities in India. National Commission for Minorities (NCM) was set up by the Union Government of India in 1992 to protect the Minorities all over India. Government of India has notified six minority communities viz., Muslims, Christians, Sikhs, Buddhists, Zoroastrians (Parsis)and Jains. In spite of considerable efforts made towards raising the socio –economic status of Minorities, many challenges remain which need to be addressed. The Minority Welfare Department was constituted in 2011 for addressing the social, economic and educational backwardness of Minority Communities in the State. The Minority Welfare Department is the nodal agency for the schemes implemented by Ministry of Minority Affairs, Government of India and Department of Minority Welfare in the State.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Approach of 12th Five Year Plan for Weaker Sections

4.235 The Twelfth Plan strives hard to achieve the overall improvement in socio-economic conditions of the marginalised sections like SC, ST, OBC, minorities and other weaker sections by extending a well balanced prioritization of efforts made for social development and economic empowerment based on actual needs and problems of these communities. This calls for an inclusive growth process which provides opportunities for all to participate in this process combined with schemes that would either deliver benefits directly or more importantly help these groups to benefit from the opportunities thrown up by the general development process.

Population

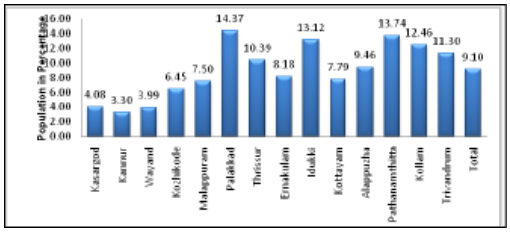
4.236 According to 2011 Population Census, Scheduled Castes and Scheduled Tribes constitute 25.24 percent of the total population of India. Scheduled Castes constitutes 16.63 per cent and Scheduled Tribes 8.61 per cent of population. Decadal growth rate (2001-2011) of Scheduled Castes is 20.85 per cent and Scheduled Tribes 23.66 per cent. Highest proportion of Scheduled Caste with total is in Punjab, that is, 31.9 per cent of the total population. Lakshadweep has the highest proportion of Scheduled Tribe population, that is, 94.8 per cent.

4.237 The Scheduled Caste population of Kerala is 30,39,573 persons as per 2011 Population Census constituting 9.10 per cent of the total population of the State. There has been a decrease in the proportion of Scheduled Caste by 0.7 per cent point between 2001 and 2011. One of the reasons for the decline is that some communities in Scheduled Caste have been included in the Scheduled Tribe classification during the period. Sex ratio of Scheduled Caste population in Kerala is 1057.

4.238 The Scheduled Tribe population of Kerala is 484839 persons as per 2011 Population Census constituting 1.45 per cent of the total population of the State. There has been an increase of 0.63 per cent point as compared to 2001 population census. Sex ratio of Scheduled Tribe population in Kerala is 1035. A comparative picture regarding literacy and sex ratio of Scheduled Castes and Scheduled Tribes population in Kerala with national level is furnished in Appendix 4.91.

4.239 In Kerala there are 53 communities which belong to Scheduled Caste as per the Amendment Act of 2006 to the Constitution of India. The settlement pattern in Kerala is entirely different from that of other States and a major portion of the Schedule Caste population lives in scattered households and only a small proportion lives in concentrated colonies, in which a few are isolated. According to 2011 Population Census, the highest presence of Scheduled Caste population is in Palakkad District (13.29 per cent) followed by Thiruvananthapuram (12.27 per cent), Kollam (10 .80 per cent), Thrissur (10.67 per cent) and Malappuram (10.14 per cent). More than half of SC population (57.17 per cent) of the State is distributed in the above five districts. The Scheduled Tribes in Kerala are not only geographically concentrated, but are overwhelmingly rural. Highest concentration of Scheduled Tribes is seen in Wayanad district (31.24 per cent) followed by Idukki (11.51 per cent), Palakkad (10.10 per cent) and Kasaragod (10.08 per cent).These four districts together account for 62.93 per cent of Scheduled Tribes in the State. The coastal district of Alappuzha has the lowest percentage (1.36 per cent). District wise Scheduled Caste/Scheduled Tribe population details are given in Appendix 4.92 and 4.93. District wise SC/ST population with respect to district population is given in Figures 4.20 and 4.21 respectively.

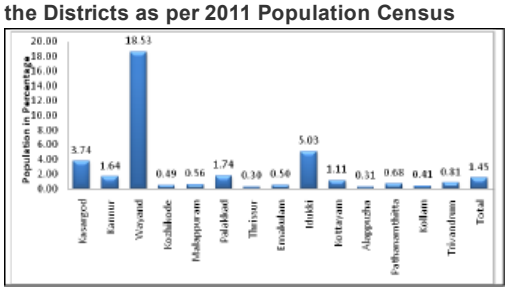
Fig 4.20
Percentage of SC Population to total Population in the Districts as per 2011 Population Census



Source: Census of India 2011

Fig 4.21

Percentage of ST Population to total Population in the Districts as per 2011 Population Census



Source: Census of India 2011

4.240 As per Census of India 2011 (Appendix 4.94) Scheduled Caste households in Kerala have much greater access to banking services, landline phones, computers with internet and car than an average Scheduled Caste household in India. Compared to other southern states like Tamil Nadu, Karnataka, and Andhra Pradesh, only SC households in Tamil Nadu have greater access to televisions than those in Kerala. SC households in Kerala do not seem to have as much access to two wheelers as other SC households in India. While more than 22 per cent of SC households in India did not have access to any of these assets, Kerala performed better with only around 11 per cent of SC households being deprived of these assets.

4.241 Similarly in the case of Scheduled Tribes, households in Kerala have much greater access to banking services, television, computer with internet, land line and car than an average Scheduled Tribe household in India (Appendix 4.95). Compared to other southern states, only Scheduled Tribe households in Tamil Nadu have greater access to televisions, computer with internet, landline phones and car than Kerala. Scheduled Tribe households in Kerala do not seem to have as much access to two wheelers as other Scheduled Tribe households in India. While more than 37 per cent of Scheduled Tribe households in India did not have access to any of these assets, Kerala performed better with only around 24 per cent of Scheduled Tribe household being deprived of these assets.

4.242 Scheduled Caste and Scheduled Tribe households in Kerala have a better standard of living than their counterparts in the rest of the country in general. However, Tamil Nadu has shown an even better standard of living for Scheduled Tribe households than Kerala.

Occupational Pattern

4.243 Decadal growth rate of Kerala's population as per Census 2011 was all time low of 4.9 per cent. The work participation rate shows an increasing trend during the decade (2001-11). The proportion of main workers is more than that of marginal workers in all cases. Especially the female main workers have considerably increased from 19.90 per cent in 2001 to 22.71 per cent in 2011 in the case of ST population. In respect of SCs same has increased from 18.51 per cent to 19.59 per cent during this period. The percentage of main workers engaged in household industry shows a decreasing trend. The category of main workers shows that 29.90 per cent of SCs and 59.49 per cent of STs are doing agricultural labour where as in the case of general population it is only 14.18 per cent. Details of occupational pattern is shown in Appendix 4.96.

4.244 In Kerala, as per Rule 14(a) of the Kerala State and Subordinate Service Rules 1958, 10% representation (8% for SCs/STs, 2% for STs only) is reserved to Scheduled Castes/Scheduled Tribes in Gazatted, Non-Gazatted and Last Grade Categories in Government Departments. The Scheduled Castes have already got a benefit of more than 8% reservation in all the three categories. But in the case of Scheduled Tribes candidates it can be said that they are nearing the required 2% reservation in State service on a faster pace than previous years. As per the Annual review in 50 out of 83 depatments as on 1.1.2014, the total representation of Scheduled Castes and Scheduled Tribes in public service is 13.84%. Details of representation of SC/ST employees in Government service is given in Appendix 4.97.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

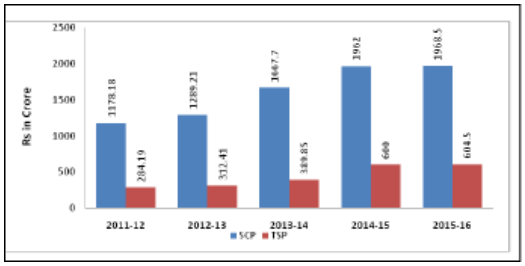
Other Chapters

Development Programmes for Scheduled Caste and Scheduled Tribes

4.245 Kerala Government earmarks fund for SCP from State Plan outlay in proportion to the percentage population of Scheduled Caste and allocate fund for TSP more than that of ST population percentage. A two pronged strategy is followed for the development of SC/ST in the State. One is through the assistance provided through the LSGs and the other through SC/ST Development Department. Out of the total SCP/TSP Plan outlay, a certain percentage of funds are allocated to Local Self Government Institutions for implementation of schemes under Decentralized Planning and the remaining to the SC/ST Development Department. A portion of the fund was considered as Notional Flow to other departments till 2008-09. This was meant for implementing schemes exclusively for SC/ST population in the respective sectors. As this experiment was not found successful, the concept of Notional Flow was dispensed with from the Annual Plan 2009-10. A system of earmarking certain amount of SCP/TSP as pooled fund under SCP and TSP for taking up schemes adopting a project approach was introduced. This gives scope to get wide range of schemes with varied objectives and physical targets, which put together, will help the all round development of the targeted groups. The total plan provision set apart for the development of Scheduled Caste and Scheduled Tribes during 2015-16 is □.1968.50 crore and □.604.50 crore respectively. Year-wise details from 2011-12 onwards are given in Appendix 4.98 and in Figure 4.22.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Fig 4.22
SCP/TSP-Yearwise Outlay



Source: Budget Documents

Programmes of Scheduled Caste Development Department

4.246 Centrally Sponsored Schemes and schemes/projects included in the state plan for the development of the Scheduled Caste population are implemented by the Scheduled Caste Development Department. During 2015-16 total State Plan provision set apart for the development of Scheduled Castes was □.1968.50 crore. Out of this, □.1040.92 crore was earmarked to Scheduled Caste Development Department and □.927.58 crore was provided as development fund to Local Bodies. Besides, □.273.59 crore as 100 per cent CSS and □.21.30 crore as 50 per cent CSS were also included under SCP during 2015-16. In addition to this, □.24 crore was included in the budget as Special Central Assistance to SCSP.

4.247 The programmes under SCP cover a wide area comprising education, economic and social welfare activities for the development of Scheduled Caste. Some of these programmes are given below. Scheme-wise outlay and expenditure of welfare of Scheduled Caste for 2014-15 & 2015-16 (as on 30-09-2015) and the physical targets and achievement are given in Appendix 4.99 & 4.100 respectively.

Box 4.16
Major Schemes of SC Development

Name of Schemes	Objectives	Achievements
Educational Schemes	Provide educational assistance to • Pre-matric studies • Post-matric studies • Running of Model Residential Schools • Students studying in self financing colleges. • Adhar linked bank account system.	During 2014-15 post-matric concessions were given to 1.51 lakh students. An amount of □.46.10 crore has been spent towards stipend and lump sum grant and an amount of□.144.47 crore has been spent for providing scholarship for post-matric students. Online distribution of educational assistance through e-Grantz and introduced SBIeZ-pay card (Appendix 4.101).
Housing Scheme	Financial assistance for • Construction of new houses for the houseless SC families • Online system of granting financial aid through e-housing	During 2014-15, 4000 houses were sanctioned and constructed 736 houses. 5000 houses were sanctioned during 2015-16 (as on 30.09.2015) and construction activities are progressing. (Appendix 4.102)

Land to Landless	• Purchase of land to the poor and eligible landless SC families for house construction	During 2014-15 an amount of □.100.00 crore was provided benefitting 3569 persons. An amount of □.150.00 crore is provided during 2015-16 (Appendix 4.103).
Health Scheme-Financial assistance to Seriously ill People	Illness assistance to • Serious diseases like Cancer, Heart/kidney/brain ailments to SC families below poverty line as per the recommendation of the doctor	During 2014-15, financial assistance was given to 15327 persons and expenditure incurred was □.28.30 crore.
Development programmes for the vulnerable communities Among Scheduled Castes	• Rehabilitation of landless and homeless SCs belonging to vulnerable communities by providing assistance for purchase of five cents of land and assistance for house construction. •Providing infrastructure, connectivity, communication facilities, education, treatment, drinking water, electricity, road etc.	An amount of □.14.96 crore was expended during 2014-15 benefitting 505 persons and □.14.00 crore has been provided during 2015-16 and the expenditure incurred as on 30.09.2015 is □.2.03 lakh.
Employment scheme	Financial assistance for • promoting new ventures among Scheduled Caste in the ratio 1: 2 as subsidy and loan	During 2014-15, □.3.61 crore was expended benefiting 560 persons. During 2015-16 □.1.36 crore is provided and expenditure incurred as on 30.09.2015 is □.0.63 crore. Financial Assistance provided to brilliant SC/ST students those seeking admission to national and international institutions .Students got assistance for courses like M.Sc Nursing and MBA during 2014-15. (Appendix 4.104).
Assistance for marriage of SC girls	Financial assistance to • Daughters of SC parents to reduce the burden of marriage expenses	During 2014-15 an amount of □.34.99 crore was expended benefitting 7077 persons. An amount of □.30.00 crore has been provided during 2015-16 and expenditure incurred as on 30.09.2015 is □.21.81 crore

Protection of Civil Rights and Enforcement of Prevention of Atrocities Act

4.248 According to the National Crime Records Bureau, during 2014-15, 351 cases were registered and an amount of □.150.29 lakh has been disbursed as compensation. During the year 2015-16, 105 cases were reported and an amount of □.54.79 lakh was disbursed as compensation to the victims as on 30.09.15. Details are given in Appendix 4.105.

Box 4.17
New Initiatives in SC Development Department during 2014-15

1. One third of the Corpus fund was allocated to Districts
2. Primary Education Aid.
3. Assistance to Rural Development Department
4. Self Help Groups
5. Construction of flats as part of Housing Scheme
6. Cyber Sri
7. Protection of Crematorium
8. Meritorious Scholarship for studying abroad

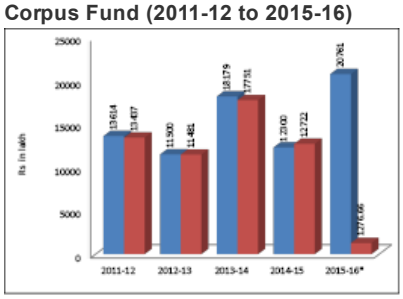
Critical Gap Filling (Corpus Fund)

4.249 This Scheme intends to provide funds for filling critical gap in the SCP provision made under various schemes on project basis with emphasis on human resource development, basic needs, economic development etc. From 2014-15 onwards one third of the outlay will be allocated to districts on population proportion basis. Schemes /projects up to □.25 lakh will be cleared by the District Level Committee for SC/ST. Project above □.25 lakh will be cleared by State Level Working Groups/ Special working Groups. Outlay and expenditure under the scheme from 2011-12 to 2015-16 (as on 30.09.2015) is given in Appendix 4.106 and Figure 4.23 and the details of schemes taken during 2014-15 are given

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

in Appendix 4.107 .

Fig 4.23
Corpus Fund (2011-12 to 2015-16)



Source: SC Development Department
* Up to 30.09.2015

Pooled Fund

4.250 A system of earmarking certain amount of SCP/TSP as pooled fund under SCP and TSP for taking up schemes adopting a project approach was introduced. This gives scope to integrate a wide range of schemes with varied objectives and physical targets for all round development of the targeted groups.

4.251 Various development departments and agencies submit projects to State Planning Board for consideration. After vetting by State Planning Board, it is forwarded to Scheduled Caste Development Department for placing before State Level/ Special Working Group for consideration. Outlay and Expenditure under the scheme from 2011-12 to 2015-16 (as on 30.09.2015) are given Appendix 4.108 and the details of schemes taken during 2014-15 are given in Appendix 4.109.

Special Central Assistance to Special Component Plan (SCA to SCP)

4.252 The Special Central Assistance to Special Component Plan is provided by Government of India to States for undertaking mainly economic development programmes for Scheduled Castes. It is not on a schematic pattern. It help to fill the gaps which is not met from the Central, State and Local body plans. Out of the total funds received under SCA to SCP, 75 per cent of the fund are distributed to the District Collectors on the basis of Scheduled Caste population in the districts. The balance 25 per cent is kept with the Director, Scheduled Caste Development Department. Activities that can be taken up under SCA are to assist Scheduled Caste families for taking up viable income generating activities, through a mix of institutional finance and subsidy. The families may be provided assistance under SCA in a manner similar to those admissible under NRLM(National Rural Livelihood Mission). The Outlay and Expenditure details of SCA to SCP from 2011-12 to 2015-16 (as on 30.09.2015) are given in Appendix 4.110.

Programmes of Scheduled Tribes Development Department

4.253 Tribal Sub Plan was introduced for the welfare of Scheduled Tribe population from the Fifth Five Year Plan (1974-75) onwards. The objective of the Tribal Sub Plan was to give a special care to Scheduled Tribes through a Sub Plan approach. After 1974-75, this strategy has undergone changes and now has been integrated with the local self government machinery.

4.254 Due to the typical settlement pattern, cultural practices and traditional identities the Scheduled Tribe population are scattered in clusters and are concentrated in interior forest and adjoining areas. By considering this the strategy of TSP was to protect tribal people and there by attaining tribal development. As per the TSP strategy, the State allocates an amount which is more than proportional to the tribal population (1.45%) in the State as TSP provision in the budget is for the exclusive development of Scheduled Tribes in the State. During 2014-15, 3 per cent of the state plan outlay was provided under TSP. For the year 2015-16 the percentage allocation to TSP is 3.02 per cent.

4.255 The major sources of funds for tribal developments are from (i) State Plans,(ii) Funds under TSP components of Centrally Sponsored Schemes (CSS) administered by Central Ministries/Departments, (iii) Special Central Assistance to Tribal Sub Plan (SCA to TSP), Grant under Article 275 (1) of the Constitution and other schemes implemented by Ministry of Tribal Affairs and (iv) Institutional Finance.

4.256 The expenditure of the Scheduled Tribes Development Department during 2014-15 was □.387.10 crore. The total State plan provision set apart for the development of Scheduled Tribes during 2015-16 was □.604.50 crore. Out of this, an amount of □.315.28 crore was earmarked to the ST Development Department and an amount of □.139.22 crore was provided as grant-in-aid to local bodies and an amount of □.150 crore earmarked as Additional Tribal Sub Plan (ATSP)

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

fund/ Special Package. For the 50 per cent and 100 per cent CSS Schemes Central Share allocation was□.20.01 crore and □.65.85 crore respectively. In addition to this, □.10.00 crore included as Special Central Assistance to TSP. Details of financial achievements are given in Appendix 4.111 and Physical achievements of schemes implemented by the Department during 2014-15 and 2015-16 (as on 30.09.2015) are given in Appendix 4.112.

4.257 The major schemes implemented by Scheduled Tribes Development Department can be broadly classified as Educational programmes, Housing, Health, socio economic upliftment and legal protection scheme. Main objectives and achievements of major schemes during 2014-15 and 2015-16 (up to 30.09.2015) are given below.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Box 4.18

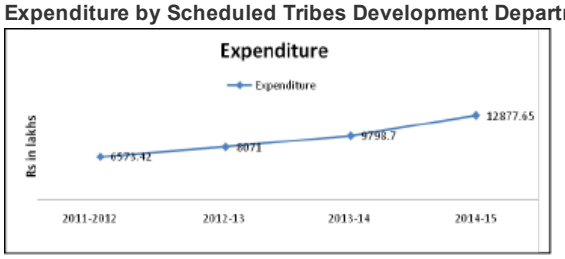
Major Schemes of ST Development

Name of Schemes	Objectives	Achievements
Educational Programmes	Provide educational assistance to • Pre-matric studies • Post-matric studies • Running of Model Residential Schools • Students studying in self financing colleges	During 2014-15, an amount of □.128.77 crore has been expended benefitting 102588 students and in 2015-16 (up to 30.09.2015) an amount of □.19.08 crore has been expended as educational assistance benefiting 89454 students. (Figure 4.24, Appendix 4.113, 4.114 and4.115).
Housing Scheme	Financial assistance for • Construction of new houses for houseless ST families	During 2014-15, an amount of □.33 crore was provided for housing by Scheduled Tribes Development Department for sanctioning 2907 new houses and □.6 crore as 25 % State share of IAY. During 2015-16, under general housing (as on 30.09.2015) department has been given attention for spill over works and under ATSP the department has given sanction for 10000houses (as on 30.09.2015). The rate of assistance has been raised from □.2.50 lakh to □.3.50 lakh (Figure 4.25, Appendix 4.116 and4.117).
Health Scheme	Illness assistance to • Serious diseases such as TB, Leprosy, Scabies, Sickle Cell Anaemia, Waterborne diseases, etc.	During 2014-15, an amount of □.11.20 crore was provided under the plan and the expenditure incurred was 10.75 crore. During 2015-16 an amount of □.17.75 crore was provided to health schemes and □.5.60 crore has been expended as on 30.09.2015 (Appendix 4.118).
Assistance for marriage of ST girls	Financial assistance to • Daughters of ST parents to reduce the burden of marriage expenses	During 2014-15, the department had given assistance to 302 ST parents. In 2014-15, the scheme was renamed as “Assistance for the welfare of STs” by including the schemes viz., Assistance to Marriage of ST girls, Assistance to Sickle-cell Animeia patients, Janani Janma Raksha & Financial Assisatance to Traditional Tribal Healers and an amount of □.9.50 crore was provided.
Resettlement of Landless Tribes	• To provide at least one acre of land per family to landless ST people subject to ceiling of 5 acres based on a master plan. • Resettlement will be done on project basis with	So far 7033 families have been distributed 9161.49 acres of land. Total extent of 165.789 acres of land have been purchased for 469 landless families. District-wise details of land distribution are shown in Appendix 4.119.

emphasis on planning and implementation through Oorukottoms.

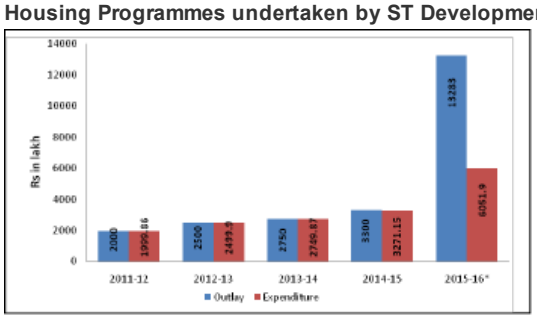
Source: STDD

Fig 4.24
Expenditure by Scheduled Tribes Development Department for Education (Plan)



* Upto 30.09.2015
Source: ST Development Department

Fig 4.25
Housing Programmes undertaken by ST Development Department

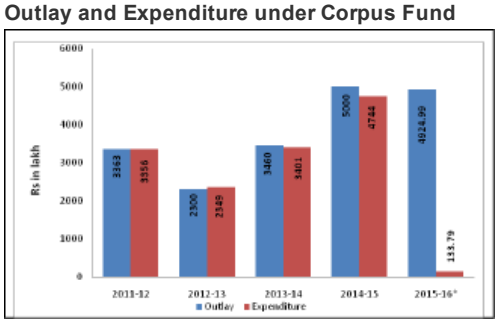


* Upto 30.09.2015
Source: ST Development Department

Corpus Fund

4.258 An amount of □.5000 lakh was provided during 2014-15 for undertaking various development activities under the scheme and the amount expended during the period was □.4744 lakh. The components of the Corpus fund includes self employment, skill development, water supply & sanitation, communication facilities, foot bridges, technology transfer, improvement of education, health etc. Statement showing the outlay and expenditure under Corpus fund from 2011-12 to 2015-16 (up to 30.09.2015) is given in Appendix 4.120 and in Figure 4.26 and district wise details during 2014-15 are given in Appendix 4.121.

Fig 4.26
Outlay and Expenditure under Corpus Fund



* Upto 30.09.2015
Source: ST Development Department

Pooled Fund for Special Projects Proposed by Other Departments under TSP

4.259 During 2014-15, an amount of □.1300 lakh was provided under the scheme Pooled Fund for special projects

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

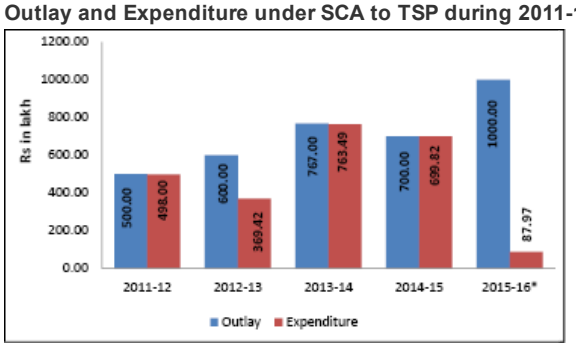
Other Chapters

proposed by other departments. Out of this an amount of □.1288.04 lakh was allocated for different projects and expended the whole amount. The expenditure during the period is □.1288.04 lakh. An amount of □.1000 lakh is earmarked during 2015-16 and the expenditure incurred as on 30.09.2015 is □.576.76 lakh. The details of schemes under Pooled fund taken during 2014-15 are given in Appendix 4.122

Special Central Assistance to Tribal Sub Plan (SCA to TSP)

4.260 The Special Central Assistance to Tribal Sub Plan released by Government of India as an addition to State Plan Funds is meant for undertaking employment cum income generation activities and the infrastructure incidental to activities based on family and Self Help Groups. 70 per cent of the fund has been utilized for implementing primary schemes supporting family/SHG/Community based income generation activities and 30 per cent used for critical infrastructure in the sectors of drinking water, watershed management etc. Under the scheme 30 per cent beneficiaries are women. The outlay and expenditure under SCA to TSP during 2010-11 to 2015-16 (up to 30.09.2015) is shown in Appendix 4.123 and in Figure 4.27.

Fig 4.27
Outlay and Expenditure under SCA to TSP during 2011-12 to 2015-16



* Upto 30.09.2015
Source: ST Development Department

Kerala Institute for Research Training and Development Studies for SC/ST

4.261 The Institute conducts research and intensive study on Scheduled Caste and Scheduled Tribe population of the State.

4.262 Anthropological investigation on doubtful community cases as requested by Scheduled Tribes Development Department, Scheduled Caste Development Department, Revenue Divisional Officers, Tahsildars and District Collectors has also been undertaken by the wing. Details are given in Appendix 4.124.

4.263 The training wing of KIRTADS co-ordinates and conducts a large number of programmes to promote Tribal Development. This wing also conducts many orientation programmes, capacity building programmes, empowerment programmes and educational programmes. The institute also undertakes Adikalagramam programme which include traditional dance and music of the SC and ST communities of the State. The scheme wise outlay and expenditure and the physical achievement of the schemes are given in Appendix 4.125 & 4.126.

4.264 An amount of □.70 lakh was provided as 50 per cent State share as Grant in aid to Research, Training and Development Studies during 2015-16 and expenditure incurred up to 30.09.2015 was □.41.9 lakh. For Adikala Gramam an amount of □.35 lakh was provided and the expenditure incurred up to 30.06.2015 was □.4.50 lakh.

Box 4.19
Additional Tribal Sub Plan (ATSP) Fund/Special Package

ATSP Fund is a special package in addition to the normal share of TSP to be utilised for the socio-economic betterment of tribal population living in the tribal settlements in the State. During 2014-15 an amount of □.150 crore was set apart as ATSP Fund/Special Package as a new initiative for the Integrated Sustainable Development of Scheduled Tribe Population in the Identified Settlements. Based on the approved DPR of 14 identified settlements an amount of □.135.75 crore (90.50%) was expended. This scheme was continued in 2015-16 also and an amount of □.150 crore was earmarked as ATSP Fund by giving more emphasis on infrastructure facilities, economic activities, employment generation, health, education, housing, etc. and expenditure as on 31.10.2015 (as per plan space) was □.9.18 crore (6.12%).

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Source: SPB

Kerala State Development Corporation for Scheduled Caste and Scheduled Tribes

4.265 The Corporation, with its registered office at Thrissur, functions through 14 Regional Offices covering all the districts, is implementing various schemes for the multifaceted development of Scheduled Castes & Scheduled Tribes in the State through its intervention in different spheres of economic activity. The sources of finance for implementing various schemes are Corporation's own share capital and assistance from other national refinancing agencies like NSFDC, NSTFDC, NSKFDC and HUDCO. The Corporation is now concentrating more on self employment schemes to enable the target people to engage in some innovative and viable income generating activities and earn their livelihood and thereby improve their socio-economic status in the society. The major schemes implemented by the Corporation include agricultural land purchase, micro-credit finance, mini-venture loans, small enterprise loans, housing, educational loan, marriage assistance etc.

4.266 The scheme-wise details of physical and financial achievements of the Corporation are given in Appendix 4.127.

Welfare of Other Backward Classes

4.267 ackward Communities Development Department started functioning as a separate department in November 2011 to look after the welfare of socially and economically backward communities of the society. Though the Directorate of this Department was created at the end of the financial year 2011-12, it implemented two major educational schemes, Pre-Matric and Post-Matric Scholarships with the help of Scheduled Caste Development Department.

4.268 OBC prematric scholarship scheme with 50% CSS is the main achievement of the Department in its 1st year. The Department has implemented various educational schemes such as Pre-Matric and Post-Matric Scholarship for OBC and OEC students. During the period, the department started a handful of schemes such as employability enhancement programme, overseas scholarship scheme, career in automobile industry, construction of hostels and assistance to traditional occupations. A total amount of □.90 crores was earmarked by the State government for the sector during 2015-16, of this □.36.10 crores is State share for CSS. An amounts of □.50.90 crore is anticipated as 100 per cent CSS during 2015-16. The expenditure incurred as on 30.09.2015 is □.43.09 crore. The Scheme wise outlay and expenditure and the physical achievements of the department during 2014-15 and 2015-16 (upto 30.09.2015) are given in Appendix 4.128 & Appendix 4.129

Kerala State Backward Classes Development Corporation

4.269 The Corporation aims at the socio-economic upliftment of the backward classes and minorities in the State .The mission of this Corporation is "Freedom from poverty and backwardness" of the targeted communities in the State. Acting as a major State level Channelising Agency (SCA) of National Financing agencies, viz., National Backward Classes Finance & Development Corporation (NBCFDC) and National Minorities Development & Finance Corporation (NMDFC), KSBCDC implements their schemes by providing loan assistance at lower rate of interest to the members of backward and minority communities living below the poverty line for their overall development. KSBCDC also implements various welfare schemes by utilizing State government assistance and its own fund reserves. The Corporation has disbursed loans worth □.1891.20 crore to 366036 beneficiaries as on 30/09/2015. 79% of the beneficiaries are from rural areas & 48% of the beneficiaries are women. The source-wise expenditure and the physical achievements of the Corporation during 2014-15 and 2015-16 (up to 30.9.2015) are given in the Appendix 4.130.

Kerala State Development Corporation for Christian Converts from Scheduled Caste and the recommended Communities
4.270 The main objective of this Corporation is to promote social, educational, cultural and economic upliftment and other living conditions of the converted Christians from Scheduled Castes and other recommended communities. The main schemes implemented by the Corporation are agricultural land purchase, foreign employment, housing, cash incentive to students, marriage loan, agriculture and allied sector assistance, small business, educational loan etc. The source of finance of the Corporation is the financial assistance received from State government and the loan assistance from NBCFDC. Details of year wise disbursement of State Government assisted loan schemes from 2011-12 to 2015-16 (as on 30.09.2015) are given in Appendix 4.131.

4.271 The scheme-wise details of physical and financial achievements of the Corporation are given in Appendix 4.132.

Welfare of Minorities

4.272 The Minority Welfare Department was constituted for addressing the social economic and educational backwardness of Minority Communities in the State. An amount of □.60 crore was earmarked to Minority Welfare Department during the

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

year 2015-16 for various programmes. The major schemes are Multi Sectoral Development Programme (MSDP) (25 % state share), Housing scheme for divorcees/widows/abandoned women from the Minority Communities, Drinking water supply scheme in Minority concentrated areas etc Expenditure incurred as on 30.09.2015 is . 26.78 crore. The Scheme wise outlay and expenditure and the physical achievements of the Department during 2014-15 and 2015-16 (upto 30.09.2015) are given in Appendix 4.133 & 4.134.

Kerala State Minority Development Finance Corporation

4.273 The State Government constituted the State Minority Development Finance Corporation to provide financial assistance to income generating projects, housing finance, educational loans, vocational training etc to minority communities. An amount of .10 crore has been provided as share capital contribution to the Corporation during 2015-16. The financial and physical achievement of the corporation is given in Appendix 4.135.

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top
Other Chapters

Section 7

Art and Culture

4.274 The small state of Kerala is known for diverse art forms. There are many institutions set up for the promotion and encouragement of various art forms of Kerala. Academies, publishing houses, cultural centres, institutions of fine arts and folk arts, research centres and directorates like Museums and Zoos, Archives, Archaeology etc. are some of these institutions (see Economic Review 2014). The outlay for Art and Culture sector increased by 9% during 2015-16 compared to the previous year. Two new schemes- preservation and digitalisation of old malayalam film negatives and medical cum accident insurance scheme for artists- were included in the Annual Plan 2015-16. Often the artists do not get the recognition and reward due to them and both the artists and the art forms suffer .In this regard, a notable step has been taken by the Sangeetha Nataka Academy to revive popular art forms .The three initiatives taken by the Academy are described below.

1. Weekly drama:

Sangeetha Nataka Academy is organizing weekly drama festivals for the promotion and development of popular theatre movement, professional drama and amateur theatre movement. This initiative aims at co-ordinating the activities of the art and cultural institutions including amateur arts associations and providing proper guidance to their activities. Professional, amateur and short dramas performed in the Sangeetha Nataka Academy drama competition are included in the weekly drama festivals. Each drama is performed in all nine centres such as Museum Hall at Thiruvananthapuram, Fine Arts Hall at Ernakulam, KPAC at Kayamkulam,Aluva ,University Campus Malappuram etc. An amount of Rs. 2 lakh is provided as reward for each troupe. An amount of . 1.10 Crore has been spent for weekly drama festivals at 30 centres.

2. Revival of Dying art forms of Kerala:

Kerala Sangeetha Nataka Academy has organized monthly programmes for the promotion and propagation of Kathaprasangam,Magic,Folksong and Mohiniyattom.This scheme is intended for providing better opportunities for the new generation artists . Folk festival is organised in centres like Kalagramam at Karakulam ,Hindusthan Latex at Thiruvananthapuram ,Ahalya and Swaralaya at Palakkad,DTPC Piravam and Keli at Koothattukulam.Mohinityattom is organized in the centres of dance and music school at Kozhikode,Sreekrishna Sangeetha Sabha at Mavelikkara,Sangeetha Sabha at Chalakkudi,Chilanka Dance Music Academy,Gouri Creations at Palakkad,Sivaranjini Sageetha Sabha at Nilambur and Sadguru Sangeetha Sabha at Kozhikode. Artists of this programme are selected under the direction of expert teachers in this field. These competitions are organized in 56 selected centres in Thiruvananthapuram to Kasaragod. In the past,Kathaprasangam was one of the art forms that dominated the cultural milieu in the State .For the promotion and propagation of this artform, Kathaprasangam festival has been organized in Thiruvanathapuram,Kollam,Ernakulam, Thrissur and Kannur. Academy has also organized a unique programme by selecting notable stories of former Kathaprasangam artists in the month of July.

The Academy has organised Mohiniyattam monthly festival (Mohini Nrityathi) in Chennai, Bengaluru, Mumbai, Dombivilli, Ahmedabad, Surat,Vadodara, Kolkata and Thrissur for the propagation of the Kerala's own classical dance form .

3. Insurance

Kerala Sangeetha Nataka Academy has started an insurance mediclaim plan during 2011 aiming at helping ailing artists practising various art forms. Total 924 artists in the fields of professional drama (642),instrument art forms (196), Kathaprasangam (52) and Magic (34) are included in this scheme. Duration of this scheme is 3 years and is implemented with the help of cine artists like Sri. Mohanlal, Sri.Mammootty and industrialist Sri.B.R.Shetty.

For the continuance of the scheme Government has allotted an amount of □.40 lakh towards the corpus fund. Balance amount will be met by the Academy through sponsorship. 146 Circus artists are also included under this scheme during current year.

As per this scheme, □.1 lakh is provided for mediclaim, accidental death, disability etc and □.1000 is provided per week (up to maximum 100 week) in such situations of temporary disability due to accident requiring bed rest .

Outlook

Sustaining the high levels of development achieved in the social sector is a challenge for the economy. Though the State has made huge advancement in the field of education and health, vulnerabilities and challenges exist in consolidating the gains made in the field of social sector. The education sector is facing service constraint in terms of quality of education. There is a shortage of skilled manpower. Similarly access to health care is one of the best in the State. But high levels of malnourishment among women and children, re-emergence of communicable and new diseases and lifestyle diseases needs to be tackled.

In terms of empowerment of women, the State needs to focus on gender sensitisation and foster social and economic empowerment. Incidence of crime against women, alarming female health issues and low economic participation are serious causes of concern. The State needs to proactively take steps in enhancing the status of women in the society and foster women empowerment in true spirit.

Although the growth process in the State has been more inclusive than other States in India, development efforts have not fully percolated to all sections of the society. There is a need for sustained efforts to bring in the Scheduled Caste and Scheduled Tribe to the mainstream by providing better infrastructure and opportunities. Focused intervention by extending the reach of social security network to these groups is necessary.

The vision for the State is to improve the quality of life of the people to the level of Nordic countries by 2030. Sustained efforts are therefore required to maintain the developments in the social sector as well as focus on improving the quality and bring in the marginalised sections into the fold of development process. To achieve the expected outcomes of various social security programmes, greater inter-sectoral convergence, stronger interdepartmental coordination and community participation are essential. For efficient delivery of services and benefits, effective monitoring of the programme is very essential. For this special emphasis has to be given for monitoring and evaluation of the programmes being implemented through various agencies.

Top

Education
Medical and Public Health
Social Security and Welfare
Drinking Water
Gender Development
Development of SC/ST
Art & Culture
Top

Other Chapters

Chapter 5

INFRASTRUCTURE

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Introduction

The importance of infrastructure for sustained economic development is well recognized. Physical infrastructure covering transportation, power and communication through its backward and forward linkages facilitates growth and creation of social infrastructure including water supply, sanitation, sewage disposal, education and health, which are in the nature of primary services has a direct bearing on the quality of life. The performance of infrastructure is largely a reflection of the performance of the economy. Infrastructure is a prerequisite for the development of the economy.

Infrastructure plays a crucial role in promoting economic growth and thereby contributes to the reduction of economic disparity, poverty and deprivation in a country. Greater access of the poor to education and health services, water and sanitation, road network and electricity is needed to bring equitable development and social empowerment. Infrastructural investments in transport (roads, railways, ports and civil aviation), power, irrigation, watersheds, communications, education, health and family welfare play a strategic role in the development process and make a significant contribution towards sustained economic growth.

Section 1

Transport Infrastructure

Presence of quality infrastructure is vital for social, economic and industrial development of the country. The transport infrastructure in Kerala largely consists of roads, railways, airports and inland water transport system. Roads play a prominent role in Public Transportation over other modes of transportation owing to the geographic peculiarities of Kerala, widely scattered habitation with lesser rural urban divide and limited geographical area of 38,863 Sq.Km.

5.2 Transport infrastructure of the State consists of 3.72 lakh Kms of road, 1257 Kms of Railways, 1687 Kms of Inland Waterways and 111 statute miles of Airways and 18 Ports. Co-ordination between the physical infrastructure providers – Public Works Department (PWD), Railways, Inland Transport Authority, Airports and Coastal Shipping Agencies to build transport infrastructure and for the operation and the maintenance of the existing ones is required. Physical infrastructure

has to be designed to support an intermodal transport network. Road design should be done based on 15 year traffic forecasts even with an intermodal transport network.

State Road Network

5.3 The outlay and expenditure in the Transport sector during 2013-14, 2014-15 and 2015-16 is given in the Table 5.1.

Table 5.1
The Outlay and expenditure in the Transport sector during 2013-14 to 2015-16
(□ lakhs)

Sl No	Sub Sectors	Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16	
		Outlay	Expdr.	Outlay	Expdr.	Outlay	Expdr.upto 10/15
1	Port Department	7869.00	4534.10 (57.62%)	9869.00	4699.13 (47.62%)	11929.00	2072.40 (17.37%)
2	Roads and Bridges	85515.00	124583.64 (145.69%)	83641.00	131660.27 (157.41%)	95107.00	117258.37 (123.29%)
3	Road Transport	7485.00	6965.76 (93.06%)	10226.00	7578.57 (74.11%)	7425.00	1900.00 (25.59%)
4	Inland Waterways	13643.00	3451.73 (25.30%)	14342.00	3632.23 (25.33%)	15542.00	974.30 (6.27%)

Source: State Planning Board

5.4 The major road network of Kerala, though well connected, faces severe constraints due to the urban sprawl and the haphazard ribbon development all along the routes. The existing traffic levels at most stretches are excessive and beyond the road capacity. The traffic on roads is steadily increasing at a rate of 10 to 11 percent a year. Capacity augmentation of existing roads is beset with problems relating to limited right of way and land acquisition.

5.5 Even though Kerala stands at the forefront with regard to density of roads, the condition of most of these roads are very poor. Therefore the focus of road development programme has to be for improvement and upgradation of the existing roads rather than constructing new roads. This requires institutional strengthening, adoption of standards applicable to the Indian Roads Congress (IRC)/Ministry of Road Transport and Highways (MORTH) specifications, strict quality control and adoption of self-financing revenue models suited to the State.

5.6 Quality infrastructure creation in road construction is the focus area during the 12th Plan. There is a need to undertake planned development of State highways, important major district roads and city roads in the State which should include geometrical improvement, junction widening, re-laying the roads after proper design and giving maintenance contract.

5.7 The most important challenge in the road sector involves building all weather roads connecting each and every village. Even though Kerala is comparatively better placed than most other states as regards road length, the condition of many of these roads is very poor. Therefore, the main emphasis under road development in Kerala has been on improvement and upgradation of existing roads rather than construction of new roads. The investment need in the road sector is high and beyond the resources available with the Government. Therefore, there is an imperative need to motivate private and other non-governmental agencies/corporate sector to participate in road construction and upgradation of selected highways.

5.8 The major development indicators of transport and communication sector in the State since 2008 are given in Appendix 5.1. On the road front, traffic has been growing at 10 to 11 percent every year, resulting in excessive pressure on the roads of the State. Total road length in Kerala during 2014-15 increased from 3,31,372.261 Km in the previous year to 3,72,472.216 Km (12%). Road density in the State is 853 Km/100 sq.km and it is far ahead of the national average of 387 km/100 sq.km. The length of road per lakh population is 958 km. Roads maintained by different agencies of the State are given in Table 5.2.

Table 5.2
Agency wise distribution of State roads in Kerala during 2014-15

Sl.No	Name of Department	Length (Km)	Percentage
1	Panchayats (LSGDs)	306341.824	82.24
2	PWD (R&B)	31811.601	8.54
3	Municipalities	18411.870	4.94
4	Corporations	6644.000	1.78
5	Forests	4575.770	1.23
6	Irrigation	2611.900	0.70
7	PWD (NH)	1747.251	0.48

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

8	Others (Railways, KSEB)	328.000	0.09
	Total	372472.216	100.00

Source: Various Departments

5.9 The roads maintained by different Local Self Government Departments have account for 82.24 percent of the total in 2014-15. Out of the total road length of 306341.824 Km maintained by Panchayats, 133705.75 Km (43.65%) are black topped and 54421.124 Km (17.77%) are cement concrete. Out of the total roads maintained by PWD 31811.601 Km, Kottayam District has the major share with a length of 3449.301 Km (10.8%). Wayanad District has the lowest share at 1029.305 Km (3%). Details of district wise and category wise length of roads maintained by PWD (R&B) as on 31.03.2015 is given in Appendix 5.2.

5.10 As on 31.03.2015 there were 2253 bridges and 51400 culverts on the PWD roads. Of them, 91 bridges need reconstruction/renovation and 1265 culverts are not in good condition. More details are given in Appendices 5.3, 5.4, 5.5 and 5.6. Major Activities of PWD (R&B) during 2014-15 are given in the Box 5.1.

Box 5.1
Major Activities of PWD R&B during 2014-15

• Development and Improvement of 2713 Km of State Highways and MDRs has been completed. It includes a total length of 1087 Km of Bituminous Macadam & Bituminous Concrete (BM&BC) surfacing and 1626 Km of normal surfacing
• Heavy Maintenance of 83.96 Km on 5 roads leading to Sabarimala completed and regular maintenance of these roads for next 5 years to be carried out by the contracting agencies
• Sabarimala roads completed under heavy maintenance are Plappally - Chalakkayam, Kanamala - Elavumkal, Mannarakulanji – Pampa, Erumeli - Mukkada – Plachery and Kanjirappally – Erumeli
• Resurfacing work done under BM&BC with 3 years guarantee on Sabarimala connected roads in Kottayam and Pathanamthitta Districts for a length of 115.35 Km for an amount of 76.55 Crore
• A programme has been formulated to complete 100 bridges in 400 days and progress of construction is continuously monitored for timely completion of the project

Source : PWD

5.11 Government of Kerala has made it mandatory to follow Indian Roads Congress (IRC) standards and Ministry of Road Transport & Highways (MoRTH) specification for road works in Kerala. Kerala Public Works Department Manual has also been revised and the revised Edition (2012) has been made effective from 01.04.2012 onwards. The impact of the change in specifications and revisions in Manuals is to be evaluated in the coming years.

National Highways

5.12 The National Highway Wing of State PWD is responsible for the upkeep and development of National Highways in the State mainly with the funds allocated by the Government of India. There are nine National Highways together constituting 1747.251 Km length in the State. The details are presented in Table 5.3.

Table 5.3
National Highways in Kerala

Sl. No	New No.	Existing No.	From	To	Length of New NH No. in Kerala Kms	
1	66	NH 17	Thalappadi	Edappally	420.777	669.437
		NH 47	Edappally	Kaliyikkavila	248.660	
2	544	NH 47	Valayar	Edappally	160.000	
3	85	NH 49	Bodimettu	Kundanoor	167.610	
4	744	NH 208	Kollam	Kazhuthuruthy	81.280	
5	766	NH 212	Kozhikode	Kerala– Karnataka Border	117.600	
6	966	NH 213	Kozhikode	Palakkad	125.304	
7	183	NH 220	Kollam	Theni in Tamil Nadu Border	190.300	
8	966 B	NH 47 A	Wellington Island	Kundanoor	5.920	
9	966 A	NH 47 C	Vallarpadam	Kalamassery	17.000	

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

10	183 A	-	Bharanikkavu	Mundakkayam	116.800
11	185	-	Adimaly	Chelimadu	96.000
	Total				1747.251

Source : PWD (NH)

Kollam and Alappuzha Bye passes

5.13 Kollam and Alappuzha Bye passes in NH 47 is being implemented on cost sharing basis between Central and State Government. The total cost of the project is □700.48 Crore and an amount of □350.24 Crore as State share is included in the Major Infrastructure Development Project by State Government. The total length of Alappuzha Bye pass (□348.43 Crore) is 6.8 Km, of which 3.2 Km is elevated highway. The work commenced on 16.03.2015 under Engineering Procurement and Construction (EPC) mode and the work is progressing. The work is proposed to be completed by August 2017. An amount of □ 27.44 Crore is sanctioned as mobilization advance by the Central and State Governments.

5.14 The total length of Kollam Bye pass is 13 Km with aggregate cost of □352.05 Crore and it includes 3 major bridges (1.54 Km) with two lane roads of 11.5 Km paved with shoulder. The work commenced on 27.05.2015 under EPC mode and has made good progress and is scheduled to be completed by November 2017. An amount of □27.22 Crore is sanctioned as mobilization advance by the Central and State Governments.

5.15 As part of completing 100 bridges in 400 days, the works completed by the PWD (National Highway Wing) during 2014-15 are given in Table 5.4.

Table 5.4
Details of bridges completed by PWD (NH) in 2014-15
(□ Crore)

Sl.No	Name	Span	Cost
1	Construction of Munnar bridge, Devikulam	85 m	6.45
2	Moidu Bridge at Dharmadam	175 m	17.98
3	KSRTC Bridge at Munnar, Devikulam	16 m	4.77
4	New bridge parallel to the existing iron bridge in Kollam Town	76 m	7.84
5	ROB at Kazhakuttam	576 m	28.6
6	Widening of existing bridge across Kuntipuzha at Mannarkadu	55 m	7.34
7	Korapuzha Bridge in Calicut Bye pass	408.10 m	42.16
8	Putakkatteri Bridge, Kozhikode	185.5 m	18.76

Source : PWD (NH)

Kerala State Transport Project (KSTP)

5.16 The KSTP is implementing the Kerala State Transport Project –Phase II. The objective of the project is to improve the riding quality in 363 Kms road section with enhanced road safety provisions. The project has three components. (1) Upgrading of 363 Kms of road, (2) Road Safety Management and (3) Institutional Strengthening. The following works are progressing under the Project. The details are presented in Table 5.5.

Table 5.5
Kerala State Transport Project
(□ Crore)

Sl.No	Name	Cost	Date of completion
1	Kasaragod – Kanghangad Road	133.06	March 2016
2	Pilathara – Pappinisserry Road	118.29	March 2016
3	Thalassery – Valavupara Road	234.99	December 2015
4	Ettumanoor – Muvattupuzha Road	171.49	August 2016
5	Thiruvalla Byepass	31.80	December 2015
6	Ponkunnam – Thodupuzha Road	227.13	December 2016
7	Chengannur Ettumanoor Road	293.58	November 2017

Source : KSTP

Kerala Road Fund Board

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.17 The Thiruvananthapuram City Road Improvement Project implemented by Kerala Road Fund Board on PPP (Annuity) mode involves development of more than 42 Kms of roads in the capital city and maintenance for 15 years after construction. By developing well designed roads of better quality and aesthetic appearance, the project has given a face lift to the capital city. The concessionaire is responsible for all investments and is paid a fixed amount as annuity, spread over 15 years. More thrust needs to be given for implementing infrastructure development projects on Public Private Partnership. A few such projects in the pipe line are:

• SPEEID KERALA- The Government has formulated the project of constructing flyovers, bridges and roads at selected areas in the State in order to reduce the increasing traffic congestion. The project named as 'SPEEID KERALA' comprises 23 projects at an estimated cost of □10,000 Crore.
• Kottayam – Cherthala Tourist Highway – The project aims at development of interior areas of Kuttanad as well as promotion of tourism in the region.
• Thiruvananthapuram City Road Improvement Project Phase II- It is proposed to take up the second phase of Thiruvananthapuram City Road Improvement Project aiming at the development of more roads on BOT- Annuity mode
• Kozhikode City Road Improvement Project – The land acquisition for developing seven roads coming under phase I of KCRIP is nearing completion. Action is in progress to bid the works of development of 6 roads under PPP mode as in the case of Thiruvananthapuram City Road Improvement Project.
• Detailed Project Reports have been prepared for implementing City Road Improvement Projects in Kottayam, Thrissur, Malappuram and Kannur and action is also in progress for preparing DPR for Kochi and Kollam city road improvement projects. The major achievements of Kerala Road Fund Board are given in Box 5.2.

Box 5.2
Major Activities of Kerala Road Fund Board during 2014-15

• Thiruvananthapuram City Road Improvement Project - works under TCRIP nearing completion and will be over by the end of January 2016
• Global Road Achievement Award (GRAA) 2015, by International Road Federation (IRF) for urban planning and mobility for the Thiruvananthapuram City Road Improvement Project
• Implementation of 37.305 Kms of Kozhikode City Road Improvement Project (KCRIP) for a total concession period of 17 years
• DPRs for other five city road improvement projects, viz, Kannur CRIP, Malappuram CRIP, and Kottayam CRIPs submitted to Government for Administrative Sanction
• Under SPEEID Kerala Programme the following four projects have been taken up - Palarivattom Flyover (□41.28 Cr), Kozhikode Bye pass (□141.02 Cr), Maintenance of Ramapuram – Nalambalam Darsanam Road (□50.75 Cr), Upgradation of Kanjikuzhi- Vettathukavala – Karukachal Road (□45.35 Cr)
• District Flagship Infrastructure Project (DFIP) - implementing 21 projects at an estimated cost of □3771.47 Crore in all the districts

Source: Kerala Road Fund Board

State Road Improvement Project (SRIP)

5.18 Road Infrastructure Company Kerala Limited is a special purpose vehicle incorporated under Indian Companies Act, 1956 by Kerala Road Fund Board. There are two packages under the State Road Improvement Project (SRIP) - Rehabilitation Package under PPP Annuity mode and the Upgradation Package with funding from multilateral funding agencies. The Rehabilitation package is intended to improve 106.2 Kms of roads on Public Private Partnership Annuity mode and the Upgradation Package is designed to improve 600 Kms of road by including land acquisition wherever needed for geometrical corrections and junction improvements.

Research and Development in Road Sector

5.19 Research and Development activities play an anchor role in developing innovative models and techniques to address the challenges in modernising the road system in general and technology up gradation with cost effective infrastructure measures in particular. Design, Research, Investigations and Quality Control Board (DRIQ Board), Kerala Highway Research Institute (KHRI) and National Transportation Planning and Research Centre (NATPAC) are the research organisations engaged in Research and Development of the road sector at present.

(a) DRIQ Board

5.20 In 2014-15, the design wing of DRIQ Board has developed 17 building designs, structural designs of 69 bridges, 38

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

general design and 31 detailed designs. Moreover, the research and project preparation unit of DRIQ Board has prepared 11 projects.

(b) Kerala Highway Research Institute (KHRI)

5.21 Kerala Highway Research Institute, the South Zone Regional Office is the quality control wing mandated with the task of assuring quality in works undertaken by PWD. Quality control sub division of Pathanamthitta, Alappuzha, Kollam districts are under the jurisdiction of KHRI. KHRI conducts training programmes for technical and non technical staff of PWD. The activities of KHRI during 2014-15 are given in Box 5.3.

Box 5.3
Major Activities of KHRI during 2014-15

• DPR preparation of Ernakulum – Sabarimala Road
• Research Work – Study on periodically distressed road stretches in Thiruvananthapuram
• Study on locally available steel reinforcing bars
• Development of NH 47 – Conversion of existing two lane roads to four/six lane from Karamana to Kaliyikkavila, total station survey at Kaimanam to Balaramapuram.
• DPR preparation of Ernakulam – Sabarimala road connecting the control points such as Kalamassery, Kakkanad, Chottanikkara, Piravom, Elanji, Monippally, Uzhavoor, Mundappalam, Ponkunnam, Erumeli, Mukkootothara and Pampa
• Traffic delay and planning studies at level crossing near Edava
Source: Kerala Highway Research Institute

5.22 As part of quality control, 3320 tests were conducted and the results were forwarded to the respective Chief Engineers for further action. The investigation works on Detailed Project Report (DPR) for KSTP Phase II covering the maintenance component of 14 roads have also been completed by KHRI during 2014-15.

(c) National Transportation Planning and Research Centre (NATPAC)

5.23 NATPAC is the Research Centre conducting Research and Development and Extension Activities in the field of transportation and allied areas. The broad areas of activities of NATPAC includes transportation, planning and road safety, regional transportation, highway planning and development, traffic management, water transport and providing consultancy services to various user agencies in the domain area.

5.24 During the year 2014-15, NATPAC has carried out 20 plan programmes, 15 externally funded projects and road safety programmes sponsored by Kerala Road Safety Authority (KRSA) and several road safety training materials have also been developed. The plan programmes are mostly R&D projects to address the traffic and transportation issues of the State. The externally funded projects are need based studies entrusted to NATPAC by government agencies like PWD, Transport, Tourism, Water Resources, Town Planning Department and other Organisations like Kochi Metro Rail Company, National Highway Authority of India (NHAI), Roads and Bridges Development Corporation Kerala (RBDCK) etc. Major activities of NATPAC during 2014-15 are given in the Box 5.4.

Box 5.4
Major Activities of NATPAC during 2014-15

• Study on the impact of higher Floor Area Ratio (FAR) in the transportation network of major commercial corridors in Kochi
• Parking study to assess the demand-supply deficit along the influential area of Pattom – Kesavadasapuram road
• Periodic updating of Price Indices for different operations to find out operational characteristics of stage carriages, IPT vehicles within the State
• Preparation of action plan for a 'Pedestrian Friendly Transportation System' for Thiruvananthapuram, Kollam, Thrissur and Kozhikode Corporations
• Planning of exclusive bus lanes in existing road network- a case study of Thiruvananthapuram City
• Evaluation of Fibre Reinforced Asphalt and its suitability to Kerala condition
• Study on the effect of geometric design standards on road safety with respect to the newly upgraded highways in Kerala
• Forecasting Urban growth based on GIS, RS and SLEUTH Model for three cities in Kerala viz Cherthala, Chalakkudy and Kanhangad
• Feasibility study to develop a ropeway system at Elaveezhapoonchira for Tourism Department

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

• Study on 'Two Wheeler Accident Causative factors among youth and its mitigative measures

Source: NATPAC

5.25 Research studies undertaken by NATPAC have facilitated in adopting designs and guidelines for the construction of better quality roads using modern construction techniques. More thrust on research and development with focus in bringing new/innovative construction methods/techniques/technologies to the field is highly essential, considering the resource crunch, environmental challenges and transportation challenges existing in the State.

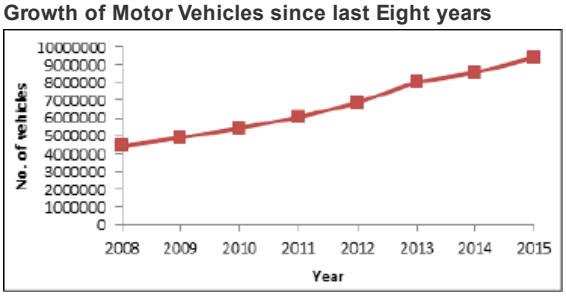
Road Transport

5.26 Road Transport is the dominant mode of transport for moving goods and passenger traffic and acts as the feeder service to the rail traffic, air traffic and ports and Inland Waterways. In Kerala, road transport industry is dominated by private service providers. The road freight services are wholly owned and operated by the private sector.

Motor Vehicle Population

5.27 The growth of vehicle population in Kerala is 10 percent over the previous year. The growth of Motor Vehicles during last eight years is shown in Figure 5.1.

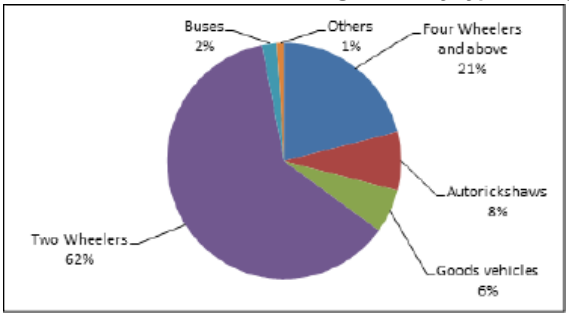
Fig 5.1
Growth of Motor Vehicles since last Eight years



Source: Motor Vehicles Department

5.28 The number of motor vehicles having valid registrations as on 31.03.2015 is 94, 21,245 as against 85, 47,966 in the previous year. The details are in Appendix 5.7. The number of newly registered vehicles is 8,73,279 during 2014 -15 of which details are given in Appendix 5.8. In the case of personal vehicles, a faster growth rate has been recorded over the previous year. The district wise growth of vehicle numbers in Kerala is given in Appendix 5.9. The distribution of category wise motor vehicles registered during 2014-15 is shown in Figure 5.2.

Fig 5.2
Distribution of motor vehicles registered by type during 2014-15



Source: Motor Vehicles Department

5.29 About 2393 vehicles are newly added to vehicle population every day. Of this 1715 are two wheelers. The highest vehicle population was recorded in Ernakulum district with 16,17,972 vehicles (17.2%) followed by Thiruvananthapuram with 11,75,647 (12.5%). Wayanad district has the lowest number of 1,29,092 (1.37 %) vehicles. Category wise growth of motor vehicles in Kerala since 2010 to 2015 is in Appendix 5.10.

Road Accidents

5.30 Even though several initiatives have been taken by the Police to enforce road discipline and enforcement of rules by Motor Vehicles Department, road accidents are increasing. The increasing trend of traffic accidents is a matter of great

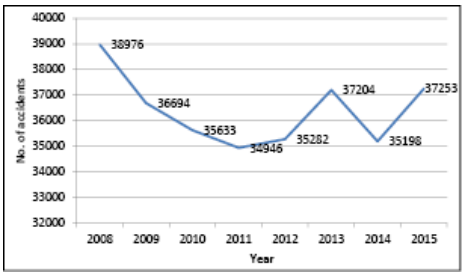
Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

concern. The analysis of figures from 1980-81 onwards shows that an increase in the number of accidents was steady from 7064 in 1980-81 to 20,900 in 1990-91 and 34,387 in 2000-01 and 35282 in 2010-11. Even bigger states like Uttar Pradesh, Gujarat and Rajasthan report far less number of accidents compared to Kerala. The district wise motor vehicle accidents in Kerala and the category wise details of motor vehicles involved in road accident are given in Appendices 5.11 and 5.12 respectively.

5.31 During 2014-15, Kerala registered 37253 accidents (102 per day). Accidents due to KSRTC buses were 1218 (3 per day) and private buses were 3168 (9 per day). The number of two wheelers has increased from 52.88 lakh in 2014 to 58.29 lakh in 2015, recording average annual growth rate of 10.27 percent. Similarly the number of traffic crashes involving two wheelers has grown from 16,394 (45 per day) in 2014 to 29,963 (82 per day) in 2015. Bike accidents account for nearly 53 percent of the total accidents reported in the State. Trend of motor vehicle accidents in Kerala is presented in Figure 5.3.

Fig 5.3

Trend of Motor Vehicle Accidents in Kerala



Source: State Crime Records Bureau

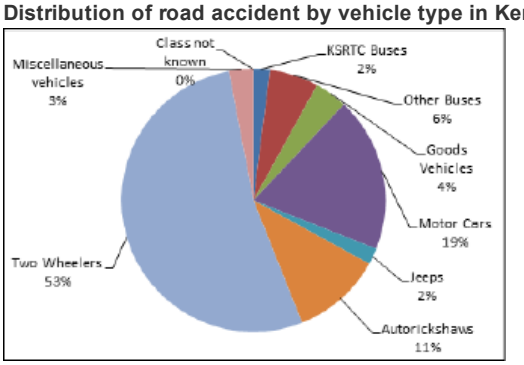
5.32 Almost 95% of accidents occurred due to the fault of drivers of the motor vehicles. The rest of the accidents are caused due to various other reasons like traffic, bad weather, poor road condition, fault of pedestrians etc. Road accidents are caused due to one or more of the following reasons.

- Rash driving and unhealthy competition of vehicles
- Defective eye sight of drivers
- Poor surface condition and badly maintained side shoulders of roads
- Uncontrolled access streets and unmanned junctions
- Least regard to traffic rule
- Haphazard parking on road side
- Location of bus stops close to junctions
- Lack of pedestrian crossing, walkway facilities etc
- Encroachment/dumping of materials on the road

5.33 The distribution of vehicle category wise accidents in Kerala during 2014-15 is shown in Figure 5.4.

Fig 5.4

Distribution of road accident by vehicle type in Kerala during 2014-15



Source: State Crime Records Bureau

Kerala State Road Transport Corporation (K S R T C)

5.34 Kerala State Road Transport Corporation (KSRTC) is the single largest public sector undertaking, which carries out passenger transport operations in the State. The gross revenue earning of KSRTC during 2014-15 is □1923.82 Crore. The gross revenue expenditure is □2541.10 Crore and operating loss during this period is □ (-) 617.28 Crore.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.35 Out of 5629 buses of KSRTC, 1444 (26%) buses are ten or more years old. The worn out status of KSRTC buses are given in Appendix 5.13. The average monthly collection of the Corporation has increased from □138.29 Crore to □150.78 Crore during 2014-15. During the period, 203 new buses were put on road and 410 buses were scrapped. The number of schedules operated as on 31.03.2015 was 4602. The Corporation operated its bus service to a distance of 6981.04 lakh kms and about 11059 lakh passengers travelled in KSRTC buses during this period. The major indicators showing operational efficiency and district wise operational statistics of KSRTC/KURTC are given in Appendices 5.14 and 5.15 respectively.

5.36 The fares of ordinary and city buses are 64 paise per Km, 72 paise per Km for super fast, 90 paise to super deluxe service, 110 paise for A/C Air Bus and 130 paise for High Tech Volvo Buses. The fare structure of KSRTC is given in Appendix 5.16.

5.37 Inter Unit analysis of KSRTC reveals that about 30% of the units of the State exhibit poor performance. Financial performance of KSRTC is not in tune with its physical achievements due to increase in operating expenditure, hike in pension commitments, increase in interest payments, operation in uneconomic routes and granting concessional travels leading to increasing losses to the Corporation. The District wise operational statistics of KSRTC during 2014-15 is given in Appendix 5.17.

5.38 The occupancy ratio in KSRTC has increased from 67.14% in 2009-10 to 75.09% in 2011-12. There are only 168 buses per 10 lakh population in Kerala and the fleet utilisation is only 82.7 percent. More than 12 percent of the buses are under repair and 41 percent of the vehicles are over aged. Staff per bus ratio is as high as 7.8. The number of breakdowns per lakh kilometres in KSRTC is around 6 while that of neighbouring Karnataka RTC (KnRTC) and Bangalore Metropolitan Transport Corporation (BMTC) are less than one. The number of buses owned by KSRTC is given in Appendix 5.18. Major physical achievements of KSRTC during 2014-15 are given in Box 5.5.

Box 5.5
Major achievements of KSRTC

- 4400 GPRS enabled Electronic Ticketing Machines purchased for service operation
- 10 Multi Axle Volvo Buses purchased and put on road for operating Bangalore services
- New Ticket Reservation Centres started at Shanthi Nagar and Kalashipalayam at Bangalore
- As part of modernization of existing fleet, 340 new buses were put on road
- In order to improve better transport facilities in major cities, a subsidiary Corporation Kerala Urban Road Transport Corporation (KURTC) has started for operating JnNURM buses
- Online reservation system of KSRTC was upgraded with latest technology
- Bus Terminal Cum Commercial Complex projects at Thampanoor, Angamali, are completed and Payyannur, Neyyattinkara and Nilambur are in progress and nearing completion
- Construction of Shopping Complex at Nedumangad completed.
- Construction of Bus terminal cum commercial complex at Muvattupuzha, Harippad and Pathanamthitta are in progress.
- Design and estimate for the work of construction of Bus terminal cum Commercial Complex at Enchakkal and Aluva are in progress
- Construction of new bus station/garage buildings for Depots viz, Mananthavady, Moolamattom, Irinjalakkuda, Parassala, Palode, Thottilpalam, Vellarada, Regional workshop Edappal, Ponnani etc have been completed by utilising MLA's development fund and Local Area Development Fund of MP for improving infrastructure facilities
- Training was given to 9592 employees at Staff Training Centre, KSRTC, which includes newly recruited drivers, conductors and other staff.
- Corrective training was given for 798 drivers with special emphasis on avoiding accidents and refresher training to 845 drivers

Source: KSRTC

5.39 The performance of KSRTC during 2014-15 is better than the previous year due to the implementation of Revival Package announced by the Government of Kerala. As part of Revival Package, the following programmes were implemented by KSRTC.

Box 5.6
Revival Package - Major programmes

- Introduction of Online Ticket Reservation

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

- Construction of Bus Terminals under interest fee deposit
- Introduction of Passenger Information System (PIS)
- Starting Courier Service in association with M/s Trackon Couriers Pvt Ltd on cost sharing model
- Starting ATMs, Indian Coffee House and Cafe Coffee Day in Bus Stations
- Implementation of Smart Card and ERP solutions are in progress
- Pending dues of Indian Oil Corporation (IOC) is settled
- Construction of bus body building in full strength. Rolled out 532 buses out of 742 chasis received against 1350 purchase orders placed
- Interstate agreement with Tamil Nadu, Karnataka, Andhra Pradesh, Telengana, Pondicherry and Goa were signed
- More service operation and ticket reservation counters in Banaglore (Satellite, Santhipuram, Kalasipalayam, Peenya and Koramangala)
- KURTC as subsidiary Corporation of KSRTC was started with 320 buses in first phase and placed orders for 400 buses in 2nd phase in five clusters
- Taken over 185 Super class service permits from Private Bus Operators, out of 241 services owned
- Reduced the number of cases pending before different forums including Hon'ble High Court of Kerala
- Initiated action to appoint franchisees for Online Reservation of passenger tickets
- Initiated action to start retail outlets of Indian Oil Corporation (IOC), Hindustan Petroleum Corporation (HPC) and Bharat Petroleum Corporation(BPC)

5.40 As part of the Revival Package, to address the pension liability, the Government has created a pension fund and permitted KSRTC to collect social security cess from passengers and agreed to contribute to pension fund in equal shares and to that of KSRTC's contribution, subject to a maximum of □20.00 Crore per month. The total value of assets of the Corporation as per the valuation report is □3674.13 Crore. Ten Public Sector / Commercial Banks have agreed to sanction loan to KTDFC for taking over the existing loan liabilities of KSRTC. M/s State Bank of Travancore has already released an amount of □200.00 Crore directly to KTDFC. M/s. State Bank of India and Lakshmi Vilas Bank have sanctioned an amount of □75.00 Crore and □50.00 Crore respectively. Modification of schedules based on scientific traffic studies, route rationalization by combining nationalized as well as private routes, compensation for additional duty for reducing average employee per bus, rationalization of trips, reducing average employee per bus needs to be focussed by the Department to bring it to the national standards.

Railways

5.41 The Indian Railway system is the second largest network in the World under a single management. It provides one of the cheapest means of transport in India. The State total railway route has a length of 1257 km and covers 13 railway routes. The Railway Divisions at Thiruvananthapuram, Palakkad and Madurai jointly carry out Railway operations in Kerala. Total route Km of 623.76 Km of Thiruvananthapuram division comprises of 494.76 Km in Kerala and 129 Km in Tamil Nadu. Thiruvananthapuram Division is the largest coaching division of Southern Railway with coach holding of 1572 (bars) coaches.

Suburban Rail Project

5.42 Government of Kerala has decided to establish Suburban train services in Thiruvananthapuram – Chengannur /Harippad sector in Phase – I by constituting a Special Purpose Vehicle to run air conditioned MEMU/EMU Rakes. M/s Mumbai Rail Vikas Corporation (MVRC) has finalized the Detailed Project Report. The total cost of the project is □3300.00 Crore. A Special Purpose Vehicle is formed between Government of Kerala and Indian Railways with 50:50 equity participation for taking up implementation of the Project.

Kochi Metro

5.43 Kochi Metro Rail Project (KMRP) is the flagship project of the Government of Kerala designed to address the transportation woes of Kochi City. The Project is implemented through the Kochi Metro Rail Ltd (KMRL) which is a Special Purpose Vehicle jointly owned by the Government of Kerala and Government of India with equity participation. The Union Government gave sanction for the project in July 2012 at a total cost of □5181.79 Crore. KMRL has signed an agreement with Government of India and Delhi Metro Rail Corporation Ltd (DMRC) for executing the project and as per the tripartite agreement signed between Government of India, Government of Kerala and KMRL, the project is expected to be completed by June 2017. The details of the project are in Table 5.6.

Table 5.6
Kochi Metro

Sl.No	Connected places	Length (Km)	Project Cost (□Crore)
Phase I	Aluva to Petta (22 stations)	25.6	5181.79

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Phase I (a)	Pettah to S.N. Junction (Extension)	2.00	359.00
Phase II	JLN Stadium to the IT city Kakkanad	11.00	1682.00

Source : KMRL

Light Metro Projects at Thiruvananthapuram and Kozhikode

5.44 Light Metro Rail Project is a Mass Rapid Transit System (MRTS) proposed to be implemented in the cities of Thiruvananthapuram and Kozhikode and the DPR has been prepared by Delhi Metro Rail Corporation (DMRC). A route length of 13.33 Km with 14 stations in Kozhikode is being taken up as the first phase of the project. The estimated completion cost of the project is □4219.00 Crore for Thiruvananthapuram and □2509 Crore for Kozhikode totalling to □6728.00 Crore (including Central taxes & land cost). The estimated completion period of the project is five years for Thiruvananthapuram and four years for Kozhikode.

5.45 The proposed project will be implemented as a joint venture of Government of India (GoI), and Government of Kerala (GoK) with a funding pattern of 20% equity of GoK, 20% by GoI and the remaining 60% by way of external and domestic borrowings. The Comprehensive Mobility Plan for the cities under the project have been prepared by NATPAC and submitted to the Ministry of Urban Development as a precondition for obtaining Government of India assistance.

Air Transport

5.46 Air Transport plays a major role in the development of tourism both domestic and international. Kerala has three airports at Thiruvananthapuram, Kozhikode and Kochi. Kannur International Airport Limited (KIAL) has been set up by Government of Kerala to build and operate Kannur International airport.
5.47 The Kannur airport project is being developed in two phases by KIAL. The first phase is envisaged to span from FY 2016-17 to FY 2025-26 and second phase would be from FY 2026-27 to FY 2045-46. In Phase I, the airport runway is proposed to be 3050 m in length, which would be sufficient to allow all major aircrafts to operate on key routes viz, Hong Kong, Singapore, Middle Eastern countries etc. The second phase is proposed to have increased capacities of passenger terminal, aprons and other facilities including a longer runway of 3400 m to accommodate bigger aircrafts like A380.The Greenfield airport is being set up in 2000 acres, of which 1265 acres have been acquired. Of the required land, 1215 acres (equivalent to □315.94 Cr) has been brought in by Government of Kerala as equity in the project.

5.48 The Ministry of Environment, Forest and Climate Change has granted necessary environmental clearance for Kannur International Airport. Agreement for the provision of CNS/ATM facilities has been executed with Airports Authority of India. Construction work on Terminal Buildings and City side facilities are being carried out by Larsen & Toubro Ltd. Expression of Interest (EoI) for servicing the debt component has been invited by KIAL and KIAL has already tied up the debt component requirement (□892.00 Crore) with a Consortium of three Banks namely Canara Bank (□692.00 Crore), South Indian Bank (□110.00 Crore) and Federal Bank (□90.00 Crore).

5.49 During 2014-15, 68119 flights (15028 domestic and 53091 international) were operated from the three airports together. A total number of 1,29,15,773 passengers (44,92,737 domestic and 84,23,036 international) were carried during 2014-15. Details of flights operated during 2014-15 by three Airports are shown in Appendix 19 (A), (B) and (C).

Water Transport Sector

Port Sector

5.50 A sea port is the nerve centre of foreign trade of a country contributing to the development of the economy. The quality of ports has a significant influence on the cost structure of country's export and defines its competitiveness in the global market. It brings varying degrees of benefits to the economy and the country. Port constitutes an important economic activity in the coastal areas. Ports are also important for the support of economic activities in the hinterland since they act as a crucial connection between sea and land transport. As a provider of job opportunities, ports do not only promote economic growth but also take care of social needs. In terms of cargo transportation, seaway transportation is the cheapest and the most effective transportation system compared to other systems. Majority of industries depends on ports for the transportation of raw materials as well as finished goods and hence are located in the coastal belts in the vicinity of major ports. These industries also strengthen the livelihood of the employees as well as indirect benefactors. In short a port plays a crucial role in the development of a nation.

Ports in India

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

5.51 India's long coastline of over 7500 km is home to the country's 12 major ports and around 200 non major ports located along the western and eastern corridors of which only 139 are operable i.e. 69.50%. Indian ports are the gateway to India's international trade by sea and are handling over 90% of foreign trade. The 12 major ports managed by the Port Trust of India are under Central Government jurisdiction and the 139 minor ports are under the jurisdiction of the respective State Governments. While the non major ports are larger in number only about one- third of them undertake regular commercial operations. These are located mainly in Gujarat, Andhra Pradesh, Goa and Maharashtra.

5.52 The major ports include Chennai, Ennore and Tuticorn (in Tamil Nadu), Cochin (in Kerala), Kandla (in Gujarat), Kolkata (in West Bengal), Mumbai and Jawaharlal Nehru Port Trust (JNPT) (in Maharashtra), Mormugao (in Goa), New Mangalore (in Karnataka), Paradip (in Orissa), andVishakapatnam (in Andhra Pradesh) .

Ports in Kerala

5.53 Kerala has a coastal length of 585 km and the State has an average width of about 60 km with one major port at Cochin and 17 minor ports. Out of 17 minor ports in Kerala, four are considered as intermediate ports based on berthing, cargo handling and storage facilities available in them. They are Vizhinjam, Beypore, Azheekal and Kollam ports. The remaining 13 minor ports in the state are Neendakara, Alappuzha, Valiyathura, Kayamkulam, Manakkodam, Munambam, Ponnani, Vadakara, Thalasserry, Manjeswaram, Neeleswaram, Kannur and Kasaragod.

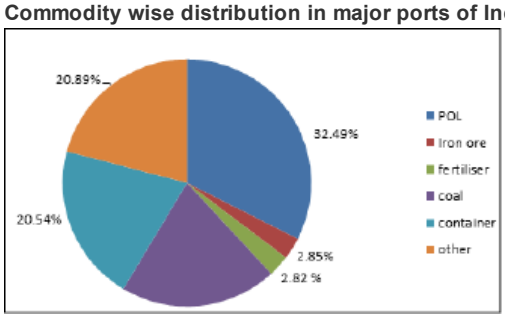
5.54 Most of the minor and intermediate ports in the State are seasonal in nature with insufficient infrastructure to handle even medium and small sized vessels throughout the year. Presently cargo operations take place only in four ports ie Vizhinjam ,Beypore, Kollam and Azheekal . At Beypore, passenger traffic to Lakshadweep islands is also handled. At Thangassery(Kollam) new cargo port facilities are created utilizing the calm fishery harbour basin.The Annual budget 2016-17 focus on development of non major ports, development of coastal shipping, PPP mode of development of ports, overall infrastructural development of operational ports for improving cargo/ passenger traffic.
5.55 The Government of Kerala has already decided to develop five minor ports through PPP mode. These Ports are Azheekal, Beypore, Ponnani, Alappuzha and Kollam. Apart from this a major port, Vizhinjam Deepwater International Container Transshipment Terminal is coming up.

Cargo traffic in Major Ports of India

5.56 Cargo traffic at India's 12 major ports during 2014-15 was higher by 4.65% at 5813.44 lakh tonnes compared with 5554.87 lakh tonnes handled during 2013-14.During 2014-15 Mormugao port recorded highest growth of traffic of 25.32% followed by Kolkata dock system (18.70%) Chidambaranar (13.17%), Ennore (10.66%), Haldia dock system (8.77%), Kandla (6.31%), Paradip (4.42%), Mumbai (4.18%), Cochin (3.39%), Chennai (2.81%) and JNPT (2.36%) Major ports which recorded negative growth in traffic during 2014-15 are Vishakapatnam (0.85%) and New Mangalaore (7.11%). (Source : Port Statistics 2014-15,Ministry of Shipping, GOI).

5.57 Among the major ports, Kandla port handled the maximum cargo of 924.97 lakh tonnes with a share of 15.9% followed by Paradip (12.2%), JNPT (10.97%), Mumbai (10.61%), Vishakpatnam (9.97%), Chennai (9.04%), New Mangalore (6.29%), Chidambanar(5.58%), Haldia Dock Complex (5.3%), Ennore (5.2%), Cochin (3.71%), Marmugoa (2.53%) and Kolkata dock system (2.63%).(Source: Port Statistics 2014-15,Ministry of Shipping, GOI). Figure 5.5 shows the commodity wise break up of cargo handled at major ports in India.

Fig 5.5
Commodity wise distribution in major ports of India



Source: Ministry of Shipping / Indian Ports Association

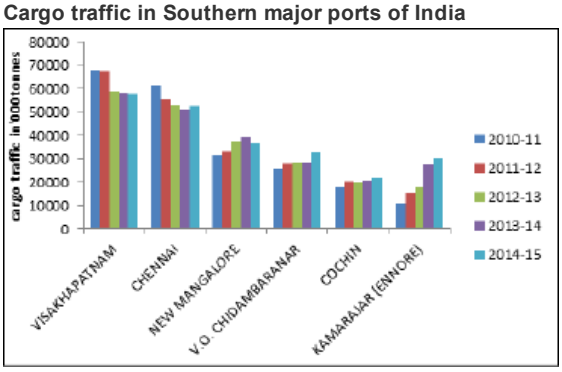
5.58 It may be seen that the commodity group with the largest percentage share in total cargo handled was POL(Petroleum Oil and lubricants) (32.49%) followed by other cargo (20.88%), container (20.55%) which includes tea, cashew kernals, rubber and rubber products, spices, coffee etc, coal (20.42%), fertilizer (2.82%) and iron ore (2.85%).%).(Source: Port

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Statistics 2014-15, Ministry of Shipping, GOI). Figure 5.6 shows the growth of cargo traffic at major ports in South India for the last 5 years.

Fig 5.6

Cargo traffic in Southern major ports of India



Source: Ministry of Shipping / Indian Ports Association

5.59 The data in Appendix 5.20 and the figure reveal that though Vishakhapatnam and Chennai hold the first and the second position in terms of the quantity of cargo handled, these ports have shown a decline in trend in the growth rates of cargo movement over the years as against the other three ports namely New Mangalore, Chidambaranar and Ennore which exhibited upward trends in the above period.

5.60 In the case of Cochin Port, the quantity of cargo handled has shown a marginal increase over the years with a decline during 2012-13. The quantity of cargo handled, in lakh tonnes, at Cochin port for the period from 2011-12 to 2014-15 were 200.91 (12.40%), 198.45 (-1.22%), 208.87 (5.09%), 215.95 (3.39%) respectively with percent change given in brackets against the actual.

Cargo traffic in Cochin Port

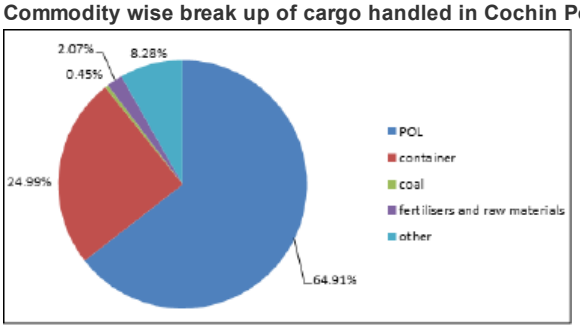
5.61 Total import traffic handled during 2014-15 recorded an increase of 5.41% to 175.36 lakh tonnes from 166.37 lakh tonnes in the preceding year. The major component of import include POL (67.84%) followed by container (19.73%) comprising machinery, cashew, chemicals etc, other cargo (9.34%), fertilizers and raw materials (2.54%)and coal (0.56%). (Source: Administration Report and Annual Accounts 2014-15, Cochin Port Trust).

5.62 Total export traffic handled during the year showed a decrease of 4.52% to 40.59 lakh tonnes from 42.50 lakh tonnes in the preceding year. The major components include POL (52.25%) sea foods (4.58%) coir products (3.09%), tea (2.23%), spices (2.08%), rubber and rubber products (1.80%), cashew kernals (1.66%), coffee (1.61%). (Source: Administration Report and Annual Accounts 2014-15, Cochin Port Trust).

5.63 Commodity wise break up of cargo handled in Cochin port during the year 2014-15 is shown in Figure 5.7. Figure 5.7 shows that among the cargo handled at Cochin Port, POL has the highest share of 64.91% followed by container (24.99%), other cargo (8.28%) fertilizer and raw materials (2.07%) coal (0.45%). (Source: Administration Report and Annual Accounts 2014-15, Cochin Port Trust)

Fig 5.7

Commodity wise break up of cargo handled in Cochin Port during 2014-15



Source: Cochin Port Trust

Cargo traffic in non-major ports of India

5.64 In the case of non-major ports in India, cargo traffic was 13% higher at 4711.95lakh tonnes in 2014 -15 against

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

4169.70 lakh tonnes in 2013-14.

5.65 During 2014-15, non major ports of Goa showed the highest growth of traffic (167.6%) followed by Andhra Pradesh (42.2%) and Karnataka (27.7%). The non major ports in Tamil Nadu showed a negative growth of 4.7%.(Source: Port Statistics 2014-15, Ministry of Shipping, GOI).

5.66 Among the non major ports, ports of Gujarat handled the maximum cargo of 3360.93 lakh tonnes (71%), followed by Andhra Pradesh (17.7%), Maharashtra (5.79%) Goa (0.16%) Tamil Nadu (0.17%) Karnataka (0.13%) and non major ports of the remaining states handling a total of 221.27 lakh tonnes (4.7%) (Source: Port Statistics 2014-15, Ministry of Shipping, GOI).

5.67 In terms of composition of cargo traffic handled at non major ports coal holds the highest share of (33.69%) followed by POL (33.22%) other cargo (21.33%) iron ore (5.74%) building materials (3.06%) fertilizer (2.96%). (Source: Port Statistics 2014-15, Ministry of Shipping, GOI).

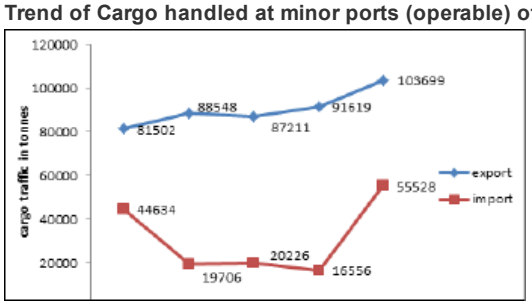
5.68 During 2014-15 iron ore ,other cargo, coal , fertilizer, raw materials, building materials posted a growth of 47.61%, 31.62%, 25.67%,16.07,1.81% respectively . However traffic of POL showed a negative growth of 8.48%.

Cargo traffic in non major port of Kerala

5.69 The non-major ports of Kerala, showed a growth of 47.19% at 159226 tonnes in 2014-15 against 108175 tonnes in 2013-14.

5.70 Cargo handling during 2014-15 was confined mainly to Kozhikode, Kollam, Vizhinjam and Azheekal ports .The total cargo handled in Kollam port has shown a drastic rise from 6072 tonnes in 2013-14 to 20044 tonnes in 2014-15. The coastal shipping operations occurred regularly between Gujarat- Kollam, Kolkata – Kollam and Kochi-Kollam sector. The major cargo handled in Kollam port includes cashew, sand, soda ash tiles, construction materials and sanitary wares. Kollam also holds the record of handling over dimensional Consignment (ODC) cargo for Vikram Sarabhai Space Centre which is considered to be the largest handled among all minor ports in Kerala. The import –export details in minor and intermediate ports of Kerala are detailed in Appendix 5.21. During 2014-15, 558 steamers and sailing vessels with registered tonnage of 158711.51 called at non- major ports against 541 steamers and sailing vessels with 205247.8 tonnages in the previous year. This shows increase in number of steamers and decrease in tonnages. The details are shown in Appendix 5.22(A). Statement showing the revenue collection at the non-major ports during 2014-15 is shown in Appendix 5.22(B). The trend of cargo handled at minor ports of Kerala is given in Figure 5.8

Fig 5.8
Trend of Cargo handled at minor ports (operable) of Kerala



Source: Directorate of Ports

5.71 Figure 5.8 shows that import has shown a flucuating trend with a negative growth in 2011-12 and a positive growth of 2.63% in 2012-13. It again declined by 18.14% in 2013-14 and increased in 2014-15.The export showed a decline in 2012-13 by 1.50% then it improved by 5.05% in 2013-14. In 2014-15, it has shown a great improvement by 13.18%.This shows remarkable capacity utilization in the year 2014-15.

5.72 The Government agencies involved in the development of ports in the State are Port Department, Harbour Engineering Department, and Hydrographic Survey Wing. An amount of □27759 lakh, □7869 lakh, □9869 lakh and □11929 lakh were earmarked for this sector during 2012-13, 2013-14 2014-15 and 2015-16 respectively.

Box 5.7
Major Achievements of the Port sector during 2014-15

• Supply order placed for the procurement of 750HP Tug for Azheekal Port and 1st stage payment already made.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

• Supply order placed for the procurement of Reach stacker for Vizhinjam Port and Beypore Port and 1st stage payment already made.
• Construction of building for Kerala Maritime Institute at Kodungalloor nearing completion.
• Construction of office building and staff quarters at Alappuzha Port in good progress.
• Stage payment made for procurement of 3 Nos. fiber glass cum patrol boat for Vizhinjam, Kollam and Beypore Port .
• Construction of Staff Quarters and Office building at Kasargod Port nearing completion.
• Supply order placed for the procurement of container handling crane at Azheekal and Beypore Port and 1st stage payment already made.
• Work order issued for dredging work at Azheekal Port
• Security equipments as per ISPS code purchased.
• Supply order as well as stage payment made for the procurement of Vessel Traffic Management Solutions (VTMS) in Kollam Port and Beypore Port.
• Work order issued for the renovation of Port Bunglow at Alappuzha Port.
• Commissioning of Electronic Data Interchange at Kollam Port in final stage.
• Signal station cum training hall at Kodugalloor Port renovated.

Vizhinjam International Deep Water Multipurpose Seeaport

5.73 Vizhinjam International Deep Water multipurpose Seaport is a flagship project of Government of Kerala Vizhinjam International Deep Water Multipurpose Seaport limited (VISL) is a special purpose government company (fully owned by Government of Kerala) which acts as a implementing agency for the development of the Greenfield port.

Box 5.8
Dream of the century transforming into a reality – Vizhinjam Port

The flagship project of the State, Vizhinjam International Deep-water Multipurpose Seaport is one of the landmark and dream project which took off in 2015. The project initially proposed in 1990s has finally translated into reality. The ground breaking ceremony of the project was held on December 5, 2015.

This port is being developed as the transshipment hub to cater to large mother vessels. Vizhinjam is an all-weather port that will come up 10 – 12 nautical miles away from the Persian Gulf – Malacca lines. The proposed site has minimal maintenance dredging. The port with a draught of 18.20m can handle new generation mother vessels of size range 18000 to 22000 TEU

The Port is being developed on DBFOT Model and has been awarded to M/s Adani Vizhinjam Port Pvt Ltd. The Concession Agreement was signed between the Government of Kerala and the private partner on 17th August, 2015. The concession period of the project is 40 years.

The total cost of the project is □5,552 crore. Out of this □4,089 crore will be the contribution of the private partner, □1,463 crore will be put by State Government for 'funded works' of the project. The Central Government will provide □818 crore as Viability Gap Funding support and balance □817 crore will be provided by the State Government out of the total Viability Gap Fund (VGF) of □1,635 crore sought for the project. The state would be providing land and developing external infrastructure such as water, power and rail connectivity. It's the first project in the State and first port in the country to receive VGF assistance from Ministry of Finance. The state government would get its portion of revenue, from non-port operations after 7 years of operation and from port operations after 15 years of operations.

Another novel feature of this project is the Funded Works component. Funded works are those components of the project where the development will be undertaken by the private partner and the State Government will reimburse the cost of the same. The construction of breakwater (3.1 km), fish landing berth and buildings in fishing harbor and side development are the constituents of funded works of this project. The construction of breakwaters for the project would be an engineering feat in the maritime history of the country.

The project will have a capacity of 10 lakhs TEU in the first phase which will be scaled up to 30 lakhs TEU. The construction period as per the Concession Agreement is 4 years. But it is expected that the project may be operational in a record time of less than 1,000 days. This Port will not only meet the transshipment needs of the country but also boost coastal shipping in the State.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Harbour Engineering Department

5.74 Harbour Engineering Department was formed in 1982 as a separate specialized service department for Fisheries and Ports. Government of India has empanelled Harbour Engineering Department of Kerala as a consultant in the coastal engineering field for the nation as a whole. This department is the only such State Department in India. The major functions of the Department are investigation, planning, design, evaluation, execution, operation, maintenance, and management and related maritime engineering and technical works for the development schemes of the Fisheries and Port Department. During 2013-14 an amount of □850 lakhs , □930 lakhs in 2014-15 and □1370 lakh in 2015-16 were allotted to this Department . The following are the major achievements fo the Department during 2014-15. Ist floor extension of Chief Engineer's office at Kamaleswaram and extension to the existing project house at Puthiyappa have been completed, mathematical model study for tidal hydrodynamics and siltation aspects for existing Fishing Harbours at Neendakara and Thottappally has been arranged and is progressing, rectification of damages to the seaward breakwater at Vizhinjam is progressing.The construction of office complex at Puthiyappa in Kozhikode district has achieved 75% progress level.

Hydrographic Survey Wing

5.75 The Hydrographic Survey Wing was constituted in 1968 as a component of the Kerala State Port Department with a view to cater to the requirements of hydrographic investigation for the development of the non-major ports of maritime State of Kerala. This wing has been conducting pre-dredging and post-dredging, pre-monsoon and post-monsoon surveys to ascertain various aspects such as requirement of dredging, data required for the construction of fishing harbours, fish landing centers, small ports etc. In addition to the routine pre-monsoon and post-monsoon survey at 16 non-major ports they also undertake survey work for other departments like Irrigation, Inland Navigation, Fisheries, Tourism, PWD and Research Institutions like Kerala Engineering Research Institute.

Major Achievements of Hydrographic Survey Wing for 2014-15

5.76 Dredging surveys at Manjeswaram, Kasaragod, Thankassery, Ayitty – Padanna boat route, Puthiyappa, Beypore, Akkulam and Munambam, sub bottom profile survey of Beypore and Thrikkunnapuzha have been conducted, digitisation report and charts of Ernakulam and Thrissur districts have been published, survey for CESS from Kadalundi to Nandihills have been conducted. Digitization of five coastal districts of Kerala have been completed. The survey launch was commissioned on July 2015. One heave compensator and differential GPS were purchased for survey launch. Construction work of superstructure of office building of Hydrographic Survey Wing for Munambam/ Paravoor sub office has been completed .One side scan sonar and four dinghies have been purchased and renovation of one Survey vessel have been completed.

5.77 Third batch of Basic Hydrograhic course (6 months) has commenced and Fourteen students from the 1st and IInd batch have got placement and the remaining students are doing one year on the job training.

5.78 Although the ports in India have shown considerable improvement over the years, their performance does not compare favourably with that of international ports. The productivity levels are still very low due to the outdated equipment, poor training, low equipment handling levels by labour, uneconomic labour practices, idle time at berth, time loss at shift change and high mining scales. Considering the criticality of the port sector to overall economic growth and to bring about an orderly development of the sector some regulatory and policy initiatives have been taken. The Port sector has been thrown open to private sector participation and new tariff guidelines have been introduced with greater flexibility to public private partnership to fix tariff based on market conditions. The security clearance guidelines for PPP bidders have been streamlined and new guidelines for leasing port lands have been announced. While the policy measures augur well for the development of the port sector, at the ground level the gap between planning and implementation remains significant because of various procedural and systematic issues, the resolution of these remains critical for the full realisation of the potential of the sector.

Inland Water Transport

5.79 Inland Water Transport is a fuel efficient and environment friendly mode of transportation. India is richly endowed with navigable waterways, comprising rivers, canals, backwaters, creeks, etc. The Inland Waterways Authority of India has been established for the development and regulation of Inland waterways for shipping and navigation and related matter. The Inland Waterways Authority of India Act, 1985, empowers the Government to declare waterways with potential for development of shipping and navigation as National Waterways.

5.80 The State is endowed with numerous backwaters and it is one of the States in India, where waterways are successfully used for commercial inland water transport. The transportation is mainly done with country craft and passenger vessels. There are 41 navigable rivers in Kerala. The total length of the Inland Waterways in the State is 1687

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Kms. The main arterial waterway in the state is West Coast Canal. The West Coast Canal connects Hosdurg in the north to Thiruvananthapuram – Poovar in the South and is about 590 Km long including 47 Km. uncut portion from Vatakara to Azheekal.

5.81 The inland canals play an important role in the economy of the State as they interconnect the rivers, on the banks on which are situated places of commercial and industrial importance and also give a connection from interior places to the West Coast Canal System. It can be broadly divided in to three sections as below:

1. Neeleswaram to Kottappuram 348 Km
2. Kottappuram to Kollam (NW III) 168 Km
3. Kollam to Kovalam 74 Km

5.82 The canal portion from Thiruvananthapuram to Ponnani and then along Bharathappuzha River upto Shornur is known as Thiruvananthapuram – Shornur Canal (TS Canal). As part of a programme for developing Waterways by the Central Government, 168 Km of Waterway from Kollam to Kottappuram of West Coast Canal including Udyogamandal and Champakara Canals were declared as National Waterway No. III.

5.83 National Waterway from Kollam to Kottappuram is navigable. the reach from Kottappuram to Beypore is partially navigable in different stretches.The stretch from Beypore to Vatakara is at present not fully navigable.The reach from Vatakara to Mahe is to be constructed. The Mahe – Valapattanam stretch of the canal (42.91 km) is also not navigable The reaches north of Valapattanam upto Konni and Koratti to Neeleswaram (Kottapuram) of Kasaragod is presently navigable as per State Water way standards.

5.84 Government agencies engaged in the development of Inland Water Transport in the State are Coastal Shipping and Inland Navigation Department (CSIND), State Water Transport Department (SWTD) and Kerala Shipping and Inland Navigation Corporation Ltd. (KSINC). An amount of 13339 lakh, 10925 lakh, 14342 lakh and 15542 lakh are earmarked for this sector during 2012-13, 2013-14 2014-15 and 2015-16 respectively.

State Water Transport Department

5.85 This department was formed in1968 with headquarters at Alappuzha. During 2014-15 Kerala State Water Transport Department obtained Government sanction for purchasing three Passenger – Cum –Vehicle carrier steel boats and one solar powered passenger boat obtained and purchased five Rescue boats and seven passenger boats. Erection of dry dock facility at Alappuzha and erection of slipway at Ponjikkara, Alappuzha and Ayaitti, Kasaragod are nearing completion. Water hub at Kottayam has been completed, 2022 life jackets purchased and installed in service boats. As compared to the previous year, the number of boats in operation and the number of passengers decreased, but the number of trips increased and there was an increase in total revenue receipts of this department. 95 boats were operated with 2,75,940 trips during 2014-15. Details of operational statistics of State Water Transport Department are shown in Appendix 5.23.

Kerala Shipping and Inland Navigation Corporation Ltd.

5.86 The Corporation was formed in 1989 by the statutory amalgamation of Kerala Inland Navigation Corporation Ltd. (KINCO) and Kerala Shipping Corporation Limited (KSC) both Government of Kerala Companies. KSINC is the pioneer in inland navigation, Coastal shipping and water based tourism and leisure activities in Kerala. It had started mechanized cargo transport in the inland waterways back in1980's and started oil bunkering in the 1990s. It had also started coastal shipping activities in 1999.Presently KSINC is engaged in developing passenger and cargo transportation through inland waterways of Kerala, docking and repair of marine vessels, construction of boats, conducting navigation training programmes, conducting tourist cruises, providing navigational aids in National Waterway-III. KSINC has identified a suitable site at Kumarakom for construction of drydock for the repair of house boats of Alappuzha and Kumarakom. KSINC also intends to construct 2 cargo barges to transport furnace oil and hydrochloric acid through inland waterways and a theme cruise vessel with facilities for night stay in PPP mode.The Corporation at present has six barges two tourist boats and two Jhankars. The operational statistics of KSINC are shown in Appendix 5.23.

Coastal Shipping and Inland Navigation Department

5.87 The main Inland Canal schemes in the State are implemented through this department. The programmes implemented through this department during 2014-15 are: 250 Km at different stretches of west coast cannal made navigable. Renovation works have also been completed in some stretches of Tanoor Kootayi canal and work of the feeder canal namely Kannety canal has been completed. One of the main works under 13 th Finance Commission namely construction of Vadakara - Mahe Canal formation, 60 % of the works have been completed. Development of Feeder Canals Connecting the National Water ways III arranged through RIDF is also progressing.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Section 2

Energy Sector

5.88 Energy plays a vital role in the socio-economic development and human welfare of a State. Efficient, reliable and competitively priced energy supply is a prerequisite for accelerating economic growth and human development. Apart from its contribution to economic development, it contributes significantly to revenue generation, employment, enhancing the quality of life and reducing poverty. Making available the required quantity of power of acceptable quality at affordable price is one among the prime responsibilities of the Government. For any developing country, therefore the strategy for energy development is an integral part of the overall economic strategy.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Energy Sector: World Scenario

5.89 Table 5.7 shows the resource wise details of five major energy producing countries in the world, compiled on the basis of gross resource pooling from the data of top 10 energy producing countries in the world.

Table 5.7
Resource position of top producers of Energy in the world

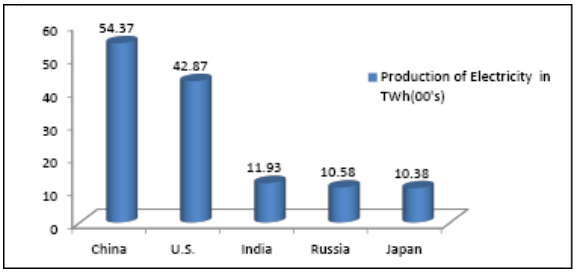
Country	crude oil (Mt)+	Natural Gas (bcm)+	coal (Mt)+	Nuclear (Twh)*	Hydro El. (Twh)*
Russia	529 (12.6%)	644 (18.3%)	334 (4.21%)	173 (6.98%)	183 (4.72%)
US	509 (12.1%)	730 (20.7%)	916 (11.55%)	822 (33.17%)	290 (7.48%)
China	212 (5.05%)	130 (3.68%)	3650 (46.1%)	112 (4.52%)	920 (23.74%)
Canada	208 (4.95%)	162 (4.59%)	0	103 (4.16%)	392 (10.12%)
India	0	0	668 (8.4%)	0	142 (3.66%)
Rest of world	2742 (65.29%)	1858 (52.72%)	2357 (29.74%)	1268 (51.17%)	1947 (50.25%)
Total	4200 (100.0)	3524 (100.0)	7925 (100.0)	2478 (100.0)	3874 (100.0)

Source: World Energy Statistics,2015, International Energy Agency(IEA)
+Provisional data,2014 *Data 2013

Note: The blank figures of India with regard to Crude Oil, N. Gas and Nuclear Resources do not imply that India is not a producer of these resources. But it means that India doesn't figure in the top 10 countries list. Similarly Canada is not figuring in the top 10 countries list for Coal. But the resources of India and Canada are pooled together with the resources of rest of the World.

5.90 India ranks third in the production of electricity among the top 10 countries excluding production from pumped storage plants and also ranks 6th in the production of hydro electricity including production from pumped storage, Pumped storage hydro Electricity being the hydro electric energy storage used by electric power systems for load balancing. The gross electricity production status of five leading countries among the top 10 countries is exhibited in Figure.5.9

Fig 5.9
Major producers of Electricity -2013



Source: World Energy Statistics,2015, International Energy Agency(IEA)

5.91 China produces 23.3% of total world electricity and United States 18.4%, followed by India 5.1%. India neither figures in the export/import of electricity in the top 10 rankings. Canada is the leading net exporter (50 Twh) and United States is importing more electricity than other countries (59 Twh).

Power Sector in India

5.92 Thermal energy is the predominant source of energy in India and the category wise contribution of energy generation from different sources to the national grid, in percentage, is given in Table 5. 8 Total installed capacity of power in India as on September 2015 is 2,78,734 MW. The contribution of State sector is 96,455 MW (34.6 %), Central sector 74,171 MW (26.6%) and Private sector 1,08,108 MW (38.8%).

Table 5.8
Total Installed Capacity in India as on 30.09.2015

Fuel	Installed Capacity(MW)	Percentage
Thermal	194200	69.6
Hydro	42283	15.2
Nuclear	5780	2.1
Renewable Sources	36,471	13.1
Total	278734	100

Source : Ministry of Power, Govt of India

5.93 A major development in the power sector has been the launch of a new scheme, the Ujwal DISCOM Assuarance Yojana (UDAY) by the Ministry of Power. This is an attempt to provide affordable and accessible 24X7 power to all. Highlights of the scheme are given in Box 5.9

Box 5.9
UDAY (Ujwal DISCOM Assurance Yojana)

UDAY (Ujwal DISCOM Assurance Yojana) for financial turnaround of power distribution companies
UDAY aims at the financial turnaround and operational revival of debt ridden Power Distribution Companies (DISCOMs) and ensures a sustainable permanent solution to the problem. Due to legacy issues, DISCOMs are trapped in a vicious cycle with operational losses being funded by debt. Outstanding debt of DISCOMs has increased from about 2.4 lakh crore in 2011-12 to about 4.3 lakh crore in 2014-15, with interest rates up to 14-15%. State shall take over the future losses of DISCOMS in graded manner and shall fund them as follows.

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Previous Year's DISCOM loss to be taken over by State	0% of the loss of 2014-15	0% of the loss of 2015-16	5% of the loss of 2016-17	10% of the loss of 2017-18	25% of the loss of 2018-19	50% of the previous year loss

The scheme is optional for all the states but the States accepting UDAY and performing as per operational milestones will be given additional / priority funding thorough DDJGJY,IPDS,PSDF or other such schemes of Ministry of Power and Ministry of New and Renewable energy

Source: Press Information Bureau, Government of India

Power Sector in Kerala

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.94 In Kerala, shortage of power is the prime obstacle in starting new industrial units. Kerala generates power from four sources - hydro power, thermal power, wind power and solar power. Of these, hydel and thermal power generations account for the bulk whereas wind and solar power generations make only marginal additions. Monsoon is essential to sustain the hydropower base in the State and the deficit in rainfall usually creates a power crisis. Yet hydel energy is the most reliable and dependable source of energy in Kerala.

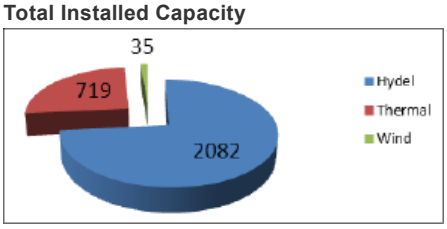
5.95 The main challenges faced by the energy sector in the State are i) Inadequate capacity addition over the years leading to massive in house demand supply gap ii) Hydel power dominated supply scenario iii) Negligible share of renewable energy in the energy mix iv) Gap between energy conservation potential and its realization v) Limited presence of Independent Power Producers (IPP) and Co-Generating Stations (CGS) and vi) Limited penetration of star labelled products.

Capacity Addition during 2014-15

5.96 Total installed capacity of power in the State as on March 2015 is 2836 MW. Hydel contributed the major share of 2082 MW (73%) to total and 719MW was contributed by thermal projects including National Thermal Power Corporation (NTPC) at Kayamkulam (Kerala's dedicated thermal station) and 35 MW from wind. Additional capacity added during 2014-15 in hydel sector was only 15.5 MW. Appendix 5.24 shows details of energy source and its installed capacity during the last five years.

5.97 Figure 5.10 highlights total installed capacity in Kerala from hydel, thermal and wind sources.

Fig 5.10
Total Installed Capacity



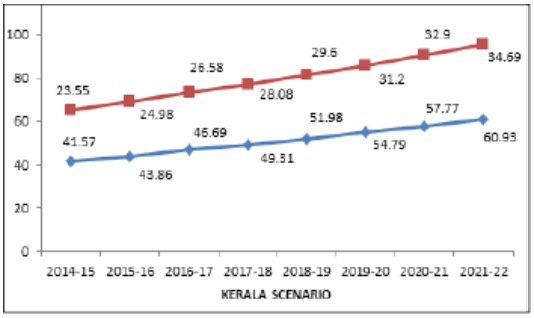
Source: KSEBL

5.98 Of the total installed capacity of 2836 MW during 2014-15, the contribution of State sector is 2186MW (77%), Central sector 360 MW (13%) and Private sector 290 MW (10%). Sector wise total installed capacity generated in Kerala from 2010-11 to 2015 is shown in Appendix 5.25. The details of power availability during the last five years are shown in Appendix 5.26.

Kerala's Power Sector Projections

5.99 The 18th Electric Power Survey (EPS) Report indicates that there will be about 65% increase in the energy requirement of Kerala and the diagrammatic representation of peak estimated year wise demand for the period 2014-15 to 2021-22 is as given in Figure 5.11

Fig 5.11
18th Electric Power Survey (EPS) Projections



Source: 18th Electric Power Survey (EPS) Report

5.100 It can be inferred from Figure 5.11 that as the energy requirement and peak load are increasing, remedial measures in generation, transmission and distribution & in energy management with a perspective vision and mission is a must and should be incorporated in the future five year plans.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Performance of Power Sector Agencies

5.101 Power development activities in the State are carried out mainly through four agencies viz, Kerala State Electricity Board Limited (KSEBL), Agency for Non-conventional Energy and Rural Technology (ANERT), Electrical Inspectorate and Energy Management Centre (EMC). The Outlay and Expenditure of these departments for last three years of the 12th Plan are shown in Table 5.9

Table 5.9
Outlay and Expenditure
(Lakh)

Sl. No	Department	Annual Plan 2013-14			Annual Plan 2014-15			Annual Plan 2015-16		
		Outlay	Expdr.	%	Outlay	Expdr.	%	Outlay	Expdr.as on 10/2015	%
1	KSEBL	117612	87780.85	74.64	131426	83569.69	63.59	140942	52011.11	36.90
2	ANERT	3980	2140.00	53.77	4280	64.66	1.51	4280	10.17	0.24
3	MTSL	340	339.80	99.94	360	359.58	99.88	560	2.71	0.48
4	EMC	338	68.00	20.12	938	653.46	69.67	938	264.44	28.19
	Total	122270	90328.65	73.88	137004	84647	61.78	146720	52287.43	35.64

Source: Plan space

Box 5.10

Recommendations of the Expert Committee on Energy

Major recommendations of the Expert Committee on Energy (2015)

State Planning Board has constituted Expert Committees on major sectors to examine in detail various programmes and policies to take maximum advantage of Central schemes during the 12th Plan period by the State. The Expert Committee on Energy chaired by Sri.P.Joy Oommen, has recently submitted its final report. After carefully studying the energy sector in Kerala, the Committee has made recommendations in respect of solar power generation, small/mini/micros hydel projects, other renewable energy programmes, transmission and generation sectors, and energy education. The major recommendations of the report are summarised below.

• State Government should encourage consumers across all categories to install solar power units. It could be made compulsory for all public buildings, commercial complexes and multi storied housing complexes to install solar power units to meet in full or a part of their energy requirements. The subsidies under various schemes need to be made more attractive and easy to avail for individual beneficiaries.
• State Government to issue instructions for use of open lands, wetlands, water bodies, fallow fields etc for installation of larger solar power systems by KSEBL, ANERT, State Govt. Agencies / Corporations/Universites etc.
• The Panchayaths where locations have already been identified for mini and micro hydel projects should be invited to have discussions on implementation of the scheme with their participation and sharing of revenues from power generation. Possibilities of Public Private Participation model in which KSEB, private companies and Grama Panchayaths join hands to implement the projects and share a part or a percentage of the power or profits / revenues with Grama Panchayaths , should be explored.
• Government should support basic infrastructure developments for projects undertaken in remote areas for encouraging small hydro projects.
• The immense potential of bio mass power projects in view of the easy availability of waste from rubber and coconut plantations should be explored through pilot studies and projects.
• EMC shall prepare a plan for demand side management including replacement of inefficient energy equipment. Appropriate provisions may be incorporated in State building code to make it mandatory to go for energy conserving technologies and design.

Source: Report of Expert Committee on Energy

Kerala State Electricity Board Limited (KSEBL)

5.102 KSEBL has been responsible for the generation, transmission and supply of electricity in the State, with particular mandate to provide electricity at affordable cost to the domestic as well as for agricultural purposes.
5.103 In order to comply with the provisions of Electricity Act 2003 and the Government of India directives, the Kerala Government notified a transfer scheme vide GO (M.S) No.37/2008/PD dated, 25.9.2008 through which all assets and

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

liabilities of KSEB were vested with the State Government. The assets and liabilities were revested with fully owned government company, KSEB Limited under the Indian Companies Act, 1956 on 14th January 2011.

Box 5.11
Major Achievements of KSEBL, 2014-15

The major schemes commissioned by KSEBL during 2014-15 are the following.

1. **Chimmony Small Hydro Electric Project (1X2.5 MW-6.7Mu)**
This project is in the downstream of the existing Chimmony dam of Irrigation Department located in Thrissur District. Power generation is planned utilising the irrigation release from December to May and spill water if any during monsoon by installing a horizontal francis turbine of 2.5 MW capacity. The total cost of the project was □2345 lakhs and it was commissioned on 22.05.2015 without cost overrun.

2. **Adyanpara Small Hydro Electric Project (3.5 MW)**
Adyanpara SHE Project envisages development of power by utilizing the potential of Kanjirapuzha stream, a tributary of Chaliyar River. The project is located in Chaliyar Panchayat, Nilambur Taluk in Malappuram District. It has an installed capacity of 3.5MW (2 x 1.5 MW + 1 x 0.50 MW) with an expected average annual generation of 9.01 MU. The actual cost of the project on completion is □23.94 Cr. The synchronization of the machines of the project with the grid was performed on 9.07.2015 and the project was commissioned on 3.09.2015.

3. **Vilangad Small Hydro Electric Project (3x2.5MW)**
Vilangad SHEP (3 x 2.5 MW) is a runoff river scheme utilizing the water of Vaniyam puzha and Kavadipuzha in Mahe river basin. The project area is located in Narippatta Grama Panchayath, Vadakara Taluk in Kozhikode District. This Hydel project having an installed capacity of 7.5 MW can generate 22.63 million unit (Mu) of energy per annum. This is the first Project in Kerala, commissioned with two diversion weirs, two separate canals and a common Forebay tank. This project was dedicated to the nation on 01-09-2014 and the total cost of project was □6269.90 Lakhs

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Generation

5.104 The electricity demand of the State is met through generation from KSEBL, Central Generating Stations (CGS), Independent Power Producers (IPPs) and Traders. Generation from KSEB's own plants provide 34% (7342 MU) of the total energy requirement. Import from CGS,IPPs,UI and Traders provides the rest of the (14996 MU) total requirement. 18795.44 MU of energy was also sold (including sales outside the state) during the year 2014-15.KSEBL has 19 hydel projects,2 gas based projects and one solar project under its purview in the pipeline. The details of the project can be seen in Appendix 5.27

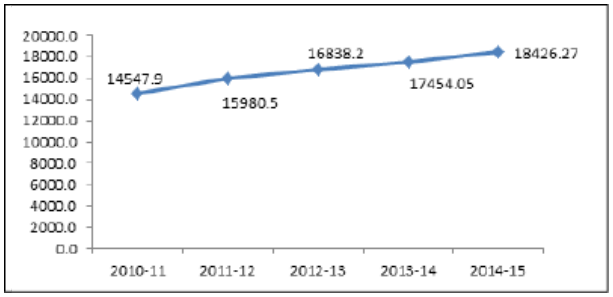
Pattern of Power Consumption

5.105 Kerala's consumption is predominantly domestic, which accounts for 50% of the total consumption. Revenue from domestic consumers is only 32% of the total revenue. The domestic category consumers showed a growth rate of more than 2% from 8788916 in 2013-14 to 8987947 in 2014-15. Per capita consumption has increased by 5.43% i.e. to 544 kWh in 2014-15 against 516kWh in 2013-14. During 2014-15, 18426 MU of energy valued at □1074485 lakh was sold (internally) showing an increase of 972 MU as compared to the previous years 17454 MU. It is also estimated that the annual consumption and maximum demand will be 26584 MU and 4669 MW respectively by the end of 12th Plan period (2017).The details of the pattern of power consumption and revenue collected during 2014-15 may be seen in Appendix 5.28.

Electrical Energy Consumption

5.106 Electrical Energy consumption in Kerala during 2010-11 to 2014-15 is depicted in Figure 5.12. The average annual increase in Electrical Energy Consumption is 6.11% since 2010-11.

Fig 5.12
Electrical Energy Consumption in Kerala (Kwh)



Power Purchase Agreement (PPA)

5.107 KSEB has entered into a PPA with various Central Generating Stations such as NTPC and Neyveli Lignite Corporation. This includes purchase of 229.9MW of power from Nuclear power stations and 1172.2 MW of power from various Thermal stations. As a measure to encourage non-conventional sources of energy, KSEBL has executed PPAs for purchase of power from Wind Energy Projects, Agali (18.60 MW) & Ramakkalmedu (14.25MW) and from small Hydro Projects Meenvallam(3MW), Iruttukkanam (3 MW), Karikkayam (10.5 MW) Ullunkal (7 MW) and Mankulam Mini Hydro(0.11 MW). Power is also being purchased from co-generation plant of MPS steel, Kanjikode (10MW) and Philips Carbon Black Ltd., Kochi (10MW). The capacity allocated from various stations for which the PPAs have been executed is given in Appendix 5.29.

Transmission

5.108 Transmission of electricity means a bulk transfer of power over a long distance at high voltage, generally of 110 KV and above. A good transmission system is necessary for effective distribution and to procure power from outside the State. In the Transmission sector, many planned works could not be taken up due to land acquisition and right of way related issues. The performance of the construction of substations with various capacities has not achieved the desired target. Out of the target of 8 numbers of 110 KV substations, only 1 substation was completed and in the case of 33 KV substations, 1 substation was completed against the target of 13 numbers. In the case of 220KV substation, 1 substation was completed while none has come up in the case of 66KV sub stations. Kerala's Transmission system consisting of substations and its connected lines are given in Appendix 5.30 and 5.31.

Improving the Transmission & Distribution Infrastructure

5.109 In order to improve the present situation, more capacity needs to be created in transmission, for which optimization of the available right of way should be the first priority. Improving the carrying capacity of lines through upgradation, changing of conductors, replacing of support structures with stronger and narrow based towers, together with upgradation of substations are the options to be explored in this regard. In the case of new lines, narrow based structures /monopole is advisable as they require minimum footprint. Space constraints will also limit the choice of substations to indoor Gas Insulated Sub Stations (GIS) in town centers.

Renovation, Modernisation and Uprating (RMU) of old Generating Stations

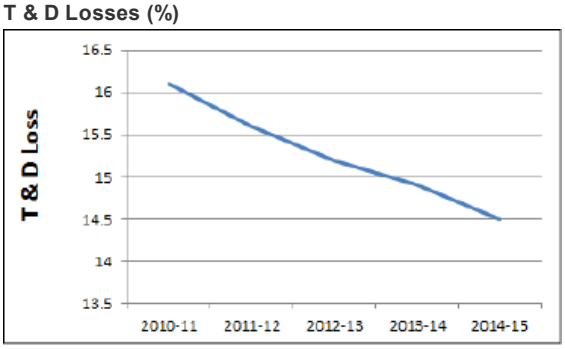
5.110 Renovation, modernisation and life extension works are to be carried out in the older generating units, which had exceeded their normal life span of 35-40 years, in order to improve their performance and extend useful life. Upgrading the capacity of generating units also needs to be attempted, wherever possible. Renovation of projects/schemes such as Poringalkuthu, Sholayar, Kuttiyadi and Idukki Stage-I were initiated for ensuring continued optimal utilisation of these stations.

Aggregate Technical and Commercial (AT & C) losses

5.111 During 2014-15 AT&C loss has come down to 14.52% from 14.96% in 2013-14.The corresponding data for the country is 23.04% (2013-14).It means that KSEB has made significant progress in the field of reducing AT&C loss. From 2003-04 onwards AT&C loss has consistently come down by way of replacement of faulty meters, intensification of theft detection, installation of new substations and lines, upgradation and modernization of transmission and distribution network through Accelerated Power Development Reforms Programme (APDRP). The impact of AT & C loss reduction during the last five years is shown in Appendix 5.32. The decreasing trend of T & D loss during the last 5 years can be seen in Figure. 5.13

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Fig 5.13
T & D Losses (%)



Source: KSEBL

Distribution

5.112 In the distribution segment, there are 55386 circuit Km of 11 KV lines, 268753 Km of LT lines and 71100 distribution transformers. During the financial year 2014-15, 4,22,238 service connections were given (against the target of 4,35,861), 1807 kms of 11 kV lines (against the target of 2665km) and 4636 km of LT lines (against the target of 4322 km) were commissioned. The target and achievement of the distribution infrastructure during 2014-15 is given in Appendix 5.33.

5.113 To improve customer satisfaction, model section concept was introduced and rolled out all over the State. SMS based complaint registration system (SMS CRS) introduced for speedy rectification of consumer complaints. E-payment facility for HT/EHT consumers is implemented. E-payment facility for LT consumers is being implemented since 23.04.2013.

5.114 Voltage & frequency of the power system was well within the specified limits. The availability of EHT & HT feeders was above 99% all over the State.

Demand Side Management activities

5.115 As part of Demand Side Management (DSM) activities, an Energy Audit Cell has been formed during the year 2007 with the objective of conducting energy audit and for taking steps as per provisions of the Energy Conservation Act 2001. As part of this, workshops have been conducted in thermal and hydro stations for formulating action plan for energy audits and for promoting energy conservation activities. Sub division level DSM Cells were formed for conducting awareness programme on energy conservation for major energy consumers, resident associations and students to restrict energy consumption during peak hours. Programme on energy conservation implemented through schools, named “Nalekkithiri Oorjam” is jointly organized by KSEBL, Energy Management Centre (EMC) and Education Department.
5.116 Anti Power Theft Squad (APTS) was active during the last 5 years. The details of amount realized by means of APTS inspections are detailed in Table 5.10

Table 5.10
Anti-Power Theft Squad (APTS) Inspection

Particulars	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (as on 09/2015)
No of inspections	23479	24090	21609	16253	31369	18179
No.of cases Registered	2980	336	382	272	4446	2409
Amount Assessed in (□ Crore)	15.56	17.39	25.10	28.03	34.15	17.24
Amount realized in (□ Crore)	11.85	11.35	15.18	12.12	1.75	11.36

Source : KSEBL

5.117 During 2015-16, the APTS wing conducted 18179 inspections till 09/2015, and out of the assessed amount of □17.24 Crore, □11.36 Crore were realized.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Restructured Accelerated Power Development and Reform Programme (R-APDRP)

5.118 As part of the efforts to reduce technical and commercial losses,43 schemes have been sanctioned under Part-A of R-APDRP at a total project cost of □28832 Lakh. Out of this, □21440 lakh has been sanctioned as loan from Ministry of Power and the balance amount of □7394 lakh is to be met from Board's own fund. Part-A of R-APDRP includes IT applications for energy accounting & auditing, IT based consumer indexing, GIS mapping, Supervisory Control and Data Acquisition(SCADA)/Distribution Management System (DMS), metering of Distribution Transformers (DTRs) & feeders etc.

5.119 Part-B of the R-APDRP scheme involves works aimed at loss reduction so as to bring down the AT&C losses to a sustainable level of less than 15%. 42 out of 43 eligible schemes have been sanctioned by Ministry of Power for a total project cost of □87217 Lakh and the works are in progress. SCADA schemes of Thiruvananthapuram (□2899 lakh), Kochi (□2976 lakh) and Kozhikode (□2440 lakh) cities have been sanctioned for a total project cost of □8315 lakh.

5.120 The details of the financial and physical progress of implementation of Rajeev Gandhi Grameen Vydhutheekaran Yojana (RGGVY) are shown in the Appendix 5.34.

Projects in the Pipeline
Solar/Wind Power Projects

5.121 KSEB proposes to increase its own wind generation capacity by at least 100 MW. The existing land available with KSEB at various locations such as Kanjikode, Madakkathara, Pothencode, Idukki etc. would be explored for installing wind generators after studying the feasibility.
5.122 As per the renewable purchase obligation notified by Regulatory Commission, the solar power purchase obligation for distribution licensees is 0.25% of the total energy consumption for the year 2010-11 which will increase every year to reach 3% by 2022. KSEBL proposes to implement solar power plants at vacant lands available at the sites of existing substations, powerhouses, rooftops of Vydyuthi Bhavanams etc. and also in various government buildings.

Gas based power projects

5.123 To augment the power generation capacity of the State, a number of new natural gas based power plants are proposed by various agencies. One of the proposals under consideration is the 400 MW gas based power plant at Brahmapuram by KSEB in the land available adjacent to the existing diesel plant. Detailed feasibility report for the project is being prepared and various studies and preliminary works are in progress.

Coal based power projects

5.124 Government and KSEBL is planning to set up a coal based power project in the State for meeting the future additional requirement of power. Even though Ministry of Coal has de-allocated the Baitarni West coal block previously allocated to Kerala, it is expected that the coal block would be re-allocated to Kerala under the present coal block allocation process. The project is proposed to be set up in the 2000 acres of land available with Government at Cheemeni in Kasargod. The capacity of the power project could be up to 2400 MW depending on the availability of coal and land. Proposal for according sanction to KSEBL for setting up the power plant and for transfer of the land to KSEBL is under consideration of the Government.

Petcoke based power project at Kochi:

5.125 A 500 MW capacity power plant is proposed to be set up at Ambalamugal in Kochi in the land expected to be available from Fertilisers and Chemicals Travancore (FACT). Petcoke, which would be available from the refinery expansion project of Kochi Refinery, will be utilised as fuel in the power plant. Discussions are in progress with FACT for transfer of land and with Bharath Petroleum Corporation Limited (BPCL) for fuel supply for the project.

Innovation Fund and ESCOT(Energy Saving and Co-Ordination Team)

5.126 Aiming at research for developing viable solutions to address energy shortage in the State, Innovation fund has been provided to set up Energy Innovation Zone. The focus of this State aided project is to promote and implement innovative ideas. An amount of □700 lakh was provided in the Annual Plan 2015-16 as state share for Innovation fund and ESCOT. The projects for the year included Grid connected Solar Photo Voltaic installation in dams and reservoirs of KSEBL and other suitable locations, promotion of solar powered inverters with peak load shifters. Besides this, support was provided to the projects mooted through Energy Open Innovation Zone (EOIZ) at start up village.

Integrated Power Development Scheme (IPDS)

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.127 Integrated Power Development Scheme (IPDS) is a new program launched by Ministry of Power, Government of India for improving the distribution infrastructure of urban areas. The scheme covers works relating to strengthening and augmentation of sub-transmission & distribution network in the urban areas, metering of distribution transformers/feeders/consumers and IT enabling & strengthening in distribution. KSEBL has submitted proposals for 63 municipal towns in all the districts for a total amount of □59207 lakh. The ongoing R-APDRP scheme is subsumed under this scheme.

Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY)

5.128 This is a new program launched by Ministry of Power for improving the distribution infrastructure of rural areas and for ensuring 24x7 power supply to all rural households. The scheme covers works relating to strengthening and augmentation of sub-transmission & distribution network in the rural areas, feeder segregation works, metering of distribution transformers/feeders/consumers etc. The scheme will be implemented in all the districts. Ministry of Power has sanctioned projects worth □48292 lakh in the State. It is proposed to complete the works within a period of two years. The ongoing RGGVY scheme is subsumed under this scheme.

Agency for Non-conventional Energy and Rural Technology (ANERT)

5.129 Agency for Non-conventional Energy and Rural Technology (ANERT) is an autonomous body under the Power Department, Government of Kerala. ANERT is the nodal agency for the implementation and propagation of non-conventional sources of energy in the State.

5.130 The programmes taken up by ANERT includes solar photovoltaic programmes, solar thermal programmes, wind energy programmes, biogas programmes, improved chulha programmes, publicity and awareness programmes. The assistance from Ministry of New and Renewable Energy (MNRE), Government of India is also available for these schemes.

Achievements of ANERT

• ANERT has installed and commissioned 2459 family type bio gas plants under state scheme 2014-15. It is estimated that energy equivalent to 41199 LPG cylinder was saved during this period. Further 2938 improved chulhas have been installed under 2014-15 programme (1857 improved chulha to SC/ST &THS, 1081 under community models).
• During 2014-15,4303 evacuated tube collector type solar water heating systems of collector area 6454.5 m2 and 1078 flat plate collector based solar water heating systems of solar collector area 2156 m2 have been installed and subsidy given to 74 m2 ETC (Evacuated Tube Collector) based systems and 511.5 m2 FPC (Flat Plate Collector) based systems.
• During 2014-15, 3793 CFL/LED based solar lanterns have been distributed to BPL/SC/ST/Fishermen category beneficiaries and 3332 CFL/LED based lanterns distributed to General category
• 10000 Rooftop Solar Power Plant (Off Grid) Programme implemented by ANERT was recognised by 'AREAS' as most innovative programme implemented by a State Nodal Agency.
• ANERT had organised 22 Awareness Camps in the fourteen districts during the period. These camps mainly focused on the ongoing 'Solar Grid Connect ' programme. ANERT had also conducted two training programmes on Solar Photovoltaic systems.

Energy Management Centre-Kerala

5.131 Energy Management Centre (EMC), Kerala is an autonomous body under the Department of Power, Government of Kerala, devoted to the improvement of energy efficiency in the State, promotion of energy conservation and encouraging development of technologies related to energy through research, training, demonstration programmes and awareness creation.

Achievements of Energy Management Centre

• Energy conservation efforts in the State during the year 2014-15 saved 291 MU of electricity, 41233 MT of oil, 5920 MT of Coal and 57.163 MT of LPG.
• Under Smart Energy Programme 392 Schools were enrolled and 586 training/awareness programmes were organised for students/ teachers.
• In the Industrial Sector, 19 capacity building programmes on energy efficiency/ conservation were organized in different parts of the State.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

• EMC participated in 32 exhibitions across the State for promoting energy efficiency/ conservation.
• In order to promote energy conservation among domestic house-wives, EMC conducted 795 energy clinic programme throughout the State.
• 100 numbers of energy conservation programmes were organized among general public, including the promotion of star labelled products.
• Completed the evaluation of 11 energy audit reports and empanelled 9 new energy audit firms under mandatory energy audit scheme for HT/EHT consumers
• 70 numbers of 100W LED street light installed at Vellayambalam - Vazhuthacaud road
• Successfully completed the LED village programme at Nilambur Municipality
• EMC along with Electrical Inspectorate Department organised 10 district level training programme for 1223 electrical wire-men and supervisors on electrical safety and energy conservation.
• Through mandatory energy audit scheme, 3.3 MU of electricity saving was achieved through the implementation of audit report recommendations.
• 23 SHP projects with a cumulative installed capacity of 100 MW were allotted IPP/CPP investor sanction on competitive tender under BOOT scheme
• 49 pico hydel projects (52 KW) were installed at various parts of State, where there is no grid power, under MNRE support.
• EMC received the first prize under the category of State Designated Agency for energy conservation activities, from the Ministry of Power, Government of India. This is the 5th time EMC is receiving this prestigious award.
• EMC received the 7th India Power Award for the best efforts in energy efficiency and DSM from the Council of Power Utilities.
• EMC successfully completed the detailed project report for the safe disposal of CFL/Fluorescent lamps in Kerala
• EMC provided financial subsidy scheme for conducting energy audit in 10 PSUs
• EMC provided technical supports for promoting LED streetlight in Kerala through LSG Department

Department of Electrical Inspectorate

5.132 The Electrical Inspectorate is functioning under the Department of Power, Government of Kerala. Safety inspections are carried out and sanction for energisation for all HT/ EHT and other medium voltage installation in the State are issued by this department. Enquiry of all electrical accidents occurring in the State and forwarding the enquiry report to the Government and taking actions against responsible person/authority are also done by this Department.

Achievements of Electrical Inspectorate

5.133 The motto of Meter Testing and Standards Laboratory (MTSL) is to provide testing and calibration of various types of electrical equipment. At present calibration facilities is available for voltage, current, resistance, frequency, power, power factor and energy. The testing facilities include pre-commissioning tests for protection relays and instrument transformers. Also pre-commissioning tests are conducted for power transformers, cables and circuit breakers. All calibrations and tests are conducted as per national and international standards.

NABL Accredited Meter Testing and Standards Laboratory at Thiruvananthapuram

5.134 The Meter Testing and Standards Laboratory at Thiruvananthapuram attached to the Department is the only Laboratory in the State under the State Government which has got NABL (National Accreditation Board for Calibration and Testing laboratories) accreditation, for Electro Technical Calibration for the parameters AC & DC voltage and current, resistance, power & energy. A 3 phase Automatic Energy Meter Test Bench has been procured during the year 2010 – 2011. Now it is possible to calibrate 20 energy meters of different types at a time. The Meter Testing and Standards Laboratory, Thiruvananthapuram is the only lab in the State with this facility as per the Central Electricity Authority (Installation and operation of meters) Regulations, 2006.

• Service Quality Management Systems Certification by Bureau of Indian Standards as per I.S.15700: 2005

5.135 Electrical Inspectorate has achieved the prestigious ‘SEVOTHAM CERTIFICATION’ (SQMS Certification) as per I.S. 15700 : 2005 from the Bureau of Indian Standards and is the first department in the country to bag this certification.

Status of Electrical Installation in the State

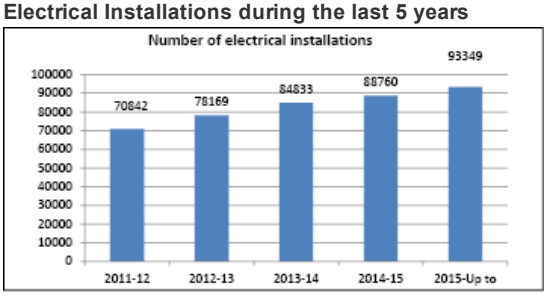
5.136 Number of safety inspections conducted by the Department as per the Central Electricity Authority (measures relating to safety and electric supply) regulation,2010 has increased considerably during the last five years. Electrical installations including EHT, HT, multi storeyed buildings, lift escalator, X Ray, CT scanner, neon sign, DG set, permanent and temporary cinema theatres are inspected by this Department and issued safety certificates thereafter. The number of

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

electrical installations during last 5 years is shown in Figure 5.14

Fig 5.14

Electrical Installations during the last 5 years



Source: Department of Electrical Inspectorate

Kerala State Electricity Regulatory Commission (KSERC)

5.137 The Kerala State Electricity Regulatory Commission (KSERC), a statutory organization of quasi-judicial nature, was established in the year 2002. The Commission has been taking all efforts to bring in an effective and efficient regulatory process in the power Sector in the state.

Important activities of the KSERC during 2014-15

5.138 In 2014-15, the Commission held 56 hearings for the disposal of the petitions filed before the Commission. In addition, the Commission held a number of routine internal meetings to transact business relating to administrative matters, framing and finalization of regulations, admission of petitions, ARR & ERC (Agregate Revenue Requirement and Expected Revenue from Charges) of the licensees and other matter related to the day to day functioning of the Commission.

5.139 During 2014-15, Commission has received 36 petitions including 11 petitions related to the ARR & ERC and truing up of the KSEB and other licensees. The Commission has issued orders on 38 petitions, including pending petitions. During 2015, upto September, the Commission received 16 petitions including ARR & ERC and Truing up petitions. The Commission held 39 hearings and issued orders on 19 petitions during the period 2015-16 (April to September).

Box 5.12

Best Practice: Green initiative at CIAL

Cochin International Airport Limited (CIAL) has taken an initiative to become a truly 'Green Airport' to fulfill the commitment of protecting and sustaining our natural resources for future generations. CIAL has set up a large 12MWp solar plant with 46,150 solar panels spread over an area of forty five acres adjacent to the Cargo Terminal. The contract was awarded to Bosch Ltd. during February 2015 at a total cost of □62.00 Crores (□5.16 Crores per MW). The work has been completed within a short span of less than six months.

The major components of the plant include the following;

1. 46,154 PV solar panels of 260Wp capacity
2. 80 numbers of string monitoring boxes
3. 10 numbers of Central Inverters of 1.2 MW each
4. 5 numbers of 2MVA Transformers
5. Weather monitoring station including SCADA system

After the commissioning of the 12 MWp solar plant on 18th August 2015, Cochin International Airport has become the world's first airport to be completely powered by solar energy - as its entire power requirement of about 50,000 units per day, will be met through solar energy generated from these plants.

CIAL will produce over 18 million units of power from 'sun' annually – the power, equivalent to feed 10,000 homes for one year, which will result in a cost saving of □12 crores per annum to Cochin Airport. This will also help to reduce the harmful carbon emissions by more than 3 lakh metric tons over the next 25 years, which is equivalent to planting 50,000 acres of trees or not driving 750 million miles. As on 1st of December 2015 (within a period of 105 days since commissioning), the 12 MW solar power plant has generated over 50 lakh units of 'green' energy with a saving of approximately □3.50 crores to CIAL.

The green initiatives of CIAL is a model which can be replicated in other areas of the State as well as the country.

Source: CIAL

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Section 3

Urban Infrastructure

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.140 Considering the special features of urbanisation and the geographical peculiarities of Kerala, the process of urbanisation in the State requires special attention while moulding various urban infrastructure development programmes. The scattered pattern of urbanisation and high density of population of the State are a big challenge for the creation of urban infrastructure. Urban infrastructure challenges range from suitable and effective waste management system, city sanitation plans, establishment and enhancement of public comfort facilities, implementation/improvement of sewerage schemes, implementation/improvement of storm water drainage scheme, to effective parking policy and modern mechanised parking system and beautification of cities and creation of green cities and non motorised urban conveyance. Rapid urbanisation and intense commercial development in cities has necessitated the creation of new mass transport system in cities and improvement of existing transportation system. Implementation of Metro Rail system in Kochi and Light Metros in Thiruvananthapuram and Kozhikode are some initiatives in that direction. The major urban development programmes being implemented in the State are given below.

1. Kerala Sustainable Urban Development Project (KSUDP)

5.141 The Kerala Sustainable Urban Development Project is an externally aided project funded by the Asian Development Bank for addressing the challenges of urbanisation. KSUDP deals with the improvement, upgradation and expansion of existing urban infrastructure facilities and basic urban environmental services in five Municipal Corporations of the State viz; Thiruvananthapuram, Kollam, Kochi, Thrissur and Kozhikode. The objectives of the project are to improve urban environment and living conditions of the people living in the five cities. It focuses on improvement of urban infrastructure (water supply, sewage, solid waste management, urban drainage and roads, poverty alleviation, improvement of slums and livelihood promotion and capacity building). During 2014-15 an amount of □150 crore was budgeted and the expenditure incurred was □62.38 crore. In addition to the above the other projects being undertaken through KSUDP are establishment of package septage treatment plants, nagarajothi project and urban 2020 scheme.

5.142 KSUDP is entrusted with the establishment of package septage treatment plants in all districts of Kerala. In the 1st phase three plants are being constructed, two at Ernakulam and one at Palakkad. The work was begun in March 2014 at an estimated cost of □4.15 crore for each plant. Among them the package septage treatment plant at Brahmapuram Kochi has already been completed. The works inrespect of the package of sepetage treatment plant at Cochin Port Trust is ongoing. So far an amount of □553.48 lakh has been transferred to KSUDP and out of which□536.50 lakh has been expended.

5.143 The scheme “NagaraJothi” project is the initiative of Government of Kerala to replace the existing street lights by energy efficient LED lighting system. The scheme is a joint venture of KSEB and LSG Department (Urban Affairs). The objectives of the project are to instal latest LED technology to replace the conventional lamps, enhancing the quality of street lighting, saving in energy bills and reducing expenditure on operation and maintenance. The scheme is envisaged in such a way that the capital investments required for the implementation of the scheme has to be reimbursed by the concerned urban local body to the implementing agency on PPP annuity mode within a maximum span of 7 years. Finalisation of tender formalities of 37 municipalities which submitted their consent to implement the project are going on.

5.144 Urban 2020 is a scheme initiated by the Local Self Government Department to assist the urban local bodies of the State technically and financially for preparing a shelf of detailed project reports to address their urban infrastructure issues. KSUDP was designated as the State level nodal agency of the scheme and 31 consultancy firms were empanelled for the preparation of DPRs. Presently, 128 project ideas submitted by 48 urban local bodies at an estimated cost of □4100 crore are undergoing review. The sectors covered under the projects are water, waste water, urban renewal, urban transport and solid waste management. So far □30 crore has been earmarked from the State share of Jawaharlal Nehru National Urban Renewal Mission and the expenditure reported as on 31 -10-2015 is □2.06 crore. Details of major projects included under KSUDP are given in Appendix 5.35.

2.Capital Region Development Project

5.145 The Capital Region Development Project (CRDP) was introduced in 2002 to improve the quality of life of people in the capital city by strengthening and improving the critical infrastructure like roads, water supply, solid waste management, surface water drainage, city beautification and bus terminals. The activities pertaining to CRDP phase I have been implemented by Kerala Sustainable Urban Development Project (KSUDP) through various agencies like Kerala Water

Authority, TRIDA/Kerala Road Fund Board and KSRTC. During 2014-15 an amount of □26.87 crore was released from budget and the entire amount was utilised for different activities under CRDP. Details of projects undertaken by Capital Region Development Programme are given in Appendix 5.36.

3. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

5.146 Government of India adopted a mission mode approach for implementation of urban infrastructure improvement programme in a time bound manner in selected cities by launching the Jawaharlal Nehru National Urban Renewal Mission in 2005. Admissible components included in the mission were redevelopment of inner city areas, water supply and sanitation, sewerage and solid waste management, construction and improvement of drains/storm water drains, urban transport including roads, highways/express ways/metro projects, parking lots/spaces on Public Private Partnership basis, development of heritage areas, prevention and rehabilitation of soil erosion/land slides only in case of special category states where such problems are common and preservation of water bodies. The two cities selected as Mission Cities from the State under the 1st phase of JnNURM were Thiruvananthapuram and Kochi. There were 15 sanctioned projects under the urban infrastructure and governance component of Jawaharlal Nehru National Urban Renewal Mission. Among the 15 projects, the bus projects of Thiruvananthapuram and Kochi alone were completed before the mission period. 3 projects were dropped and 1 was foreclosed due to public protest. The remaining projects are included in the spillover work. The funding pattern of Thiruvananthapuram Corporation is Government of India 80%, Government of Kerala 10%, ULB 10% and that of Kochi Corporation is Government of India 50%, Government of Kerala 30% and ULB 20%. Details of projects approved for implementation under JnNURM are given in Appendix 5.37. On expiry of the mission period of the 1st phase of JnNURM on 31-03-14, the Ministry of Urban Development, Government of India announced sanction of new projects under the transition phase for a period of 3 years w.e.f. 1-04-2014. Under the transition phase, sanction was accorded for the procurement of 400 buses for improving urban transportation in the various cities of the State excluding Thiruvananthapuram and Kochi.

4. Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT)

5.147 The Urban Infrastructure Development Scheme for Small and Medium Towns (UIDSSMT) is a sub-scheme of Jawaharlal Nehru National Urban Renewal Mission launched by Government of India during the year 2005-06 to improve the infrastructure in small and medium towns in the country in a planned manner. In Kerala, 61 urban local bodies (excluding Thiruvananthapuram and Kochi Corporations, Thrippunithura and Kalamasseri Municipalities) are eligible for getting financial assistance under the scheme. The funding pattern is 80:20 shared by the Central and State Governments. The State share (20%) would be equally borne (ie.10% each) by the State Government and the participating urban local self governments. Under the scheme 25 projects were approved by Government of India for the 22 municipalities of the State. This includes 13 water supply projects, 11 solid waste management projects and one sewerage project. Out of the above projects, 2 water supply projects have been completed, 9 solid waste management schemes, sewage schemes were foreclosed due to non availability of land and public protest. At present 10 water supply schemes and 2 solid waste management schemes are prograsing as spillover projects. So far cumulative expenditure reported as on 31-10-2015 is □390.74 crore. In the transition phase of UIDSSMT for a period of 3 years w.e.f 1-04-2014, six projects worth □184.47 crore were sanctioned and one project having an approved project cost of □14.66 crore was released by Government of India. During 2014-15 an amount of □184.55 crore was budgeted and the amount expended was □33.27 crore. Details of projects approved under UIDSSMT are given in Appendix 5.38.

5. Basic Services to the Urban Poor (BSUP)

5.148 Basic Services to the Urban Poor (BSUP) is a sub-component of Jawaharlal Nehru National Urban Renewal Mission (JnNURM) and implemented through Kudumbashree. The duration of the mission is seven years beginning 2005-06. Only two corporations in the state, Thiruvananthapuram and Kochi come under the scheme. The objective of the scheme is to provide basic services and civic amenities with a view to provide utilities to urban poor. A City Development Plan (CDP) would be required before the city can access mission fund. The CDP of Thiruvananthapuram includes five adjacent Grama Panchayats in addition to the Corporation area. 13 adjacent Panchayats and Thripunithara, Kalamassery Municipalities are included in the CDP of Kochi. The total allocation under BSUP to the State during the mission period is □250 crore. Projects are sanctioned based on the detailed project report submitted by the mission cities. The Central share will be released in four instalments (25% each) based on submission of utilization certificate for 70% expenditure of the funds released. The fund sharing pattern for Thiruvananthapuram is 80:20 by Central and State Governments. The State share is borne equally by the State and Local Governments. For Kochi Corporation the sharing pattern is 50:50 by Central and State Governments. Out of 50% of State Share, 30% would be born by the State Government and the balance amount after deducting beneficiary share would be borne by the respective urban local bodies. Four phases of projects worth □208.01 crores and 3 phases of projects worth □135.66 crore was sanctioned for Thiruvananthapuram and Kochi Corporations respectively. Under this scheme, out of 23,577 houses sanctioned, 19060 have been started and 16312 completed. The total expenditure incurred for the project so far is □226.13 crore. Details of projects sanctioned under BSUP for the two

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Corporations are given in Appendix 5.39. The physical achievements of the scheme are summarized in Appendix 5.40.

6. Rajeev Awas Yojana

5.149 The scheme for slum dwellers and urban poor under Jawaharlal Nehru National Urban Renewal Mission envisages a 'slum free India" through encouraging States/Union territories to tackle the problem of slums in a definite manner. Under the scheme each State would prepare a State Slum Free Plan of Action (POA). The State POA would include the cities identified by the State and intended to be covered under RAY in five years. Government of India had given sanction to prepare Slum Free City Plan of Action of five Corporations (Thiruvananthapuram, Kollam, Kochi, Thrissur and Kozhikode) of Kerala. At present the main work of Kudumbasree under RAY is the preparation of slum free city plan by conducting detailed MIS based socio economic survey and GIS based geo-referenced mapping including total survey. The total project cost approved in 5 urban local bodies is □160.76 crore and the expenditure incurred during the year is □4.60 crore. During 2014-15, 85 houses were completed out of 320 houses started. Projects sanctioned under RAY are given in Appendix 5.41.

7. Integrated Housing & Slum Development Programme (IHSDP)

5.150 Integrated Housing and Slums Development Programme (IHSDP) was launched during 2006-07 aimied at the holistic development of slums in urban areas. The basic objective of the scheme was to strive for holistic slum development with a healthy environment by providing adequate shelter and basic infrastructure facilities to the slum dwellers of the identified urban areas. IHSDP is to be implemented in all towns and cities identified as per 2001 Census cities, except cities/towns covered under JnNURM. (Thiruvananthapuram and Kochi Corporations). The components for assistance under IHSDP include all slum development/ improvement/relocation projects including new house construction/improvement of houses and infrastructural facilities. The financing pattern of the scheme is in the ratio of 80:20 by Central and State Governments. Beneficiary share (12% for General and 10% for SC/ST) is stipulated for projects for individual beneficiaries like housing. Out of 20% State share, the balance fund after deducting beneficiary share will be borne equally by the urban local body and State (Maximum state share is 10% of the total project cost). 53 projects of urban local bodies have been sanctioned by Government of India at a total project cost of □273.32 crore. During 2014-15, 759 of the 1076 houses initiated were completed and incurred an expenditure of □57.71 crore. The total expenditure incurred for the project so far is □141.83 crore. During 2015-16, Government of India has informed that the project will be discontinued from 31-03-2015 and later Government of India has extended the project completion period up to 31-03-2017. The achievements of the scheme are summarized in Appendix 5.42. Details of projects approved by Government of India and fund released to 53 urban local bodies are given in Appendix 5.43.

8. National Urban Livelihood Mission

5.151 The Government of India has launched the National Urban Livelihood Mission (NULM) by replacing the previous scheme SJSRY for reducing poverty and vulnerability of the urban poor. The mission aims to reduce poverty and vulnerability of the urban poor households by enabling them to access gainful self employment and skilled wage employment opportunities. Mobilisation of the urban poor by strengthening SHG's is one of the major components of the Programme, for which there is provision for revolving fund and the formation of SHG's. So far 2960 SHG's has been funded under this programme. In addition to this there is provision for self employment of urban poor; in which soft loan to the tune of □10 lakh is being given to the urban group. Also there is provision for employment through skill development and provision for rehabilitation of street vendors. During 2014-15, an amount of □418.33 lakh has been expended for the scheme. The financial and physical achievements and the district wise thrift and credit operation under NULM as on 30-09-2015 are shown in Appendix 5.44, 5.45 and 5.46 respectively.

9. Ayyankali Urban Employment Guarantee Scheme

5.152 Ayyankali Urban Employment Guarantee Scheme was started during 2009-10. It is intended to address the unemployment and under-employment problems in the urban society. The objective of the scheme is to enhance livelihood security in urban areas by providing at least 100 days of guaranteed wage employment to every household whose adult members are willing to do unskilled manual labour. Creation of durable community assets and strengthening the livelihood resource base of the urban poor is also envisaged in the scheme. The scheme is structured on the pattern of Mahatma Gandhi National Rural Employment Guarantee Scheme. While providing employment, priority shall be given to women. At least 50% of the beneficiaries shall be women who have registered and requested for work under the scheme. During 2014-15, an amount of □748.3 lakh has been expended for the scheme and created 3,61,100 work days.

10.Development Authorities in Urban Infrastructure

(i) Thiruvananthapuram Development Authority (TRIDA)

5.153 Thiruvananthapuram Development Authority (TRIDA) was constituted for the imple-mentation of projects for planned

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

and scientific development of Thiruvananthapuram city and adjoining areas. The jurisdiction of TRIDA extends to Thiruvananthapuram Corporation covering an area of 293.65 sq. kms. TRIDA has been appointed as the nodal agency for the land acquisition related works as a part of the Capital Region Development Programme. Under this programme, 12 roads totaling a distance of 42.6 Kms have been taken up for improvements. The land acquisition for widening of roads has been completed and the land was handed over to the Kerala Road Fund Board (KRFB) for road widening works. Details of major projects undertaken by TRIDA are given in Appendix 5.47.

(ii) Greater Cochin Development Authority (GCDA)

5.154 Greater Cochin Development Authority (GCDA) is an autonomous body constituted under the Local Self Government Department of the Government of Kerala. The GCDA aims at formulating and implementing various urban development schemes and projects for the welfare of the general public in the area coming under its jurisdiction. The jurisdiction of this authority covers an area of 732 sq.kms consisting of Cochin Corporation, 6 Municipalities and 33 Grama Panchayaths. The development schemes launched by the authority are implementation of town planning schemes, research studies related to urban development and Infrastructure development schemes viz. housing, roads, bridges, flyover, commercial infrastructure development, neighbourhood development projects, environmental improvement projects, construction of stadiums and sports complexes etc. Government have recently revived the Development Authorities of Thrissur, Kozhikode and Kollam. The details of major programmes under taken by GCDA are given in Appendix 5.48.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Section 4

Communication Infrastructure

Postal Network of Kerala

5.155 Indian postal system is the largest in the World with a network of about 1.55 lakh Post Offices, of which 1.39 lakh (89.78 %) are in rural areas and 15826 (10.22%) in urban areas of the country. The postal network consists of four categories of post offices namely, Head Post Offices, Sub Post Offices, Extra Departmental Sub Post Offices and Extra Departmental Branch Post Offices.

5.156 Kerala Postal circle includes the entire State of Kerala, the Union Territory of Lakshadweep and Mahe under the Union Territory of Puducherry. Kerala is the only postal circle where every village has at least one post office. As on 31.09.2015, there are 5068 post offices in the circle, of which 1508 are Departmental post offices and 3560 Extra Departmental post offices. On an average each post office in the State serves an area of 7.69 Sq.km and a population of 6606 as against the national average of 21.21 sq.km and a population of 7175 people. Around 83 percent of the post offices are located in rural areas. Major Activities of Kerala Postal Circle are given in Box 5.13. More details are available in Appendices 5.49, 5.50, 5.51 and 5.52.

Box 5.13
Major Activities of Kerala Postal Circle during 2014-15 up to 30.09. 2015

• All the 1508 departmental post offices in the Circle are computerised
• Introduction of the facility to register the complaints on the web and track the progress till it is finally settled
• New e-based and value added services introduced
• Introduction of International Speed Post or EMS - a facility available from India to 99 countries
• World Net Express Service (WNX) is introduced to connect 220 countries
• Two new parcel products of India “Express Parcel” and “Business Parcel” introduced
• Introduction of Logistics Post Air to the customers for getting end to end services on the logistics value for faster transmission /delivery of their consignments
• 94 Post Offices (51 HOs and 43 SOs) in the State have been shifted to the Core Banking System
• Introduction of ‘My Stamp” – any individual can get their personalized stamps with their photograph on it.

• Tie up with Kerala State Government for Corporate e-post
i. Tie up with Commissioner for Entrance Exam for selling Application forms under Retail post
ii. Tie up with Director, LBS Centre for Science & Technology
iii. Kerala Water Authority under e-payment
iv. BSNL under e-payment

v. Tie up with Local Self Government for tax collection
vi. Tie up with Kerala Books and Publication Society (KBPS) for distribution of text books to schools throughout the State for the academic year 2015-16
vii. Sale of Penta Mobile through Post Offices (e-payment)

Source: Chief Post Master General

5.157 As a result of these initiatives on the part of Indian Post, Post Offices in Kerala have improved their functioning as the hub for every citizen. Every citizen now has access to this hub which is close to his/her doorstep.

Telecommunications

5.158 Telecommunication is one of the prime support services needed for rapid growth and modernisation of the economy. The telecommunication service in India has improved significantly since independence. Kerala Telecom circles serve the whole of Kerala State, the Union Territory of Lakshadweep and part of Union Territory of Puducherry (Mahe). The circle has 11 major Secondary Switching Areas (SSAs) and one minor SSA of Lakshadweep. The status of telecom sector in Kerala is given in Box 5.14

Box 5.14
Status of Telecom Sector in Kerala as on 31.03.2014

No. of Telephone Exchanges	1269
Equipped Capacity	10742162
Working Connections	8969375
Average No. of Telephone per Sq.Km	230
Telephone Density	267 per 000 population
Percentage market share	28.03

Source: BSNL

5.159 All the Panchayats and all the villages in the Circle have been provided with public telephones. There is wide network of over 28915 Public Telephones for easy access to the average public and it has become very popular among the people. The State has a modern telecom network spanning its length and breadth and comprises state-of-the-art digital switches interconnected by reliable Optical Fibre/Microwaves/Satellite media. The State is served by 1294 automatic exchanges all of which are Digital electronic.

5.160 BSNL has launched WIMAX (Wireless Broadband Service) service with mobility for the first time in the State with 456 towers covering all the SSA Head Quarters. As part of Digital India Project (NOFN) 1130 internet connections (978 Grama panchayats and 152 Block Offices) have been provided. 87524 landline connections converted with New Generation switch which is a packet based network able to provide telecommunication services, multiple Broadband enabled transport technologies.

5.161 Public Grievance Cell is working at Circle level with '12727' and District level with '12728' other than computerized 198 faults repair services. Call Centre with '1500 & 1501' for Landline, 1502 for CDMA/WIMAX, 1503 for GSM Mobile services and 1504 for BB Services is fully functioning in Kerala. Call Centre for Mobile service is '9447024365'. On line Public Grievance Cell is also fully functioning in Kerala Circle SSA –wise & Circle - wise. District wise details of telephone network during 2014-15 is given in Appendix 5.53

5.162 The major achievements of BSNL as on 31.03.2015 are given in the Box 5.15

Box 5.15
The major achievements of BSNL as on 31.03.2015

• The total number of Telephone connections working is around 89.69 lakh (Landline 24.84 lakh, WLL 2 lakh and Mobile 62.84 lakh)
• There are 657129 Broadband Customers are available in the Circle and Broadband service is 'on demand' in almost all Exchanges
• 21677.512 RKM OF cable has been laid
• 28318 WIMAX connections provided

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

- 4954 FTTH connections (Internet connection with Fibre Home) provided
- 844 Colleges are covered under National Mission for Education Project (NME) and about 14734 broadband connections have been provided
- BB connectivity to 1565 Akshaya Centres are provided
- BB Kiosks have been provided at 1102 locations under USOF
- 15 WiFi Hotspots (Ernakulam-10, Calicut -4, and Malappuram -1)
- Provided 872 VPNoBB connections to Grama Panchayats and 1100 Village offices in twelve districts
- Provided about 935 BB connections to Kudumbasree Offices and 472 connections to NREGS
- Provided about 652 Combined VPN connections to Excise Department and 566 connections to Kerala Police
- 4490 Broad band connections provided under IT @ School Project
- 61 leased circuits provided to Registration Department and 59 to KWA
- Provided 451 MPLSVPN circuits to KSEB

Source: BSNL

Section 5

Information Technology

5.163 Information and Communication Technology is one of the key sectors powering growth of the State economy. Government of Kerala acknowledges the critical importance of ICT in the economic progress of the State and thus revised the Information Technology Policy for the State in 2012. The vision of the State's policy is to "plan, develop, and market the State as the most preferred IT/ITeS investment/business destination in India". The State Government supports the sector by way of single window clearance, developing Kerala "IT Brand", incentivising investment and making direct investment. Kerala Perspective Plan 2030 aims at developing State's ICT sector on par with top countries in the world in terms of ICT development.

5.164 Export of registered IT / ITeS units in Software Technology Parks in India (STPI) grew by 8.67 percent during 2013-14 compared to previous year. In value terms, export of STPI registered units increased from □251497 crore in 2012-13 to □2,73,313 crore in 2013-14. The value of export of the sector from the State is estimated at □ 2665.12 crore during 2013-14 which is 0.96 percent of all India. Karnataka ranked first among Indian States by achieving an export value of □103720.16 crore (37.95%) during 2013-14 followed by Maharashtra with □55419.79 crore (20.48%), Andhra Pradesh with □36752.95 crore(13.45%) and Tamil Nadu □29880.20 crore (10.93%). Kerala ranks 8th in the export by STPI registered IT and ITeS units.

5.165 Kerala State Information Technology Mission (KSITM), Indian Institute for Information Technology and Management – Kerala (IIITM-K), Technopark, Infopark, Cyberpark, Kerala State Information Technology Infrastructure Ltd. (KSITIL), International Centre for Free and Open Source Software (ICFOSS) and Kerala Start-up Mission are the major agencies involved in the implementation of Information Technology programmes in the State under the Information Technology Department.

5.166 The State Government envisages expansion of IT industry in the State in a manner that benefits all the districts in the State. A hub and spoke model has been planned. Thiruvananthapuram (Techno Park), Kochi (Info Park) and Kozhikode (Cyber Park) will act as hubs and the remaining districts will be the spokes.
5.167 Government of Kerala has provided an amount of □374.57 crore during 2015-16, for the development of core IT infrastructure, ITeS, e-governance activities and incentivising investment in the sector, which is 19.54 percent higher than the previous year. The Plan outlay for Information Technology during 2014-15 was 34.72% higher than that in 2013-14. The details of Plan Outlay and Expenditure are given in Table 5.11

Table 5.11
Plan Outlay and Expenditure
(□ lakh)

Sl. No.	Agency	Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16
		Outlay	Expenditure	Outlay	Expenditure	Outlay
1	KSITM	6853.00	3208.00	9192.00	5448.34	9706.00

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

2	IIITM-K & ICFOSS	1500.00	1374.00	1800.00	1725.00	2050.00
3	Technopark, Infopark and Cyberpark	12500.00	14212.00	13445.00	14892.32	13600.00
4	KSITIL	2405.00	1754.00	2600.00	0.00	4000.00
5	Knowledge City			1.00	0.00	1.00
6	Technology Innovation Zone			2500.00	1500.00	5000.00
7	Youth Entrepreneurship			1795.00	85.52	3000.00
8	Implementation of priority schemes under Kerala Perspective Plan 2030					100.00
	Total	23258.00	20548.00	31333.00	23651.18	37457.00

Source: State Planning Board

Kerala State Information Technology Mission (KSITM)

5.168 Kerala State Information Technology Mission (KSITM) is an autonomous nodal IT implementation agency of the Department of Information Technology, Government of Kerala which provides managerial and technical support to various initiatives of the Department, since 1999. KSITM performs diverse roles including e-governance and development of human resources, disseminating information across citizens and Government, interfacing between Government and industry, bridging digital divide, investor interactions and achieving speed and transparency in governance.

5.169 The major objectives of KSITM are interfacing between the Government and the industry, interacting with potential investors, strengthening the IT/ITeS industry base, holding promotional campaigns for hard selling the State, ICT dissemination to bridge the digital divide, e-governance, developing human resources for IT and ITeS and advising the Government on policy matters.

Box 5.16
Major Programmes of KSITM

- Construction of Centre for e-Governance
- Computer Emergency Response Team-Kerala(CERT Kerala)
- Citizens Call Centre
- Department WAN
- E-district
- e-Government Procurement (e-GP)
- Establishment of Virtual IT cadre
- E-Office
- Friends
- Information and Data Exchange Advanced System(IDEAS)
- Investment Promotion Management Cell(IPMC)
- IPV4 to IPV6 Migration
- Kerala State Spatial Data Infrastructure (KSDI)
- Kerala State Wide Area Network (KSWAN)
- Mobile Governance
- PG Diploma in e-governance projects
- Secretariat Record Digitization
- Secretariat Wide Area Network (SECWAN)
- Service Plus
- SPARK

Source: KSITM

E-governance Programmes of KSITM

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

5.170 In the present world, E-governance is an important tool for good governance by achieving transparency, reliability, and accountability in rendering services. Kerala has been a frontrunner in e-governance and mobile governance by promoting and developing core infrastructure and e-literacy programmes.

5.171 E-governance initiatives under KSITM include e-office, Service plus, FRIENDS, Akshaya, SEMT, Citizen Call Centre, SPARK, e-procurement etc. E-Office aims to conduct office procedures electronically thereby transforming government offices to paperless offices and bringing out the benefits of digital communication. So far it has been implemented in Secretariat and in 21 departments either fully or partially. The Government has decided to roll out e-Office to Districts and Directorates.

5.172 Service Plus is a software designed and developed by NIC, under Department of Electronics and Information Technology, Government of India. It is a generic metadata based frame work that can be used to configure and launch e-services quickly using its flexible workflow and provision for dynamic design of application forms.

5.173 Core infrastructure for e-governance in the State consists of Kerala State wide Area Net Work (KSWAN), Secretariat Wide area Net work, State Data Centre and State Service Delivery Gate way. KSWAN is backbone of the State Information Infrastructure (SII), connecting Thiruvananthapuram, Kochi and Kozhikode, extending to 14 districts and 152 Blocks of the State. The network will also connect 1500 offices of Government Departments through wireless and a larger number through leased lines and LAN.

Box 5.17
E- Governance Initiatives of KSITM

Services to Departments
• E-office
• Service Plus
• Kerala Government Gateway
• Mobile Service Delivery Gateway
Infrastructure
• Kerala State Wide Area Network (KSWAN)
• State Data Centre (SDC)
• Citizen Service Centre(Akshaya and FRIENDS)
• Video Conferencing
Service Delivery Platform
• Mobile Service Gateway
• State Service Delivery Gateway (SSDG)
• E-district
• Investment and Promotion Management Cell (IPMC)
• Integrated Call Centre
• State Resident Data Hub
Common/Core Application
• Transparency oriented (e-Procurement, Digital Document File System & Information and Data Exchange Advanced System)
• Efficiency oriented (SPARK and Common Mail Service)
• Skill oriented(PG Diploma in e-governance, Women Resource Centre and SPEED IT)
• Information oriented(Kerala Spatial Data Infrastructure)
• Security initiative(CERT- Kerala)
• Digital Inclusiveness Project (Insight, Citizen Email for Government Reach, Malayalam Computing)

Source: KSITM

5.174 Akshaya was launched on 18th November 2002 to bridge the digital divide and it works on public private participation mode. In the initial stage the objective of the project was to make at least one person in a family e-literate. Gradually focus of Akshaya was shifted to citizen service centric mode. At present, 2418 Akshaya Centers functioning across the State give employment to 7254 persons. Selection of Akshaya entrepreneurs in 360 locations is in progress. The total turnover of Akshaya centres in the State was □34.31 crore in 2013-14 which increased to □38.57 crore in 2014-15. Total turnover of Akshaya Centers for 2015-16(as on September 2015) was □32.71 crores. Details of Akshaya are given in Appendix 5.54

Box 5.18
Major Achievements of KSITM through Akshaya

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

- There are 2418 Akshaya centres.
- As per the survey records of Department of Electronics and Information Technology, Kerala is ranked 3rd in Governmental e-transactions with 40 crore transactions and contribution of Akshaya to reach this magical number is credit worthy.
- Each Akshaya entrepreneur is now able to employ a minimum of 3 to 4 staff members in their centre.
- E-district project – more than 1.8 crore applications submitted and revenue certificates generated.
- Played a very significant role in Digital India project.
- Roll out UID enrolment across the State.
- 1.6 crore citizens enrolled under UID through Akshaya Centres.
- Entered into new area of banking and insurance services.
- Started around 917 number of banking kiosk.
- Implemented online food licensing and registering system.
- Setup Akshaya help desk at the venue of Chief Minister's Mass Contact Programme.
- Registered about 10 lakh family under Aam Admi Bima Yojana

Source: KSITM

Indian Institute of Information Technology and Management – Kerala (IIITM-K)

5.175 The Indian Institute of Information Technology and Management – Kerala was set up in 2000 as a premier institution of excellence in Science, Technology and Management. It emphasises quality education to students and develops professionals and leaders of high calibre of entrepreneurship and social responsibility. The institute focuses on education, research, development and training in applied information technology and management.

Box 5.19
Academic Programs currently offered at IIITM-K

- M.Phil in Ecological Informatics
- M.Phil in Computer Science
- Master of Science in Information Technology
- Master of Science in Geo-Informatics
- Master of Science in Computational Science
- Master of Science in Computer Science and Information Security
- Post Graduate Diploma in e-Governance
- Doctoral Research

5.176 The MPhil and MSc degrees are awarded by Cochin University of Science and Technology (CUSAT) and post graduate diploma by Directorate of Technical Education, Government of Kerala. The major projects completed are biometric embedded system security and internet of embedded things, software engineering and software project management unit and library and information service. Construction of a full-fledged residential academic campus for IIITM-K as per UGC/AICTE norms is in progress.

Technopark

5.177 Electronics Technology Parks – Kerala, popularly known as Technopark was setup under the auspicious of Government of Kerala as an autonomous body to create global standard infrastructure and to provide total support required for development of high technology industries. It was formally dedicated to the nation on 18th November 1995. Since then Technopark has been growing steadily both in size and employees strength. With the development of Phase I, Phase II and Phase III Technopark will become one of the largest IT Parks in India with 334 acres of land, 7.2 million sq.ft built up area and 47,100 IT/ITeS professionals. Technopark through its companies currently provides direct employment to 47,100 IT employees and offers an indirect employment for another 1,65,000. Technopark has charted out an ambitious

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

target of creating 56000 new jobs by 2020. Details of physical achievements and growth of Technopark are given in Appendix 5.55 and 5.56.

Box 5.20

Technopark's Contribution to the State Economy

- Annual production from the Campus □12000 Cr.
- Annual export from the Campus □5000 Cr.
- 20% growth expected every year
- The largest employment base campus in Kerala.
- Stimulates growth of secondary services like retail, hospitality, transportation and financial services in the city and suburbs.
- With the launch of Technocity projects in 424 acres of land, Kazhakkuttam – Kovalam (NH66) will become the first IT corridor in Kerala.
- Will become one of the largest IT Parks in India.

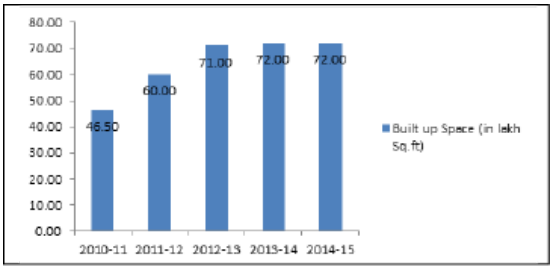
Source: Technopark

Growth of Built up Space in Technopark

5.178 The built up space in the Technopark has increased from 46.5 lakh sq.ft in 2010-11 to 60 lakh sq feet in 2011-12 , 71 lakh sq. ft in 2012-13, 72 lakh sq. ft. in 2013-14 and remained unchanged in 2014-15 as shown in Figure 5.15.

Fig 5.15

Growth of Built-up Space in Technopark from 2010-11 to 2014-15



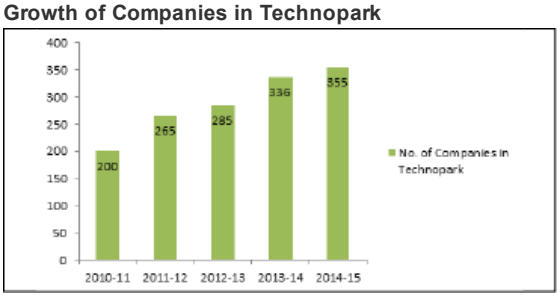
Source: Technopark

Companies in Technopark

5.179 There has been an increase in the number of the companies working in Technopark for the last five years. In 2010-11 there were 200 companies in Technopark. It increased to 265 in 2011-12, 285 in 2012-13, 336 in 2013-14 and to 355 in 2014-15. Gradual growth of number of companies in Technopark from 2010 to 2015 is exhibited in Figure 5.16

Fig 5.16

Growth of Companies in Technopark



Source: Technopark

Growth of Export from Technopark

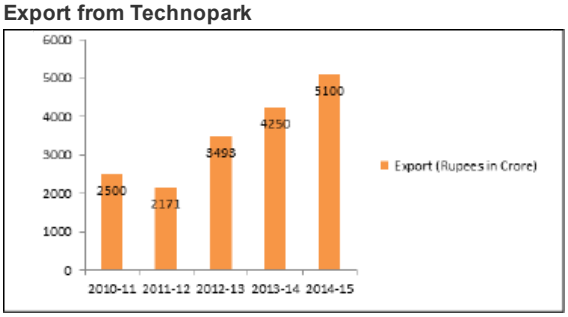
5.180 The exports from Technopark decreased from □2500 Crore in 2010-11 to □2171 Crore in 2011-12 and then increased and reached □5100 Crore in 2014-15. It grew by 20 percent in 2014-15 as compared to 2013-14. The trend in export from Technopark during the last five years is depicted in Figure 5.17

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Fig 5.17
Export from Technopark

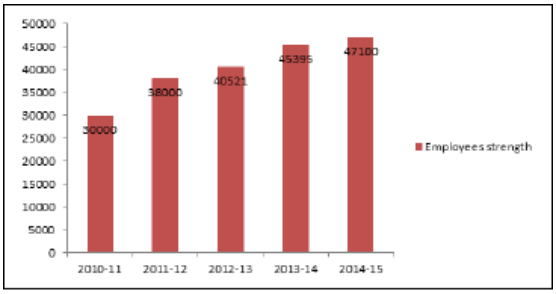


Source: Technopark

Growth of Employment in Technopark

5.181 The growth of Technopark can also be analysed in terms of employment generated during the last five years. The employment generated increased from 30000 in 2010-11 to 47100 in 2014-15. The growth of employment generation for the last five years is shown in Figure 5.18

Fig 5.18
Growth of Employment in Technopark from 2010-11 to 2014-15



Source: Technopark

Infopark

5.182 Infopark, Kochi is the second largest IT hub in Kerala with spokes at Cherthala and Thrissur and spread over 321.86 acres of land and 5.8 million sq.ft built up area. At present, 237 companies are working in Infopark. It provides direct employment to 26500 professionals. As on March 2015, □2000 crores worth of investment has been made in the area. Export turnover of Infopark for the financial year 2014-15 was □3150 Cr.
At present Infopark has the following IT Parks

• Infopark Kochi – Phase I - It is spread over 100.86 acres of land with 83.22 acres in SEZ and 17.64 acre in non SEZ area and about 3.5 mn. sq.ft of built up IT space and associated auxiliary systems. The construction of nearly 10 million sq.ft is under progress. This includes 1.3 million sq.ft space nearly completed by TCS in 15.72 acres of land leased to them. At present 110 companies are working in Infopark Kochi .
• Infopark Kochi – Phase II – An extent of 125 acres has been acquired and is in the possession of Infopark. 102.7 acres of land are in SEZ area.
• Infopark, Thrissur - It is located at Koratty in an extent of 30 acres of land. 18.5 acres are in SEZ area. The first phase of development consisting of renovation of 8 buildings having a built up area of 45000 sq.ft and modifying them as IT buildings has been completed. 29 companies are working in Infopark Thrissur.
• Infopark, Cherthala – It is spread over 66 acres of land with 60 acres in SEZ area. Construction of 2.4 lakh sq.ft IT building at Infopark Cherthala SEZ has been fully completed along with basic infrastructure such as 110 KV substation, internal roads, sewage treatment plant, water storage tanks, boundary walls etc. There are 27 IT companies functioning in the park.

5.183 The physical achievements of Infopark are furnished in Appendix 5.57

Cyberpark

5.184 Cyberpark is established to bridge the IT infrastructure gap in the area from Kochi to Kasaragod along the west coast based on a hub and spoke model. The Cyberpark, Kozhikode acts as the hub and the parks in Kannur and Kasaragod are

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

the spokes for the IT and infrastructure development of the northern region of the State. The purpose of Cyberpark is to provide a friendly, cost effective and top of the line infrastructure to the IT/ITeS investors.

5.185 Cyberpark is the largest IT park in the northern region of Kerala with 44.38 acres of land in Kozhikode, 25 acres in Kannur and 100 acres in Kasaragod. Out of this, 115 acres of land is in SEZ area and 14.38 acres in non SEZ area. Now 4 companies are working in the SEZ area which provides direct employment to 49 IT professionals. The physical achievements of Cyberpark are given in Appendix 5.58.

Kerala State Information Technology Infrastructure Ltd (KSITIL)

5.186 Kerala State Information Technology Infrastructure Limited (KSITIL) is the apex public limited company formed under the Government of Kerala IT Policy to provide the most robust, modern, environmental friendly and efficient IT Infrastructure adaptable to current needs.

5.187 The company leverages the valuable land assets owned by the Government and through viable financial models generates enough funds and utilizes the same for building up of IT Infrastructure in the State in a Public Private Participation model.

5.188 The business model for the company is to acquire land, create value addition to it providing basic infrastructure like electricity, water, road and compound wall, obtain SEZ status and such other Government approvals that may be required and then allot land to private developers for development of either IT SEZ or IT Parks.

5.189 Major projects implemented by KSITIL are Kozhikode IT Park, Kannur IT Park, Kasaragod IT Park, Kollam IT Park, Koratty IT Park, Cherthala IT Park, Infocity Pala, IIIT-Kerala, Malappuram IT Park and Technolodges. There are 131 companies working in these IT parks and gives direct employment to 1523 professionals.

International Centre for Free and Open Source Software (ICFOSS)

5.190 Government of Kerala established ICFOSS as an international centre in collaboration with Free Software Organisations in India and abroad to promote development and application of free software and free knowledge. It is a nodal agency in all matters relating to free and open source software including consultancy, research and development, academics, studies and service, training, publishing, certification, international co-operation and collaboration.

Box 5.21
Major Programmes of ICFOSS

- Start-up acceleration for FOSS enterprises.
- E-Governance and other FOSS studies.
- Localisation of accounting and other utility software.
- ICT support to Micro, Small and Medium Enterprises
- Technical workshops and training programmes
- FOSS certification
- Capacity building and skill up gradation for engineering / technology students.
- Malayalam computing.
- Research programme

Source: ICFOSS

Kerala Startup Mission (KSUM)

5.191 Kerala Start up Mission (KSUM) formerly known as 'Technopark Technology Business Incubator' is India's first successful Non Academic Business Incubator. It started operation during 2007.

5.192 The objective of the Mission is to identify and develop entrepreneurial talents among youth and students in Kerala, address the technology based entrepreneurship development requirements in the traditional sectors of Kerala, build appropriate training programmes suitable for Kerala's socio-economic culture, identify market niche for technology products and services, interfacing and networking among academic, R&D institutions, industries and financial institutions,

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

establishing a platform for speedy commercialization of the technologies developed in the institutes to reach the end-users.

5.193 Government of Kerala has introduced Youth Entrepreneurship Development Programme which includes key initiatives like Raspberry Pi Programme, Startup Box Campaign, Startup Boot camp, Start up Leadership Academy and Training programme, International Entrepreneurial Exchange Programme, FABLAB Programme, Entrepreneurship Driving Programme, Performance Linked Scheme and Patent Support Scheme. In addition to the above Government is creating a Technology Innovation Zone at KINFRA Hi Tech Park, Kalamassery with multiple sectors of incubators under a single umbrella.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Section 6

Sports Infrastructure

5.194 Universal appeal has led to sports gaining recognition as a simple, low-cost and effective medium for checking key developmental goals for children and youth. It can contribute significantly in promoting health, improving academic outcomes, fostering gender equity, enhancing social inclusion and promoting employment.

5.195 The role of Government is to create infrastructure and promote capacity building for broad-basing sports as well as for achieving excellence in various competitive events at the national and international levels. The schemes of the Department are geared towards achieving these objectives. Major institutions coming under the sector are Kerala State Sports Council, Kerala State Youth Welfare Board, Kerala State Bharat Scouts & Guides, Directorate of Sports and Youth Affairs, Directorate of Public Instruction and Directorate of Collegiate Education

5.196 The 35th National Games of India hosted by Kerala commenced on 31st January 2015 and continued till February 14th across seven districts in the State. It is the second time that Kerala is hosting the National Games after it hosted the 27th National Games in 1987. 33 sports disciplines were included in 35th National Games. The 15-day event competition was for a total of 405 gold medals, 406 silver medals and 523 bronze medals. The 35th National Games (Jan 31-Feb 14) which cost □611 crore was held at 30 venues across seven districts of the State.

Box 5.22
National Games Achievements

In the medal tally, Kerala emerged as the top state with 162 (54 Gold, 48 Silver, 60 Bronze) medals. Government has taken a policy decision to provide employment to all medal winners. 9000 Sportspersons participated in the 35th National Games for 414 competitive sports items. The grandeur of the event may be gauged by comparing it with the 2010 Common Wealth Games where the participation was of 6081 sports persons and there were only 272 items.

Infrastructure Upgradation as part of 35th National Games

5.197 As a part of conducting 35th National Games an amount of □245.44 crore has been expended for new constructions such as Karyavattom Stadium, shooting range, squash court, tennis complex, Thiruvananthapuram etc. and an amount of □105.32 (renovation cost only) crore has been expended for renovation and construction of Jimmy George Indoor Stadium, CSN Stadium, University Stadium, LBS Stadium etc. The major infrastructure upgradation work as part of the 35th National Games are as follows

• 4 Stadiums were awarded with International quality certification

a) Chandrasekharan Nair Stadium, Thiruvananthapuram (Synthetic Turf)
b) Kozhikode Medical College Stadium (Synthetic Turf)
c) Thrissur Corporation Stadium (Football Ground)
d) Kollam Hockey Stadium (Astro Turf)

• Sports Equipment of international quality worth □30cr purchased for 35th National Games can be used for training of Sports Persons.

• Security and fire safety equipment worth □ 3 crore have been allotted to Police and Fire Force after the Games.

• A well-furnished Prefab Games Village was set up at Menamkulam. 405 prefab houses, 30 toilet service blocks, 1250 air

conditioners 3000 cots, 1500 almirahs etc. used in the Games Village have been allotted to various Government and quasi Government departments after the games.

• 'AMMU' drama which was enacted across the state and 'Run Kerala Run' a massive run with participation of one third of the population of the State emerged as a grand success. Both the events have got certification from LIMCA BOOK OF RECORDS, the first as a National Record and the second as a World Record.

5.198 Major physical achievements of the 35th National Games are given in the Appendix 5.59

Box 5.23
A leap in Sports Infrastructure- Kariavattom Green Field Stadium

The Kariavattom Green Field Stadium spread over 37 acres with a seating capacity of 50,000 and built at a cost of Rs. 161 crore is Kerala's 'first world- class stadium'. This stadium is the first-of-its-kind in the country to be built under the PPP model-DBOT-Design, Build, Operate and Transfer mode. The stadium is located on 30.5 acres and 6.5 acres has been earmarked for a 1,000-vehicle parking lot. The opening and closing ceremonies of the 35th National Games was held in the Kariavattom Green Field Stadium.

The Stadium is divided into four zones. While the North Zone is reserved for cricket the East is for football. Indoor facilities include two squash and volleyball courts, a basketball court and a table tennis facility. The Stadium features a modern Olympic size swimming pool in addition to a children's pool. Space has been set aside for retailers, gymnasium, convention centre and dormitories. Bothe day and night events can be held at the stadium which also has a club house with restaurants, VIP area, corporate boxes and locker rooms. The stadium has been constructed in adherence to the FIFA and International Cricket Council (ICC) regulations. A unique feature of the stadium is a roof covering 50 per cent of the area as opposed to the standard 30 per cent is most stadiums. The roofing of the stadium is done with tensile fabric which offers UV protection and has anti-fungal properties.

Infrastructure Financing and Leasing Services Limited (IL&FS) had won the bid with the lowest NPV (Net Present Value) quote for □141.19 Cr. IL&FS has formed a special purpose vehicle, Kariavattom Sports Facilities Limited (KSFL), for the construction of the stadium. The concession period is for 15 years including construction period of 2 years from the commencement date. Annuity payment shall be made on annual basis by National Games Secretariat(NGS), over 13 structured annuities.

Developing multipurpose synthetic play spaces

5.199 Maintenance of playground and sports facilities was being done through various institutions through grants made available under the schemes. The grants involved facilitated only small improvements to existing sports facilities which has no significant impact on the overall development of quality play areas. Therefore the scheme has been reviewed by the Department and is modified to develop available grounds as play spaces ideally for multi-sport usage including volleyball, basketball, tennis and other games using modern synthetic surfaces. Government has taken measures for the development of multi-sport play spaces at identified locations to develop good quality play areas all over the State.

Medical Assistance

5.200 Rajiv Gandhi Sports Medicine Centre established in 1992 is a pioneering venture of Government of Kerala and is the only one of its kind in the State promoting excellence in sports by lending scientific and prompt medical assistance and rehabilitation therapy to sports persons. In the Financial Year 2014-15, an anti-doping programme was conducted to develop awareness among the sports persons, and summer coaching camps were conducted for the promotion of cycling and swimming. Combination therapy, laser therapy units, fitness equipment etc. were installed at the Rajiv Gandhi Sports Medicine Centre. □2 lakh has been sanctioned for establishing Health Club in Vanithavedi, Government Secretariat. An amount of □6 lakh has been spent for the implementation of the scheme "community outreach programme"to create awareness among people about the importance of sports and physical fitness.

Box 5.24
Youth Empowerment through Keralotsvam

Cultural and arts competitions are conducted from Grama Panchayat level to State level for the rural youth between the ages of 15 to 35. Financial assistance is given to the local bodies for those celebrations- □15000 for Gram Panchayat, □30000 for Block panchayat, □30000 for Municipalities, □30000 for Corporations, □200000 for district level and □7000000 for state level competitions.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Section 7

Project Structuring and Financing

5.201 Investment in infrastructure has been a matter of priority for the State government. The investment needs for the development of various infrastructure projects in the State is huge and the finance required is beyond the resources available with the Government. Infrastructure financing is therefore becoming difficult due to deficit in resources. In Kerala, capital outlay as a percentage of GSDP has shown an increasing trend since 2006-07.However, there is a widening gap between the trend in the State vis-à-vis All states capital outlay affecting adversely the GSDP growth of the State. As the resources required for infrastructure development cannot be met by public funds alone, alternate resources for financing infrastructure needs to be explored. Development of roads, ports and urban infrastructure projects are now increasingly being taken up on Public Private Partnership (PPP) mode. The Thiruvananthapuram City Road Improvement project on PPP (Annuity) mode, Vizhinjam project on DBFOT mode and Kariavattom Green Field Stadium on DBOT mode are some of the PPP projects in the State. Project structuring is crucial in attracting more funds from the private sector. Flow of private funds would depend on a conducive legal and administrative environment in the State.

5.202 In order to address the resource constraint in the infrastructure sector, the Project Financing Cell (PFC) was constituted in State Planning Board in 2012 to help in structuring the projects for attracting financial resources from private sector. The objective of PFC includes examining the possibility of extra budgetary resources, including Public Private Partnership for all projects of the State. PFC is also mandated to examine the technical as well as financial feasibility of all projects above an out lay of □5 Cr. Since its inception, PFC has been appraising project proposals and providing the structuring framework for investment mobilization from extra budgetary resources. Some of the proposals initiated by PFC to create an enabling environment for PPP in the State and to carry forward further projects in PPP mode include preparation of Draft Kerala Infrastructure Development Bill and Draft PPP policy, formation of PPP teams in Government Departments/Agencies and framing of Infrastructure Master Plan. PFC also provides information to Government regarding the new policy announcements and schemes to enable the departments to avail the assistance offered under various Central government programmes and policies.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Sensitization to Stakeholders

5.203 Project Financing Cell has been conducting several PPP sensitization programmes for district level officers and seminars on Extra Budgetary Resources for LSGIs. So far sixteen such programmes have been conducted in various districts. A seminar was arranged by PFC on Real Estate Investment Trust (REIT) and Infrastructure Investment Trust (INVIT) for imparting knowledge on understanding the new SEBI guidelines for promoting investment in Kerala.

Development of Model Projects

5.204 Project Financing Cell has been undertaking development of model projects which can be taken up on PPP mode. Development of a Model Energy Efficient Village is one of them. The study has been conducted in Perumbalam Grama Panchayat in Alappuzha district in association with Energy Management Centre (EMC). The draft report has been submitted by EMC. Some of the other model projects intended to be developed by PFC include Ladies short stay hostel and Multi storied car parking facility in Medical Colleges.

Number of PPP projects in different States

5.205 A comparison of number of PPP projects in major States is shown below.

Table 5.12
Government Infrastructure Projects (PPP) as on 31/12/2015

Sl.No	State	Number of Projects *	Total project cost (in crores)
1.	Andhra Pradesh	72	31181.59
2.	Bihar	22	15416.32
3.	Chhattisgarh	10	12774.00
4.	Delhi(UT)	17	3809.48
5.	Gujarat	96	71328.02
6.	Haryana	25	35072.89
7.	Himachal Pradesh	39	14158.46

8.	Jammu&Kashmir	6	11434.02
9.	Karnataka	136	58097.00
10.	Kerala	33	16883.62
11.	Madhyapradesh	155	34359.89
12.	Maharashtra	193	85597.78
13.	Multi State/Centre	49	67997.63
14.	Odisha	32	26309.21
15.	Punjab	39	6489.50
16.	Rajasthan	87	17825.70
17.	Sikkim	23	5887.97
18.	Tamil Nadu	75	4037654
19.	Telangana	16	16372.09
20.	Uttar Pradesh	40	100214.53
21.	West Bengal	36	19690.01

Status: Projects which are under construction, completed, terminated or operational

Source: InfrastructureIndia.gov.in, Department of Economic Affairs, Ministry of Finance, Government of India

Box 5.25

National Investment and Infrastructure Fund

In the Union Budget 2015-16, creation of a National Investment and Infrastructure Fund (NIIF) was announced with an aim to find resources to ensure an annual flow of □20,000 crore to it. This was intended to enable the Trust to raise debt, and in turn, invest as equity, in infrastructure finance companies such as the Indian Railway Finance Corporation (IRFC) and National Housing Bank (NHB). The infrastructure companies can then leverage this extra equity, many folds.

The objective of NIIF is to maximize economic impact mainly through infrastructure development in commercially viable projects. The NIIF will be established as one or more Alternative Investment Funds (AIF) under the SEBI Regulations.

The initial authorized corpus of NIIF would be □20,000 cr, which may be raised from time to time, as decided by the Ministry of Finance. Government's contribution in the corpus will be 49% in each entity set up as an AIF and entire share will be contributed by the Government directly. This share will neither be increased beyond nor allowed to fall below 49%. NIIF would solicit equity participation from strategic anchor partners. The contribution of the Government of India will be virtually seen as a sovereign fund and is expected to attract overseas sovereign/quasi-sovereign/multilateral/bilateral investors to co-invest in it. Central Public Sector enterprises, domestic pension and provident funds and National Small Savings Fund may also provide funds to the NIIF. It may also utilize the proceeds of a monetized land and other assets of PSU's for infrastructure development.

To oversee the activities of NIIF, a Governing Council has been constituted with the mandate for approving the guidelines for investment of Trust property/Corpus of NIIF and parameters for appointment and performance of investment manager/advisors.

Section 8

Housing

5.206 Kerala had formulated a policy of 'Adequate and Affordable Housing for All' by providing standardized housing services to Economically Weaker Sections(EWS), Low Income Group(LIG) and Middle Income Group MIG) categories by co-ordinating various activities to ensure high living standard, healthy environment and basic infrastructure development. The State aims to undertake the construction of 12 lakh houses by the end of 12th Plan period, of which around 60% is for weaker sections of the society.

5.207 The State Govt. has announced three new schemes to provide affordable housing for 1.75 lakh families and to fill the gap between demand and supply of houses in the State. One major focus of Kerala Budget 2015 is to ensure 'Housing for All 'and □482 crore has been provided for this. Following schemes are included in 'Housing for All'.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

1 Residential flats up to four floors will be constructed for the poor. District Housing Societies will be formed to take up bankable schemes for the purchase of land and raise funds from banks with Govt. guarantee.
2 An integrated bank loan linked scheme to build 75,000 houses for landless BPL & Low Income Group families. It will be implemented in collaboration with the leading banks of the State.
3 A special housing scheme of Govt to provide one house in each ward of every local body in the State. 22,000 houses will be constructed with 50% state share fund and 50%fund from local bodies.

5.208 'Total Housing Mission' has been constituted as an initiative of State Planning Board for the Weaker, Marginalized and Vulnerable Sections for the effective implementations of various housing schemes so that the beneficiaries can identify the right scheme. It channelizes institutional finance from various sources to establish an alternate mode of operation of programmes on a large scale and to examine the possibilities of channelizing housing funds including loan, grant etc through Nationalized Banks and to provide houses to all housesless people. It includes an expert group to study the diverse aspects of the subject to formulate a project report of undertaking 'Total Housing Mission' in the State.

5.209 Meetings of the Expert Group were held, three sub groups were constituted and its two meetings were also convened. Various information/ secondary data on local body wise number of houseless and landless have been collected from the Directorate of Panchayats and Department of Urban Affairs. Compilation of data has almost been completed. Moreover, guidelines, pattern of funding, subsidy norms etc. of the various housing schemes have also been obtained through the implementing departments. In the wake of new technology options and inventions introduced in the housing sector in Kerala, this study will analyse the possibility of introducing low cost housing materials while constructing houses under different welfare schemes. Final report of the Expert Group is expected to be submitted in two months.

Box 5.26
Central Housing Policy

Central Govt has acknowledged the relevance of housing issues in the country and promises to provide affordable housing to citizens especially Economically Weaker Sections (EWS) and Low Income Group (LIG)s by the year 2022. As per the studies conducted by the Ministry of Rural Development and the Ministry of Housing and Urban Poverty Alleviation, almost a quarter of Indian households lack adequate housing. India needs 20 million housing units in urban areas and 45 million units in rural areas.

The present Government has created an enabling framework for participatory action from public, private, community and individual sector and encouraging rental housing for the poorest of the poor. In the Union Budget 2015 Central Govt envisages to build 2 crore houses in Urban areas and 4 crore houses in Rural areas of India.

Agencies in Housing Sector

5.210 Several agencies which are implementing housing schemes in the state include Kerala State Housing Board, Kerala State Co-operative Housing Federation, Kerala State Development Corporation for SC/ST, SC/ST Development Departments, Rural Development Department including Kudumbashree etc. Non–governmental agencies such as COSTFORD and Habitat Technology group, Co-operative societies and Corporations such as Kerala State Co-operative Housing federation, Kerala Police Housing & Construction Corporation, etc have also helped in constructing houses. Several NGOs also have contributed significantly. Other Departments like Labour, Fisheries, Sainik Welfare, Urban Affairs, etc are also implementing various affordable housing schemes for poor labourers and Economically Weaker Sections. These agencies / departments have provided assistance to construct around 1,49,193 houses during the period from 2012-13 to 2015-16 up to 30/9/2015. A concerted and co-ordinated effort is needed among the various agencies engaged in the housing sector. Achievements under major housing schemes by different housing agencies in Kerala is given in Appendix 5.60 These agencies have implemented various schemes during 2014-15 as given in Box 5.27.

Box 5.27
Housing schemes and implementing agencies

Agencies	Schemes /Activities	Achievements during 2014-15
	Innovative Housing Scheme (to provide flats on rental basis to the poor migrant workers in urban	100 flats have been constructed and the construction of 112 flats are in progress at various urban centres like Thiruvananthapuram, Thrissur, Ernakulam and Kozhikode.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

	areas)	
Kerala State HousingBoard	Grihasree Housing Scheme	In this scheme financial assistance is given as Government subsidy at the rate of □2 lakh/house for the construction of houses in EWS/LIG category in their own land with the support of Voluntary Organizations. □10.50 crore utilized towards capital subsidy for 525 houses in 2013-14 and 10.49 crore utilized for 709 beneficiaries in 2014-15
	Saphalyam Housing Scheme (flats for BPL category)	The scheme envisages setting up of support services and infrastructure facilities for the construction of flats for BPL category. (unit cost of 280 sq.ft will be □3.50 lakh -□2lakh Government subsidy, □1 lakh loan from HUDCO, □25000 voluntary contribution from NGO and □25000 beneficiary contribution. During 2013-14 48 flats have been completed and construction of 168 flats is progressing. Administrative Sanction has been received for 96 flats during 2014-15.
Kerala State Co-operative Housing Federation	Provide financing facilities for the affiliated primary co-operative housing societies(PCHS) for the construction of houses, repair/extension.	During 2014-15 up to 30/9/2014, an amount of□8456.56 lakh has been disbursed for constructing 2554 housing units and in 2015-16 upto September2015 □3309.03lakh disbursed for 980 houses among EWS, LIG, MIG and others. Houses assisted and amount disbursed by Kerala State Co-Operative Housing Federation given inAppendix 5.61
Fisheries Dept.	Integrated Development of Fishing Villages (IDFV)2014-15	Envisages construction of 1800 houses in Marine and inland sector of kerala at a cost of □2akh per house.
	Housing Scheme 2015-16 under BIF&HDF (Basic Infrastructure Facilities and Human Development) of Fisher Folk.	During 2015-16 Government is implementing this Housing Scheme to provide safe home for 4900 fishermen families in the Fishing Villages of 9 Marine Districts.
Scheduled Tribe Development Dept.	Houses to Houseless	This scheme aims to provide financial support to houseless Scheduled Tribes for construction/completion/repair of houses. The amount provided in this scheme at the rate □3.50 lakh / house for new houses in four installments and maximum of □1 lakh for repairing houses. (See chapter 4 Section 6 for details)
Scheduled Caste Development Dept.	Land to landless families for construction of houses.	During 2015-16 the number of Scheduled caste families to be covered is approximately 4000.
	House to Houseless, completion of partially constructed houses, Improvement of dilapidated houses	Providing financial assistance for construction of new houses or flats for houseless SC families. and for the completion of houses sanctioned in the previous two years. Maximum of □1 lakh per household will be provided for improving dilapidated houses. (See chapter 4 Section 6 for details)
Sainik Welfare Housing Dept.	Providing house building grant to disabled Ex-servicemen before completion of terms of engagement, recruits, war widows and widows of Jawans died in harness	The beneficiaries annual income limit is □150000/- and the present rate of grant is □100000/-. The income limit is not applicable to the war widows and war disabled Ex-servicemen.
Urban Affairs Dept.	Ashraya, VAMBAY, etc.	During 2009-10 to 2014-15(Sept 14)9117 houses have been sanctioned under EMS Housing Scheme, 452houses under 'Ashraya' scheme, 4412 houses under Plan fund scheme and 884 houses under VAMBAY through various local bodies.

Source: Housing Commisisonerate, Thiruvananthapuram

Centrally Sponsored Schemes tapped by the State Government

5.211 The Government of India has targeted social housing as one of its focus areas and has given special attention to the needs of the slum dwellers and housing for the weaker sections. Inorder to stimulate housing and urban development in

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

the country Government of India has come out with the following major policy initiatives.

• Working Women's Hostels (WWH):- The Scheme that aims to provide safe and affordable accommodation for working women is being implemented by Kerala State Housing Board by availing 50% of construction cost as Central Govt Grant and 50% State Government share. Kerala State Housing Board has completed four projects at Muttom, Kakkanad,Gandhinagar and Pullazhy. Ongoing WWH projects are at NCC Nagar, Edapally, Chalakudy and Mulamkunnathukavu.

• Indira Awas Yojana (IAY):-IAY is implemented through Local Self Government Institutions to help rural BPL houseless families in the construction of houses and upgradation of existing 'kutcha' houses to 'pucca' houses.

• Housing Schemes under JNNURM:- The JNNURM was launched by the Central Government in 2005 with two sub missions Basic Services for Urban Poor (BSUP) and Integrated Housing and Slum Development Programme (IHSDP) for improving housing of Urban poor. The financing pattern of IHSDP is 80-20 by Central and State Governments. There are 53 IHSDP projects running in 45 cities/ towns of Kerala.

5.212 Interest rates on housing loan of different financial institutions is given in Appendix 5.62 and details of home loans by various banks is given in Appendix 5.63

Box 5.28
Similar Housing Schemes in Other South Indian States

• Tamil Nadu
In 'Vision 2023' policy the Govt. envisages the promotion of affordable housing for everycitizen of Tamil Nadu by constructing 2.5 million houses for EWS also in the next 11 years. Major implementing agencies are Tamil Nadu Housing Board, Tamil Nadu Slum Clearance Board, Housing Co-op societies, Commissionerate of Town and Country Planning and Chennai Metropolitan Development Authority.

• Karnataka
The policy aims at housing for socially and economically weaker sections. Three organisations under Housing Dept. viz. Rajiv Gandhi Rural Housing Corporation Ltd., Karnataka Housing Board, Karnataka Slum Development Board- promote cost effective environment friendly innovative technologies in the field of housing and design houses for special groups like widows, leprosy cured, HIV affected, Devadasis, tribals, etc.

• Andhra Pradesh
Affordable housing scheme is included in the policy of the Govt. 'Rajiv Swargruha' is oneof the major schemes implemented by Andhra Pradesh Rajiv Swargruha Corporation Ltd. Andhra Pradesh Housing Board is also involved in housing for weaker sections. Andhra Pradesh State Housing Coporation(APSHC) mobilize loans from various financial institutions for implementing housing programmes.

Section 9

Information and Publicity

5.213 In Kerala, the Department of Information and Public Relations is the nodal department involved in effective dissemination of Government policies, programmes and achievements. The Department facilitates feedback from the public, and ensures a healthy relationship between the Government and the public by acting as a meaningful link between various stakeholders.

5.214 Two autonomous institutions, namely, Kerala Media Academy and Centre for Development of Imaging Technology (C-DIT), working under this Department, undertake the administrative, technical and promotional affairs of the public and private sector with the help of advanced technologies in the field of visual communication, journalism, etc. The details of the schemes and programmes undertaken by the Department are summarized below.

Sutharyakeralam

5.215 This flagship programme of the Department is a live weekly complaint redressal forum where the Hon'ble Chief Minister addresses the grievances of common people especially the poor.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations
Top
Other Chapters

Video Publicity

5.216 The Department releases video news clippings to various television and web channels from different offices. In 2014-15, the Department documented the sitting of the Fourteenth Finance Commission and Planning Board lecture series, distributed 4500 visual news to channels and website through clip mail service and prepared visuals for weekly production of 'Priyakeralam' television programme.

Production of Video Documentaries

5.217 This involves production and broadcasting of various video magazine programmes through electronic media. "Navakeralam" in Doordarshan, "Janapadham" radio programme in AIR, weekly video news magazine, "Priyakeralam" in Doordharsan, and "Ponnayiram" documentary as part of the 3rd anniversary of the Government were telecast in various channels.

Modernization of Tagore Theatre

5.218 The renovation and developmental activities of the Tagore Centenary Hall, Vazhuthacaud, Thiruvananthapuram into a multipurpose cultural centre for facilitating various cultural and entertainment activities was completed and opened to public.

Interstate Public Relations

5.219 Conducting special press conferences of Chief Ministers and other media related public relations activities in metro cities to highlight the developmental activities of States comes under interstate public relations activities of the Department. A trade fare showcasing Kerala culture and products was conducted at Mumbai in March, 2015.

Special PR Campaigns

5.220 Special PR campaigns for popularizing Government initiatives and programmes in the rural areas of the State were undertaken as follows.

• Conducted State level inauguration of 1000 days celebration of the Government in Thiruvananthapuram.
• Conducted Nehru's 125th birth anniversary celebration in all districts.
• Malayalam day celebration organized with various programmes.
• Produced and telecast a documentary on the developments in the health sector in connection with inauguration of Idukki Medical College.

Video Wall Network

5.221 LED display boards (video walls) were erected at Thiruvananthapuram, Kottayam, Thrissur, Malappuram, Kozhikkode and Kannur district headquarters for disseminating information on developmental and welfare programmes of the Government.

Kerala Art and Cultural Centre at New Delhi

5.222 Kerala art and cultural centre at New Delhi was set up to propagate the rich tradition of the art, culture and literature of the state. As part of this, a fiesta of different arts from Kerala was conducted at Kerala House premises in New Delhi in March, 2015.

Integrated Development News Grid

5.223 For the timely dissemination of local level development news, a separate news portal was set up under the News Grid project. In 2014-15, the portal was redesigned by adding new tools of communication.

Media Academy

5.224 Kerala Media Academy is an institution under Government of Kerala to conduct media related courses. Documentary shooting of Victers channel of the Department of Education which was started in Kozhikkode, Malappuram and Kannur districts was a major achievement.

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Centre for Development of Imaging Technology (C-DIT)

5.225 C-DIT established in 1988 is an autonomous research and training institute in the area of imaging technology. Following are the achievements of C-DIT in 2014-15.

• 2000 technicians in the State were provided training as part of technician training programme on solar photovoltaic systems.
• Developed nearly 2000 learning objects which will be accessible to students in computers, tablets and smart phones in connection with ICT enabled education.
• Played key role in the 3rd phase of Hon'ble Chief Minister's Mass Contact Programme.

Outlook

Infrastructure development has been recognized as a critical factor for the effective functioning of the economy. Recognizing the importance of infrastructure, the State has during the last four years given a thrust to specialized major projects like the Kochi Metro, Vizhinjam Port and Kannur Air Port. These projects are expected to bring about major transformation in the State economy. Further to ensure smooth progress of projects the Government has earmarked a lump sum amount for infrastructure development projects. This will ensure that projects which are progressing are not constrained by lack of funds. Though a push has been given to promote infrastructure growth, challenges persist in terms of the emerging infrastructure and urban infrastructure in the State. To cater to the growing urban population adequate facilities in terms of water supply, drainage, sanitations and waste management needs to be provided. A holistic approach is required and a Kerala State Spatial Strategy needs to be framed within the overall perspective of KPP 2030. Similarly, improving the power scenario in the State is imperative. The State needs to explore the full potential of Hydro Electric generation and Renewable Energy. Adequate focus also needs to be given on using energy efficient lighting. Feasibility of innovative approaches like floating solar power plants may be explored. ICT is one of the main pillars of Knowledge based Economy. The Government has been promoting increasing use of ICT across all sectors. The State needs to focus on improving its e-readiness and making its e-Governance process more inclusive. To improve the infrastructure in the State more efforts are required to attract Private Sector participation. A conducive framework needs to be evolved in the State.

Top

Transport
Water Transport
Energy
Generation
Transmission
Distribution
ANERT
Urban Infrastructure
Communication Infrastructure
Information Technology
Sports
Housing
Information & Public Relations

Top

Other Chapters

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Chapter 6

EXTERNAL SECTOR

Introduction

Kerala economy has always been more open than the Indian economy. A much higher portion of its produce had external market as its destination and a sizable part of its consumption came from outside. The last four decades have also seen a sizable proportion of its labour force exploring the globe for employment and the last two decades have seen large number of labourers from other States of India entering Kerala in search of work. The growing remittance flow into the Kerala economy- the ratio of remittances to GSDP rising from 0.12 in the early 1990s to 0.22 in the early 2010s- has been one of the engines of growth of the economy. The last two decades have seen tourism bloom in Kerala. Currently, the contribution of tourism to the Kerala economy is over 10 per cent equalling that of agriculture. Thus, the trends in external trade, migration and tourism have a significant impact on the economy of Kerala.

Section 1

External trade

India's share in global exports and imports increased from 0.8 per cent and 1.0 per cent respectively in 2004 to 1.7 per cent and 2.5 per cent in 2013. Its ranking in terms of leading exporters and importers improved from 30 and 23 in 2004 to 19 and 12 respectively in 2013. While India's total merchandise trade as a proportion of Gross Domestic Product (GDP) increased from 29.0 per cent in 2004-05 to 41.8 per cent in 2013-14, India's exports as a proportion of GDP increased from 12.1 per cent to 17.0 per cent during the same period.

6.2 As the commercial gateway of Kerala, external trade operations in the State is mainly conducted through Cochin Port. Important items of trade include pepper, cashew, coir and coir products, tea, cardamom, ginger, spices and spices oil and marine products. The total traffic handled by the Port during 2014-15 recorded an increase of 3.4 per cent to reach 215.95

lakh MT as against 208.86 lakh MT, in2013-14. Exports which showed an increase of 10.85 per cent to become 42.50 lakh MT in 2013-14 declined by 4.52 per cent and reached 40.58 lakh MT in 2014-15. Imports during the period increased to 175.37 lakh MT from 166.36 lakh MT in 2013-14.While exports in quantitative terms declined by 4.51 per cent, the value decreased by 4.9 per cent during the period 2014-15 (see Table 6.1).

Table – 6.1
Cargo Handled at Cochin Port during 2010-11 to 2014-15 (In Lakh MT)

Traffic	Export					Import				
	2010-11	2011-12	2012-13	2013-14	2014-15	2010-11	2011-12	2012-13	2013-14	2014-15
1	2	3	4	5	6	7	8	9	10	11
Coastal	12.04	14.86	14.05	17.18	16.48	48.21	51.74	52.12	60.63	52.15
Foreign	22.00	28.25	24.29	25.32	24.10	96.47	106.06	107.99	105.73	123.22
Total	34.04	43.11	38.34	42.50	40.58	144.68	157.80	160.11	166.36	175.37

Source: Cochin Port Trust

Trade
Non-Resident Keralites (NRKs)
Tourism
Top
Other Chapters

6.3 Export of commodities through Cochin Port showed a declining trend during 2014-15. In 2014-15,only two commodities showed an increase in the exports: cashew kernels & coir products the export of which declined during 2013-14 revived in 2014-15 showing an increase of 3.7 per cent and 1.1 per cent respectively. Exports of goods like tea declined by 6.5 per cent, sea foods by 6.5 per cent, spices by 11.6 per cent, coffee by 13.8 per cent and miscellaneous items including POL by 3.7 per cent in 2014-15 over the period 2013-14. (See Appendix 6.1)

6.4 Imports through Cochin Port continued to increase in 2014-15 touching 175.37 lakh MT compared to 166.36 lakh MT in 2013-14 showing an increase of 5.4 per cent. Fertilizers and raw materials, iron & steel and machinery, newsprint, raw cashewnut, Petroleum, Oil and Lubricants (POL) etc. are the main items of import. No food grains are imported continuously for the last three years. The growth rate of import of miscellaneous items which was 5.2 per cent in 2013-14 declined to 4.8 per cent during 2014-15. Fertilizers and raw materials the import of which continued to decline since a while increased by 44.91per cent during 2014-15. Import of iron, steel and machinery which was decreasing continuously, increased by a record rate of 207.3 per cent in 2014-15. There was no import of newsprint during 2014-15,but import of cashewnut increased by 2.3 per cent (See Appendix 6.2).

6.5 Coastal and foreign exports through Cochin Port which increased by 4.1 per cent during 2013-14 declined by 4.8 per cent in 2014-15. Coastal export decreased from 17.18 lakh MT in 2013-14 to 16.48 lakh MT in 2014-15 whereas foreign export which was 25.32 lakh MT in 2013-14 fell to 24.10 lakh MT during 2014-15. While coastal imports declined by 14 per cent, foreign imports increased by 16.5 per cent during the period 2014-15. (Table 6.1)

Marine products

6.6 Marine products exports from Kerala, both in quantity and value increased in 2014-15; quantity has increased from 165,698 MT in 2013-14 to 166,754 MT in 2014-15 and value from □470636 lakh to □516608 lakh for the same period. But the share of Kerala in Indian exports declined from 16.84 per cent in 2013-14 to 15.86 per cent in 2014-15 in terms of quantity and from 15.58 per cent to 15.45 per cent for value during the reported period. (Table 6.2).

Table 6.2
Export Trend of Marine Products – India & Kerala (2010-11 to 2014-15)

Year	INDIA		KERALA		KERALA'S share %	
	Quantity (Tonnes)	Value (□ Lakh)	Quantity (Tonnes)	Value (□ Lakh)	Quantity	Value
2010-11	813091	1290147	124615	200210	15.33	15.52
2011-12	862021	1659723	155714	298833	18.06	18.00
2012-13	928215	1885626	166399	343585	17.93	18.22
2013-14	983756	3021326	165698	470636	16.84	15.58
2014-15	1051243	3344161	166754	516608	15.86	15.45

Source: The Marine Products Export Development Authority (MPEDA)

6.7 USA is the largest market for Indian marine products with a share of 26.46 per cent followed by South East Asia (25.71%), European Union (20.08%) and Japan (9.11%), other countries (8.58%), Middle East (6.04%) and China (4.02%).

6.8 Commodity wise import through Cochin Port during 2011-12 to 2014-15 is given in Appendix 6.2. Item wise details of marine products export from India and Kerala during 2014-15 are given in Appendix 6.3.

Cashew

6.9 Exports of cashew kernels which had shown a sharp drop in 2012-13 revived in 2013-14. While the trend continued in 2014-15, the rate of growth of both quantity and value were lower. Kerala's share in total exports of cashew kernels from India in quantitative terms, which was 57.22 per cent in 2013-14 marginally increased to 57.29 per cent in 2014-15. In value terms it was 56.57 per cent in 2013-14 and reached 57.04 per cent during 2014-15 (Table 6.3). USA, UAE, Netherlands, Japan, Saudi Arabia, UK, France, Spain, Germany, Korea, Iran, Malaysia etc. were the major markets for Indian cashew kernels in 2014-15 also.

6.10 The export of cashew nut shell liquid/ cardanol from India during 2013-14 which was 9480 MT valued at □38.6 crore increased to 10938 MT with a value of □55.81 crore in 2014-15; the quantity of exports increased by 15.38 per cent and value by 44.58 per cent. But export of cardanol through Cochin Port which was 872 MT with a value of □2.66 crore in 2013-14, declined to 818 MT valued at □2.70 crore in 2014-15 (Appendix 6.4).

Table 6.3
Export of Cashew Kernels – Kerala & India (2010-11 to 2014-15)
(Qty: MT, Value: □crore)

Year	KERALA*		INDIA		Share of Kerala (%)	
	Quantity	Value	Quantity	Value	Quantity	Value
2010-11	56578	1478.67	105755	2819.39	53.50	52.45
2011-12	69149	2299.67	131760	4390.68	52.48	52.38
2012-13	53624	2138.47	100105	4046.23	53.57	52.85
2013-14	65679	2861.75	114791	5058.73	57.22	56.57
2014-15	68150	3098.75	118952	5432.85	57.29	57.04

*Export through Cochin Port. Source: The Cashew Export Promotion Council of India

6.11 Import of raw cashewnut through Cochin Port which was 201955 MT in 2013-14 increased by 2.27 per cent to reach 206542 MT in 2014-15. (Appendix 6.2)

Coffee

6.12 Export of coffee from India during 2014-15 was 199441 MT (provisional) valued at □3509.42 crore. There is a decline of 34.83 per cent in quantity and 22.97 per cent in value over the previous year in which export was 306029 MT valued at □4555.77 crore.

6.13 Export of coffee from Kerala through Cochin Port during 2013-14 which was 75631 MT valued at □872 crore, declined to 65216 MT valued at □749.98 crore during 2014-15. The decline was 14.01 per cent in value and 13.77 per cent in quantity.

Tea

6.14 Export of tea through Cochin Port during 2014-15 was 90348 MT valued at □478.21 crore. This shows a decrease of 6.55 per cent in quantity and the same per cent in value, the quantity of export during 2013-14 being 96681 MT and value □511.71 crore.

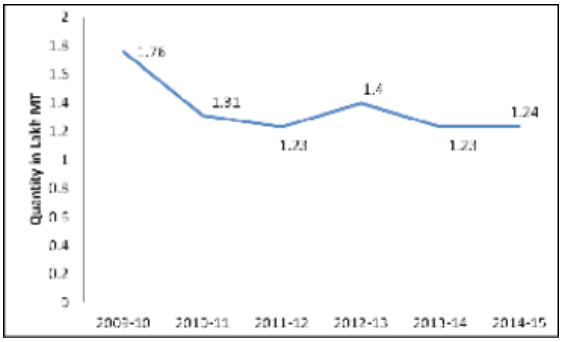
Coir and Coir Products

6.15 The exports of coir and coir products through Cochin Port which recorded a decrease of 12 per cent during 2013-14 revived marginally by 1.1 per cent in 2014-15. Quantity of exports which stood at 124116 MT with a value of □385.37 crore in 2013-14 slightly increased to 125523 MT valued at □389.12 crore during 2014-15. Main items of exports are coir mat, coir yarn and other coir products. Export trend of coir and coir products through Cochin Port for the period from 2009-10 to 2014-15 is shown in the graph. (Figure 6.1)

Fig 6.1
Export Trend of Coir and Coir Products from Cochin Port.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters



Source: Cochin Port Trust

Spices

6.16 In 2014-15, a total of 893920 MT of spices and spice products valued at □14899.68 crore has been exported from India, as against 817250 MT with a value of □13735.40 crore in 2013-14. This shows an increase of 9.38 per cent in volume and 8.48 per cent in value. The total export of spices during 2014-15 also has exceeded the target in terms of both quantity and value: 755000 MT and □12304.90 crore respectively.

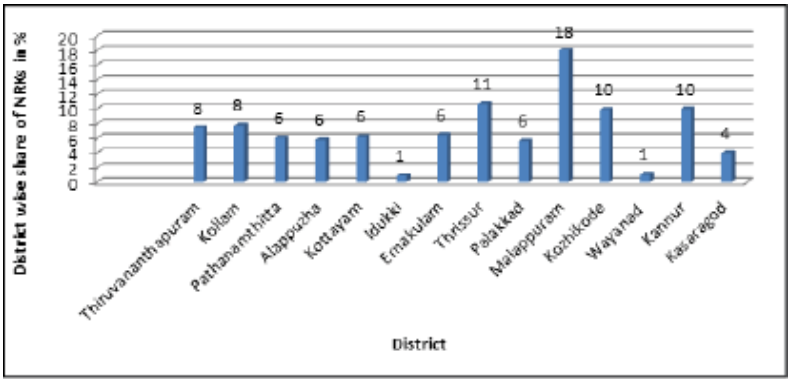
6.17 As per estimates of Spices Board, export of spices from Kerala (through Cochin and Thiruvananthapuram Ports) increased to 81555.27 MT valued at □3285.34 crore in 2014-15 from 81412.60 MT with a value of □3253.40 crore during 2013-14, recording a meager value - the exports increased by 0.18 per cent and value by 0.98 per cent (The figures of exports of spices through Cochin port vary with this figure for Cochin port exports products of other states also). Pepper, cardamom, chilli, ginger, turmeric, coriander, cumin, celery, fennel, fenugreek, other seed spices, garlic, tamarind, nutmeg and maize, other miscellaneous spices, curry powder/mixture, spice oils and oleoresins and mint products are the main items of exports through Kerala ports.

Section 2

Non Resident Keralites

6.18 Non resident Keralites play a vital role in the development of the State. Their contribution to the development can be seen at family level, community level and state/country level. At family level it has improved household earnings, food,consumption, health care, housing and educational attainments and for over three decades remittances have been meeting the current account deficit of the country. The Non-Resident Malayali Census 2013 of Economics and Statistics Department, Government of Kerala, identified that out of the 16.25 lakh Non-Resident Malayalis, 14.26 are working in different jobs. Around 50 lakh people in Kerala are dependent on Non Resident Malayalis. Country wise, 90% of Non-Resident Malayalis are working in the Gulf region.

Fig 6.2
District Wise Proportion of NRKs in Kerala



Source: Economic and Statistics Department,GoK

6.19 As per the survey conducted by Economics and Statistics Department of Government of Kerala, the largest number of NRKs are reported from Malappuram, their proportion to the total NRKs being 18 per cent. Thrissur is in the second position accounting for 11per cent of the total followed by Kannur and Kozhikide with 10per cent share each. Idukki and Wayanad are the two low NRK reporting districts and their share to the total NRKs are 1per cent each. Appendix 6.5 shows

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

the district wise proportion of NRKs in Kerala.

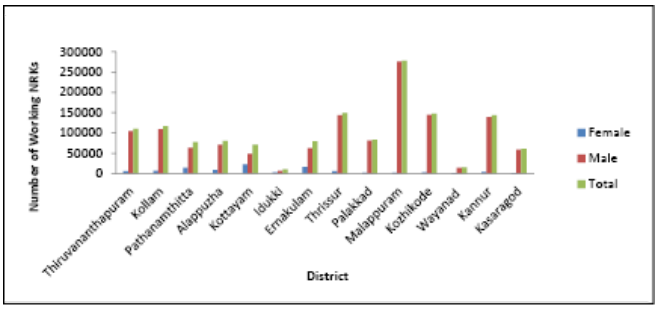
Number of Working NRKs

6.20 Out of the total Non-Resident Keralites, 87.77per cent are engaged in different economic activities. Among those employed, 93.04per cent are men and 6.96per cent are women. District wise, Malappuram has the highest proportion of 19.51per cent NRKs employed followed by Thrissur and Kozhikode at 10.50per cent and 10.37per cent respectively. Even though Idukki reported the lowest share in employed NRKs women NRKs employed is 32.83per cent of total working women NRKs. Second highest proportion of female working NRKs is reported from Kottayam (31.68per cent).The district and gender wise ratio of working NRKs are given in the Appendix 6.6.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Fig 6.3
District Wise Working NRKs in Kerala

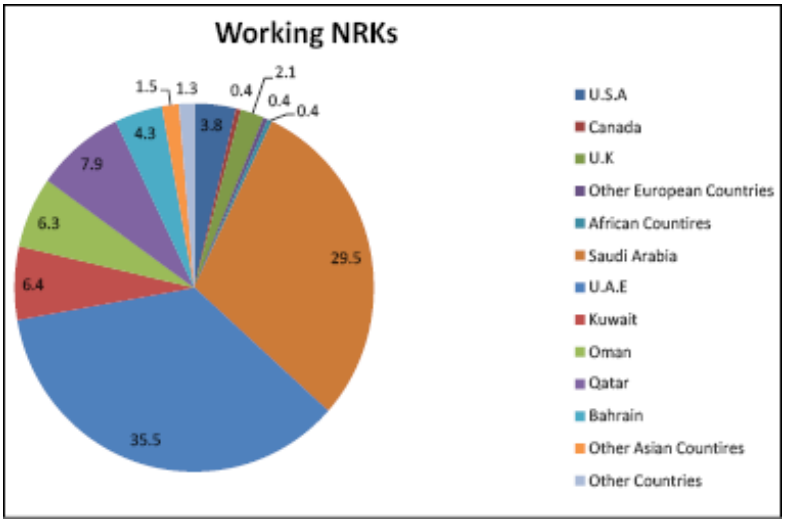


Source: Economics and Statistics Department, Government of Kerala

Country Wise Working NRKs

6.21 Distribution of NRKs by country showed that 35.54per cent are in UAE and 29.5 per cent in Saudi Arabia. Figure 6.4 gives the country wise proportion of NRKs in Kerala. Gender wise data shows that the proportion of female NRKs to total NRKs is higher in UK with 34.21per cent, followed by Canada at 33.01per cent and other European countries with 29.34 per cent.The lowest female NRKs are identified from Qatar with 3.7per cent of the total NRKs in Qatar.

Fig 6.4
Country wise Working NRKs



Source: Ecomomics and Statistics Department, Government of Kerala

Professional NRKs

6.22 In recent years, the pattern of emigration in terms of the skill content has changed. In the 1970s, the proportion of skilled workforce to the total emigrants was very small. Now larger number of skilled workforce from different professions such as doctors, nurses, engineers, IT professionals and teachers are seeking employment outside the country. Distribution of NRKs by profession showed that 11.85 % of them are working as drivers, 10.99% as salesmen, 6.37% as nurses, 3.78% as engineers, 2.23% as IT professionals and 0.53% as doctors and the remaining 67.78% working in

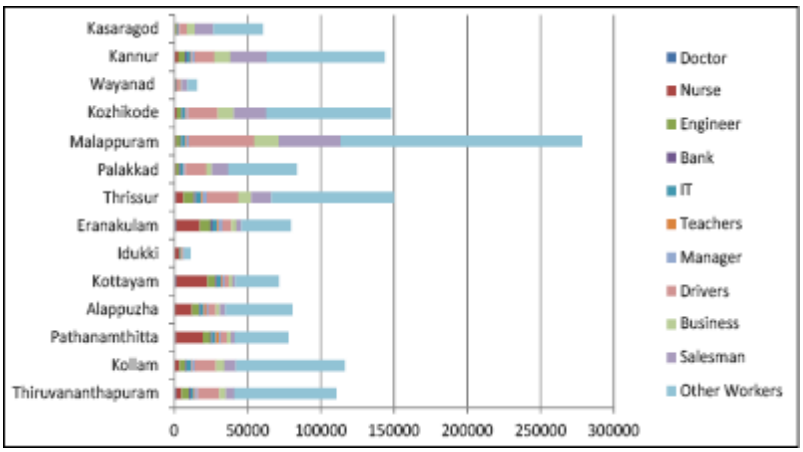
different spheres like businessman, teachers and bank professionals.

6.23 Among the doctors, the highest share is reported from Thiruvananthapuram at 14.39% followed by Kottayam and Ernakulam with 14.38% and 14.34% respectively.The lowest share is from Wayanad.In the case of nurses, the highest proportion is from Kottayam at 23.73% followed by Pathanamthitta at 20.75 % and Ernakulam at 18.16 %. For engineers, Ernakulam has the highest proportion of 13.47 %,followed by Thrissur at 13.23 % and then Kottayam at 10.11 %. Among teachers, Pathanamthitta has the highest share of 16.69 % followed by Alappuzha at 15.99 % and then Kottayam at 9.74%. Figure 6.5 shows the district wise number of NRKs working in different jobs abroad.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Fig 6.5
District-wise NRKs working in different jobs



Source: Economics and Statistics Department,Government of Kerala.

Box 6.1
Glimpse of Plan schemes,Services and Own Project Offered by Norka Roots

Rehabilitation of Return Migrants, is a scheme which aims to reintegrate returned emigrants by helping them to find suitable employment/self employment as a step towards their rehabilitation. Government has formulated Norka Department Project for Return Emigrants (NDPREM) to develop a sustainable Business Model.The project envisages providing a capital subsidy of 10 % of the total project cost as a backened subsidy to eligible entrepreneurs among return emigrants who wish to start their own ventures in the field of agri-business,training,services and manufacturing.

Santhwana, is a scheme which provides financial assistance to NRKs (returnees) whose minimum period of services abroad is of two years and the period after return is not exceeding10 years. For medical assistance □50,000/- is provided and death assistance is maximum □1,00,000/-, marriage assistance is □15000/- and for wheel chair crèches and artificial limbs □10,000/ is provided as assistance.

Swapna Saphalyam, The lower segments of Non –Resident Keralites working abroad especially in Gulf countries are subjected to various miseries due to lack of labour protection rules. It is estimated that 1400 Indians are jailed in Saudi Arabia alone, of which 80% being NRKs. The scheme proposes to address those NRKs jailed abroad for no wilful default on their part and aims to provide free air tickets when they are released from jails and are not able to afford the tickets.

Pravasi Legal Assistance (Pravasi Legal Aid Cell), One of the major problems faced by the migrant workers from Kerala to the Middle East Countries is the court cases and other legal problems they get into. In the absence of any sort of legal help, the poor workers end up in jail and suffer from all forms of punishments. This happens even in the cases of minor offence or without any offences. The scheme proposes extending legal assistance by Government including appearances in courts abroad, through the Indian Diplomatic Missions or through advocates empanelled by the Indian Mission.

24 Hours Help Line/Call Centres, intends to disseminate information on various schemes/projects implemented by Government and NORKA Roots, redress grievances of NRKs, conduct counselling to NRKs who are in distress, create awareness among emigrants and prospective emigrants against illegal exploitation, migration etc. and to act as a frontline service facilitator/one point client interaction point for NRKs. It is also envisaged to provide need based information and assistance to emigrants through the proposed helpline.

Pre Departure Orientation Programme, The potential migrants lack awareness in matters connected with emigration in general and overseas job in particular. The scheme is intended to impart orientation and training to these prospective emigrants before departing to their destination countries so as to ensure legal migration. The widespread rural penetration of this scheme will restrict prevalence of illegal migration and exploitation by unscrupulous recruiting agents.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top
Other Chapters

Section 3

Tourism

6.24 Tourism has been experiencing an uninterrupted global growth in recent years and recorded 4.3 percent increase and a total 1133 million tourist arrivals in 2014. International tourism receipts reached US$ 1245 billion worldwide in 2014, corresponding to an increase of 3.7 percent in real terms. Tourism has turned into a key driver of socio-economic progress through the creation of jobs and enterprises, export revenue and infrastructure development across the world.

6.25 Tourism in India has also been exhibiting a robust growth and there was a 10.2 per cent increase in foreign tourist arrivals with 7.68 million tourist visitors in 2014. Foreign exchange earnings reached a level of □1,23,320 crore and recorded a 14.5 percent increase in 2014 over the previous year.

6.26 Kerala with its natural advantages in tourism like long shoreline, high hill ranges with rich biodiversity and wild life, rivers, back waters, lagoons and equitable climate has turned tourism into a growth engine in the last 30 years. Today Kerala is one of the most sought after destinations in the world. Tourism industry in Kerala has turned into a □24885.44 crore revenue generating activity hosting 12.62 million domestic and foreign tourists in 2014.

Recent Trends in Tourist Arrivals in Kerala
Foreign Tourist Arrivals

6.27 Foreign tourist arrivals registered a 7.6 percent annual increase in 2014 with 0.92 million foreign tourists' visits, compared to 8.12 percent annual increase in 2013 and 0.85 million foreign tourist visits. This shows a marginal decrease in the growth of foreign tourist arrivals in 2014 compared to that of the previous year. The recent trends in foreign tourist arrivals is exhibited in Figure 6.6.

Fig 6.6
Recent trends in Foreign Tourist Arrivals in India and Kerala

*Quick estimate of foreign tourist arrivals from January to October 2015
Source: Department of Tourism, Government of Kerala

6.28 Foreign tourist arrivals recorded positive growth rates at National and State levels, except for 2009 when world economic crisis impacted tourist inflow. In subsequent years, State tourism performed better than National level. But the National average surpassed State annual growth rate of foreign tourist arrivals in 2014 for the first time in a decade. The State tourism has been witnessing a slowdown in annual growth rates, since 2010. The quick estimates of 2015 records still lower rate of 6.3 percent growth with 7,75,390 foreign tourist arrivals from January to October 2015, compared to the same period in 2014. Appendix 6.7 shows the National and State foreign tourist arrivals and annual growth rates from 2008 onwards.

6.29 The share of the State in the national pie of foreign tourist arrivals is 12.02 per cent in 2014 whereas it was 12.31

percent in the preceding year. Kerala ranks 7th in foreign tourist arrivals in 2014. Tamil Nadu, the neighbouring state ranks first in foreign tourist arrivals and captures 20.6 percent of the national pie.

Seasonality in foreign tourist arrivals

6.30 Foreign tourist arrival is seasonal which takes place mostly in the beginning and ending months of a year. Figure 6.7 depicts the pattern of foreign tourist arrivals from January to December 2014.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Fig 6.7
The pattern of foreign tourist arrivals from January to December 2014

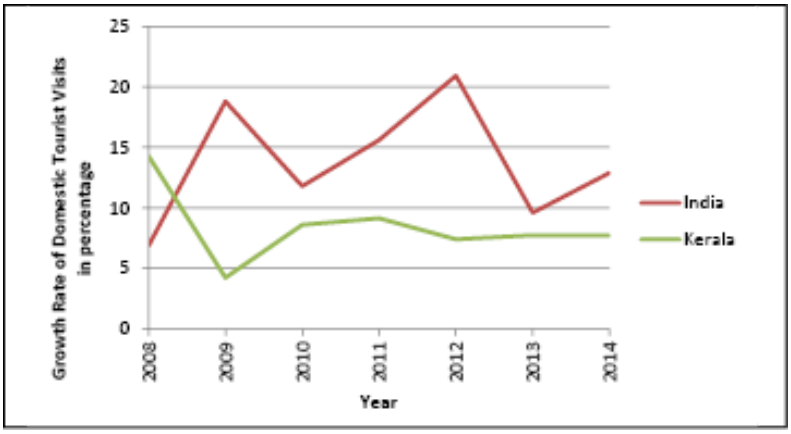
Source: Department of Tourism,GoK.

6.31 The trend line of foreign tourist arrivals in 2014 is U shaped which shows lower levels of foreign tourist arrivals from April to September months. The Department of Tourism has taken many measures to make Kerala an all time destination and promoted products like monsoon tourism, Meeting Incentive Conference and Events (MICE) tourism, customised packages for non season etc. This has to be continued and new products fit for all seasons may be introduced to convert tourism to an all time activity generating sustainable income and full time employment. Besides, market specific, multi pronged marketing strategy based on market analysis should be put in place to attract foreign tourists to the State throughout the year.

Domestic Tourist Arrivals

6.32 Domestic tourist visits to Kerala was 11.7 million in 2014 and registered an annual growth rate of 7.71 percent. There was also a marginal decrease in growth rate as the annual growth rate was 7.75 percent in the previous year. The recent trends in National and State domestic tourist visits in terms of annual growth rate is exhibited in Figure 6.8.

Fig 6.8
Recent Trends in Domestic Tourist Visits in India and Kerala



*Quick estimate of domestic tourist visits from January to October 2015
Source: Department of Tourism,GoK.

6.33 Domestic tourism in India is predominantly pilgrim tourism where the State lags behind the national average growth rates over the years. A notable feature is that the national growth rate in domestic tourist visits is always greater than State annual growth since 2009 and has increased in 2014, while the State annual growth shows a slight slowdown. The quick estimates of 2015 shows a further decline in growth rate at 7.21 percent with 99, 53,137 domestic tourist visits in January to October 2015, compared to the same period in 2014. As far as the share of the State in the national pie of domestic

tourist visits is concerned, it is only 0.9 percent in 2014. Appendix 6.8 shows the National and State domestic tourist visits and annual growth rates from 2008.

Source Markets of Tourist Arrivals

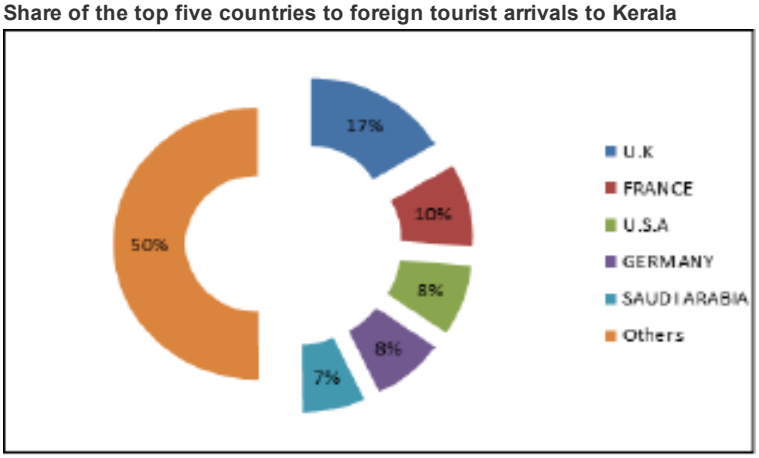
6.34 China has been the fastest growing source market for international tourism in recent years and has been the world's top spender in international tourism since 2012, followed by the United States, Germany, the United Kingdom, Russian Federation, France and Canada. The main tourist generating countries for Indian tourism are the United States followed by Bangladesh, United Kingdom, Sri Lanka, Russian Federation and Canada. The first three countries together contribute around 38 percent of tourist arrivals to India.

6.35 In 2014, the United Kingdom is the top source market for Kerala with 17.45 percent share, followed by France (9.85 percent), the USA (8.41 percent), Germany (8.20 percent), and Saudi Arabia (7.04 percent). The percentage share of the top countries in the foreign tourist arrivals to Kerala is represented in Figure 6.9.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Fig 6.9
Share of the top five countries to foreign tourist arrivals to Kerala



Source: Department of Tourism,GoK.

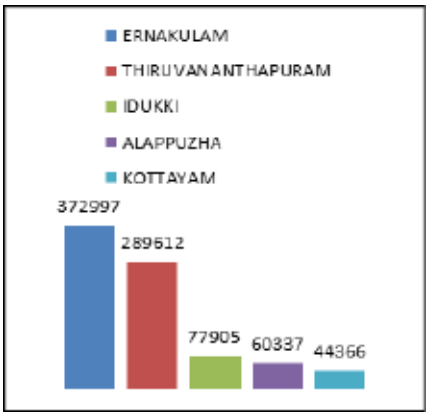
6.36 All the five countries together account for 50 percent of total foreign tourist arrivals to the State. Appendix 6.9 shows the share of major international source markets to Kerala tourism.

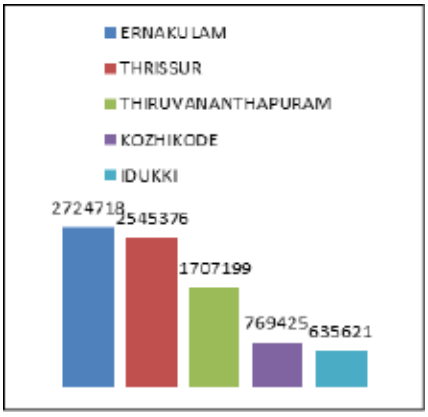
6.37 As per the Continuous Survey Report 2012-13 of Tourism Department, Government of Kerala, about 74 percent of the domestic tourist visits in Kerala originates from within the State. Among the other states, Tamilnadu dominates with 10.5 percent of the tourists followed by Karnataka, Maharashtra, Andhra Pradesh and Delhi with shares of 5.74 percent, 3.0 percent, 1.56 percent and 1.34 percent, respectively. The main purpose of visit of domestic tourists was leisure, recreation and holiday with a share of 35.60 per cent of tourists. Another 30.29 percent of the tourists visited Kerala for business, conferences and meetings. Pilgrim or religious visits accounts for only 7.55 in 2012-13. Company executives in the private sector, business men, and public and private sector employees were the main domestic visitors to Kerala.

District Profile

6.38 Tourism is highly concentrated in southern districts of the State. Ernakulam, Thiruvananthapuram and Idukki are the three southern districts that find place in top five districts in both the foreign and domestic tourism segments. The only one northern district that finds place in top five districts is Kozhikode which ranks 4th in domestic tourist visits. The number of foreign tourist and domestic tourist visits to top five districts in 2014 is depicted in Figure 6.10 and Figure 6.11 respectively.

Fig 6.10 Top Five Districts in Foreign Tourist Arrivals in 2014	Fig 6.11 Top Five Districts in Domestic Tourist Arrivals in 2014





Source: Department of Tourism, Government of Kerala

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

6.39 The total foreign tourist arrivals and domestic tourist visits to the State was 9.23 lakh and 116.95 lakhs, respectively in 2014. The top five districts captured 92 percent of foreign tourist arrivals and 72 percent of domestic tourist visits to the State in 2014. Ernakulam district is at the top and Pathanamthitta district is at the bottom in both the foreign and domestic tourist arrival segments. The number of foreign and domestic tourist visits to 14 districts is provided in Appendix 6.10.

Growth in accommodation

6.40 There is an increase in number of accommodation units and rooms in 2014 compared to the previous year. Total number of star accommodation units is 409 and rooms 11387 which registered an increase by 13 units and 1022 rooms over the previous year. Appendix 6.11 provides the categories of star accommodation units and number of rooms at State in 2014.

Government Initiatives in Tourism

6.41 The thrust of the Government with regard to tourism is to promote private investment, draw quality visitors and provide unique experience and safeguard the interest of host communities, visitors and the nature as is explicit in the State Tourism Policy 2012. The Government support in creating infrastructure, marketing in domestic and international markets and building up quality human resource has been critical for the growth of the tourism sector, especially since tourism has been declared as an industry in 1986. The establishment of Kerala State Tourism Development Corporation (KTDC) in 1966 for building up basic infrastructure in hospitality sector and running hotels and wayside amenities in the State was a landmark in tourism development.

6.42 Another land mark in tourism development was the establishment of the Tourist Resorts Kerala Ltd in 1989, later renamed as Kerala Tourism Infrastructure Ltd (KTIL) for tourism investment promotion and infrastructure development through partnership models. KTIL runs a joint venture with the Taj Group, namely Taj Kerala Hotels and Resorts Ltd in three destinations, namely Varkala, Kumarakom and Ernakulam. Bekal Resorts Development Corporation (BRDC) founded in 1995 concentrates on tourism promotion in Bekal in Kasaragod district and surrounding areas which had no distinctive mark in Kerala Tourism map then. District Tourism Promotion Councils under the auspices of district administrations have also been promoting creation of destinations and tourism products across the State.

Government Spending

6.43 The State Government allocates about one percent of its total budget to tourism sector every year. In addition, Ministry of Tourism, Government of India has also been earmarking funds for tourism projects in the State. Table 6.4 shows the funding of State and Union Governments to Kerala Tourism since 2011-12. State funds include supplementary allocation over and above the budgetary allocation.

Table 6.4
State and Union Government Funding to Kerala Tourism since 2011-12
(Rs crore)

Year	State Funding	Union Funding	Total Funding
2011-12	182.49	23.76	206.25
2012-13	180.53	78.26	258.69
2013-14	214.89	34.67	249.56
2014-15	245.36	0	245.36

Source: Department of Tourism, Government of Kerala

6.44 The major chunk of government spending has been on infrastructure projects like development of basic amenities in tourism destinations, beautifications, quality wayside and waterside amenities, state of the art information centres, visitor lounges, infrastructure for land and water based adventure tourism, erecting international quality tourism signage at destinations and en-route, tourism transportations and safety and security aspects of tourists.

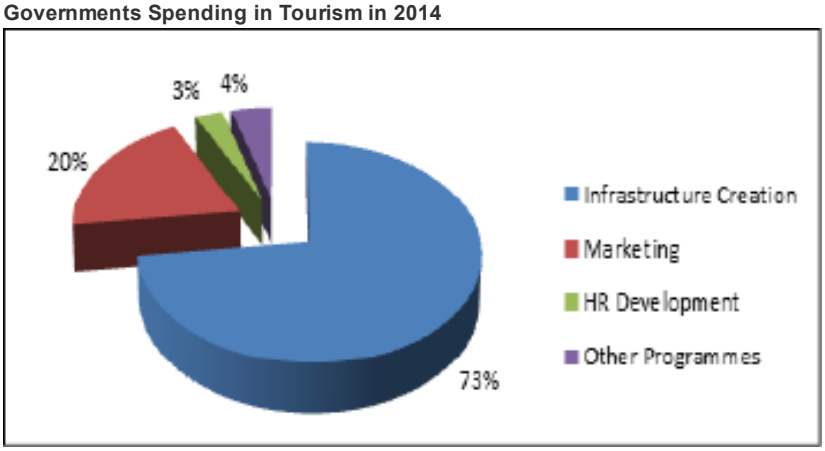
6.45 The second focus area in government spending has been marketing. The government has succeeded in branding Kerala Tourism in international market with the title “God’s own country”. The State has consolidated its marketing efforts in domestic and international markets through advertising in print and television media, taking up innovative marketing like Train Branding, Airport Branding, Staging of road shows, seminars and workshops, and conducting familiarization trips for tour operators, leading travel writers and journalists, participating in trade fairs and also making use of the promises of information and communication technologies like social media campaign, viral video clips, web optimisation, and software solutions. It also has been creating new brands like The Great Backwater of Kerala, Kerala-Home of Ayurveda, Your Moment is Waiting, Dream Season etc in a big way.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

6.46 Quality human capital with labour standards is fundamental to tourism development in any region. Shortage of skilled manpower in tourism is a challenge to Indian Tourism. The State Government arms like Kerala Institute of Tourism and Travel Studies (KITTS), State Institute of Hospitality Management (SIHM) and Food Craft Institutes (FCIs) have been creating quality manpower in travel, tourism and hospitality sectors. Figure 6.12 shows the pattern of government spending in 2014-15.

Fig 6.12
Governments Spending in Tourism in 2014



Source: Department of Tourism, Government of Kerala

6.47 The figure makes it clear that 73 per cent of total government funding to the tourism sector in 2014 goes to infrastructure development, 20 percent to marketing and 3 percent to human resource development and 4 percent to other activities.

Economic Impact

6.48 Tourism activities have a wide impact on the economy in terms of creating jobs and income for the households through tourists’ spending in the local economy. It generates income in a large number of activities like hotels and accommodation units, restaurants, travel agencies and tour operators, transport services, tourist resorts and complexes, entertainment facilities, shopping, conferences and conventions, adventure and recreational facilities, guide services etc.

6.49 With increasing tourist inflows, the tourism sector is a significant contributor to the State economy. The direct contribution of the industry is in foreign exchange earnings and domestic tourist earnings. The foreign exchange earnings from tourism during the year 2013 were □5560.77 crore which increased to □6398.93 crore in 2014 registering an increase of 15.07 per cent. Domestic tourist earnings for the year 2013 were □11726.44 crore that increased to □12981.91 crore in 2014 registering an increase of 10.78 per cent.

6.50 The tourism industry in broader terms has great indirect multiplier impact in the economy through backward and forward linkages and also induced impact through spending of benefitted households and firms in the economy. Total revenue from direct and indirect means from tourism has increased from □22926.55 crore in 2013 to □24885.44 crore in 2014 recording 8.54 percent annual increase. Appendix 6.12 shows the foreign exchange earnings and domestic tourist earnings including revenues from indirect sources from 2008.

Landmarks in Kerala Tourism
Responsible Tourism

6.51 Tourism has strong impact on socio-economic scenario of the host community. The development and management of a destination has to be in line with the aspirations of local communities, which would not only provide for a more authentic tourist experience, but also attract a strong community support for tourism. The Department of Tourism has put efforts for inculcating local community views on tourism planning and destination management by introducing Responsible Tourism in four destinations, Kumarakom, Kovalam, Thekkady and Wayanad. The Responsible Tourism initiative aims at minimizing negative economic, environmental, and social impacts of tourism at destinations and enhancing economic and social well-being of host communities and conservation of natural and cultural heritage of the destinations. The Department has set in multi stakeholder mechanisms in these destinations involving local governments, local people and the tourism industry and trade. This has provided a platform for direct interaction between the stakeholders. It has enabled a clear understanding of visitor requirements by service providers, while keeping requisite safeguards in optimizing outcomes for mutual benefit. It also provides scope for economic activity for local people by supplying local produce, performing local art forms and rendering services. There exists cohesion and mutual respect between the industry and people in these destinations. It also provides more enjoyable experiences for tourists through meaningful connections with local people, and fosters respect for local culture. The second international thematic conference on responsible tourism held in 2007 at Kumarakom received international appreciation for the Tourism initiatives of the State. Recently Kumarakom Responsible Tourism bagged the prestigious United Nations World Tourism Organization's (UNWTO) Ulysses Award for Excellence and Innovation in 2015.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Master Plans for Destinations and Circuits

6.52 Sustainability is the key focus and hence the Department of Tourism has based its future tourism developments on Master Plans with long perspective. Master Plans for five Destinations, viz Kovalam - Poovar Tourism Corridor, Kumarakom, Thekkady, Fort Kochi and Munnar with thirty year perspective has been prepared and five other Master Plans are being prepared. These Master plans open up possibilities for Tourism Corridors and Circuits and avenues for additional employment and income generation. Master Plans focus mainly on improving and creating basic infrastructure, preservation of flora fauna, protection of water ways, landscapes, creating connectivity within the destinations, Preservation of Heritages and wild life and creating support infrastructures like water supply, waste management, signages etc.

Visa on Arrival and e-Visa

6.53 Visa on Arrival (VoA) is a single entry permission to enter India for the purpose of tourism. It is a non-extendable Visa for thirty days permitting two visits in a calendar year. The Government of India has also introduced Electronic Travel Authorisation facility (e-visa) to 113 nationals. E visa is issued for tourism, visiting friends and family, short duration medical treatment and business visits. 7972 and 3719 tourists availed e visa in Kochi and Thiruvananthapuram Airports respectively as on August 2015, since its introduction in 2014.

Box 6.2
Awards and Recognition for Kerala Tourism in 2014

- Das Golden Stadttor Award 2015 for the Great Backwaters Television Campaign
- Pacific Asia Travel Association (PATA) 2014 for E-Newsletter and Corporate Social Responsibility in Kumarakom Responsible Tourism
- Travel & Leisure Award 2014 for Best Indian State and Best Green Destination
- Lonely Planet - India Travel Awards 2014 for Best Destination for Families
- Web Ratna Awards 2014 in 'Outstanding Content' Category for Kerala Tourism Website
- United Nations World Tourism Organization's (UNWTO) Ulysses Award for Excellence and Innovation in Kumarakom Responsible Tourism
- Golden City Gate Award-2014 for Print campaign "The Great Backwaters"
- CNBC Awaaz Travel Awards for Best City – Kochi
- Condé Nast Traveler Readers Award 2014 for Favourite Indian Leisure Destination: Kerala (Runner - Up)
- Kerala State Planning Board Award for best performance in implementation of Annual Plan 2013-14

Source: Department of Tourism, Government of Kerala

Spice Route and Muziris Heritage Tourism Project

6.54 Muziris was an ancient port in Kerala located at Pattanam near North Paravur in Ernakulam district which served as a key link in the spice trade with rest of the World till it was destroyed in the 14th century by a natural disaster. The Department of Tourism developed the Muziris Heritage Project to utilize the immense potential of the State in the Heritage tourism sector. It connects a number of museums and historical monuments around water ways. The UNESCO showed great deal of interest in the project and joined with the Department of Tourism for developing it into a "Spice Route Heritage Project". The project aims at opening new vista in the field of tourism and historical research in Kerala. The Spice Route Heritage Project will connect almost all nodes of historical trade in Kerala, especially Malabar, a major centre of trade in the early centuries. Kerala Tourism and UNESCO will jointly mobilise bilateral and multilateral collaboration with countries that were part of the ancient spice trade. The Government has recently formed a company, namely Kerala Heritage Company Ltd to take forward the Muziris tourism project.

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Eco-Tourism

6.55 Eco-tourism is a purposeful travel to natural areas to understand and experience environment without altering the integrity of the ecosystem. It also aims at producing economic opportunities to local people and thus enhances conservation of natural resources. Kerala is famous for its eco-tourism initiatives. The objective of government in eco-tourism is to convert the entire tourism industry in Kerala into eco-friendly mode and to ensure local community involvement in tourism initiatives leading to employment and income generation. Directorate of Eco-Tourism has been pioneering the eco-tourism activities in the State.

Adventure Tourism

6.56 Kerala Tourism has setup Kerala Adventure Tourism Promotion Society which has been introducing adventure tourism, a new branch of tourism in Kerala. The Government has also constituted a society, namely Green Tourism Circuit (Kottayam) to connect, develop and foster tourism in Elaveezhapoonchira, Ayyampara and Vagamon in Kottayam district.

Box 6.3
Key Initiative of the Tourism Department in 2014-15

Marketing

- Opening up new market in China by participation of Kerala Tourism in BITE International Fair 2015 at Bejing and B2B workshops at Shanghai, China
- Attracting foreign tourists visiting Sri Lanka by organising International Road show at Colombo
- Consolidating the efforts in existing markets by participating in International Fairs, Partnership Meets, B2B in Middle East and Europe
- Innovative approaches in domestic market by organising Kerala Tourism Food Festival in nine major Indian cities in November – December 2015

Infrastructure

- Take a Break – establishing wayside amenity centres with restrooms and food courts across the State – 1st and 2nd Phase of the project commenced
- Showcasing craft villages, farm tourism and village tourism
- Developing new destinations, pilgrim centres in circuits, establishing facilities for culture and entertainment, and beautification of many destinations
- Eco-tourism Circuit connecting Gavi, Pathanamthitta, Thekkadi and Vagamon approved by Government of India for funding to the tune of □99.97 crore
- Pilgrim Circuit connecting Padmanabhaswami Temple, Aranmula and Sabarimala approved by Government of India for funding to the tune of □92.40 crore.

Source: Department of Tourism, Government of Kerala

6.57 The Tourism Department has taken up development of Backwater Circuit in Alappuzha back water region as a Mega Circuit with central government assistance. This has given a face-lift to the Alappuzha back water region by developing house - boat terminals, night halt terminals, minor destinations and beaches. Another innovative tourism project with the

assistance of Central Government is the development of Palaikkari Fish Farm and surroundings areas into a major tourism destination. The Department, based on the 30 year perspective, has now been beautifying the destinations to attain international standards, providing amenities and supporting infrastructure.

Outlook

World merchandise trade that was growing rapidly till 2011 has hardly shown much growth during the last three years and signs of revival are not to be seen. Merchandise trade of India growing rapidly till 2011 has shown sharp decline and has been in the negative territory during the last one year. Remittances growing robustly with every depreciation of the rupee have started showing signs of lower increases following the precipitous fall in the crude oil prices. Tourism too has not been doing well impacted by the poor growth of the World economy and a number of internal developnments. Kerala being more integrated with World economy is already feeling the impact of these external developments. In the near term the effects of developments in trade, remittances and tourism will be felt more intensely.

Top

Trade
Non-Resident Keralites (NRKs)
Tourism
Top

Other Chapters

Scientific Services & Research
Kerala State Council for Science, Technology & Environment
Skill Development
Top
Other Chapters

Chapter 7

CAPACITY BUILDING

Introduction

One of the key bases of the knowledge economy is education. The education landscape in the knowledge economy is dominated by higher education, life-long learning and scientific knowledge. Three particular aspects of learning are - professional, vocational and workplace learning. There has been rapid proliferation of scientific and practical knowledge due to continuous production of new knowledge. This requires continuous upgrading of knowledge. The vision underlying Kerala Perspective Plan 2030 is to make Kerala a key node in the global knowledge network by 2030. It will be among the top-ranked countries in terms of efficiency, competitiveness, services and market delivery in education, recognised for academic excellence and innovation. Higher education institutions will be the engine for new ideas through research sustaining innovative enterprises of the future.

To create a world class education system with higher education at the centre of knowledge economy, Kerala needs to benchmark its higher education sector against the world's best. Kerala also needs to move from knowledge dissemination to knowledge creation. This will mean a complete transformation of the existing structure of higher education, shifting to a model where universities are driven to become more enterprising to enhance national competitiveness in innovation, R&D and technological advancement. There will be emphasis on R&D, innovation and academic entrepreneurship.
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Section 1

Scientific Services & Research

As India aspires for fast, sustainable and inclusive growth, the Indian Science Technology and Innovation System along with the advantages of a large demographic dividend and the huge talent pool needs to play a defining role in achieving the national goals. Government of India realising this has announced the National Science and Technology Policy 2013. The key elements of the policy are highlighted in Box 7.1.

Box 7.1
Key Elements of National Science and Technology Policy 2013

- Promoting the spread of scientific temper amongst all sections of society.
- Enhancing skill for applications of science among the young from all social strata.
- Making careers in science, research and innovation attractive enough for talented and bright minds.
- Establishing world class infrastructure for R&D for gaining global leadership in some selected frontier areas of science.
- Positioning India among the top five global scientific powers by 2020.
- Linking contributions of science, research and innovation system with the inclusive economic growth agenda and combining priorities of excellence and relevance.
- Creating an environment for enhanced Private Sector Participation in R&D.
- Enabling conversion of R&D outputs into societal and commercial applications by replicating hitherto successful models as well as establishing of new PPP structures.
- Seeding S&T-based high-risk innovations through new mechanisms.
- Fostering resource-optimized, cost-effective innovations across size and technology domains.
- Triggering changes in the mindset and value systems to recognize, respect and reward performances which

create wealth from S&T derived knowledge.

• Creating a robust national innovation system.

Source: Department of Science and Technology, Government of India

Kerala State Council for Science, Technology and Environment (KSCSTE)

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

7.2 The Kerala State Council for Science, Technology and Environment (KSCSTE) constituted in November 2002 in place of erstwhile Science, Technology and Environment Committee (STEC), established in 1972, plays a pivotal role in promotion of science & technology in Kerala. The Council has wide ranging activities from promoting high end basic research and development of cutting edge technologies on the one hand and development of appropriate skills and technologies on the other. The Council prepares the road map for development through scientific research and innovation in technologies, interactions with academia-industry, and building strong infrastructure and developing a high quality science education system in the State.

7.3 Kerala State Council for Science Technology and Environment supports Research and Development efforts of the R&D Centres by providing assistance to creation of physical infrastructure and procurement of Scientific infrastructure through Development and Selective Augmentation of R&D activities. The initiatives of the council are shown in Figure 7.1

7.4 The KSCSTE aims at promotion of Research and Developments in both fundamental and applied research and extends financial assistance to projects in emerging areas of science and engineering. It has been awarding doctoral and post doctoral research fellowships to researchers and has been trying to utilise the expertise of eminent retired scientists at home or abroad by the emeritus scientist scheme. It also extends school level programmes and promotes young talent in schools and nurtures excellence in science teaching. It encourages women in science specially and has been implementing 'back to lab' programme for qualified women who had undergone a career break due to family reasons and wish to return to the mainstream as scientist.

Fig 7.1
Major initiatives of KSCSTE

7.5 The KSCSTE makes deliberate efforts to popularize science including basic science, applied science, technology, environmental science, medical science and related areas among people with the assistance of Governmental and Non Governmental organizations, colleges and approved institutions. National Science Day and National Technology Day are observed to spread the message of importance of science and its application among the people. Seminar-Symposia-Workshops, Technology Festival, Rural Innovators Meet and Kerala Science Congress were conducted to facilitate

interaction among academics, researchers, professionals, industry and policy decision makers.

7.6 Technology development and transfer is promoted through Patent Information Centre, Engineering and Technology Programmes, Technology Development and Adaptation Programme, and Rural Technology Programmes etc. It also provides training and consultations in Ecology and Environment Management, Green Technology, Wetland Conservation, and Kerala Coastal Zone Management.

7.7 The Council extends awards and recognition to promote science and technology and promote scientific attitude among youngsters. Kerala Sasthra Puraskararam is for life time contribution of a Scientist of Kerala, working anywhere in the world. In addition to this the Council extends Young Scientist Award, Science Literature Awards, Environment Early Career research Award and Outstanding Environment Award to promote science and technology.

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

Major Arms of KSCSTE for Scientific Research

7.8 The State has made some significant initiatives for attracting talent to science and careers with research. There are nine Research and Development Institutes in different disciplines of Science functioning under the Kerala State Council for Science, Technology and Environment.

Kerala Forest Research Institute (KFRI)

7.9 Kerala Forest Research Institute (KFRI), established in 1975. is an institution conducting research on tropical forests and forestry. This Institute has contributed significantly to research in tropical forestry and biodiversity conservation over the past three decades and serves as a Centre of Excellence in Tropical Forestry. It provides scientific support for decision making on matters related to forestry, with particular emphasis on conservation, sustainable utilization and scientific management of natural resources. The institute has well maintained state of the art instrumentation centre, conducts research in Tissue-culture, Clonal Multiplication, Physiology, Wildlife, Soil Science, Biotechnology, Wood Sciences, Biochemistry, Mycology, Entomology, and Sylviculture etc. It has accumulated impressive collections of plant and animal specimens, and pedological samples on forestry and environment.

National Transportation Planning and Research Centre (NATPAC)

7.10 National Transportation Planning and Research Centre (NATPAC) was established in 1976 as a Division of Kerala State Electronics Development Corporation (KELTRON), a Public Sector Enterprise under the Government of Kerala. In 1982, NATPAC was reconstituted as an R&D institution under the Department of Science, Technology and Environment, Government of Kerala. The Centre is undertaking research and consultancy works in the fields of traffic engineering and transportation planning, highway engineering, public transport system, alternate options for transport system, transport energy, inland water transport, and tourism planning and rural roads. Thrust areas of NATPAC research includes transport infrastructure development, new materials for road construction, road safety, and Inland Water Transport System. It has carried out several pioneer studies such as comprehensive traffic and transportation studies for Thiruvananthapuram, Kochi and Calicut, Intermodal transport planning studies in Quilon-Kochi region, Employment potential studies in Inland Waterways, Planning, implementing and monitoring of the traffic circulation and parking system in New Delhi for the 1982 Delhi Asiad, feasibility studies and Detailed Project Report for National High Ways in the State and outside. It also conducts regular training programmes for students, graduate engineers, and Road Safety Training for different target groups like school children, Government and private drivers and general public on a regular basis.

Centre for Water Resources Development and Management (CWRDM)

7.11 The Centre for Water Resources Development and Management (CWRDM) was established as an autonomous research organisation by the Government of Kerala in 1978. It is a pioneer institution in the water sector, situated at Kozhikode. CWRDM has substantially contributed to the scientific hydrologic studies and water management in the region. Starting with the establishment of data management system for the region, CWRDM has tackled different problems pertaining to watershed development, wetland management, water management for agriculture, forest and urban hydrology, estuarine management, groundwater development, water quality management, water related environmental issues, irrigation and drainage issues, etc. The institution regularly conducts several training courses to address the needs of Government Departments, NGOs, Local Bodies, etc.

Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI)

7.12 Jawaharlal Nehru Tropical Botanic Garden and Research Institute (JNTBGRI) formerly known as Tropical Botanic Garden and Research Institute (TBGRI) was founded as an autonomous institution in 1979 with the objective of establishing a Conservatory Botanic Garden of tropical plant resources in general and of the country and the Kerala state in

particular. It also undertakes research programmes for the sustainable utilization of these resources. The institute is located in 300 acres of natural forestland, right in the lap of the Western Ghats of Palode, 40 km northeast to Thiruvananthapuram city. The core areas of JNTBGRI research are systematic studies, conservation and management of plant wealth of the country in general and the State in particular,bio prospecting of plants for sustainable utilisation, documentation of indigenous knowledge, education, extension and training on conservation and sustainable utilisation of plants. JNTBGRI is reckoned as the biggest conservatory garden in Asia with over 50,000 accessions belonging to 4000 species. It has discovered three genera and over 90 species of flowering plants and 400 taxa of fungi as new to science. Half a dozen horticultural plant varieties including orchid hybrids have been developed and registered.

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

Kerala School of Mathematics (KSOM)

7.13 Kerala School of Mathematics (KSOM) was established in 2009 as a joint venture of Kerala State Council for Science, Technology and Environment and Department of Atomic Energy (DAE), Government of India for carrying out advanced learning and research in Mathematics. It is situated at Kunnamangalam near Kozhikode. It plays a catalytic role in reviving the great mathematical traditions and promotes mathematical research in the country and Kerala in particular, through research at doctoral and post-doctoral level. It serves as a meeting ground for mathematicians from home and abroad.

Srinivasa Ramanujan Institute for Basic Sciences (SRIBS)

7.14 Srinivasa Ramanujan Institute for Basic Sciences (SRIBS) is a capacity building institute envisaged for research, teaching and learning in basic sciences. SRIBS was established by the Government of Kerala in 2013. The main objective of the institute is to formulate and implement programmes for capacity building for young faculty members, researchers and post graduate students in contemporary areas of sciences.

State Centre Resource Institute for Partnership in Technologies (SCRIPT)

7.15 The State-Centre Resource Institute for Partnerships in Technology (SCRIPT), a collaborative venture involving the Union Department of Science and Technology (DST) and the Kerala State Council for Science, Technology, and Environment (KSCSTE), is a new initiative which will be based in Thiruvananthapuram. It is envisaged as a platform for transfer of demand- driven technologies for improving the socio-economic standards and livelihood of the people of Kerala.

Critical Mineral Research Institute (CMRI)

7.16 Critical Mineral Research Institute (CMRI) is a new initiative with the broad objective of conducting high end R & D in the area of beach minerals for value addition and thereby enhancing the industrial technology innovations in this area.

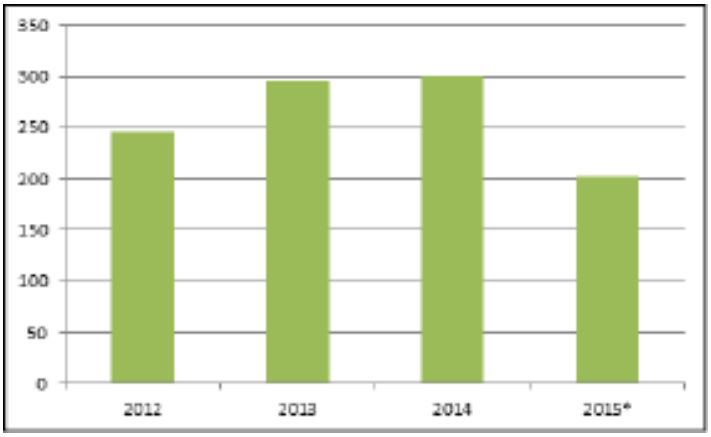
Malabar Botanical Garden and Institute of Plant Studies (MBGIPS)

7.17 The Malabar Botanical Garden and Institute of Plant Studies (MBGIPS), formerly functioning as an autonomous Grant-in aid institution under Science and Technology Department has now turned into an R&D institution under KSCSTE. This is a centre for research on the aquatic plant diversity of the country and for conservation of the endangered plants of the erstwhile Malabar Region. It is situated at Pokkunnu in Kozhikode District in 40 acres of land comprising of marshy land and hilly terrain providing diverse habitat for varieties of plants. The Malabar Botanical Garden is unique in the nation for ex situ conservation of aquatic/wetland plants and for undertaking research on them.

Achievements of Scientific Institutions

7.18 **Research Publications** - The Research and Development Institutions of KSCSTE have been creating the wealth of knowledge in diverse fields. The institutes have produced a good number of publications in refereed journals, published books and chapters in books and presented research papers in national and international conferences. The number of research papers produced by R&D Institutions from 2012 onwards is portrayed in Figure 7.2.

Fig 7.2
Research Papers Produced by R&D Institutions from 2012 onwards



*(2015 is a quick estimate as on Nov 2015)
Source: R&D Institutions concerned

7.19 Considering the previous years, there is growth in number of publications in 2014. JNTGBRI and CWRDM contributed the bulk of publications. Number of research publications of R&D institutions from 2012 onwards is provided in Table 7.1.

Table 7.1
Research Publications by R & D Institutions

R & D Centre	2012	2013	2014	2015
NATPAC	19	21	25	11
JNTGBRI	90	160	114	81
CWRDM	95	66	107	80
KFRI	36	42	41	9
KSOM	2	1	2	4
MBGIPS	4	6	11	17
TOTAL	246	296	300	202

Source: R&D Institutions concerned

7.20 **Manpower Training** - Ensuring sustainable pipeline of talented youth for science is a challenge. The role of R & D institutions in nurturing up research aptitude and talent has foremost importance in orienting the youth to science, technology, innovations and S&T-based solutions that successfully lead an economy or a State. The R&D institutions of KSCSTE have produced 12 PhDs in 2015 (as on November 2015 estimates). The institutes have trained 534 manpower in research capacities and 243 in technical capacities. Table 7.2 provides the performance of the R &D institutions collectively in providing quality manpower, and producing output in terms of patents and technology transferred.

Table 7.2
Performance of R & D Institutions

R & D Centre	2012	2013	2014	2015
Ph D awarded	12	10	11	12
Research Manpower Trained (other than Ph D)	171	1017	703	534
Technical Manpower Trained	146	283	473	243
Patent Filed	1	1	Nil	1
Technology Transferred	Use of waste plastic for road construction by NATPAC			

Source: R&D Institutions

Other Key Achievements

• Research Scholars supported by KSCSTE have published 135 papers in International Journals and 125 papers in National Journals during 2011-15
• 21 Publications of Research Scholars supported by KSCSTE bagged best paper awards
• Environmental Information System (ENVIS) web portal has been enriched with statistics of 24 diverse areas in 2014-15
• State Level Children Science Congress was held on the theme “Understanding weather and climate”
• One new species of flowering plant was discovered by a scholar of KSCSTE pursuing research in Calicut University and One new patent filed by another Scholar in 2015
• 61 patent applications received in 2014-15 and 2 forwarded after database serach

Scientific Services & Research
Kerala State Council for Science, Technology & Environment
Skill Development
Top
Other Chapters

• Launched Varghese Kurian Young Scientist Fellowship to train scientist with PhD in cutting edge technology, management and entrepreneurship
• NATPAC formulated the proposal for pedestrian friendly transportation system for Corporations of Kerala
• Three new species of oil degrading bacteria were isolated as part of DST project by Malabar Botanical Garden and Plant Studies.
• Six new species of plastic degrading bacteria were isolated from plastic industries in Kerala by Malabar Botanical Garden and Plant Studies.

Scientific Services & Research
Kerala State Council for Science, Technology & Environment
Skill Development
Top
Other Chapters

Regional Cancer Centre, Thiruvananthapuram

7.21 The Regional Cancer Centre, Thiruvananthapuram (RCC) is a Government supported premier, dedicated centre for diagnosis, treatment and control of cancer in Kerala. It is rated amongst the top three of the 28 Regional Cancer Centers in the country and maintains a working relationship with international bodies such as the WHO, International Agency for Research on Cancer (France), International Atomic Energy Agency (Vienna), National Cancer Institute (USA), Institute for Cancer Research (UK), University of Leeds (UK), Health Research Foundation (Japan) and a host of other respected organizations.

7.22 Over the past thirty-four years, RCC has been able to contribute significantly to the increasing needs of cancer care of the people of the state of Kerala and adjoining areas of Tamil Nadu and Karnataka by providing state-of-the-art diagnostic and treatment facilities at the lowest possible cost. In addition, RCC is committed to cancer control activities among the public, human resource generation in the various specialities of oncology as well as cancer research aimed at developing in new treatments for cancer. Box 7.2 provides the profile of the RCC in 2014-15 at a glance.

Box 7.2
Profile of RCC in 2014-15 at a glance

• New Cases Registered - 15939
• Review Cases Registered - 207166
• In-patient Admissions - 10847
• Radiotherapy - 7355
• Brachytherapy - 1749
• Surgical Procedures - 6741
• Endoscopic Procedures - 2318
• Chemotherapy Administered - 10128
• Bone Marrow Transplantations - 39
• Cancer Detection Programmes - 418
• Cancer Education Programmes - 131
• Ongoing Research Projects - 144

Source: Regional Cancer Centre, Thiruvananthapuram

Enhancement of Patient Care Facilities

7.23 Early detection is the key to cancer cure. Modern diagnostics facilities are needed to detect cancers at very early stages. During the past five years, RCC could make phenomenal strides in procurement of advanced equipment for prompt diagnosis and timely treatments thus helping patient's survival and quality of life. RCC has all the departments and treatment facilities required for comprehensive cancer care. Major Diagnostic & Treatment Facilities available are:

• Pathology
• Imageology
• Nuclear Medicine
• Clinical Laboratory
• Transfusion Medicine
• Microbiology
• Cancer Research
• Treatment Facilities

- Radiation Oncology
- Surgical Oncology
- Medical Oncology
- Paediatric Oncology
- Palliative Care

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

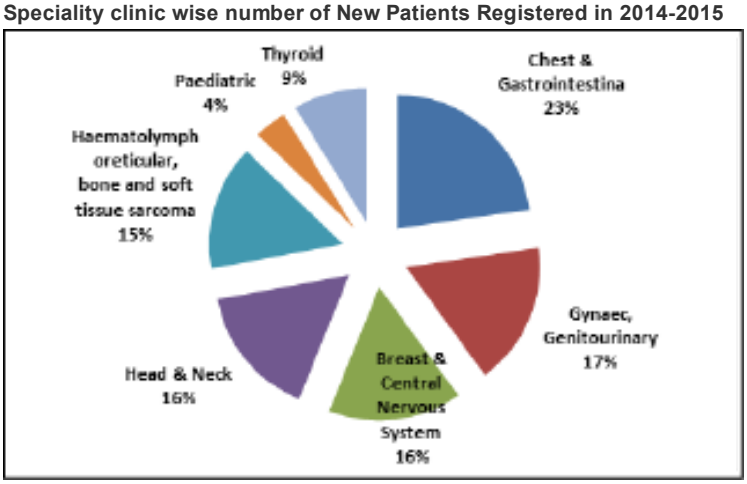
Skill Development

Top

Other Chapters

7.24 Figure 7.3 gives the details of new patients registered in speciality clinics in 2014-15.

Fig 7.3
Speciality clinic wise number of New Patients Registered in 2014-2015



Source: Regional Cancer Centre, Thiruvananthapuram

7.25 The highest percentage of new cancer cases registered were Chest & Gastrointestinal cancers followed by Gynaec, Genitourinary and Breast & Central Nervous System cancers. Including both new and review patients together, Breast & Central Nervous System comes first. Table 7.3 provides number of new and review patients undergone treatment in speciality clinics in the year 2014-2015.

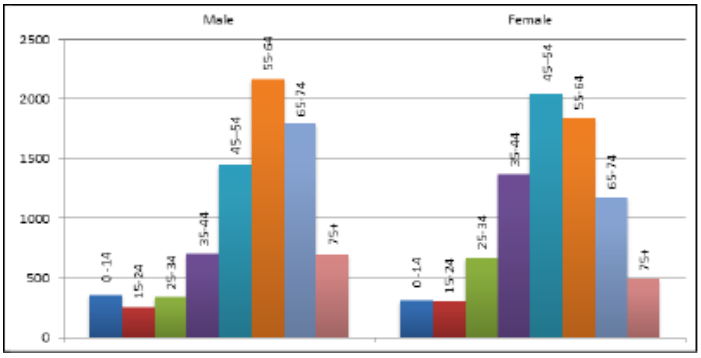
Table 7.3
Speciality clinic wise number of patients (new and review) undergone treatment in 2014-15

Clinic	New	Review	Total
Chest & Gastrointestinal	3623	30697	34320
Gynaec, Genitourinary	2749	31234	33983
Breast & Central Nervous System	2571	44842	47413
Head & Neck	2550	28180	30730
Haematolymphoreticular, bone and soft tissue sarcoma	2411	35653	38064
Paediatric	631	23424	24055
Thyroid	1404	13136	14540
Total	15939	207166	223105

Source: Regional Cancer Centre, Thiruvananthapuram

7.26 The new cancer cases registered in 2014-15 reveals that people in middle age groups are more prone to cancer than other age groups. Most of the cases registered for male were in 55-64 years age group and female in 45-54 years age groups. Figure 7.4 illustrates age and sex wise new cancer patients registered for treatment in RCC in 2014-15.

Fig 7.4
Age & Sex wise number of New cases registered in 2014-15



Source: Regional Cancer Centre, Thiruvananthapuram

Referral System

7.27 RCC is a tertiary level referral hospital and patients were referred from other government and private hospitals. Most of the cases were referred from Thiruvananthapuram district, followed by Kollam, Pathanamthitta and Alappuzha districts. In addition, 1922 cases were referred from Tamil Nadu, 117 cases from Karnataka, Lakshadweep and other Indian States. Also 229 patients from Maldives and 2 from Middle East have registered in 2014-15.

Patient Welfare Schemes

7.28 The RCC charges only minimum or subsidised rate for low income patients. Patients are grouped into categories according to their socio-economic status and payment capacities. Table 7.4 gives category wise number of New Patients registered in RCC in 2014-15.

Table 7.4
Categories of new Patients Registered (based on socio-economic status) in 2014-15

Category	No. of Patients	Percentage
Minimum payment	8573	53.78
Subsidised payment	3630	22.77
Normal rate	3736	23.45
Total	15,939	100

Source: Regional Cancer Centre, Thiruvananthapuram

7.29 The RCC has provided free or subsidised treatment for more than 75 percent of new patients registered in 2014-15. Based on income and other eligibility criteria, patients were attached to various welfare schemes of both the Central and State Governments. The welfare schemes of State and Central Governments are:-

7.30 **State Government Supported Schemes** - Cancer Suraksha Scheme, Chis Plus, Karunya Benevolent Fund, Sukrutham, Thalolam, Scheduled Tribe Patient Fund, Snehasanthwanam for Endosulfan Victims.

7.31 **Central Government Supported Schemes** - Prime Minister's Relief Fund, Health Minister's Rashtriya Arogya Nidhi (RAN), Health Minister's Discretionary Fund.

RCC Initiatives

7.32 In addition to the Government supported schemes RCC provides support to patients and families through various other schemes as detailed below:

1. Cancer Care for Life (CCL) Scheme – This is a health insurance scheme for cancer treatment. Considering the large response from the public, the RCC has been modifying the scheme.
2. Free Drug Bank - The Free Drug Bank functions according to specific guidelines and provided full or partial help to 7258 patients during 2014-15.
3. Free Food ('Akshayapathram') - Free food was provided to 6828 patients belonging to low socio-economic status during 2014-15 with the support of many philanthropic organizations.
4. Support for Paediatric patients – Special schemes are available for children suffering from cancer. Under the 'Kinginicheppu' scheme, free food and treatment were provided to poor paediatric patients through voluntary contributions. 'Prathyasa', a voluntary group working in collaboration with Paediatric Oncology division gave financial and psychosocial

Scientific Services & Research
Kerala State Council for Science, Technology & Environment
Skill Development
Top
Other Chapters

support to children and their families.

5. Indian Cancer Society Support Scheme - RCC was selected as one of the five cancer centres across India for receiving financial support from the Indian Cancer Society for treatment of cancer. During 2014-15, 189 patients including 91 new patients received support worth Rs. 155 Lakhs.

Expansion of Physical Infrastructure

7.33 A new Out Patient block with 9 storey building has been constructed under State Plan Scheme. New building will accommodate most of the OP clinics with exclusive waiting areas, OP procedure rooms, nuclear medicine department, day chemotherapy wards and out-patient pharmacy. This building will also house the medical records and telemedicine facilities, and administrative offices. Further expansion of 25,000 sq meters building is envisaged in adjacent land and preliminary works have been started there.

Research & Development Activities

7.34 The RCC as a pioneer research institution in cancer research has also produced several PhDs in cancer research and 30 scholars are currently pursuing PhD. 30 residents have undergone specialisation in Medical, Paediatric and Surgical Oncology super speciality courses and 38 residents have undergone postgraduate courses in Anaesthesia, Pathology, Radio diagnosis and Radiotherapy. There are 144 research projects being undertaken during the year.

Cancer Control Activities

7.35 **Cancer awareness programmes** - 52 programmes were conducted mainly for high school/higher secondary school students and teachers, office staffs, lay public and vulnerable groups like the tribal population, fishermen community, and rural population and around 7500 people participated in these programmes

7.36 **International School of Colposcopy** - Six doctors were given one-week hands on training and 53 BSc (MLT) students were given one day orientation programme on diagnostic tools for early detection of cervical cancer.

7.37 **Trainer-Trainee Programmes** - 10 trainer-trainee programmes were conducted for health care providers which included doctors, post graduate medical students and paramedical staff from governmental and non-governmental institutions. Nineteen programmes were conducted for community volunteers from organisations such as the Kudumbasree and ASHA, public health training students, teachers and school students from various districts of the state.

7.38 **Early cancer detection** - In 2014-15, 3506 persons attended the Early Cancer Detection Clinics. RCC and its nodal centres also provide technical guidance and assistance in pre cancer management to other hospitals and institutions.

7.39 **Cancer Outreach Programmes** - Screening programmes for early detection of common cancers in the community, and sixty eight cancer detection camps were conducted in various parts of the State including tribal settlements of Idukki and Palakkad districts, in which 5529 people underwent screening.

7.40 RCC has also taken other programmes like campaign against substance abuse in high schools and higher secondary schools in Thiruvananthapuram District, Voice of Tobacco Victims (VoTV), Kerala Chapter, School based intervention programme against tobacco and alcohol consumption in high school/higher secondary schools and observed World No Tobacco Day (31 May 2014), Breast Cancer Awareness Month (October 2014), National Cancer Awareness Day (7 November 2014) and World Cancer Day (4 February 2015). A project titled 'Swasthyam' to empower women volunteers for cancer prevention and control activities in the community was inaugurated as part of World Cancer Day.

Scientific Services & Research
Kerala State Council for Science, Technology & Environment
Skill Development
Top
Other Chapters

Section 2

Skill Development

7.41 Employability of the growing young population is an important factor in the economic development of the State. The economy becomes more productive, innovative and competitive by the existence of more skilled human potential. Economy which has skilled workforce can adjust more effectively to the challenges and opportunities of globalisation. Technological advancement in the existing areas and emergence of new areas in the service sector necessitates the imparting of more skills. Currently, there is severe mis-match between the talents and skills, required by the industry and skill-sets possessed by workforce. This results in majority of the people remaining unemployed. National Skill Development Mission envisages producing 500 million skilled manpower by the year 2022. Based on the population and to increasing matriculates passing out Kerala, 1.5 lakh to 2 lakh skilled man-power per year has to be trained annually to reach the national target.

7.42 Much has been done in recent years to upgrade Kerala's skill development regime. But the existing capacity of skills training institutions in Kerala often generates skills that are below the international standard.In order to address these problems a project has been prepared in Colleges falling under the Higher Education Department. Additional Skill Acquisition Programme (ASAP) is meant for those studying in various colleges in the State. ASAP strives to transform State of Kerala as a human resource hub of the region and is well positioned to capture growth opportunities. ASAP aims to impart industry specific skills to the needy students in the selected schools and colleges along with their regular studies through modular courses with the active participation of industry partners. Students enrolled with ASAP will get opportunity to learn sector specific skills of their choice. Communicative English and Basic IT modules are integral component of ASAP Programmes. Additional Skill Enhancement Programme (ASEP) has been developed for the students of ITIs and Registrants of Employment Exchanges. Physical details of ITIs are given in the Labour section. Along with this Modular Employable Skill Programme is also being run with the support of vocational training providers in the State.

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

Major initiatives

Craftsman Training

7.43 Industrial Training Department implements Craftsman Training Scheme to ensure a steady flow of skilled workers in different trades for the domestic industry. There are 78 Government ITIs, one Basic Training Centre, one Staff Training Institute, two AVTS, 486 private ITIs and 44 ITIs under Scheduled Caste Development Department (SCDD) exclusively for SC and 2 ITIs under Scheduled Tribe Development Departmen (STDD) exclusively for ST students functioning in the State. There are about 80 trades in which seats are allocated for Craftsman Training with a total seating capacity of 96,702.The details of ITIs and its trade and enrolment are given in the Appendix. The strength and enrolment of Government ITIs are given in Appendix 7.1. The trade/duration wise intake and out turn of Government ITIs are given in Appendix 7.2, 7.3, 7.4 , 7.5, 7.6. New trades introduced during last two years and institution wise apprentice are given in Appendix 7.7 and 7.8.

Apprenticeship Training

7.44 The Apprenticeship Training scheme is being conducted as per Apprentices Act, 1961, which was enacted with the objective to regulate the programme of training of apprentices in the industry so as to conform to a standard syllabi, period of training, skill sets etc and to utilize the facilities available in industries for imparting practical training with a view to meeting the requirements of skilled manpower for the industry. Apprenticeship is a contract between an apprentice and an employer to provide training in a particular skill in the establishment for a particular period and provide a stipend fixed as per the Apprentices Act. The Central/State Govt acts as the third party in contract regulating and monitoring the process. It was enacted with the purpose of utilizing the facilities available in industries for skill training and certification by the National Council for Vocational Training (NCVT). Trade Apprenticeship training in Kerala is both a Central and State Initiative. Apprenticeship schemes in the state are implemented through Related Instruction centres in nine districts and ITIs in the remaining five districts.

7.45 There are 81 trades in which 9848 seats have been allocated for Apprenticeship Training, of which around 5000 seats are utilized. Around 2000 trainees are certified every year under this scheme. Government sector accounts for more than 50% of apprenticeship placements in the State.

Skill Development Initiative Scheme

7.46 Skill Development Initiative Scheme aims to give free training in Modular Employable Skill courses (MES) to early school leavers and existing workers especially in unorganized sectors for employable skills. Existing skills of person can also be tested and certified under this scheme. The successful trainees will be issued certificates by the National Council for Vocational Training.

7.47 The Department of Industrial Training is the authority for implementing & monitoring training in the Skill Development Initiative Scheme in the State. There are approximately 297 Vocational Training Provider (VTPs) in the State which are conducting the above scheme. As per the direction of the Director General of Employment & Training, Government of India, an amount of Rs.27.5 per trainee for one hour is being distributed to the VTPs. 30,394 trainees have completed training and 1731 trainees are undergoing training as on 31-10-2014. In the year 2015-16, it is envisaged to give training to at least 16,000 trainees under the programme.

State Institute for Staff Training and Technology Updating

7.48 State Institute for Staff Training and Technology Updating was started in 1999 at Kazhakkuttom, Thiruvananthapuram, to update the technical knowledge of Instructional Staff and others in pace with technical developments, Service Training

Course and Principles of teaching methods are also imparted to the instructors of both Government and Private institutions. In the year 2013-14, 913 persons were trained through STI in various courses

Kerala Academy for Skills Excellence (KASE)

7.49 KASE is a Section - 25 company fully owned by Govt. of Kerala. The objective of the company is to facilitate mass human resource development through specialized skill development courses across the state. The participation of leading public and private industries is envisaged in the domains of construction, retail, finance, IT & ITES, tourism, hospitality etc. The main purpose of the academy is to spearhead the creation of highly skilled and safe professional workers, for all the levels of work in the industry, through scientifically designed specialized courses for various categories of workers. Training will be imparted to sharpen the technical skills as well as soft skills. To be at par with international standards, the workers need to be trained in soft skills like communication skills, language skills, safety and environment awareness etc., which is currently lacking in our work force as well as professional course students, who graduate from various colleges. It aims at imparting theoretical as well practical training of skill sets needed for each category -from supervisory level to working class.

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

Box 7.3

Milestones during the Financial year 2014-15

- The initiatives of the Department were recognized by awarding ISO certification to 10 ITIs at ITI Kozhikode, Kalpetta, Kannur, (w) Kazhakuttom, Attingal, Chenneerkara, Kalamassery, (w) Chalakkudi, Areacode and Chengannur
- Tie-ups were made with M/S. Maruti by ITI Ettumanoor, Mala, Chackai, Kozhikode and Kalamassery to enhance the employability of the trainees
- Tie-ups were made with M/S. Samsung by ITI Kalamassery to enhance the employability of the trainees
- Department has implemented digital file management system for creating a paperless office with timely action and better service
- Nutrition Programme, by supplying egg & milk to the trainees of all Government ITIs for all training days was started
- The Department has developed 3 D interactive visual teaching aid for optimize the use of 3 D visuals in training. The training was conducted in five trades, viz; D/Civil, Fitter, Turner, Machinist & Electrician
- The Department got 3rd Prize for Kerala e-Governance award under the category of e-learning for the year 2011-13
- An amount of Rs.68.29 crore has been expended for the implementation of various plan schemes

Box 7.4

National Skill Development Corporation has conducted state-wise sector skill gap studies to estimate the existing skill gap for the 20 high priority sectors as identified by the erstwhile Planning Commission. The challenges on skill development in Kerala and the recommendation for skill enhancement in the State is given below.

Major Skill Challenges	Recommendation
• Limited placement opportunities for students • Need to increase industry participation and improve practical component of training • Need to strengthen industry readiness of the vocationally trained students • Limited Awareness or uptake of Skill Development Initiatives • Limited opportunities and awareness for up skilling/continuous learning • Need to strengthen Quality Assurance/Control for Skill	• Skill Development Centres targeted at the unorganized sector • Re-skilling and Multi-skilling initiatives in Traditional and Unorganized Sectors • Faculty development programmes and exchange programmes • Pool of master trainers of skilled emigrants/return migrants • Infrastructure-sharing with private training providers like NSDC partners • Introduce the concept of dignity of labour and encourage youth to take up vocational trades, at the school level through the current

Trainings • Need to improve availability of nationally recognized certification • Limited availability of local labour for minimally skilled jobs • Preference for white collar jobs and professional education • Lack of Entrepreneurship Culture	ASAP initiative. • Skills Competitions and media campaigns to popularize skill development • Specific initiatives targeted at home-makers to become entrepreneurs in sectors such as Food Processing, Readymade Garments, Tourism/Hospitality • Study the profile of returning emigrants in terms of education/ skill attainment and occupational profile. Re-skilling initiatives as required

Scientific Services & Research

Kerala State Council for Science, Technology & Environment

Skill Development

Top

Other Chapters

Outlook

Innovation and skilled manpower is the need of the hour as the economy moves towards a competitive innovation based economy. Increasing focus on R&D, knowledge creation and technological progress is required to fuel innovation, productivity growth and capital creation. Kerala requires a focused approach towards spearheading innovation, entrepreneurhip and skill enhancement in the economy. 64% of the population of the State are in the age group 15-59 years (Census 2011) and this calls for a concerted approach to tap the demographic advantage. The skill shortages need to be plugged and effort is required towards acquisition of new skills. The State has to take adequate steps for creating and encouraging an environment which promotes research and development, nurtures entrepreneural skills and helps in acquisition of new skills attuned to the needs of the economy so as to raise the productivity levels in the economy.

Performance of Local Governments
Sector-wise performance
Top

Other Chapters

Chapter 8

LOCAL GOVERNMENTS AND DECENTRALISED PLANNING

Introduction

Decentralisation has been institutionalised in Kerala in the last two decades. It has been a long process of decentralisation in administration, innovative methods of implementation with a clear vision and purpose. Many milestones have been crossed in the process. Devolution of approximately one fourth the plan funds with clear formulae is the most important among them. But dual control over the functionaries and lack of role clarity for the different tiers remain a major weakness. Despite the weakness Panchayati Raj Institutions have built millions of kilometres of rural roads and provided drinking water, housing etc for the poor and marginalised.

Major thrust in different plan periods

Decentralization initiated following the 73rd and 74th amendments to the Indian Constitution has given greater responsibility and powers to the local governments for local planning, effective implementation and monitoring of various social and economic development programmes. In Kerala, the process of decentralization was launched as 'People's Plan Campaign' with a view to emphasize the concept of participatory planning that was new to the people, people's representatives and officials in local governments. But conscientisation was found quite essential. Under the 10thPlan, decentralization programme in Kerala was restructured and named 'Kerala Development Plan' (KDP) after analysing the experience of Peoples Plan Campaign. A number of innovative steps were taken under KDP to strengthen and institutionalize decentralization in the State. During the 11th Plan, Government revamped the entire process, giving stress to the concept of 'People's Planning' focusing on the completion of the process of institutionalization of decentralization. In order to make the system more efficient and effective the 12th plan approach envisaged some concrete steps to strengthen the institutions as well as the planning process. Kerala has become a role model not only in participatory planning at the local level but also in devolving functions, finance and powers to Local Governments.

Plan Allocation to Local Governments

8.2 Financial devolution is the most important element of Kerala's decentralization process, which has enabled the Local Governmets to receive resources from the State's Plan allocation as Development Fund for implementing own schemes as well as transferred schemes. The fund provided from the state plan to Local Governmets is in the form of untied plan grant for planning and implementing projects for local development. Local Governmets have the freedom in formulating and implementing projects after deciding their priority subject to an overall framework.

Performance of Local Governments
Sector-wise performance
Top
Other Chapters

8.3 At present, there are 1200 local governments in Kerala, 941 Grama Panchayats, 152 Block Panchayats, 14 District Panchayats, 87 Municipalities and 6 Corporations. The allocation of development fund to LGs is being done under three categories - General Sector, Special Component Plan (SCP) and Tribal Sub Plan (TSP). The outlay for each category was fixed on the basis of the recommendations of the IVth State Finance Commission (SFC). The Commission recommended that at least 25% of the likely plan size should be devolved to LGs for development purpose. The fund would be inclusive of the devolution from the 13th Finance Commission and the amount flowing to LGs from the proposed World Bank supported project namely, 'Kerala Local Government Service Delivery Project'. Even while the yearly step-up is strongly recommended, it would be subject to the free plan outlay available each year. However, under no circumstance should any year's allocation be less than 25% of plan size assumed by the Commission for that year. The recommended allocation to Local Self Governmets by the IVth State Finance Commission and actual allocation done so far is given in Table 8.1

Table 8.1
Award of Development Fund for LGs (2011-16)
(Rs. in crore)

Year	Amount proposed by SFC	Actual allocation	Percentage to Total Plan Outlay*
2011-12	2750.00	2750.00	25
2012-13	3388.00	3228.00	23
2013-14	3933.00	4000.00	24
2014-15	4559.00	4700 .00	24
2015-16	5193.00	4800 .00	24

*Inclusive of KSEB's contribution
Source: 4th State Finance Commission Report & Appendix IV of the Budget

Special Component Plan and Tribal Sub Plan under Decentralization

8.4 The Special Component Plan and Tribal Sub Plan are based on Article 46 of Constitution of India for providing special protective measures to safeguard the interest of Scheduled Caste(SCs) and Scheduled Tribe(STs).This constitutional mandate on the State requires it 'to create a regime of equality including social equality through comprehensive measures of social justice.' Social equality means ensuring equity between Scheduled Castes, Scheduled Tribes and other marginalized sections on the one hand, and socially advanced castes on the other, in all parameters of life- economic, occupational, educational, residential facilities, health, nutrition etc.' As one of the major objectives of decentralized planning is to improve the socio-economic status of Scheduled Castes and Scheduled Tribes and enhancing their quality of life conscious efforts have to be made at all levels of government for the effective implementation of SCP/TSP.

8.5 The allocation of Plan funds to SCP and TSP from State Plan outlay is done according to the ratio of population of SCs and STs to total population of the State. Out of the total SCP/TSP Plan outlay, a certain percentage of funds are earmarked to LGs for implementation of schemes under decentralized planning. The projects under the SCP/TSP can be categorized into two viz, the beneficiary oriented schemes and infrastructural development schemes. The outlay and expenditure for each category is shown in Table 8.2.

Table: 8.2
SCP & TSP Allocation& Expenditure of the LGs (2010-11 to 2014-15)
(Rs. in Crore)

Year	SCP		TSP		Total	
	Allocation	Expenditure*	Allocation	Expenditure*	Allocation	Expenditure*
2010-11	589.49	484.03	88.47	78.28	677.96	562.31
2011-12	660.23	697.69	99.09	93.07	759.32	790.76
2012-13	739.46	661.58	110.98	99.65	850.44	761.23
2013-14	828.2	882.49	124.3	136.89	952.5	1019.38

2014-15	927.58	811.56	139.21	121.61	1066.80	933.17

*includes opening balance

Source: Appendix IV of the Budget & Information Kerala Mission,2015

Unique features of LGs plan during the 12th Five Year Plan

8.6 During the beginning of twelfth plan period some conscious efforts have been made to give more flexibility and freedom to the local governments for plan formulation. Accordingly, some changes have been made in the plan guidelines, mainly in sectoral ceilings and project appraisal. Now there is no mandatory minimum or maximum ceiling in productive or service sector. However, in infrastructure sector the mandatory ceiling fixed is not more than 45 per cent to Grama Panchayats and Block Panchayats, 55 per cent to Municipalities and Corporations and 50 per cent to District Panchayats in general sector plan outlay. In addition to this, 10 per cent of the development fund must be earmarked for women component plan and 5 per cent to children, old age, differently abled, palliative care and other vulnerable groups. The Annual Plan Document of local governments only needs to be approved by the District Planning Committees (DPCs) instead of approving individual projects.

Performance of Local Governments
Sector-wise performance
Top
Other Chapters

8.7 Technical Advisory Groups (TAG) which are seen to be points of delay in clearances of projects were dispensed with. Instead of vetting the projects by the TAG concerned, it is verified and certified by the implementing officer and then furnished to the officer of the same department at the higher level for getting it appraised and approved. A Project Formulation Committee (PFC) can be constituted, if required, for providing technical expertise to prepare and approve the projects.

8.8 It is also important to note that now under SCP/TSP the construction of roads is allowed within SC/ST habitat. Width of the road in tribal colonies has been enhanced to a maximum of 3 metres. Introduction of financial support for SCs/STs in getting employment abroad, assistance to meritorious students seeking admission in national and international institutions are some of the landmarks in the utilization of SCP/TSP funds. Introduction of online approval of projects through Sulekha software is considered as a major shift from the traditional approach adopted by the TAG system. The application of Sulekha software includes plan formulation, appraisal, approval, monitoring, revision processes and expenditure tracking of the plan projects of local governments.

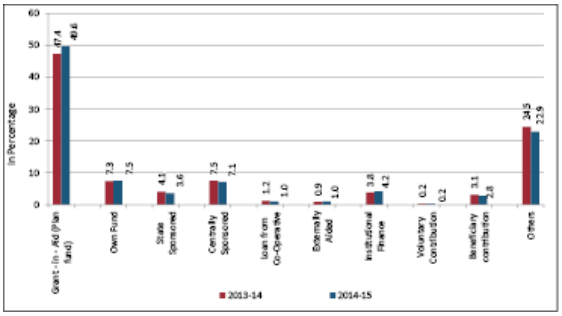
8.9 Another important change is the introduction of special grama sabhas, ayal sabhas and seva grams- gramakendrams. In order to strengthen grama/ward sabha ayal sabhas are constituted in each ward with 50- 100 families. Special grama sabha are convened for the families of differently abled and mentally challenged persons. Ayal Sabhas and Seva Gram-Gramakendram thus aims at getting people's participation in planning and implementation.

Financing of LGs plans

8.10 The total plan size of LGs during 2014-15 was Rs.11917.30 crore of which the plan grant from Govt. constituted 49.63%. The own contribution of LGs constituted 7.45% of the total and the rest was from other sources. The expenditure recorded in 2014-15 was 51.49%, which showed a decrease by 5.52 per cent compared to last year's expenditure of 57.01%. Out of the total expenditure, the plan grant share is 65.75%, own fund share 5.32%, sponsored schemes together with externally aided source 2.62% and the balance is from other sources. Even though there was 16.95 % hike in the plan grant allocated to LGs in 2014-15, proportionate increase was not reflected in the plan grant utilization, which is the major resource of LGs plans.

8.11 Source wise funding details and the respective percentage to total fund for 2013-14 and 2014-15 are given in Figure 8.1, and the percentage of expenditure from various sources for the year 2014-15 is provided in Figure 8.2. Source/Sub-sector wise details of 2013-14 and 2014-15 are given in Appendix 8.1 (a & b).

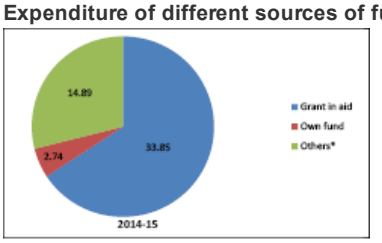
Fig 8.1
Sources of Financing LGs Plan (in percentage)



Source: Information Kerala Mission, 2015

Fig 8.2

Expenditure of different sources of funds in 2014 -15 (in percentage)



*Others include state sponsored, centrally sponsored, loan from co-operative, externally aided, voluntary contribution, beneficiary contribution and others (items excluding grant in aid and own fund).

Performance of Local Governments
Sector-wise performance
Top
Other Chapters

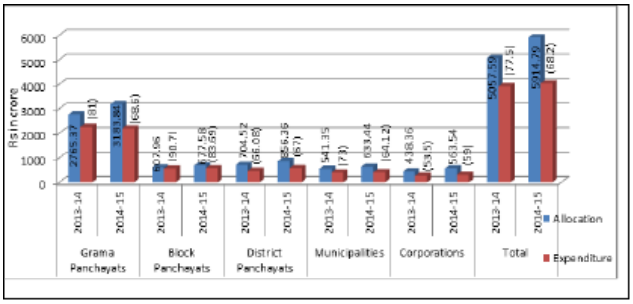
Performance of Local Governments

8.12 The local governments allocate their plan funds mainly to productive, service and infrastructure sectors. The productive sector includes agriculture and allied sectors, soil and water conservation, irrigation and industries. The service sector consists of education and allied sectors, health and allied services, women and children development, labour and labour welfare. The infrastructure sector includes energy, transportation and buildings. The total plan fund available including opening balance with LGs for allocating funds to various development sectors during 2014-15 wasRs.5914.80 crore, an increase of 857.20 crores(ie. 16.95%) from the previous year.

8.13 Out of the total grant-in-aid, only Rs.4033.94 crore was utilized for different sectors. Thus, the overall utilization percentage in 2014-15 was 68.20 per cent which was lower compared to the previous year. In 2013-14, the utilization percentage was 77.47 per cent and in 2012-13 it was 70.84 per cent. The expenditure pattern shows wide variations among local bodies. Among the three tiers the performance of rural local governments was better in Block Panchayat with 83.69 per cent expenditure followed by Grama Panchayats with 68.63 per cent and District Panchayat with 67.04 per cent during 2014-15. The per cent of expenditure among urban two tier local governments was the lowest in the Corporation (53.51 per cent) and Municipalities (64.12 per cent) during 2014-15. The tier wise details of outlay, allocation and expenditure of grant-in-aid during 2013-14 and 2014-15 are given in Figure 8.3 and Appendix 8.2a & Appendix 8.2b.

Fig 8.3

Grant-in-aid to LGs, Allocation and Expenditure



Category - wise performance

8.14 As mentioned earlier, the allocation of grant-in-aid to Local Governments falls in three categories-General Sector, Special Component Plan and Tribal Sub Plan.The outlay for each category is fixed on the basis of recommendations of the State Finance Commission. During 2014-15, an amount of Rs..5914.80 crore was allocated to different categories of which general category, SCP & TSP constituted 76 %, 21%, and 3 % respectively. There is a slight enhancement by 4% in general sector but allocation in SCP &TSP fund decreased by 3% and 1% respectively compared to 2013-14. An analysis of category wise utilization during 2014-15 shows that the percentage of expenditure under General Sector was 69.28 per cent of the plan outlay and in the case of SCP and TSP it was 64.72% and 65.58 per cent respectively. In the previous year achievment was 79.09 per cent in the general sector, and 73 and 75 per cent respectively in the case of SCP and TSP. Shortfall in expenditure of SCP/TSP is a common phenomenon for all tiers of Local Governments except for Block Panchayats, but the least utilisation of SCP and TSP funds is in urban local bodies. The category wise and local body wise allocation during 2014-15 is given in Table 8.3 and in Figure 8.4.

Table 8.3

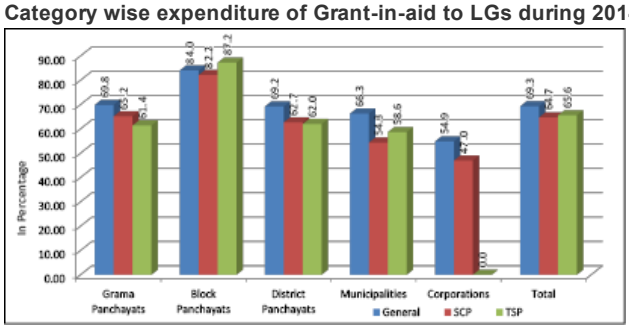
Category wise Allocation of Grant-in-aid to LGs during 2014-15 (Rs.in Crore)

Type of LGs	General	SCP	TSP	Total
Grama Panchayats	2443.04	628.13	112.66	3183.84
Block Panchayats	472.33	175.80	29.46	677.59
District Panchayats	575.05	240.99	40.33	856.37
Municipalities	517.88	112.60	2.97	633.45
Corporations	467.08	96.45	0.01	563.55
Total	4475.38	1253.97	185.44	5914.80

Source: Information Kerala Mission-2015

Fig 8.4

Category wise expenditure of Grant-in-aid to LGs during 2014-15



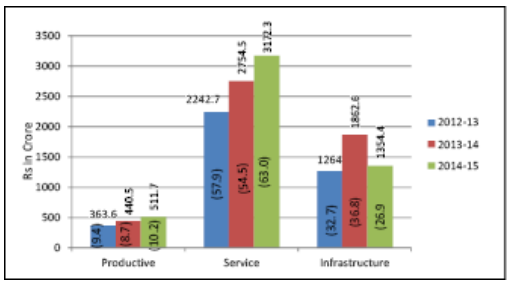
Source: Information Kerala Mission 2015

Sector-wise performance

8.15 The LGs allocate their funds mainly in three sectors viz. productive, service and infrastructure. The total fund available for these sectors for the year 2014-15 was Rs.5914.80 crore. Out of this the allocation to productive, service and infrastructure sectors was 9 per cent, 54 per cent and 38 per cent respectively and the corresponding figures in the previous year was 9 per cent, 54 per cent and 37 per cent respectively. The sector wise allocation and expenditure details of 2014-15 are given in Figure 8.5 and the sector wise and local government wise percentage of expenditure to total expenditure is given in Table 8.4. It may be seen that in the productive sector the expenditure is low compared to service and infrastructure sectors in both the years, though there is a slight improvement in 2014-15. The percentage of expenditure is meagre in municipalities and corporations. The sector wise allocation and expenditure details in 2013-14 & 2014-15 are given in Appendix 8.3a & Appendix 8.3b.

Fig 8.5

Sector wise Allocation to Local Governments*



*Figures in parenthesis are respective percentage of expenditure to allocation

Source: Information Kerala Mission 2015

Table 8.4

Local Government wise and sector wise percentage of expenditure

(Rs. in crore)

Type of LGs	2013-14			2014-15		
	Productive	Service	Infrastructure	Productive	Service	Infrastructure
Grama Panchayat	9.16	56.48	34.36	10.07	59.05	30.88
Block Panchayat	7.93	59.58	32.48	7.91	60.07	32.02
District Panchayat	9.45	60.36	30.19	9.55	57.78	32.67
Municipalities	4.96	51.45	43.58	5.13	53.84	41.03

Performance of Local Governments
Sector-wise performance
Top
Other Chapters

Corporation	4.33	49.84	45.83	4.03	48.21	47.76

Source: Information Kerala Mission 2015

Productive Sector

8.16 Out of the total plan funds made available to productive sectors by Local Governments, 79 per cent of fund was earmarked for the implementation of various schemes under agriculture and allied sectors in 2014-15 while it was 83 per cent in the previous year. The LGs have given more weightage to agriculture and allied sectors compared to industries, energy, etc. during 2014-15 also. The initiative of rural local bodies in this respect is worth mentioning as a considerable amount of allocation was made under productive sector compared to urban local bodies. The Grama Panchayats have given major attention to the implementation of programmes in productive sectors by allocating 89 per cent of the total to this sector. The performance of Grama Panchayats is better in the productive sectors since they have spent 74 per cent of their allocation to this sector, while during 2013-14 the performance of Block Panchayats were better with 82 per cent of utilisation. The details of allocation and expenditure during 2014-15 are given in Table 8.5 and the percentage of allocation to different tiers is shown in Figure 8.6. The details of achievements during 2013-14 and 2014-15 are given in Appendix 8.4a & Appendix 8.4b

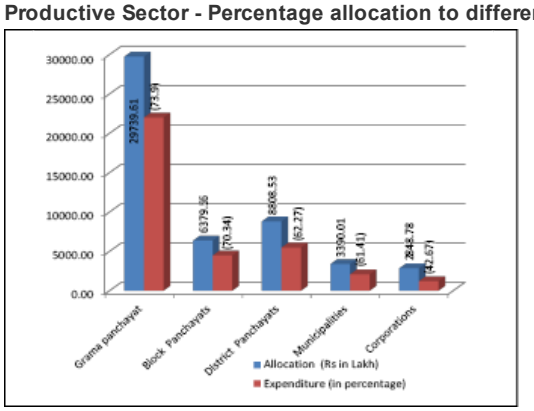
Performance of Local Governments
Sector-wise performance
Top
Other Chapters

Table 8.5
Productive Sector - Allocation & Expenditure during 2014-15 (Rs. in Crore)

Type of LGs	2014-15		
	Allocation	Expenditure	Percentage
Grama Panchayat	297.40	220.03	73.99
Block Panchayat	63.80	44.87	70.34
District Panchayat	88.08	54.85	62.27
Municipality	33.90	20.82	61.41
Corporation	28.48	12.16	42.67
Total	511.66	352.73	68.94

Source: Information Kerala Mission 2015

Fig 8.6
Productive Sector - Percentage allocation to different Tiers of LGs during 2014-15



Figures in parenthesis are respective percentage of expenditure to allocation
Source: Information Kerala Mission 2015

Service Sector

8.17 Under service sector all LGs have given more attention to enhance the quality of basic services provided to the public through welfare oriented programmes with special emphasis on education, housing, health, drinking water, nutrition and social welfare, etc. In utilizing the funds, the service sector has performed better than the productive and infrastructure sectors. Block Panchayat performed well in the service sector by achieving 89 per cent of expenditure, while it was 93% in 2013-14. The sector wise allocation and expenditure are shown in Table 8.6 and percentage share of service sector to different tiers are shown in Figure 8.7 and sub sector wise details for 2013-14 & 2014-15 are shown in Appendix 8.5a & Appendix 8.5b

Table 8.6
Service Sector - Allocation & Expenditure during 2014-15 (Rs. in Crore)

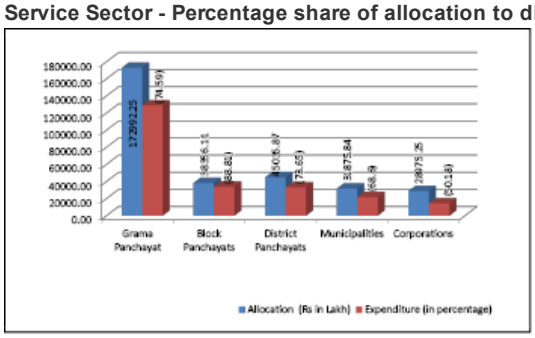
Type of LGs	2014-15		

	Allocation	Expenditure	Percentage
Grama Panchayat	1729.92	1290.37	74.59
Block Panchayat	383.56	340.66	88.81
District Panchayat	450.36	331.69	73.65
Municipality	318.76	218.67	68.60
Corporation	289.75	145.38	50.18
Total	3172.35	2326.77	73.35

Source: Information Kerala Mission 2015

Performance of Local Governments
Sector-wise performance
Top
Other Chapters

Fig 8.7
Service Sector - Percentage share of allocation to different Tiers of LGs during 2014-15



Source: Information Kerala Mission 2015
Figures in parenthesis are respective percentage of expenditure to allocation

Infrastructure Sector

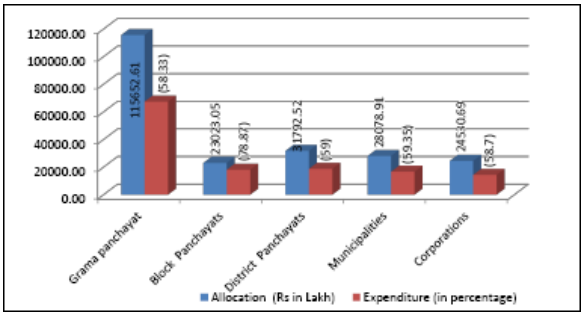
8.18 During the review period, the Local Governments set apart 38 per cent of the total allocation for infrastructure sector while it was 37 per cent in 2013-14. Among the tiers, the Grama Panchayats allocated 52 per cent of their allocation to the sector. The expenditure during 2014-15 decreased to 61% from 74 % in 2013-14. In the utilization of plan fund in this sector, Block Panchayats and Municipalities achieved 79 % and 59 % of expenditure respectively during 2014-15, which is lower than that in 2013-14. Against the total allotment made in the infrastructure sector, 72 per cent of fund was earmarked for transportation facilities and the corresponding expenditure was 66 per cent. Transportation and building sectors together constituted 92 per cent of funds from their total outlay in the infrastructure sector. Tier wise, sub sector wise allocation and expenditure details in 2014-15 are given in Table 8.7 and percentage share of allocation to different tiers is shown in Figure 8.8 and sub-sector wise details of 2013-14 & 2014-15 in Appendix 8.6a & Appendix 8.6b.

Table 8.7
Infrastructure Sector - Allocation & Expenditure during 2014-15
(Rs. in Crore)

Type of LGs	2014-15		
	Allocation	Expenditure	Percentage
Grama Panchayt	1156.53	674.65	58.33
Block Panchayat	230.23	181.57	78.87
District Panchayat	317.93	187.57	59.00
Municipality	280.79	166.66	59.35
Corporation	245.30	144.00	58.70
Total	2230.78	1354.45	60.72

Source: Information Kerala Mission 2015

Fig 8.8
Share of Infrastructure Sector Allocation to different Tiers of LGs during 2014-15



Source: Information Kerala Mission 2015

Figures in parenthesis are respective percentage of expenditure to allocation

Performance of Local Governments

Sector-wise performance

Top

Other Chapters

Performance under Special Sector Plans

8.19 Women component plan and plan for disadvantaged groups (aged, children, disabled, palliative and other vulnerability) in the plan of local governments is one of the salient features in Kerala's decentralisation. Out of the total plan size, local governments have to set apart the mandatory provision of 10 per cent for women development and 5 per cent for disadvantaged groups. In the case of special programme for Women Component Plan and children the expenditure decreased from 77 per cent to 72 per cent and 90 per cent to 86 per cent respectively. This year too,Rs.38.06 core and Rs.139.12 crore were set apart for palliative care and other vulnerability groups. The percentage of expenditure in palliative care is 88% during 2014-15, which is slightly higher than that in 2013-14 , which was 87%. Details of allocation and expenditure during 2014-15 are given in Table 8.8 and the figures in 2013-14& 2014-15 are given in Appendix 8.7a & Appendix 8.7b.

Table 8.8
Allocation and expenditure of Special Sector Plan for 2014-15
(Rs. in crore)

Special sectors	2014-15		
	Allocation	Expenditure	Percentage
Women Component Plan	613.16	441.32	71.97
Special Programme for children	174.36	149.56	85.77
Special Programme for elderly	32.65	22.46	68.78
Differently abled	115.33	88.36	76.61
Other Vulnerability	139.12	92.78	66.70
Palliative Care	38.06	33.43	87.81
Youth Welfare Programmes	147.22	74.07	50.31

Source: Information Kerala Mission, 2015

Strengthening of District Planning Machinery

8.20 In order to deepen the Local Government system and reduce government control, the Amendment Acts provide provisions to create constitutional bodies for specific purposes. District Planning Committee, has been created as per article 243ZD of the Constitution of India at the district level for planning at district and below. Accordingly, District Planning Committees were constituted in all the fourteen districts in accordance with the spirit of the 74th amendment of the constitution so that they can play the nodal role in plan preparation by LGs, approval of local plans, providing suggestions to LGs, monitoring of plan implementation etc. and their integration at district level as also their linkages with the state plan. The DPC consists of 15 members headed by the District Panchayat President and District Collector is the Member Secretary. Twelve of the fifteen members are elected representatives from District Panchayat and Urban Local Governments in the ratio of rural -urban population in the District. One member is an expert nominated by the Government. All MPs and MLAs are permanent invitees of DPC and all the district level officers are ex-officio Joint Secretaries. The DPCs are fully functional in the State. The District Planning Officer, Joint Secretary (Co-ordination) assist the Member Secretary in convening meetings, preparation of agenda, minutes and all other secretarial duties. The constitution of DPC has been done every five years without fail in the State along with the election to the Local Self Governments.

8.21 The 1200 Local Governments in Kerala prepare more than two lakh projects every year and the responsibility of vetting these projects is a major responsibility as well as a risk on the part of DPC. At present the DPO Office which is functioning as the Secretariat of DPC is the agency to take up this difficult task within the limitation of lack of staff, space and even a proper building to accommodate all these records. Considering the varied functions and the volume of work involved, Government in 2006 decided to strengthen the District Planning Committee by attaching the Offices of the Deputy

Director of Statistics and the District Town Planner to its Secretariat in addition to the District Planning Office. The duty of data analysis and interpretation for economic planning was entrusted to the District Planning Officer, Collection of information and data required for Local Level Planning to the Deputy Director of statistics and providing technical support to the District Town Planner. As there is no building to house the three offices included in the Secretariat under one roof, Government decided to construct DPC secretariat by using the fund from Central and State governments and contribution from LGs.

8.22 The construction of DPC buildings have been completed at Ernakulam, Thrissur, Kasaragod, Wayanad, Kannur, Alappuzha and Palakkad and have started functioning in six districts except Palakkad. In the other districts the work is progressing.

Performance of Local Governments

Sector-wise performance

Top

Other Chapters

Box 8.1
Award System

In order to make the local bodies more functional in plan formulation, approval , implementation and monitoring in time, the State Planning Board has initiated an award system during 2012-13 onwards to the first three Districts which complete the plan formulation and implementation successfully in all respects. In the year 2012-13, Wayanad, Alappuzha and Ernakulam districts were selected as first, second and third and in the year 2013-14 Malappuram, Kottayam and Thiruvananthapuram bagged first , second and third prizes respectively.

Box 8.2
Study to Assess the Performance of Grama Panchayats under Decentralised Planning

The State Planning Board is now conducting a study in 152 randomly selected grama panchayats for the purpose of assessing the performance under decentralized planning. The study emphasizes grama sabha and peoples participation, functioning of working groups, resource mobilization, including own resources of the panchayats and their utilization, plan formulation and expenditure, monitoring mechanisms and major achievements and constraints.

The Study also gives emphasis to the topography and vulnerability of the panchayats predominated by tribals and fisher folk. It is nearing completion and the report will be published during this financial year

Best Practices

Box 8.3
Residential Flats for SC families in Feroke Grama Panchayat (Kozhikode district)

Residential Flat for SC families is an innovative project implemented by Feroke Grama Panchayat. The project is the first of its kind in the State. Around 24 residential flats comprising (6 clusters x 4 flats) have been constructed in 58 cents of land owned by the Panchayat in Puttekkad area. The plan and design of the buildings are characterised by architectural beauty and beautified surroundings. Each flat has a spacious bed room, dining room, kitchen and a drawing room. The courtyard has been paved with interlock bricks. Rainwater storage facilities, streetlights and quality drainage have been provided in the complex. The Panchayat started this project in the year 2011-12 and completed it in 2014-15. The project was completed at a cost of Rs.72.00 lakhs. The panchayat share was Rs. 48.00 lakhs and Rs. 1.00 lakh was collected as beneficiary contribution. Accommodating more number of families in minimum land holdings with better living standards is the main attraction of the project. Moreover facilities for rainwater harvesting are done effectively. The work was implemented through the accredited agency M/s. HABITAT, Thiruvananthapuram. The project was inaugurated on September 14, 2015

Box 8.4
Snehasparsham (www.snehasparsham.com)

Snehasparsham is an integrated project initiated by District Panchayat, Kozhikode for the rehabilitation of renal patients. The Project was launched in the year 2012 by registering a ‘Kidney Patients Welfare Society’ under the Charitable Societies Act. The jurisdiction of the Society is Kozhikode Revenue District. The District Panchayat

President is the Chairperson and District Collector is the Chief Co-ordinator of the Society. The Secretary of the District Panchayat is the Convenor of the Society. The activities of the Society are monitored by an Executive Committee consisting of eminent personalities from various walks of life. Its office is functioning at District Panchayath Office Complex in Civil Station, Kozhikode. It primarily started as an initiative for the welfare of Kidney Patients in Kozhikode District. The source of funds for the project is managed as public contributions from individuals, Kudumbasree members, students, religious institutions, Residents Associations, local bodies etc. Kozhikode District Panchayath had allocated an amount of Rs.5.00 lakh each in 2012-13 and 2013-14and Rs.2.50 lakhs in 2014-15.

Major activities of the project include, supporting the shattered patients and their families both financially and morally and providing dialysis support and medicine for post transplant patients, at the rate of Rs. 2500/- per month (250 x 10 Dialysis)

Performance of Local Governments

Sector-wise performance

Top

Other Chapters

Outlook

Kerala's decentralisation experience is unique and encouraging, and it is recognized world over. The state is fortunate to have well established and strong local governments. It may be observed that decentralization has made its impact in local level planning. The systems developed under this process have become part and parcel of the development activities at the grass root level. Moreover the innovative initiatives to organize people's participation through different organizational set up have been appreciated widely. Kerala Perspective Plan 2030 identifies the lessons from the Kerala's experience in decentralization. Once the responsibilities are transferred the local governments are compelled to perform as there is pressure on elected representatives / government to assure that decentralization succeeds. But this process requires a continuous effort on the part of elected representatives and officials. While adequate and enhanced budgetary funds are provided to Local Governments, there is inadequate capacity among local governments to conceptualize and prepare detailed project reports, implement and monitor them. As project management skills are yet to be attained, capacity building is the most important gap that needs to be bridged. Conscious and consistent efforts have to be made for the sustainability of the whole process.

State Planning Board Thiruvananthapuram, Kerala, India.

Home |

Chapter 9

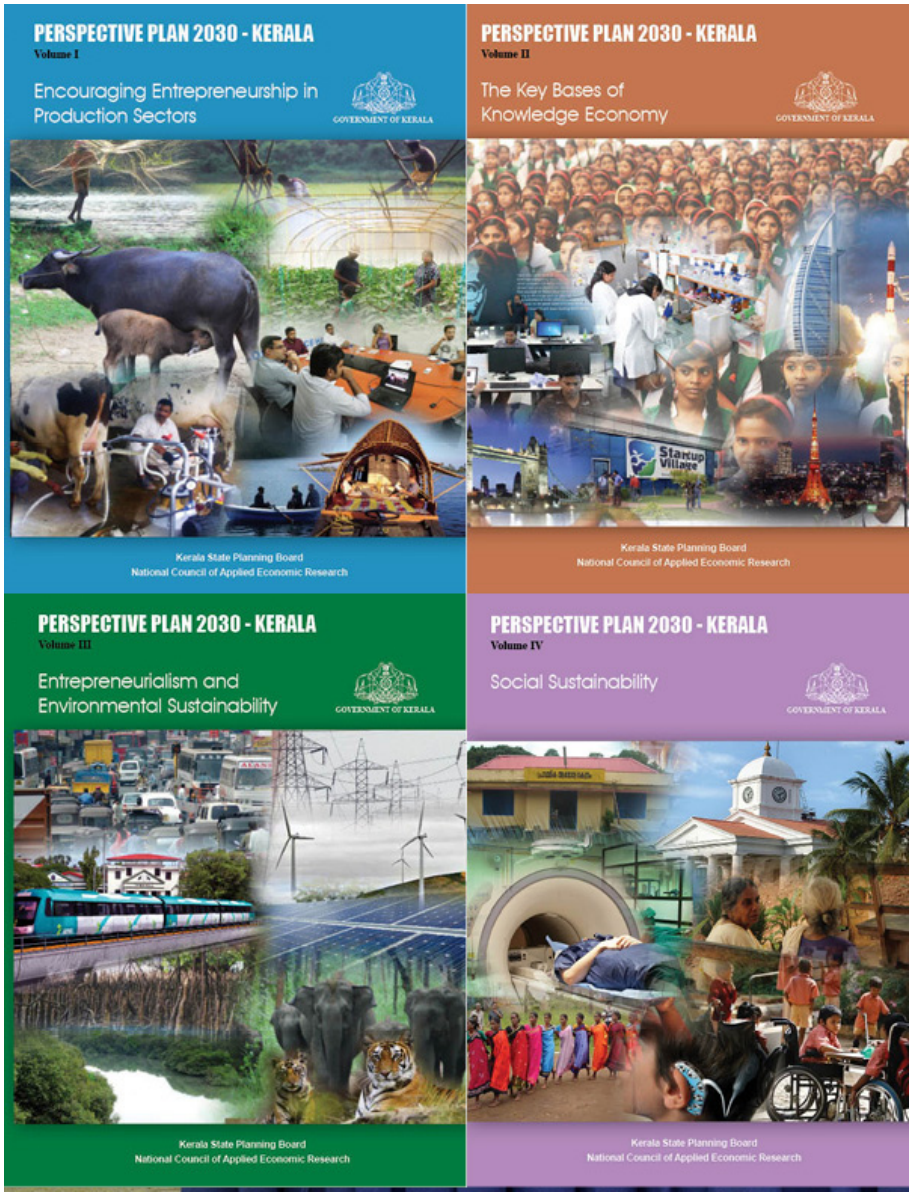
PERSPECTIVE PLAN 2030

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters



Introduction

To ensure sustainable development and inclusive growth in the State, the Government of Kerala directed the State Planning Board to prepare 'Kerala Perspective Plan 2030' (KPP 2030). Technical support came from the National Council of Applied Economic Research (NCAER), New Delhi. The document was launched on 13th July 2015. Perspective plan for Kerala is based on a thorough analysis of the existing and potential strengths and weaknesses of the Kerala State. It establishes long term goals for the economy in terms of major macroeconomic and social indicators within an overall framework of socio-economic and environmental development in the context of the State. It puts together a vision of development, sectoral strategies, and projections relating to quantitative dimensions of medium and long term development plans.

Kerala Perspective Plan 2030 is a strategic articulation of its development vision, mission, goals, and objectives, and a high level strategy to achieve them. It also specifies an action plan around the framework of resources, competencies, and capacities. The KPP 2030 identifies critical challenges; provides a strategic framework for sustainable and inclusive growth drawing on international experiences; sets developed country benchmarks for Kerala to achieve; examines the best regional and international practices and provides the rationale for development planning and resource requirement. Creation of a knowledge-based economy is central to this Perspective Plan. The plan will be integrated into the overall development strategy of the State articulated in Budgets and Plans.

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

Perspective Plan

Planning means looking ahead and chalking out future course of actions to be followed. It is a preparatory step. It is a systematic activity which determines when, how and who is going to perform a specific activity. Perspective Plan is a plan for a fairly long period, say 20 to 30 years, less detailed and less concrete than annual plans. The purpose of a perspective plan is to set a 'perspective' for the short term plans. The short term plans, so worked out, would be such as to lead to certain long term results. It is neither a fully worked out plan nor just a theoretical exercise, but perspective plan is a framework within which concrete short term plans can be fitted. Thus perspective planning is a blue print regarding the objectives and targets of long run growth.

9.2 The five year plan is further divided into annual plans. Whether there are perspective plans or annual plans, they are divided into sectoral as well as regional plans. Regional plans are concerned with regions, districts and localities. While sectoral plans are made for the development of the sectors like agriculture, industry, transportation, health, education etc., they are further divided into sub plans like plans to boost the agricultural output; plans to increase the coir and cashew production; plans to enhance exports etc. All these plans and sub plans are constituents of the Perspective Plan.

9.3 The following are some of the steps required for a perspective plan.
i. Analyze the existing scenario
ii. Conduct stakeholder assessment
iii. Clarify values important to the organization
iv. Set goals and objectives
v. Identify strategies – set time lines and tasks
vi. Estimate and allocate resources
vii. Develop and communicate a marketing or business plan
viii. Establish a system for the implementation and monitoring of policies, procedures, and rules
ix. Establish a system for exchanging information and building consensus
x. Provide a mechanism for evaluation

Need for Perspective Plan

9.4 Over the five and a half decades since its formation in 1956, Kerala has recorded impressive achievements in development, significantly improving the material conditions and quality of life of its people. Its achievements in terms of human development indicators such as education, health, and demographic indicators have been globally acknowledged. Its social development in terms of social equality, social network ties, social cohesiveness and political vibrancy which present enormous opportunities for the policy makers, has also not gone unnoticed. In contrast to the experience of high income countries, these achievements were made at low levels of economic development and per capita income and had not been accompanied by corresponding economic growth for almost 30 years since its formation. This development experience of Kerala was portrayed as a paradox of 'human development despite economic stagnation of its economy'. Since the late 1980s there has been a turn-around in Kerala's fortunes and the current experience is described as one of 'high economic growth with low productivity and high unemployment'. This paradox is intrinsically linked with the poor quality of growth in the State. The economic history of Kerala is characterised by three distinct phases of economic growth. These are:
• Economic stagnation phase : 1970−71 to 1986−87 (Average growth rate is 1.1%);
• Moderate growth phase:1987−88 to 2001−02 (Average growth rate is 5.1%); and
• Accelerated growth phase: 2002−03 to 2009−10(Average growth rate is 7.5%);

9.5 Currently, Kerala is not only ranked very high among Indian states in terms of human development and poverty reduction, it has also been achieving acceptable levels of economic growth. It is well positioned among Indian states in terms of per capita income. Its Gross State Domestic Product (GSDP) has also been growing at a rate that is above the all-India average till 2014, with 2004-05 as base year for calculation.

9.6 Nevertheless, economic growth in Kerala cannot be taken for granted. Examining the data from the 1970s shows that

Kerala's growth is mainly driven by construction; transport, storage & communication; trade, hotels and restaurants; real estate ownership, business, and legal and other communication services. These services have low tradability and are mainly driven by domestic demand. The four factors that drive domestic demand are: remittances, tourism, government welfare expenditures and the welfare role of social organisations. Consumption is not accompanied with commensurate increase in investment and productive capacities. Kerala is caught in a low productivity trap of GSDP and employment. The average rate of unemployment in Kerala is three to five times higher than that of the rest of India. It is characterised by unemployment amongst the educated and casualisation of employment.

9.7 Further, Kerala is characterised by relatively high personal and regional inequality as compared to the rest of India. The State is confronted with aging population; rapid urbanisation without commensurate increase in urban infrastructure; and increasing pressures on natural resources, especially land and water. Nutritional deprivation is serious. Social challenges in the form of high incidence of crime against women and rising rates of alcoholism remain.

Strategic Planning
Initial Steps in Implementing KPP 2030
Top
Other Chapters

9.8 The narrow base of growth drivers is the main reason for this situation. Growth in Kerala was driven by industry along with transport, storage, trade and hotels during 1971-86. During 1987-2001, real estate and business services became important. The period beyond 2001 saw construction, transport, storage and communication, trade, hotel and restaurants, real estate ownership, business and legal services, and other services boosting growth. Remittances, tourism and welfare expenditures were the drivers of growth. Will these factors be able to sustain the growth witnessed during the last decade and a half?

9.9 Despite the development of human capital that has taken place over the past several years, the State is yet to become known for knowledge-intensive service-oriented products and services. While the national economy is driven by skill-intensive, tradable and high value-added services like software, communications and financial services, Kerala is not. Any fall in remittances, tourism and welfare spending will take growth to lower levels. The magnitude of the fall in growth can be large. Three different growth scenarios may be visualized: (i) Growth in banking and communication sectors slow down; (ii) Growth in banking, communication and construction sectors slow down and (iii) Growth in remittances slows down. The results would be: Scenario1- overall growth rate in Kerala would fall to 5.1 per cent in 2012−16, and later this growth rate could reach a new low of 4.6 per cent in 2027−31. Scenario 2- a range of growth rate from 3 to 4 per cent; Scenario 3- growth rate of 3.3 per cent. These are extremely low growth rates under which sustaining the welfare gains of the ageing population would be almost impossible. Kerala has to prepare itself to face this challenge. In face of a grim and uncertain business scenario and multifarious challenges, there is need to improve the quality of growth in terms of productive capacity, structural transformation and the quality of human development. This requires course of correction. Strategic planning is an essential first step to place the State on a high growth trajectory.

Strategic Planning

Vision

9.10 The vision outlined in KPP 2030 for the State is a prosperous, dynamic, knowledge-driven, competitive and eco-efficient economy in the distinguished league of the world's advanced economies with a spirit of entrepreneurship, innovation, tolerance and diversity.

9.11 It is envisaged that Kerala will be a globally-oriented knowledge hub, in the distinguished league of the world's leading knowledge hubs. A key node in global knowledge networks, it will have distinctive expertise in the education sector, health care, bio- technology, ICT, bio diversity and environment related areas.

Mission

9.12 The mission of KPP 2030 is to achieve "Sustainable Economic Prosperity". Sustainable Prosperity means prosperity for the present without compromising prosperity of future generations. Four dimensions of this prosperity are: economic, human, social and environmental.

• **Economic prosperity**: With the aim of achieving high income status equivalent to Nordic countries by 2040, Kerala will achieve the standards of a high middle income country by 2030.
• **Human prosperity**: Quality of life will be shaped by access to, and quality and affordability of services namely, health, education, and effective and clean governance.
• **Social prosperity**: Equal opportunity for every person residing in Kerala irrespective of gender, caste and origin for intellectual, personal and professional growth.
• **Green prosperity**: Preserve the natural wealth and biodiversity of Kerala for future generations.

Mission statement

9.13 Quantity is not enough—quality matters.

Goals

Economic prosperity:

• Achieve annual per capita income of USD 36,000 from the current (approximately) USD 4,700 (2005 PPP) by 2040
• Achieve a compound rate of 7.5% during the next 20 years to reach the level of USD 19,000 equivalent to a middle high income country by 2030.
• With sectoral growth rates of
• 2% minimum growth in agriculture
• 9% in manufacturing
• 9% in construction
• 7.5% in communication
• 10% in education and health sectors
• Brand Kerala as a 'global education and health hub' driving India's exports in education and health care services along the lines of Bangalore in IT exports.

Strategic Planning
Initial Steps in Implementing KPP 2030
Top
Other Chapters

High quality of life

• Increase the share of education and health sectors in GDP to 10% of GDP from the current 5−6%;
• Increase in enrolment ratio in higher education to 48%;
• Health security for all;
• Upgrade to highest category of UNDP human development index.

Just and equal society

• Reduction in
• Unemployment rate to 4%
• Gini coefficient to 23%
• Poverty rates to 1% ($2 per day PPP)
• High standards of living with focus on
• The growth of smart urban and rural areas.
• Transforming Kochi into a global city to bring it into A.T. Kearney index of global cities
• Culturally diverse, safe and just society.

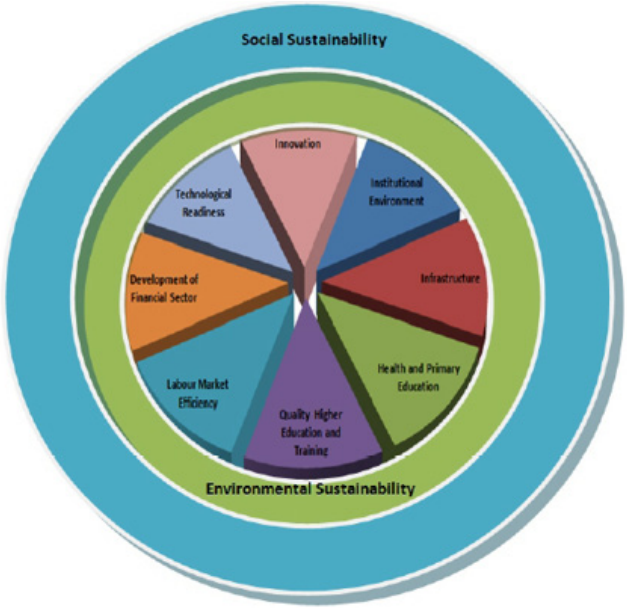
Clean and safe Environment

• Upgrade ecosystems, biodiversity, resources, through sustainable production systems and consumption;
• Protect forests and wetlands;
• Conserve the World Heritage bio-diversity of Western Ghats
• 20% increase in energy and water use efficiency.

Framework of Kerala Perspective Plan 2030

9.14 The framework for the development of the Kerala Perspective Plan 2030 has been conceived in terms of innovation-embracing entrepreneurs at the centre of the economy, with eight pillars of institutional elements, infrastructure, health and primary education, quality of higher education, labour market efficiency, development of financial Sector, Technological readiness and innovation built on the foundational elements of environmental sustainability and social sustainability (See Figure 1). The trajectory of encouraging, sustaining and enhancing growth will require decisive action to boost Kerala's competitiveness and improve its future economic outlook.

Fig 1
Framework of Kerala Perspective Plan 2030



Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

9.15 A competitive economic environment is built on eight pillars, of which the first pillar is the institutional environment determined by the legal and administrative framework within which individuals, firms and governments interact to generate wealth. The quality of institutions has a strong bearing on competitiveness and growth. The role of institutions goes beyond the legal framework. Government attitudes towards markets and freedom and the efficiency of its operations are also very important. Excessive bureaucracy and red tape, overregulation, corruption, lack of transparency and trustworthiness and the inability to provide appropriate services can considerably slow the process of economic development.

9.16 Infrastructure is the second pillar that is critical for ensuring effective functioning of the economy as it is an important factor in determining the location of economic activity and the kinds of activities or sectors that can develop within a region. Well-developed infrastructure reduces the effect of distances, lowers costs and reduces inequalities in a variety of ways. Effective modes of transport — quality roads, railway, ports and air transport — enable entrepreneurs to get their goods and services to the market in a secure and timely manner.

9.17 The third pillar of a competitive economic environment is health and primary education. A healthy workforce is vital to a region's competitiveness and productivity, not to mention the State's well being. Workers who are ill cannot function to their potential and will be less productive. Poor health leads to significant costs for businesses, as sick workers are often absent or operate at lower levels of efficiency. Astronomic health expenditure could also greatly reduce savings and investment.

9.18 The fourth pillar is quality higher education and training, which is crucial for economies that want to move up the value chain, beyond simple production processes and products. Today's globalising economy requires countries to nurture pools of well educated workers, who are able to perform complex tasks and adapt rapidly to their changing environment and the evolving needs of the production system.

9.19 The fifth pillar is labour market efficiency. Efficiency and flexibility of the labour market is critical to ensure that workers are allocated to their most effective use in the economy and provided with incentives to maximise their productivity. Labour markets must, therefore, have the flexibility to shift workers from one economic activity to another rapidly and at low cost, and to allow for wage fluctuations without much social disruption.

9.20 Development of the financial sector is the sixth pillar of a competitive economic environment as it allocates the resources saved by citizens, as well as those entering the economy from abroad, to their most productive uses. It channels resources to entrepreneurial or investment projects with the highest expected rates of return.

9.21 The seventh pillar is technological readiness, which is the agility with which an economy adopts existing technology to enhance the productivity of its industries. It also includes specific emphasis on its capacity to fully leverage information and communication technology (ICT) in daily activities and production processes to increase efficiency and enable innovation for competitiveness.

9.22 The eighth pillar, innovation, can emerge from new technological and non-technological knowledge. Non-technological innovation is closely related to the know-how, skills and working conditions that are embedded in organisations. In the long

run, sustained gains in productivity depend on innovation, which is a strong source of market power that entrepreneurs compete with existing firms to build.

9.23 Local governance (increasingly urban governance, as the State is urbanising rapidly) too has an important role to play in sustainable competitiveness. Globalisation and State devolution establish the contemporary context of urban and rural governance. Economic globalisation has made cities more vulnerable to the ebbs and flows of the international economy, compelling them to compete for business investment. More administrative authority and functional responsibility should be transferred from the higher to the lower levels of government.

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

9.24 KPP 2030 is organised in four volumes, which elaborate the four interconnected themes that together constitute its central tenet of balancing economic prosperity, social inclusion and environmental stewardship. Volume I begins with an analysis of the growth of the economy, identifies growth drivers and dynamism of enterprises in different sectors and then goes on to discuss strategies needed to spur entrepreneurial initiative. Volume II takes up the eight pillars of entrepreneurial activity, except some, such as health, that is more foundational and are taken up in the social sustainability volume (Volume IV) and some such as infrastructure that go into the environmental sustainability volume (Volume III). Thus, each volume has its own strengths and adds to overall value.

Knowledge-driven Sustainable Development Strategy

9.25 A central plank of Kerala's sustainable prosperity will be the development of a knowledge economy. Two principles of this strategy are:

(i) Sustainable development: Quality of growth is ensured when the four dimensions of the growth process namely economic, human, social and environment interact positively in a virtuous cycle. There can be some difficult trade-offs between quantity and quality. Fast growth for instance can have conflicts with environment and social sustainability. Managing this qualitative aspect becomes essential for achieving sustainable improvements in welfare. Integrating them is technically and politically complex. It requires mutually supportive approaches whenever possible, and making trade-offs where necessary. The pursuit of sustainable development thus requires improving the coherence and complementarity of policies across wide ranging sectors. All policies should be judged by how they contribute to the four pillars of sustainable development. This means that sustainable development will become the central objective of all sectors and policies.

(ii) Knowledge economy: A knowledge economy is an economy where knowledge is acquired, created, disseminated and used effectively to enhance economic development. In a knowledge economy knowledge capital supersedes physical capital and labour as factors of production. Under the new paradigm of knowledge driven growth, the essential factors of production are new ideas, transformational innovations, and state-of-the-art technology focusing on the development of all other sectors to comprehensively advance the development level of the economy.
9.26 The new development strategy will integrate the principles of social justice and environmental protection such that social and environment capital complement physical capital to push the economy to the virtuous circle of knowledge-driven sustainable development process.

The strategic elements of this new development strategy for Kerala are:

9.27 Element 1: Knowledge creation and Knowledge diffusion: Constructing a knowledge-driven economy requires new skills, new ideas and a high level of creativity from a highly-trained, flexible and adaptable workforce. For a knowledge-driven society to flourish, a country needs to build its human capacity to meet its demands. This means that the new growth drivers of Kerala's economy will be education and health care areas where Kerala has huge advantages. The new development strategy for Kerala proposed here emphasises that the State must build on its competitive strengths in these sectors by bundling them into product and service offerings and positioning itself in the Indian and global markets in these sectors to transform these consumption oriented sectors into tradable productive sectors. Productive capacities created in these sectors will harness the trade opportunities created by the process of globalisation and ICT revolution. These sectors will stimulate growth directly by generating income from the service trade and indirectly by encouraging productive capacities in other knowledge intensive sectors.

Action Plan 1: Developing knowledge nodes and health hubs and spokes as key structuring elements of the strategy

9.28 Setting up of global cities of education and health care will be used as the building blocks to transform the economy into a knowledge-based economy. It is proposed to create 6 global hubs within the State over a period of 20 years in Kozhikode, Malappuram, Thrissur, Thiruvanthapuram, Palakkad and Pathanamthitta. These global knowledge and medical hubs will attract reputed domestic and foreign service providers and universities to start campuses, research organisations and start-up firms. These hubs may be benchmarked against some of the known education hubs in UAE, Singapore, Hong

Kong, Malaysia, Qatar, Bahrain, and South Korea; and medical hubs of Thailand, the Gulf region and South Korea. The development of urban centres around these knowledge hubs would have urban design qualities and urban infrastructure associated with a Global City.

Action Plan 2: Promoting spokes in each district

9.29 Each district will have a hub of specialised knowledge and will be developed as a spoke, well connected with the global hubs. In each district knowledge clusters will be created, based on specialised knowledge that draws on the competitive strengths of that area. These knowledge clusters will act as spokes and will be connected with global hubs (cities).

Strategic Planning
Initial Steps in Implementing KPP 2030
Top
Other Chapters

9.30 The success of the KPP 2030 strategy is closely linked with planned growth of urbanisation in Kerala. The strategy forward will be based on a holistic approach of developing a “Kerala State Spatial Strategy” within the framework of the Perspective Plan 2030. Regional/spatial planning gives geographical expression to the economic, social, cultural and ecological policies of society. It is at the same time a scientific discipline, an administrative technique and a policy developed as an interdisciplinary and comprehensive approach directed towards a balanced regional development and the physical organisation of space according to an overall strategy. The State Spatial strategy will safeguard areas of State interest and provide guidelines aimed at maximising the efficiency of human settlements and other productive efforts and enhancing rural urban complementarities. Mixed land use, developing smart, compact, clean and green cities will be the focus of this strategy. Kochi is envisioned to become a global city by 2030. Transit-oriented development (TOD) is recommended for the cities of Kerala. TOD is characterised by proximity to and a functional relationship with transit stations and terminals and service provision by high-quality public transit. Compact, mixed-use buildings and neighbourhoods that, because of their design, encourage walking, cycling, and use of public transit by residents, employees, shoppers and visitors are proposed to be set up. A successful TOD includes strategic (macro) and design (micro) elements such as a strong development climate and master plans for multi-use, high-intensity development supported by implementation plans.

9.31 Element 2: Promote knowledge economy by increasing the knowledge content of all other sectors: Another key element of the strategy will be to create a framework for policies to support the use of knowledge or science and technology as a factor playing a leading role in the process of growth. The strategy of focusing on knowledge and innovation will call for prioritising the development of ICT and tourism, the development of advanced manufacturing industries, developing hi-tech industries vigorously, renovating and upgrading traditional industries with competitive advantages and actively developing modern agriculture. There will be overall emphasis on improving the health and education sectors from bottom-up. In this respect, Kerala will focus on strengthening the critical elements to support the knowledge-based economy. This will call for the following strategic action plans.

9.32 The comprehensive strategy on education will be developed with quality (competitiveness) and social inclusion as two key components. The structure of higher education, vocational education and schooling will be revamped using different effective strategies. The goals of the KPP 2030 are the following:
• 100% enrolment in primary schools;
• 95% of all young people shall complete general or vocational upper secondary education by 2015;
• 50% of all young people shall complete a higher education programme by 2015;
• Everyone shall be engaged in lifelong learning;
• Kerala will account for 50% of India’s export in education services by 2030;
• 6% of the GSDP should be spent on education, of which 1.5–2% should be set aside for higher education.

9.33 The vision of the health sector in Kerala would be to provide health security provision to each and every one by 2030. The target also is to eradicate health care inequality. Health care would be accessible to every citizen. Kerala would also be able to establish itself in the global health care services market generating foreign exchange and driving its growth process. The goals of the KPP 2030 in the health sector are:

• Increase the health expenditure to GSDP ratio from 0.6 per cent in 2012 to 4−5 per cent by 2027−31. This will be achieved by 1 percentage point increase spread over the next 5 years plans.
• Reduce MMR from 81 to 12 per 1 lakh live births;
• Reduce IMR from 13 to 6 per 1,000 live births;
• Eradicate communicable diseases;
• Prioritise health areas to include mental diseases, alcoholism, and suicides;
• Increase the number of hospital beds from 34.6 per 10,000 in 2004 to 70 per 10,000 by 2030;
• Increase the number of nurses from 12.4 per 10,000 in 2004 to 65 by 2030;
• Increase the number of doctors from 9.9 per 10,000 population to 17.2 in 2030;
• Provide health insurance cover to all.

9.34 The rapid advancements in ICT, which will underpin the growth of the knowledge-based economy, will itself spawn

new activities and areas of investment in all the sectors due to demand created within the State.

9.35 Measures to expand the tourism sector in newer areas by creating infrastructure and services, promoting targeted marketing campaigns, quality assurance and logistics, and improving training and identify the employment and entrepreneurial opportunities for the youth. New products will be developed in tourism like cashew and coir investment zones, tribal village tourism, museum tourism, etc.

9.36 Encouraging private investment in economic activity with the State assuming the role of facilitator and effective regulator. Kerala will be established as an attractive location for business investment in Asia. It will be dominated by high value added activities. The industrial sector will be innovation driven and socially and environmentally sustainable. The strategic goals for the industrial sector are:

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

• Increase the share of manufacturing from the current 8% to 10% of GSDP by 2030;
• Shift of the structure of industry from resource-driven to efficiency driven over the next 20 years. This will be on track to develop innovation-driven industrial sector;
• Share the registered sector in total manufacturing will rise to 80%;
• Sustained increase in employment in manufacturing;
• Adoption of clean production systems.

9.37 Replacing “livelihood approach” by “entrepreneurial approach” in the primary and traditional manufacturing sectors. There will also be a move to corporatize cooperative societies. Semi-skilled jobs will be brought within the folds of “Producer Companies” a form of corporatized cooperatives. Corporatisation does not mean privatisation. It implies a change in the organisational form with emphasis on efficiency and competitiveness. In a knowledge economy, the success of economic enterprises (including agriculture) will be reliant upon their effectiveness in gathering and utilising knowledge and the rate of learning. Increasing knowledge content and changing status of these occupations will attract the young generation to them. Government will provide the conditions and enabling infrastructures for these changes through appropriate financial, competition, information and other policies. Adopting new technologies and integrated farming techniques will help both agriculture and allied activities including, animal husbandry and livestock and fishing. Incentive structure will be redesigned to target activities and not sectors. Further, it will have both ‘’carrot and stick’’ measures, and not only the “carrot” method. Another common element of the strategy forward for agriculture and allied activities and traditional industries (cashew, handloom and coir) is to increase diversification, increase the value-additivity of products, invent and innovate with other industries. Promotion of the brand – “Made in Kerala” is a key strategy for all agro-based and products of traditional industries.

9.38 Good quality infrastructure is a key ingredient for sustainable development. Kerala will need efficient transport, water and sanitation, energy, and urban (and rural) development to attract private investment and provide a decent standard of living for their populations.

o Transport Infrastructure: The goal is to develop a regional, inter-state and international connectivity that caters to the economic and social aspirations of the people and also raise the State to the world arena of economy, education, health and tourism. Develop effective intra-city (city/town/Urban Agglomeration level) integrated transport facilities that give due importance for pedestrian facilities and non-motorised transport (including bicycles). Develop concerted strategies to increase the share of public transport and to reduce the number of private vehicles/ single passenger occupied vehicles on the roads. Overall for the State, a smart inter-modal transport system will be developed along with the conjunction of the Kerala Spatial Strategy 2030. Smart and intelligent public mass transport systems will be developed for Kerala.
o Energy is crucial for development of a knowledge economy and the shift will be towards increasing the share of supply of renewable energy and managing and conserving demand.
o The strategy is one of sustainable integrated management of water in all areas. Water needs to be conserved and valued. Recovering, recycling and re-using of water is the sustainable way out. New technologies will be adopted both on the supply and demand side for using water in a conservative fashion. Pricing and water metering may be used to monitor water usage. Micro irrigation schemes are recommended for Kerala. Water availability 24*7 is a key hallmark of smart, compact and global cities. Existing urban water schemes may be extended to supply water in the rural areas.

9.39 In order to marshal the private sector to respond with urgency, the Government will create greater awareness of the opportunities that will be generated through better dissemination of information.

9.40 Element 3: Mainstreaming social development: It is expected that the knowledge driven strategy will minimise the technical and political costs by being in agreement with the socio-historical-political contexts of the State. It will reinforce social capital by enriching the intellectual diversity and the overall learning environment within the State. However, it may not happen automatically. The Government will therefore ensure that the objectives of social development are integrated within the growth strategy. It will provide the poor and vulnerable sections equal access to opportunities for prosperity.

Therefore, the strategies must involve not a mere alleviation of circumstances, but rather, a careful analysis of different vulnerabilities, how these can be prevented or diffused, and in general, the levels of social infrastructure that must be established for enhancing the quality of life for them. Mainstreaming of concerns of socially vulnerable groups are needed to alleviate their concerns. In urbanisation, infrastructure development, their concerns have to be taken into account while designing urban spaces or infrastructure. A differential strategy for Scheduled Castes (SCs) and Scheduled Tribes (STs) needs to be adopted. While SCs should be brought into the mainstream, culture of STs needs to be celebrated. However, the SCs and STs need targeted interventions in education and health to lessen historic inequities.

9.41 Element 4: Mainstreaming Environment: The vision is to achieve economic prosperity which is characterised by ecosystem resilience for the benefit of future generations. In that context, a strategic element of growth strategy is environmental sustainability. The environmental impact can be minimised using a well framed policy which will cover all the sectors and will further reinforce growth. Adoption of clean production mechanism for industry, integrated farms for agriculture and allied services, change in building norms, building smart clean green cities as per KPP 2030 and developing inter-modal transport are all elements of strategies in each sector where environment is mainstreamed and the strategy is one of green growth.

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

Implementation Strategy of KPP 2030

9.42 It is envisaged that approximately 40 per cent of the State GSDP will be required for investment in areas outlined in the Kerala Perspective Plan 2030 in the next three FYPs. This will require huge resource mobilisation. The following are the areas/sectors which require huge investment. Some Sector wise Investment Possibilities of Kerala Perspective Plan 2030 are listed at Appendix 9.1.

Key Principles

Leapfrogging: Leapfrogging is essential for transformation which is the first principle adopted when formulating the Perspective Plan. The underlying principle is to give a major push to the economy in which all sectors and stakeholders participate.

International benchmarking: Under the new strategy, Kerala's economic prosperity will be benchmarked against the Nordic countries: Denmark, Norway, Sweden and Finland. With an economic structure which is similar to that of Kerala, these economies have been at the top of the Global Prosperity Index which is a weighted sum of economic, human and social capital. They are also topping the global ranking in terms of human development, economic competitiveness, social capital and environment capital generated by different unrelated global organisations. Since Kerala's economy is close to that of Nordic countries in terms of the economic and institutional structure, the aim is to achieve the economic status of those countries.

Systems approach to planning: This approach would require coordinated efforts of all the government departments, production systems, communities, NGOs and people to achieve certain goals.

Coordinated action taken at all levels of government: An important principle of the Perspective Plan is complementarity in policies at all levels of government. Implementation of this plan requires a bottom up approach with local governments playing a key role in grass-root planning and its implementation.

Participation by all: Achievement of these objectives depends not only on the government of Kerala, but also on the active involvement of other stakeholders.

Creating conditions for the success of strategy

Land, Labour and Capital: The Kerala Spatial Strategy 2030 adopted for urban and rural development will identify ecologically fragile land, forests, wetlands etc. They will be zoned and protected and no conversion will be allowed in those zones. Mixed zoning is the recommended strategy to build compact cities and villages. Land acquisition strategies are suggested which will be sustainable and inclusive. In case of capital, the diaspora will be the most important source for resource mobilisation for Kerala. Last but not the least for labour, an inclusive model is suggested which ensures flexisecurity.

Institutions: A more integrated and comprehensive approach will be taken in developing the institutional framework to create a conducive environment for the proliferation of knowledge activities and knowledge-driven economic prosperity.

Drive Science & Technology (S&T) in key sectors: Kerala will strengthen its base in sustainable development of S&T which will comprise economic, social and environmental dimensions. The KPP 2030 proposes a new Innovation policy which will

aim at creating an “Innovation Ecosystem”, incorporating the three advantages. It will involve systematic engagement of the three sub-systems in interactive learning:

o The regional production structure or knowledge exploitation sub-system which consists mainly of firms, especially where these display clustering tendencies;
o The regional supportive infrastructure or research sub-system which consists of public and private research laboratories, technology transfer agencies, and research consultants;
o Academic subsystem consisting of universities and colleges, vocational training organisations, etc.

Governance for sustainable growth: Better governance is a pre-requisite for sustainability. For sustainable prosperity in Kerala, the theme has to be rather “Get the government do its duty than get the government to off you back”. Further, it will require institutional, organisational and cultural change in governance to improve its quality and deliver on the vastly increased duties of the government envisaged in the report. E-Governance will play a major role in good governance with development of citizen-centric governance.

Diaspora: The proposed strategy is to mainstream the three categories of migrants: Non Resident Keralites(NRKs), return emigrants, and in-migrants, in the development agenda by creating an enabling environment into which the migrants are effectively integrated and able to make significant contributions to the development of the country. The main thrust is therefore, to harness the diaspora (including return migrants) and in-migrants as a resource for development. Remittances will be directed into creating physical and social infrastructure for the effective development of Kerala.

Entrepreneurship: The KPP 2030 proposes creating an entrepreneurial ecosystem encompassing all the elements that entrepreneurs need to thrive on. This ecosystem has six elements:
o Personal enablers,
o Financial enablers,
o Business enablers,
o Professional enablers.
o Economic enablers (economic policies and performance) and
o Social entrepreneurs.

9.43 The immediate challenge before the State is to ensure that the Perspective Plan is translated into reality. The two biggest challenges in this regard are, first, aligning the existing Plan framework with the Perspective Plan so as to translate the vision into a reality. The second challenge is mobilizing the resources. The State Government alone cannot undertake this task. Funds and support from the central Government and active participation of the private sector is required for implementing the strategies articulate in the plan. Going forward, the success of the Perspective Plan depends on the commitment not only of successive governments at the State and local body levels, but also on the support we receive from the Union Government and the private sector in achieving our goals. As a first step in this direction, Rs. 25 crore in the Annual Plan 2015-16 budget was provided to kick start the process of implementation of the KPP 2030. Alongside, other initiatives have also been aligned with the KPP 2030.

Strategic Planning
Initial Steps in Implementing KPP 2030
Top
Other Chapters

Initial Steps in Implementing KPP 2030

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9.44 Major Infrastructural Development Projects: Inadequate infrastructure development has been a major concern in Kerala limiting the potential of growth and employment in the State. Lack of financial resources has been one of the critical factors hampering the growth of infrastructure development in the State.Often,infrastructure projects have been delayed due to non-availability of funds on time. KPP 2030 recognises that infrastructure is a crucial pillar for a competitive economic environment and is a critical factor for ensuring effective functioning of the economy.

9.45 Recognising the need for a major thrust in the field of infrastructure development, the State Government in its 12th Plan earmarked a lump sum amount under a single head “Major Infrastructural Development Projects”. Under this head there is a flexibility to utilise the funds against any of the intended major infrastructural development projects depending upon its requirement and performance. A token provision of Rs. 1 lakh is included against each scheme covering different sectors, and the additional funds required for implementation of the scheme is re-appropriated from the outlay provided under the new head “Major Infrastructural Development Projects” depending on the actual requirement. This was introduced to ensure timely availability of funds for major projects and to incentivise the utilisation of funds for major projects. The normal practice is to allocate funds for individual projects which may either not be sufficient or may not be spent. This approach has the advantage that funds can be allocated to the intended projects which are progressing. Since 2013-14, an amount of Rs. 4071 crore has been budgeted for the scheme under Annual Plans. In 2013-14, a total amount of Rs. 846.03 crore was allocated for 10 projects which included Kochi Metro, High Speed Rail Corridor, Vizhinjam

International Deep-water Multipurpose Sea Port, Kannur Airport etc. This amount was enhanced to Rs. 1225 crore in 2014-15 and to Rs. 2000 crore in 2015-16. The number of projects was also raised to 11 in 2015-16. Thus, a major step in filling the infrastructure deficit has been taken in the State by an innovative budgeting mechanism.

9.46 Expert Committee on School Education: Kerala's achievements in the sphere of education are well-known. Public provisioning has been the cornerstone of educational policy in Kerala, especially school education, since independence. Infrastructural facilities have also improved much in schools. But the quality of education has been deteriorating in recent years and the subject calls for immediate attention. This has been dealt in detail in KPP 2030. Kerala's education sector, a key base of the knowledge economy, has to be transformed to become a knowledge creator and support the growth of entrepreneurship. In the education sector, as per KPP2030 transforming the school system involves seven components: international benchmarking, participation in Program for International Student Assessment (PISA), developing a common school system, developing unified curricula, teachers training and expansion of school infrastructure in backward areas.

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters

9.47 In this context, Kerala State Planning Board, in its 12th Board Meeting held on 14-05-2014 decided to constitute an Expert Committee for studying the deterioration of the quality of school education in the State and to make recommendations for improving the school education system. The Committee has made far reaching recommendations to improve the quality of school education in the State. Some of the important recommendations are in the areas of recruitment and development of career paths of teachers; teaching, assessment and learning outcomes; school governance; school infrastructure and teaching material; synchronization of different agencies; all round development of children; and approval and accreditation of schools.

9.48 The recommendations of the Committee are premised on the tenet that an education system is only as successful as the value assigned by the society to the teaching profession. The society would value the profession highly when the calibre of the incumbents is of a very high order which would require systems to attract the best talent in the society and train them to excel. The highest-performing countries in education take a comprehensive approach to the teaching profession by actively recruiting high-quality entrants, raising the rigor of teacher preparation programs to equip prospective teachers with strong subject matter skills and extensive clinical experience, mentoring every new teacher, developing career paths and leadership roles for outstanding teachers, and providing effective forms of professional learning and collaboration directed at student achievement. The recommendations have followed from the premise adopted by the Committee.

9.49 Some of the key recommendations of the Committee are the following. It is recommended to develop teacher leaders for the purpose of mentoring beginning teachers, coaching teachers in specific subjects, observing teachers and providing feedback on classroom practice, leading professional learning in schools, working with schools in poor neighborhoods to strengthen curriculum or teaching, providing input into policy, and to carry out action research in schools.The Committee has recommended revamping of pre-school education. Uniform curriculum should be implemented and children should not be over burdened. They should not be taught more than the prescribed syllabus. There should be a single agency to co-ordinate the Pre-School Education in the State.

9.50 The Committee has emphasized that barrier free environment should be ensured to the children with special needs. As Government Schools are more inclusive in nature, a large number of children with special needs study there. But the infrastructural facilities (like special toilets, IED Centres and facilities in the IED Centres (like instruments for physio therapy, brain motivating toys etc.) are very poor. Hence, special financial support for this purpose should be made available to the Government Schools. A certain percentage of children suffer from various learning disabilities, such as dyslexia and dyscalculia. Steps should be taken for their early identification. Specialized teachers should be available as per the students' strength to take care of these needs.

9.51 Comprehensive Mission on Employment Generation: Promoting self-employment has been a policy of the government for long. Self employment is of two types: opportunity driven and necessity driven.Opportunity-driven entrepreneurs are those who introduce new products and processes to the market. They are innovation-embracing entrepreneurs driving economic change through innovative ideas and technology. On the other hand, necessity-driven-entrepreneurs are replicative agents, who start businesses similar to those they see around them. For them, business is a way of earning a livelihood.Both classes of entrepreneurs require an entrepreneurial ecosystem to thrive that has six enablers- personal enablers, financial enablers, business enablers, professional enablers, economic enablers, and social entrepreneurs- in addition to certain economy and society wide factors.

9.52 Current schemes of self-employment give prominence to two enablers, namely financial enablers and economic enablers, with the other enablers almost missing. Recent years have seen the setting up of incubators which bring in two more enablers –professional and environmental- into the ecosystem. Independently, there has been skill training for entrepreneurial development. But the coming together of many enablers, which is essential for a thriving self-employment scene, has not taken place.Opportunity- driven entrepreneurship, however, does not emerge without a stream of

innovation, which is a strong source of market power that entrepreneurs compete with existing firms to build. The stream of innovation would see the sprouting of entrepreneurs taking the economy to higher levels of technology and productivity as propounded by KPP 2030.

9.53 Notwithstanding the various initiatives of different departments in promoting self-employment among low skilled people, there has been little progress in developing an entrepreneurial culture or economy in the State. The observed low proportion of self-employed in the workforce in Kerala is owing to the poor entrepreneurial ecosystem in terms of the six enablers and the poor orientation of the higher education system towards knowledge creation and innovation.

9.54 Recognising the importance of changing the entrepreneurial ecosystem in the State to promote self employment, the Vice Chairman of the State Planning Board constituted a Task Force to formulate a Comprehensive Self-Employment Scheme after studying the present scenario of self-employment schemes implemented through various agencies, including commercial banks. The Task Force working through eight subcommittees that looked into various aspects of self employment in the State submitted a comprehensive report proposing the constitution of a single overarching mechanism, viz., Comprehensive Mission on Employment Generation (MEGA), to provide holistic direction and oversight to self-employment programmes and ensure end to end vital services to potential entrepreneurs.

9.55 The Mission is proposed to have a 3-tier structure, comprising a State Mission Unit, District/Corporation Mission Units, and a pool of empanelled, accredited resource personnel/agencies at the grass root level to provide end to end services. The Mission will be mandated to extend critical support in areas, particularly Skill and Competence Development, Business Planning, Financial Linkages, Market Linkages, Technology and Infrastructure Support, Mentoring, Compliance support and IT services. The Mission will be an interface between government schemes, service providers and the potential entrepreneurs.

9.56 The Cabinet has accepted the recommendations of the Task Force and the Government has already passed the necessary orders to go ahead with the Mission.

Strategic Planning

Initial Steps in Implementing KPP 2030

Top

Other Chapters