



GOVERNMENT OF KERALA

**STATE PLANNING BOARD**

# **THIRTEENTH FIVE-YEAR PLAN**

## **2017-22**

**THIRUVANANTHAPURAM**

**2018**



## *FOREWORD*

Kerala is the only State of the Union to have made a public commitment to continue with the formulation and implementation of Five-Year and annual Plans. It was one of the early decisions of the State Government to continue with Five-Year and Annual Plans to guide Kerala's social and economic development.

The Thirteenth Five-Year Plan will continue the legacy of State in investing in its people and development of productive forces of the economy. This is a Plan for the working people, the poor, the socially deprived, and the environment.

This Plan document provides the overall orientation of the different sectors in the Thirteenth Five-Year plan period and the overall resource estimate for financing the Plan.

The Thirteenth Five-Year Plan is an outcome of efforts of many individuals and departments. I would like to acknowledge the effort of all the officials of Planning Board, departments and members of Working Groups who have contributed to this document. I am grateful to the Members of the Board for providing inputs and advice. I acknowledge the efforts of all those who have supported the planning process in the State and the efforts of the Government of Kerala, to establish a Plan that serves society, social production, and the environment.

V K Ramachandran  
Vice-Chairperson



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## 1 THIRTEENTH FIVE YEAR PLAN: AN OVERVIEW

### *Introduction*

Kerala has been, and remains, the most important example in independent India of the power of public action to improve the well-being of the people and to transform social, political, and cultural conditions in a State. In Kerala, the actions of mass organisations and mass movements against social, political, and economic oppression, and the policy actions of Governments have been the most important constituents of such public action.

Twenty-seven years have passed since the introduction of accelerated policies of capitalist globalisation and liberalisation in 1991. India's economy is marked by hardship and crisis for the vast majority of India's rural population, by stagnation in India's manufacturing sector, by shrinking opportunities for decent employment, and a sharp increase in economic inequality. Despite the declaration of "cooperative federalism" as a policy objective, there has been shrinkage of the federal space, thus further constraining the rights of States.

Even as the Government of India has abandoned Five-Year Plans and has disbanded the Planning Commission, the Government of Kerala has reiterated its commitment to the planning process. It is our conviction that, despite the specific form of capitalist development that now prevails, and despite the constraints that State governments must face, there is room for State governments that are committed to people's welfare to address the concerns of the people.

The task of the Plan is to structure the aspirations of the people for better lives and livelihoods into a workable economic policy for the State and provide a secular, democratic, and developed State to the people. In Kerala, the formulation of a Five-Year Plan is an exercise in people's participation. The people and institutions of local governments help draw, formulate, approve, and implement plans – and monitor the implementation as well.

At the end of September 2016, the Kerala State Planning Board began an effort to conduct the widest possible consultations before formulating the Plan. The Planning Board formed 43 Working Groups,<sup>1</sup> with a total of more than 700 members – scholars, administrators, social and political activists, and other experts to help formulate the 13th Plan. The Approach Paper of the 13th Five-Year Plan has been widely circulated and discussed.

The recovery from the global economic and financial crisis that erupted in 2008 has been slow and halting in most developed capitalist economies. Even where there has been some recovery in output, there has not been corresponding recovery in terms of employment expansion. Rates of unemployment remain very high in the countries of the European Union and have not been much lower in the United Kingdom and North America. Stagnant living conditions for a significant proportion of the population and rising inequality in these countries have led to popular discontent. Such discontent has also contributed to electoral outcomes in some of these

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<sup>1</sup> Copies of Working Group Reports are available in State Planning Board

countries that may have negative implications for the growth of international trade in the coming years.

The world economy continues to record low growth rates. As a result of these developments, the prospects for increased absorption of exports from the less-developed countries by the advanced capitalist economies are not very encouraging.

The international economic context matters more perhaps for Kerala than for most other states of India. Kerala's economy has a significant degree of dependence on exports of agricultural and other primary commodities. The major crops that form the basis of Kerala's agriculture are export-oriented; their prices and market prospects are determined by fluctuations in the global economy. Kerala's services sector growth is crucially dependent on earnings from international tourism, which is also linked to the growth of purchasing power in the rich countries. The flow of remittances to households in the State from non-resident Keralites is correlated with the performance of the international economy in general and the economies of the Persian Gulf in particular.

A fundamental constraint on planned development at the State level in India is that of shrinking fiscal space. That the structure of fiscal federalism in India is greatly biased in favour of the Centre is well known. The liberalisation regime has exacerbated the imbalance in the Indian fiscal system. This imbalance is manifested in the mechanism by which resources are shared between the Centre and the States as well as in the decreasing space for borrowing allowed to the State Governments.

In Kerala, too, the 13th Five-Year Plan had to face certain immediate difficulties: a depleted exchequer, negative rates of growth in agriculture (and more particularly in crop production), stagnation in industry, and a consequent slowdown of employment. The planning process in Kerala has also to take into account the external economic situation described briefly above. Specifically, the Plan has to factor in the following: the sensitivity of the Kerala economy in terms of household incomes to changes in the prices of crops such as rubber, pepper, tea, coffee, and spices; the impact of slow growth in the Gulf on remittances and return migration; and the environment for international tourism.

The crises in the spheres of employment and material production are among the most troubling features of the economy at the opening of the 13th plan. The rate of growth of employment in Kerala today and its sectoral composition do not meet the expectations of educated youth entering the labour market. The proportion of working women is low in Kerala (only 21 per cent in 2011-12). There are new pressures – from construction, from disposable waste, and from other sources – on Kerala's environment. There are disturbing signs of rising economic inequalities and of tensions caused by the growing presence of the private sector in health and education.

The present situation of a low-growth economy is neither desirable nor sustainable. Kerala's development experience and Kerala's development future are matters of great importance for all progressive and democratic movements, in India and internationally. As noted, it is now clear

that the tasks of increasing employment and production (and transforming production conditions) have to be major components of the present phase of Kerala's development. Our rate of growth for the most recent year for which we have data, 2016-17, was about 7 per cent. If we want to change that to about 10 per cent in about two years, we have to consider substantial changes in growth in different sectors.

In a State with our plant wealth, the growth rates of agriculture and allied activities increased by 3 per cent, and within that, the growth rate of crop production was about 4 per cent in 2016-17. Our aim must be to harness agriculture, animal resources and fisheries, construction, industry, infrastructure, tourism, transport, and other sectors to achieve a rate of growth of income of ten per cent.

The desired transformation in incomes, however, must build on, consolidate, and extend the achievements of the past, and not undermine the gains of a long history of public action in order to impose a capitalist, market-driven, income-growth-alone strategy of development on the people. A new phase of economic development in Kerala has special resources on which to draw. Kerala has extraordinary natural resources, a basic land reform, an educated, skilled and politically conscious work force, and unique achievements in the spheres of health and education. It has a government that has set itself the tasks of modern economic development and socio-political change, and is active in the task of strengthening institutions of local government in the State.

The 13th Five-Year Plan commits the State of Kerala to a path of development that will develop, enhance, and modernise the productive sectors of the economy; expand employment in various sectors with an emphasis on creating jobs for educated youth; strengthen and upgrade public education and health; and build upon the network of social welfare and reform measures that are part of the rich legacy of public action in the State; and ensure effective, timely, and monitorable delivery of the gains of development to the people.

Kerala leads the States with respect to the achievement of the United Nations Sustainable Development Goals that are to be achieved by 2030. The agenda titled “Transforming Our World: The 2030 Agenda for Sustainable Development” contains 17 goals and 169 targets. The schemes and programmes for each sector in the 13th Plan will be aligned to the objective of attaining the Sustainable Development Goals.

The 13th Plan seeks to support the effort to build a new Kerala through the four missions announced by the Government of Kerala. The missions emphasise sustainable development and people's participation in the following fields:

1. High-quality school education.
2. People-friendly health facilities (Aardram).
3. Nature-friendly agriculture, a clean environment, and clean water bodies (Haritha Keralam).
4. Secure housing and livelihoods (LIFE Mission).

### *Overview of the Economy*

The growth rate of Gross State Domestic Product (GSDP) at current prices was 10.6 per cent in 2016-17 higher than the growth rate in 2015-16 (8.9 per cent).<sup>2</sup> Agriculture and allied activities growth increased by 2.9 per cent in 2016-17. The major problems of agriculture in Kerala are currently threats to the preservation of arable land; a failure to bridge yield gaps in all major crops; low, stagnant, or declining sectoral and individual incomes from crop cultivation; failure to integrate crop cultivation with on-farm fisheries and animal resource development; weak forward linkages with product markets, storage, distribution networks, and agro-based production. There are also problems of the small scale of production on the vast majority of operational holdings. The growth prospects in Agricultural sector are closely linked with the performance of its major crops, prices of which are significantly integrated with world prices.

A striking feature of Kerala's economy is the relatively low size of its manufacturing sector. The share of manufacturing in gross state domestic product was only 8 per cent in 2011-12 compared to 16 per cent share of sector in India as a whole during the same period. Though manufacturing contributed only 8 per cent to Kerala's GSDP, it employed around 14 per cent of the State's total workforce in 2011-12. This point to some degree of lopsidedness in the structure of Kerala's manufacturing sector. A significant feature of the economy is the large presence of micro and small industries in Kerala, especially rural Kerala.

The service sector has been the mainstay of Kerala's economic growth. Tourism has a continuing and promising potential in the State. However, after the boom period of 1990s and early 2000s, the rate of growth in tourism arrivals declined in the State.

In 2016-17, the contribution from primary, secondary and tertiary sectors to the GSVA at constant prices (2011-12) was 11 per cent, 26 per cent and 63 per cent respectively. At current prices, the primary, secondary and tertiary sectors contributed 13 per cent, 24 per cent and 63 per cent respectively to the GSVA in this period. The contribution to GSVA (at current prices) of the tertiary sector and primary sector increased from 62.6 per cent in 2015-16 to 63.2 per cent in 2016-17, and from 12.8 per cent in 2015-16 to 13.4 per cent in 2016-17 respectively. During the corresponding period, the contribution of secondary sector declined from 24.6 to 23.5. The driving force for the growth of the tertiary sector is mainly the growth in the transport, storage, communication and service related broadcasting, and public administration.

### *Strategy for the 13th Five-Year Plan*

The 13th Five-Year Plan will focus on regaining the momentum in the economic growth of the State by more than doubling Plan size over five years. The strategy for the 13th Plan as a whole will include:

1. Building a new Kerala through the four missions announced by the Government. The missions emphasise sustainable development and people's participation in the following fields:

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<sup>2</sup>Source Department of Economics and Statistics

1. High-quality school education;
  2. People-friendly health facilities;
  3. Nature-friendly (including organic) agriculture;
  4. Waste management, a clean environment, and a litter-free Kerala;
  5. Clean water bodies and enhanced water resources; and
  6. Secure housing and livelihoods.
2. Increasing material production in agriculture and industry.
  3. Generating employment, skill development, livelihood security, and entrepreneurship.
  4. Strengthening Kerala's physical and social infrastructure.
  5. Strengthening the financial infrastructure.
  6. Expanding the role of modern science and technology in society and production, promoting sustainable development, and the modernisation of governance and administration.
  7. Deepening people's planning by local governments.
  8. Extending social protection and the struggle against social exclusion.
  9. Promoting activities centred on heritage, culture, the promotion of tourism, and building cultural and economic ties with non-resident Malayalis.

#### *Resource Estimation for the 13th Five-Year Plan*

The Plan size of the State for the 13th Plan period is Rs 2,00,000 crore. However, if the State economy faces unforeseen challenges, particularly because of the external factors, the resources for the 13th Five-Year Plan will have to be revised downwards to Rs 1,80,000 crore. The details about resource estimation and financing of the Plan have been elaborated in Chapter II on Financing the Plan.

## 2 FINANCING THE PLAN

### *Introduction*

The 13th Five-Year Plan of the State commences at a time when considerable changes have taken place in the financial sphere of the economy. The resource position of the State has undergone significant changes in the last few years, mainly due to changes in Centre-State fiscal relations. The changes in resource flow from Centre to State has been due to the 14th Finance Commission recommendations, changes in Central Assistance to State Plans and restructuring of Centrally Sponsored Schemes. Also, the major tax reform initiative, Goods and Services Tax (GST), was introduced in 2017. These policy changes have affected State finances in a significant manner.

Effective public policy intervention has been the highlight of economic policy of the State. The 13th Five-Year Plan also envisages carrying forward the successful policy initiatives and initiating new and innovative programmes for the social and economic development of the State. The Government, in particular, has tried to overcome the barrier of neoliberal fiscal conservatism and focus on strong public intervention. Without this approach, the Government cannot structure the aspirations of people into an effective Plan. The challenge for the State is that it has to work within the limits set for the fiscal deficit as well as the ceiling on borrowings. Since most of the social sector spending is revenue in nature, Kerala's budgets are largely driven by high revenue expenditure. In this context, financing of Plan involves several challenges. The Government has reiterated its commitment for developmental and welfare activities during the 13th Plan by utilising the space within the confines of budget as well as building a new fiscal space outside the budget.

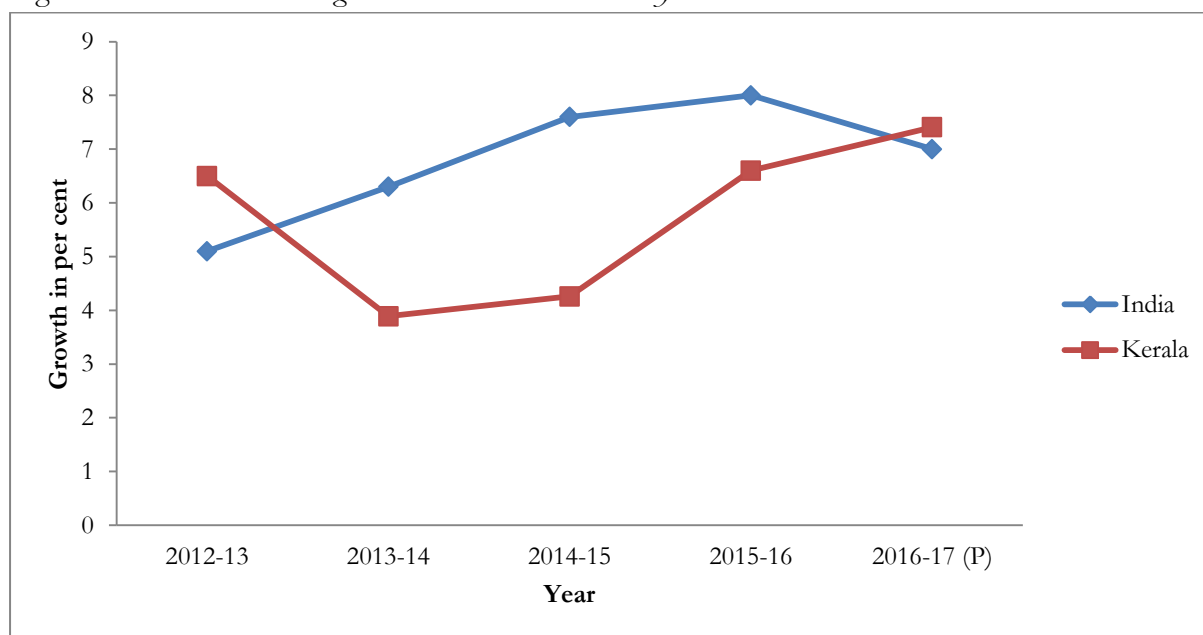
Given the current challenges, it is estimated that the Plan size of the State for the 13th Five-Year Plan period would be Rs 2,00,000 crore. However, if the State economy faces unforeseen challenges, particularly because of the external factors, the resources for the 13th Five-Year Plan will have to be revised downwards to Rs 1,80,000 crore.

### *Growth Trend in the Economy*

The Gross State Domestic Product (GSDP) growth rate at constant prices (2011-12) was 7.4 per cent in 2016-17. The growth rate in the State has picked up since 2014-15. In 2016-17, the all India GDP growth rate at constant prices (2011-12) was lower than the Kerala GSDP growth (7.1 per cent). The economic growth trend of the State vis-à-vis all India growth trend from 2012-13 to 2016-17 is shown in Figure 2.1.



Figure 2.1 *Kerala's economic growth vis-à-vis Indian economy*



The analysis of sector-wise annual growth rate of GSDP at constant prices in 2016-17 shows that tertiary sector recorded the highest growth rate of 6.7 per cent, followed by primary sector (5.2 per cent) and secondary sector (2.9 per cent). Tertiary sector has been the driving force of Kerala's economy.

### *Fiscal Space of the State*

The fiscal space of State, as stated above, has undergone several transformations during the last few years. The 14th Finance Commission raised tax devolution from 32 per cent to 42 per cent of the divisible pool. Kerala's share in tax devolution increased from 2.3 per cent during the 13th Finance Commission award to 2.5 per cent in 14th Finance Commission period. Finance Commission restricted the grants to just three: disaster relief and local government, both are formula based, and revenue deficit grants to those States which were running revenue deficit post devolution. Kerala received revenue deficit grants for the years 2015-16, 2016-17 and 2017-18 which amounted to Rs 9,519 crore. The 14th Finance Commission recommendations therefore increased the untied fiscal space of the State. Kerala gained from the Commission on two counts. The horizontal share showed an increase after about two decades and the State also received revenue deficit grant. While the parameters of resource flow from Centre to Kerala turned favourable, the economic situation has not been too conducive to larger flow of resources. The GDP growth trends have profound implications on tax mobilisation by Centre and States. Poor growth of the economy led to lower transfers to the State.

Restructuring of Centrally Sponsored Schemes in terms of changes in funding pattern and implementation of GST are the other major changes that have affected State finances. Demonetisation of high denomination notes also created disruption in Kerala's economy. All these factors have brought about major changes in the fiscal space of the State.

### *Trends in State Finances (2011-12 to 2017-18 BE)*

Kerala's economy has been characterized by large fiscal deficits (FD), driven by high revenue expenditure and revenue deficits (RD), high debt and low capital expenditure. During the period 2011-12 to 2017-18, revenue receipts to GSDP ratio showed an increase from 10.4 per cent in 2011-12 to 12.5 per cent in 2017-18 (BE). This increase is expected to be primarily due to the increase in Central transfers from 2.7 to 3.8 per cent of GSDP during the period. This increase in transfer is due to (a) flow of funds through consolidated fund of the State from 2014-15 (which was earlier directly going to implementing agencies) and (b) an increase in devolution and aggregate transfers to the State of Kerala post 14th Finance Commission award. However, State tax revenue to GSDP ratio declined from 7.1 per cent in 2011-12 to 6.7 per cent in 2016-17 revised estimates (RE) and is estimated to be 7.1 per cent in 2017-18 budget estimates (BE). Total expenditure to GSDP ratio showed an increase from 14 per cent of GSDP to 16 per cent of GSDP during the same period. Fiscal deficit to GSDP ratio remained at around 3.5 per cent of GSDP in most of the years, except in 2015-16 when it was 3 per cent of GSDP. The following table provides an overview of State finances during this period.

Table 2.1 *Overview of State finances 2011-12 to 2017-18 in Rs crore*

Items	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17 RE	2017-18 BE
Revenue Receipts	38,010	44,137	49,177	57,950	69,033	80,620	93,585
Per cent of GSDP	10.4	10.7	10.6	11.0	11.7	12.2	12.5
State Tax Revenue	25,719	30,077	31,995	35,233	38,995	44,548	53,411
Per cent of GSDP	7.1	7.3	6.9	6.7	6.6	6.7	7.1
State Non-Tax Revenue	2,592	4,199	5,575	7,284	8,425	10,057	12,038
Of which Lotteries Net	381	591	593	960	1,149	1,507	2,170
Per cent of GSDP	0.7	1.0	1.2	1.4	1.4	1.5	1.6
Central Govt. Transfers	9,700	9,862	11,607	15,434	21,612	26,015	28,135
Per cent of GSDP	2.7	2.4	2.5	2.9	3.7	3.9	3.8
Capital Receipts	12,284	15,685	17,050	18,719	17,965	23,366	25,540
Per cent of GSDP	3.4	3.8	3.7	3.6	3.1	3.5	3.4
Total Receipts	50,295	59,823	66,227	76,670	86,998	1,03,986	1,19,124
Per cent of GSDP	13.8	14.5	14.2	14.6	14.8	15.7	15.9
Total Expenditure	50,896	59,228	66,244	76,744	87,032	1,04,297	1,19,602
Per cent of GSDP	14.0	14.4	14.2	14.6	14.8	15.7	16.0
Revenue Expenditure	46,045	53,489	60,486	71,746	78,689	94,556	1,09,628
Of which Expenditure on Lotteries	902	2,083	3,203	4,485	5,123	6,018	7,027
Per cent of GSDP	12.6	13.0	13.0	13.6	13.4	14.3	14.7
Capital Outlay	3,853	4,603	4,294	4,255	7,500	8,748	9,057
Per cent of GSDP	1.06	1.12	0.92	0.81	1.27	1.32	1.21
Loan Disbursements	999	1136	1,464	743	842	993	917
Per cent of GSDP	0.27	0.28	0.31	0.14	0.14	0.15	0.12
Revenue Deficit	8,034	9,351	11,309	13,796	9,657	13,936	16,043
Per cent of GSDP	2.2	2.3	2.4	2.6	1.6	2.1	2.1
Fiscal Deficit	12,815	15,002	16,944	18,642	17,818	23,461	25,756
Per cent of GSDP	3.5	3.6	3.6	3.5	3.0	3.5	3.4
Primary Deficit	6,521	7,798	8,679	8,872	6,708	11,074	12,124
Per cent of GSDP	1.8	1.9	1.9	1.7	1.1	1.7	1.6
Outstanding Debt	89,418	1,03,561	1,19,009	1,35,440	1,57,370	1,80,921	2,07,027
Per cent of GSDP	24.56	25.12	25.59	25.75	26.75	27.27	27.68
GSDP (Current Prices)	3,64,048	4,12,313	4,65,041	5,26,002	5,88,336	6,63,358	7,47,945

*Source* Report of the Kerala Public Expenditure Review Committee, August 2017, Government of Kerala

### *Trends in Revenue Receipts*

The State's own tax revenue consists of sales tax and value added tax (VAT), taxes on vehicles, state excise duties, stamps and registration, taxes and duties on electricity, taxes on agriculture income, land revenue and other taxes and duties on commodities and services. The compound annual growth rate of State tax revenue was 12 per cent for 2011-12 to 2016-17 (RE). Sales Tax/VAT had the largest share in own tax revenue. There has been a downward slide in growth rates in sales tax/VAT, excise duty and stamp duty and registration fees during 2011-12 to 2015-16 when compared to the previous five-year period of 2006-07 to 2010-11. These three taxes together contribute 92 per cent of the own tax revenue.

Own non-tax revenue mainly arises from general services, economic services and social services. Interest receipts and dividends and profits comprise a minor part of own non-tax revenue of the State. General services accounted for over 60 per cent of the own non-tax revenue out of which gross receipts from lotteries formed the bulk. Non-tax revenue formed well below 7 per cent of the total revenue receipts of the State from 2001-02 to 2011-12. It has exhibited a growing trend since then mainly due to increase in revenue from lotteries.

Revenue receipts also include transfers from Centre which has been described separately.

### *Trends in Revenue Expenditure*

Revenue expenditure accounts for around 90 per cent of the total expenditure. The share of revenue expenditure in total government expenditure was as high as 93.5 per cent in the fiscal year 2014-15. The corresponding figure for the average of all Indian states was 84.4 per cent. As regards, the trends in salary, interest and pension payments during the period 2011-12 to 2015-16, their combined share in revenue expenditure declined and the same was lowest at 59.1 per cent in 2014-15. Another major component of revenue expenditure is the subsidy bill. Food subsidy accounts for the maximum share. The devolution to Local Self Government institutions has also been rising and was the highest in 2014-15. However, in 2015-16 there is a decline. The expenditure composition in 2014-15 shows that the development expenditure as a proportion of aggregate disbursements was lower for Kerala than all States, and that non-development expenditure as a proportion of aggregate disbursements is higher than all States.<sup>1</sup>

### *Plan Size over the Years*

The Plan outlay of the State has increased from Rs 6,950 crore in the beginning of the 11th Plan period (2007-08) to Rs 24,000 crore by the culminating year of the 12th Plan period. The aggregate Plan size increased from Rs 45,605 crore during the 11th Plan period to Rs 95,010 crore during the 12th Plan period.

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<sup>1</sup> State Finances: A Study of Budgets of 2016-17, Reserve Bank of India, May 2017

Table 2.2 *Plan outlays 2006-07 to 2018-19*

Year	Budgeted Outlay (in Rs crore)	Percentage increase over the year
2006-07	6,681	-
2007-08	6,950	4.03
2008-09	7,700	10.79
2009-10	8,920	15.84
2010-11	10,025	12.39
2011-12	12,010	19.80
2012-13	14,010	16.65
2013-14	17,000	21.34
2014-15	20,000	17.65
2015-16	20,000	0
2016-17	24,000	20.00
2017-18	26,500	10.42
2018-19	29,150	10

Source Annual Plans, State Planning Board

*Resources during the 11th and 12th Plan Period*

Plan expenditure of State is financed by State's own resources, borrowing and Plan grants from the Union. Until 2014-15, Plan grants comprised of Normal Central Assistance (NCA), Additional Central Assistance (ACA) for specific-purpose scheme, Special Plan Assistance, Special Central Assistance, Central Plan Schemes and Centrally Sponsored Schemes. Post 14th Finance Commission (FFC), Normal Central Assistance and Additional Central Assistance have been discontinued or subsumed under higher devolution of taxes. In Kerala, State Plan financing also have contributions of Local Self Governments and Kerala State Electricity Board.

During the 11th Plan period (2007-08 to 2011-12) Plan financing was mostly done through borrowing. The contribution in the form of BCR (Balance from Current Revenue) was negative. Also there was a progressive reduction in the share of untied Normal Central Assistance to the State during this period. During the 12th Plan period, i.e., for the period from 2012-13 to 2016-17, pattern of Plan financing remained more or less the same, except for the fact that NCA was discontinued from 2015-16. In other words, the State of Kerala had to make resources available from its own revenues and enhanced tax devolution which was earlier available as NCA. Most ACA's were also discontinued post 14th Finance Commission award and the consequent restructuring of grants. Due to this restructuring, the share of State's own resources including dependence on borrowing to finance the 12th Plan remained significant. Details of the scheme of financing and realisation versus projection during the 11th and the 12th Plans are given in the following tables.

Table 2.3 11th Five-Year Plan – Scheme of financing

Item	2007-08 per cent of Total	2008-09 per cent of Total	2009-10 per cent of Total	2010-11 per cent of Total	2011-12 per cent of Total
BCR	-50	-37	-28	-12	-49
State PF Net	19	17	10	11	20
MCR	12	-10	20	5	19
Special Grants under TFC	1	0	1	0	4
Net Small Savings	2	-1	-2	0	-4
Net Market Borrowing	61	68	52	48	68
Negotiated loans	4	1	-1	3	-2
ACA for EAP/Other ACA schemes	19	23	11	10	9
Normal Central Assistance		3	3	3	3
Central Loan Repayment		0	0	-3	-3
LSG	24	26	24	27	26
KSEB	9	10	8	9	10
Total	100	100	100	100	100
Rs crore	5,932	7,082	9,040	10,028	11,092

Note ACA for EAP/Other ACA (Grant and Loan) is net of central loan repayment (2003-02) up to 2008-09

Source Report of the Kerala Public Expenditure Review Committee, August 2017, Government of Kerala

Table 2.4 11th Five-Year Plan, Scheme of financing - Realisation/ Projection in per cent

Item	2007-08 Realisation/ Projection (per cent)	2008-09 Realisation/ Projection (per cent)	2009-10 Realisation/ Projection (per cent)	2010-11 Realisation/ Projection (per cent)	2011-12 Realisation/ Projection (per cent)
BCR	73	131	189	222	183
State PF Net	68	130	204	192	82
MCR	-82	74	-219	-21	-104
Special Grants under TFC	27	25	57	34	111
Net Small Savings	4	-4	-6	-17	-3589
Net Market Borrowing	253	619	609	71	111
Negotiated loans	23	16	-13	63	-56
ACA for EAP/Other ACA schemes	47	71	39	49	47
Normal Central Assistance		28	28	93	92
Central Loan Repayment				81	96
LSG	78	97	105	124	112
KSEB	61	94	76	90	106
Total	85	92	104	100	101
Projection (Rs crore)	6,950	7,700	8,660	10,000	11,030
Realisation (Rs crore)	5,932	7,082	9,040	10,028	11,092

Source Report of the Kerala Public Expenditure Review Committee, August 2017, Government of Kerala

Table 2.5 *12th Five-Year Plan Scheme of financing*

	2012-13	2013-14	2014-15	2015-16	2017-18
Particulars	As per cent of total	As per cent of total	As per cent of total	As per cent of total	As per cent of total
BCR	-34	-50	-59	-5	-8
MCR	11	16	20	4	1
Plan grants	1	2	3	4	1
PF (net)	14	14	14	11	8
Small Savings (NSSF) Net	0	0	3	4	0
Open Market Borrowings (SLR based)	77	82	76	66	66
Loan from financial institutions (net)	-3	-2	-2	-1	2
Back to back EAP loans	4	3	5	3	4
Central Assistance	6	6	3	0	0
Loans	0	0	0	0	0
Grant	6	6	3	0	0
GOI Loan Repayment	-2	-3	-2	-2	-2
KSEB	6	6	6	6	6
LSGD	21	26	32	14	23
Total	100	100	100	100	100
Rs crore	13,717	13,862	15,402	19,546	23,607

*Source* Report of the Kerala Public Expenditure Review Committee, August 2017, Government of Kerala

Table 2.6 *12th Five-Year Plan – Scheme of financing - Realisation/Projection in per cent*

	2012-13	2013-14	2014-15	2015-16	2016-17RE
Item	Realisation/ Projection (per cent)	Realisation/ Projection (per cent)	Realisation/ Projection (per cent)	Realisation/ Projection (per cent)	Realisation/ Projection (per cent)
BCR	141	267	420	24	58
MCR	-84	-400	2306	205	22
Plan grants	24	50	117	0	0
PF (net)	124	275	232	222	100
Small savings (NSSF) Net	32	61	-7081	-9865	100
Open Market Borrowing (SLR based)	113	117	95	91	110
Loans from Financial Institutions (net)	-229	-153	160	-174	100
Back to back EAP loans	63	37	84	36	58
Central Assistance	29	28	24	10	0
Loans	0	0	0	0	0
Grant	48	46	24	10	0
GoI Loan repayment	83	86	81	101	100
KSEB	70	57	78	86	91
LSGD	91	91	103	59	107
Total	98	82	77	98	107
Realisation (Rs crore)	13,717	13,862	15,402	19,547	23,607
Projection (Rs crore)	14,010	17,000	20,000	20,000	23,607

*Source* Report of the Kerala Public Expenditure Review Committee, August 2017, Government of Kerala

*Working Group on Financial Resources and Resource Mobilisation*

The Working Group on Financial Resources and Resource Mobilisation (March 2017) made an assessment of the resource position of the State from 2017-18 to 2021-22. The projections for revenue expenditure, that is, salaries, pension and other revenue expenditure for the years 2017-18 and 2018-19 was taken from the Medium Term Fiscal Policy and Strategy Statement (2016-17 to 2018-19). For 2019-20 to 2021-22, growth rate of 10, 18 and 20 respectively was assumed. Forward projections of own tax revenue was made by assuming different growth rates for sales tax, excise duty, motor vehicles tax, stamp duty and electricity duty. Sales tax/VAT/GST was assumed to grow at 15 per cent in 2017-18 and 2018-19, 18 per cent in 2019-20 and 2020-21 and 20 per cent in 2021-22. Excise duty was projected to grow at 14.5 per cent every year during 2017-22. A 14.1 per cent growth every year was assumed for motor vehicles tax whereas for stamp duty and registration, growth of 10 per cent was assumed in 2017-18, 12 per cent in 2018-19, 14 per cent in 2019-20, and 15 per cent in 2020-21 and 2021-22. A 10 per cent annual increase was projected for electricity duty. Projections for non-tax revenue were made based on the average of annual growth rates in major head since 2009-10. This shows that only meagre resources are available for capital expenditure in the State.

Table 2.7 *Resource position of the State (2017-22) in Rs crore*

Variable	2017-18	2018-19	2019-20	2020-21	2021-22
Interest	8,609	8,144	7,575	7,085	6,419
Salaries	33,718	3,5425	38,968	42,865	47,152
Pension	20,521	2,5484	30,071	35,484	41,871
Other RE	35,296	4,4936	53,923	64,708	77,650
Total RE	98,144	1,13,989	1,30,537	1,50,142	1,73,092
Own Tax Revenue	52,116	59,747	69,989	82,048	97,511
Non Tax Revenue	10,144	11,278	12,413	13,547	14,680
State's Share in Taxes	16,960	18,995	21,274	23,827	26,686
Total Revenue Receipts	79,220	90,020	1,03,676	1,19,422	1,38,877
Total Revenue Receipts-Total RE	-18,924	-23,969	-26,861	-30,720	-34,215
GSDP	7,38,426	8,27,037	9,30,417	10,46,719	11,77,559
3 per cent of GSDP	22,153	24,811	27,913	31,402	35,327
Resources Available	3,229	842	1,052	682	1,112

*Resource Estimation for the 13th Five-Year Plan*

The Approach Paper of the 13th Five-Year Plan provides the resource estimates for the Plan period. It has been assumed that Kerala's State Domestic product (SDP) will grow at a nominal rate of 13 per cent during the five year period from 2017-18 to 2021-22. This assumption is based on the past trends in income growth in the State and also on expectations about inflation and other macroeconomic variables. The 13th Five-Year Plan will coincide with the remaining three years of the term of the 14th Finance Commission and the first two years of the term for the 15th Finance Commission award. The Fiscal Responsibility and the Budget Management (FRBM) Act sets limit to expenditures by the State Government. These factors have been taken



into account while estimating Plan resources for the 13th Five-Year Plan. The resource estimation is based on the following assumptions.

1. Nominal GSDP of Kerala will grow at an average annual rate of 13 per cent during the period from 2017-18 to 2021-22.
2. The State's own tax revenues will grow at an annual rate of around 18 per cent during the 13th Five-Year Plan period. This estimate is based on the projections about tax buoyancy in the State, due to implementation of the GST regime and expected improvement in tax enforcement in the State.
3. Revenue expenditure in Kerala will grow at an annual rate of 18 per cent in 2017-18 period (as per Medium Term Fiscal Policy of the State) and at annual rate of about 14 per cent over the subsequent four years.
4. Kerala will limit its fiscal deficit to 3 per cent of the State's GSDP over the 13th Five-Year Plan period.

Based on the above assumptions, the resources for financing Kerala's 13th Five-Year Plan will amount to Rs 2,00,000 crore. However, if the State economy faces unforeseen challenges, particularly because of the external factors, the resources for the 13th Five-Year Plan will have to be revised downwards to Rs 1,80,000 crore. It is estimated that State will receive Rs 40,000 crore over the next five years under Centrally Sponsored Schemes. The year wise tentative outlay for the 13th Five-Year Plan is provided in the following table.

Table 2.8 *Plan outlays, 2016-17 to 2021-22*

Year	Budgeted Outlay (in Rs crore)	Percentage increase over previous year
2016-17	24,000	-
2017-18	26,500	10.4
2018-19	31,800	20
2019-20	38,478	21
2020-21	46,558	21
2021-22	56,664	21.7
Total	2,00,000	

For meeting its development goals, the State would try to supplement the Plan outlay with resources raised through innovative interventions by the government in the area of finance. The two such important interventions planned by the State during the 13th Five-Year Plan are co-operative credit and the Kerala Infrastructure Investment Board (KIIFB).

#### *Kerala Infrastructure Investment Fund Board*

Kerala Infrastructure Investment Fund Board (KIIFB) is an important financial innovation initiated in the State. KIIFB is going to be a key feature of the Kerala economy during the 13th Plan. It is a statutory body constituted under the Finance Department in 1999 for raising funds both in the medium and long term to finance infrastructure projects. KIIFB has been revamped substantially in 2016-17 to play a decisive role in infrastructure financing. State's capital

expenditure is historically low and remained below one per cent of GSDP. Only in the last decade, capital expenditure has seen an increase but that is totally inadequate to meet the infrastructure deficit facing the State. KIIFB is the special purpose vehicle intended to fill this gap in financing. This gives the Government fiscal space beyond the conventional limits of the budget. KIIFB's resources would come from shares of annual taxes and cesses, as well as from grants and income bearing infrastructure assets.

### *Co-operative Credit*

The development of co-operative credit institutions was the key to the historical weakening of usury in rural areas of the State. As the Report of the Committee on the Impact of Demonetisation appointed by the State Planning Board observes, "Cooperation and primary co-operatives are Kerala's strength, a rich legacy of our freedom movement. People's confidence in these institutions is a part of Kerala's historical heritage." Today, these institutions form the backbone of much of rural economic activity in the State.

Neo-liberal economic policies and demonetisation have affected co-operative credit institutions in Kerala severely. As a result of the implementation of the recommendations of the Vaidyanathan Committee and the Prakash Bakshi Committee, the norms for the capital-to-risk weighted assets ratio (CRAR) for co-operatives was raised to 7 per cent (till 2014-15) and 9 per cent (to be attained by 2016-17). State co-operative banks that have CRAR lower than the stipulated levels are denied refinance by NABARD. These stipulations, which consider co-operative banks at par with commercial banks, have created a major crisis in the functioning of co-operatives in Kerala. The Prakash Bakshi Committee suggested that all PACS should divest their banking operations and become banking correspondents (BCs) for the respective District Central Co-operative Banks. The RBI, on its part, has declared that urban co-operative banks would have to choose between transforming into a small finance bank (SFB) or become a universal bank.

The State Government has decided not to remain inactive while the policies of the Central government restrict the co-operative credit sector. The Government is taking steps towards formation of a Kerala Bank by amalgamating the District Central Co-operative Banks and the State Co-operative Bank. In addition, the 13th Plan will support the modernisation of co-operatives across the State to computerise and install core banking solutions as well as to universalise KYC norms among depositors. This will enable the PACS to actively supplement the formation and functioning of the Kerala Bank. Special attention will also be paid to the encouragement of SC and ST co-operatives.

### *Centrally Sponsored Schemes*

A major change in Centre-State fiscal relations has been due to restructuring of Centrally Sponsored Schemes. Subsequent to the recommendations of the Sub Group on Centrally Sponsored Schemes, 66 schemes have been rationalised into 28 umbrella schemes and have been classified as Core of the Core, Core and Optional schemes. The existing pattern will continue for the 6 core of the core schemes, for core schemes the funding pattern is in the ratio 60:40

between Centre and State (except for North Eastern States and Himalayan States where it would be 90:10) and for optional schemes the funding pattern is 50:50 between Centre and State (except for North Eastern States and Himalayan States where it would be 80:20).

Classification of schemes as Core of the Core and Core has implications for finances. Since for the Core of the Core schemes, existing pattern of funding has been retained, schemes classified in this category is budget neutral for the states as they do not have to make additional resources available for funding such schemes. It is seen that only 27 per cent of the total grants have been classified in this category and for the rest of the schemes, that is, Core and Optional, states' share has been enhanced which would result in reduction in untied fiscal space of the State. The following table provides an overview of central transfers to the State.

Table 2.9 *Overview of transfer of resources from centre to Kerala in Rs crore*

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 RE
Transfers Through State Budget	7,338.5	9,699.6	9,862.2	11,606.9	15,434.4	22,227.1
Central taxes	5,141.9	5,990.4	6,840.7	7,468.7	7,926.4	12,690.6
Grants	2,196.6	3,709.2	3,021.5	4,138.2	7,508.0	8,921.3
Transfers Outside State Budget	1,723.8	1,987.6	211.7	262.4	705.1	0.0
Total Transfers	9,062.2	11,687.1	10,073.9	11,869.3	16,139.4	21,611.9
Transfers as per cent of Revenue	26.14	25.38	18.83	19.62	22.50	27.46
Expenditure						
Transfers as per cent of Total	23.83	23.42	17.34	18.32	21.24	24.83
Expenditure						
Transfers as per cent of GSDP	2.92	3.21	2.44	2.55	3.06	3.67

The aggregate transfer to State as per cent of GSDP is estimated to be 3.69 per cent in 2016-17. Fund flow to States outside the budget was routed through consolidated fund of the State from 2014-15 onwards. There has been an increase in the transfers to GDP ratio from 2.5 per cent in 2013-14 to 3 per cent in 2014-15 followed by a further increase to 3.67 per cent and 3.7 per cent of GDP in 2015-16 (RE) and 2016-17 (BE). It is estimated that if aggregate resource flow to State remains at least 3.6 per cent of GSDP of the State, there will be an increase in absolute volume of transfers to Rs 42,392 crore by the end of the 13th Plan period. The Approach Paper to 13th Plan assumes Rs 40,000 crore in flow under Centrally Sponsored Schemes over the next five years.

#### *Goods and Services Tax*

Goods and Services Tax (GST) has been introduced in the country from July 1, 2017. It subsumes the following Central and State taxes. The Central taxes include central excise duties, additional duties of excise, additional duties of customs, special additional duties of customs, service tax and, central cess and surcharges so far as they relate to supply of goods and services. State taxes subsumed under GST are State VAT, central sales tax, luxury tax, entry tax, entertainment tax, taxes on advertisement, purchase tax, taxes on lotteries, betting and gambling, and State surcharges and cesses so far as they relate to supply of goods and services. Petroleum

products, alcohol for human consumption, real estate sector and electricity duty have been kept out of the purview of GST.

An assessment of resource generation post implementation of GST is difficult at this juncture. It is expected that GST will enlarge the base of the State taxation by bringing services into the tax net. With the introduction of destination based GST, it is expected that Kerala will get additional tax revenue from e-commerce by inter-governmental fund transfer through the integrated goods and services tax. However, it is seen that post GST, a far fewer number of commodities fall under the highest rate of 28 per cent, which implies that the State would get a lower rate of 14 per cent (50 per cent share from 28 per cent rate of GST would be SGST and the other 50 per cent would be CGST) from lesser number of commodities than under the earlier VAT system where almost 75 per cent of VAT collection was from commodities under the standard rate of 14.5 per cent.<sup>2</sup> A clearer picture of tax collection will emerge later in time.

### *Conclusion*

The State has to orient its efforts on effective mobilisation of resources, efficient tax administration, rationalisation of expenditure, effective implementation of centrally sponsored schemes, and focus on prioritisation of expenditure for better delivery of services to citizens. Duplication of schemes and investing in schemes which have not produced intended results need to be reviewed. The State needs to tap effectively the flexibility it has obtained from the untied fiscal space and also adopt innovative means of financing for completion of projects and implementation of schemes.

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<sup>2</sup> Report of Public Expenditure Review Committee, Government of Kerala, August 2017

### 3 AGRICULTURE AND ALLIED ACTIVITIES

#### AGRICULTURE

##### *Overview*

Kerala and North East India are the two great repositories of plant biodiversity in the country. Kerala is a location of world significance with regard to its plant diversity and wealth, and is, in addition, endowed with a coastline rich in marine fisheries and with inland water bodies. The Government of Kerala has correctly emphasised the importance of agricultural growth. Agricultural growth will require attention in many spheres: modern scientific and technological development, research in agriculture and allied activities – particularly in our universities and research establishments – extension, storage, marketing and price policy, institutional change including completion of land surveys and the modernisation of land records, new forms of production, including co-operation, and value addition.

Kerala is characterised by the existence of a series of micro-environments suited to diverse kinds of agriculture and related activities. It is our task to translate the potential of Kerala's biodiversity into incomes for our people.

The sub-sector agriculture, comprising crop husbandry, marketing, storage and warehousing, accounts for the largest share of allocation under agriculture and allied sectors over the Plan periods. To revive the agricultural economy of the Wayanad district, a package of schemes was initiated under the Wayanad package and was included in the Special Programme for Area Development during the 12th Plan. The share of expenditure for agriculture under agriculture and allied sectors was around to 47 per cent in the 11th Plan period. The share increased to 53 per cent in the 12th Plan period. The share of expenditure of agriculture in total Plan expenditure was 3 per cent in the 11th Plan, a share that increased to 3.8 per cent in the 12th Plan. The details are given in Table 3.1.

Table 3.1 *Budgeted outlay and expenditure for agriculture in the 11th and 12th Five-Year Plans in Rs crore*

Period	Budgeted Outlay	Expenditure	Expenditure (in per cent)
11th Plan	1,337.1	1,260.2	94
12th Plan	3,413.9	3,295.50	96.50

##### *Problems of Kerala's Agriculture Sector*

Major problems related to agriculture in Kerala are threats to the preservation of arable land, a failure to bridge yield gaps in all major crops (and the scientific and technological problems that cause such failure), low, stagnant, and declining incomes from agriculture. Other issues include failure to integrate crop cultivation with on-farm fisheries and animal resource development, weak forward linkages with product markets, storage, distribution networks, and agro-based production. There are also problems of the small scale of production on the vast majority of operational holdings.

### *12th Five-Year Plan*

In the 12th Five-Year Plan period (2012-17), the budgeted outlay for agriculture, including crop husbandry, marketing, storage and warehousing, other programmes, and Wayanad package was Rs 3,413.91 crore. The details are given in Table 3.2. The details of major crops of Kerala and their production targets and achievements in the 12th Plan period are given in Table 3.3.

Table 3.2 *Year-wise budgeted outlay and expenditure for agriculture in the 12th Five-Year Plan in Rs crore*

Year	Budgeted Outlay	Expenditure*
2012-13	688.74	660.50
2013-14	781.31	641.29
2014-15	920.32	708.45
2015-16	474.93	685.88
2016-17	548.61	599.38
Total	3,413.91	3,295.50

\* Expenditure includes Supplementary Demand for Grants

Table 3.3 *Major crops of Kerala, production targets and achievements, 12th Five-Year Plan period*

Major crops	Annual Target proposed in the 12th Plan	Achievement in 2015-16
Rice (in lakh tonnes)	6.50	5.49
Coconut (in million nuts)	6750	5873
Banana (in lakh tonnes)	15	9.47
Pepper (lakh tonnes)	0.80	0.42

#### *Critical Gaps Identified during the 12th Plan*

1. Inadequate focus on rice development.
2. Lack of focused implementation of extension scheme.
3. Risk management including human-animal conflict.
4. Poor intervention in fruits, flowers, urban agriculture, and medicinal plants.
5. Marketing and value addition.

### *13th Five-Year Plan*

Kerala will strive for sustainable agricultural development focussing on productivity, profitability, and ecology and in achieving self-sufficiency in vegetable production.

Over the 12th Five-Year Plan period, the State's agricultural sector declined. Agriculture and allied sector recorded a growth rate of 1.4 per cent in the first year (2012-13) of the 12th Plan period. After three years of declining growth, there has been a positive growth in the agriculture and allied sector in 2016-17. Although this is a positive development, Kerala has still far to go with respect to agricultural growth.

Because of the part played by commercial crops in Kerala's cropping pattern, agricultural households in the State earn a higher income per hectare than in other States. In 2012-13, the

total value of production per hectare for agricultural households in Kerala was Rs 97,491; the corresponding figure was Rs 43,308 for India, Rs 88,058 for Punjab, and Rs 67,224 for Haryana. However, per household net income from cultivation and farming of animals was lower, owing to smaller average size of holdings in Kerala. In 2012-13, the net income from cultivation and farming of animals for an agricultural household was Rs 4,106 per month in Kerala, Rs 3,844 in India, Rs 12,520 in Punjab and Rs 10,512 in Haryana. In other words, the higher value of production in agriculture in the State does not translate into higher incomes per household.

There is a shortage of workers in Kerala who are skilled and interested in agriculture. One way to address this problem is to integrate the creation of farmers' volunteer groups (*Karshika Karma Sena*) with a network of agro-service centres that will provide for mechanisation in agriculture.

Crops in Kerala are grown in different agro-climatic environments and farming systems. The main zones are the highlands, the middle zone, the lowland plain, and the coastal plain. Plantation crops are grown in the highland zone. Rice is grown as a field crop, while coconut, vegetables and spices like pepper are largely grown in garden land and homesteads of small sizes. Garden land and homesteads are characterised by intensive inter-cropping. The livestock sector is often integrated into production in homesteads. In some parts of the State, fish farming is integrated with rice farming. The Government recognises the cultivation of medicinal plants to be a specific sector of our agriculture. Opportunities with respect to apiculture have not been utilised. The Government proposes that employment opportunities in this sphere be created by means of a specific mission.

Farmers produce the raw material for agro-based value-added products. They must be ensured a fair share of the income generated in this process.

It is necessary to introduce policies to attract young people to agriculture. The Government plans to introduce an action plan for the modernisation of farms in the public sector. The Government will also utilise opportunities in the field of farm tourism. The Government will promote research in the development of seed varieties that are climate-resilient. The Government will create facilities to protect traditional seed varieties and biodiversity.

It is proposed to create Special Agricultural Zones (SAZ) in Kerala for the production of rice, vegetable, banana, coconut, and flowers. Each zone will seek to bridge yield gaps in the specific crops and increase farmers' incomes through sustainable agricultural practices. Each area requires a distinctive approach to the evaluation of yield potential and the selection of varieties. Support services like agricultural information, soil and plant health, input costs and output prices, post-harvest market linkages, storage, and distribution are also required. Value addition needs to be planned for each commodity in each agricultural zone.

While designing strategies for the 13th Plan, special emphasis will be given to increase the area under cultivation and production of rice in Kerala. Data from the Directorate of Economics and Statistics indicate that 1.96 lakh hectares of rice were cultivated in Kerala in 2015-16. The target of the Government is to raise the gross cropped area under rice to 3 lakh hectares by the end of the 13th Plan period. To increase the area under rice, cultivation needs to be extended (more

fallow land must be brought under cultivation) and intensified. Towards this purpose, special agricultural zones for rice will be notified in seven locations: Kuttanad and Onattukara (Alappuzha), Kole (Thrissur), Pokkali (Ernakulam), Palakkad, Kaipad (Kannur), and Wayanad. Farmers will receive support with regard to inputs, mechanisation, procurement, and marketing of rice.

The cultivation of vegetables in Kerala in the last decade has been relatively successful. We should build on this success, and aim to more than double the area cultivated with vegetables. We shall aim to attain self-sufficiency in vegetable production and augment vegetable cultivation to 1.05 lakh ha in a phased manner. It is also aimed to establish vegetable producer companies, promote rain shelter cultivation, and promote growing vegetables in mini-polyhouses in urban areas and apartments.

A major objective of the Haritha Keralam mission of the Government is to raise vegetable production significantly. Under the 13th Plan, the Government plans to establish special agricultural zones for vegetables in Devikulam (Idukki), Kanjikuzhy (Alappuzha), Pazhayannur, Ollukkara, Kodakara (Thrissur), Chitoor-Kollengode (Palakkad), and Mananthavadi (Wayanad). The focus in vegetable cultivation will be to ensure that irrigation facilities are improved, group cultivation of vegetables is encouraged through the formation of vegetable producer companies, reorganisation of existing farmer's groups, establishment of more soil testing labs to help identify the best vegetable crops for specific regions, the strengthening of the Vegetable and Fruit Promotion Council Kerala (VFPCCK) and better marketing facilities in each panchayat. To improve vegetable marketing, the Government plans to establish a network of cold storage facilities across the State. In vegetable cultivation, the Government will give due importance to organic agriculture and the provision of safe-to-eat products.

The 13th Plan will also promote the cultivation of millets, such as ragi, and maize in Wayanad and Palakkad districts. The Government will promote the cultivation of traditional crops, such as tubers and pulses, grown by Adivasis in the State.

The potential of Kerala in the cultivation of flowers has been inadequately exploited. Wayanad has been selected a site for a special agricultural zone for floriculture in the 13th Plan.

The departments concerned may also investigate and experiment with innovative forms of urban agriculture in Kerala.

#### *Schemes Proposed for the 13th Plan*

The schemes proposed by the Department for 13th Plan are classified under the categories crop development, marketing and value addition, agriculture extension and human resource development, soil and plant health management, input and service delivery, risk management, biodiversity conservation and farm diversification and farmer's welfare. They are summarized below:

1. Augment area under rice to 3 lakh ha by the end of the Plan.



2. Attain self-sufficiency in vegetable production. Augment the area under vegetable cultivation to 1.05 lakh ha. Establish vegetable producer companies, promote rain shelter cultivation, and promote vegetable cultivation in mini poly-houses in urban areas.
3. Expand Keragramam model to facilitate integrated management of coconut gardens. Promote coconut producer companies, neera, sweet toddy and other coconut based value added products to augment the income of coconut farmer.
4. Develop Special Agriculture Zones to ensure convergence of programmes in an organised and result oriented manner for sustainable development of agriculture ensuring maximum productivity, profitability and ecology.
5. Promote agro-processing and value addition including establishment of agro parks. Promote processing and value addition including branding and marketing. Handhold farmer's collectives in value addition and marketing to enhance entrepreneurship.
6. Mechanize farming to reduce cost of cultivation. Focused interventions and convergence of activities for profitable crop production
7. Develop an integrated pepper development by means of area expansion and rejuvenation of pepper. Expand area under ginger and turmeric. Promote organic spices.
8. Encourage fruit cultivation including the establishment of agro-park for jack fruit and banana.
9. Promote floriculture. Establish flori-villages and floriculture nurseries.
10. Promote varietal development and expansion. Strengthen tissue culture labs for multiplication of planting materials for promising varieties.
11. Promote medicinal plant cultivation.
12. Strengthen marketing facilities for farmers in rural and urban areas. Establish collection centres, post-harvest production units, grading and packing centres, and cold chains. Encourage agro-businesses through a network of agro-parks.
13. Extent Agro-Service Centres (ASC) to all Blocks (152 Blocks).
14. Ensure good agricultural practices and sustainable food production for building a healthy population.

## ANIMAL HUSBANDRY AND DAIRY

### Overview

Livestock sector in Kerala is one of the fastest growing sectors of the State's rural economy. It accounts for approximately 3 per cent of the Gross State Value Added (GSVA) and can have a significant impact on the rural and urban livelihoods. Our efforts in animal resource development can contribute to enhance nutrition, generate employment, alleviate poverty, provide food security, and empower women. Animal resources are also coping mechanism where other sources of agricultural income fail.

We must ensure that the growth of milk, egg and meat production keeps pace with steady rise in demand. Supplies of quality feed and fodder at affordable rates are necessary, especially in the context of the decline in pasture. Modern facilities for animal slaughter must be established. The state needs more multi-specialty clinics and ambulance service for diagnosis and treatment of new and emerging diseases such as *Peste des petits ruminants* (PPR), hog cholera, and avian influenza. Farmers need to be protected against risk and encouraged for new ventures in the field of animal husbandry and dairy development.

### 12th Five-Year Plan

In the 12th Five-Year Plan Rs 1,355.96 crore was allocated for animal husbandry sector and Rs 324.15 crore was allocated for dairy development.

Table 3.4 *Animal husbandry and dairy development, budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs crore

Year	Animal Husbandry		Dairy Development	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure*
2012-13	211.17	174.53	35.00	43.98
2013-14	260.25	222.74	47.65	52.62
2014-15	295.16	221.59	70.00	72.54
2015-16	299.38	217.71	79.00	77.44
2016-17	290.00	215.25	92.50	94.13
Total	1,355.96	1,051.82	324.15	340.71

\* Expenditure includes Supplementary Demand for Grants

### 13th Five -Year Plan

In the 13th Plan period, the Government will focus on increasing milk, egg, and meat production. With respect to milk production, the Government's objectives are to improve the production and distribution of livestock feed, increase production of fodder, re-orient extension services, expand insurance facilities in the field, and strengthen and modernise milk co-operatives, linking them at the State level with the help of a unified software solution.

It also requires an increase in number of animals and improved genetic potential and quality. With respect to poultry and egg production, the department will establish more backyard poultry production units, strengthen layer breeder farms, establish new layer breeder farms, and hatcheries.

Meat production requires new cattle farms as well as modern slaughter houses and meat stalls for the supply of hygienic and high-quality meat. The Government is committed to improve extension services, insurance facilities and veterinary medical services.

The target set by relevant departments and agencies in milk and egg are 30 lakh MT of milk per year and 300 crore eggs per year. Emergency night veterinary services are to be provided in all 152 Blocks of the State and one lakh calves per year will be covered by the Govardhini and Special Livestock Breeding Programme.

#### *Key Initiatives in the 13th Plan*

1. Assist the establishment of breeder piggery units, silage making units, commercial goatery units and the installation of waste management facilities.
2. Extension of emergency night veterinary services to all 152 Blocks (from the present 85 Blocks).
3. Establish new broiler breeder farm, layer breeder farm, and hatcheries.
4. Commercial fodder production in barren lands and wastelands.
5. Establish distinct dairy zones in the State and a cattle farm at Chalakudy.
6. Establish high tech slaughter houses and abattoirs.
7. Establish new training center for laboratory management training at Chief Disease Investigation Office (CDIO), Palode.
8. Develop waste management systems for effective utilisation of farm, hatchery, and canteen waste.
9. Establish new oncology wing and centre for wildlife studies at CDIO, Palode.
10. Assist infrastructure development of State Dairy Lab, Regional Dairy Labs, District Level Labs and Mobile Dairy Labs and establish permanent Milk Quality Testing Facility.
11. Implement unified accounting software for dairy co-operatives.
12. Implement comprehensive health insurance programme covering cattle and cattle owners.
13. Geo mapping of all the dairy co-operatives of the State.

## CO-OPERATION

### *Overview*

The co-operative movement in Kerala began in the early 20th century and gained momentum and strength after independence. The co-operative movement, which began in the sphere of co-operative credit, diversified thereafter into many areas. The co-operative movement in Kerala today has spread to almost all parts of the State and most spheres of life. Co-operatives play an important role in mobilising people, pooling their resources so as to realise the common needs of their members. Kerala has 15,287 co-operatives in the State, of which 11,908 are functioning. Among them, 3,468 are credit co-operatives 4,671 are consumer co-operatives and 3,918 are miscellaneous co-operatives, including labour contract co-operatives, transport co-operatives and education co-operatives.

However, there are still problems to be overcome in this sector. Modernisation of credit co-operatives is still incomplete. More than half of all Primary Agricultural Credit Co-operatives (PACS) are not computerised. More than half of all SC/ST co-operatives are dormant or not-functioning. Neoliberal economic policies, demonetisation, and the norms of the capital risk assets ratio (CRAR) for co-operatives being brought on par with commercial banks have all had an adverse effect on the health of co-operative institutions.

### *12th Five-Year Plan*

In the 12th Five-Year Plan Rs 400.78 crore was allocated for the sector under State Plan and Rs 205 crore as National Co-operative Development Corporation (NCDC) assisted schemes. Table 3.5 gives the year-wise outlay and expenditure of the sector during the 12th Plan

Table 3.5 *Co-operative sector, State Plan and NCDC schemes, budgeted outlay and expenditure in the 12th Five-Year Plan in Rs crore*

Year	State Plan			NCDC			Total		
	Budgeted Outlay	Expenditure*	Expenditure (in per cent)	Budgeted Outlay	Expenditure*	Expenditure (in per cent)	Budgeted Outlay	Expenditure*	Expenditure (in per cent)
2012-13	62	53.62	86.48	50	36.04	72.08	112	89.66	80.05
2013-14	75	64.85	86.47	30	28.51	95.03	105	93.36	88.91
2014-15	83.39	171.39	205.53	35	74.39	212.54	118.39	245.78	207.60
2015-16	85.39	82.08	96.12	45	35.56	79.02	130.39	117.64	90.22
2016-17	95	92.60	97.47	55	43.06	78.29	150	136.32	90.88
Total	400.78	464.55	115.91	205	217.56	106.12	605.78	682.11	112.60

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The vision for the 13th Plan is to promote an inclusive co-operative movement giving special focus to the marginalized sections and to modernize co-operative credit structure in the State.

The formation of the Kerala Bank is an important highlight of the 13th Plan. Modernisation of credit co-operatives is vital to the formulation of the Bank. At present, credit co-operatives are organised in a three-tier system, with the State Co-operative Bank (SCB) at the apex, 14 District Co-operative Banks (DCBs) in the districts and 1,625 PACS. SCB and DCBs upgraded their systems and became operational in core banking solution (CBS) a few years ago. However of the 4,625 branches of 1,625 PACS, only 2007 are core banking enabled branches, with 1,134 branches being fully automated. Computerisation of the remaining branches, establishment of common software and upgrading to CBS is a necessity. The State needs to draw a clear road map for to the modernisation of PACS to complete the process in a time bound manner.

Co-operatives must serve the 13th Five-Year Plan objectives of raising the living standards of the people of Scheduled Castes and Scheduled Tribes and of making the Plan gender sensitive.

*Key Initiatives in the 13th Plan*

1. Formation of Kerala Bank by amalgamating 14 DCBs and SCB.
2. Modernisation of all the co-operatives under the Co-operative Department.
3. Modernisation drive that began in the 12th Plan to be completed in the 13th Plan with the computerization of the remaining PACS, adoption of a common software and upgradation to CBS.
4. Revival and strengthening of SC and ST co-operative societies
5. Special scheme for establishment co-operatives for women.
6. Interest subsidy linked to market support for cultivation of cool season vegetables in Vattavada and Kanthalloor in Devikulam block of Idukki district.
7. Comprehensive health care to tribal population in Attapady in association with EMS Co-operative Hospital, Perinthalmanna.
8. Farmer service centres to be extended to 12 more Blocks.
9. Suvaranam shops to be established for the sale of organic vegetables as well as other indigenous products.

## SOIL AND WATER CONSERVATION

### Overview

The Report on the Status of World's Soils has pointed out that "human society as a whole depends more than ever before on products from the soil as well as on the more intangible services it provides for maintenance of the biosphere." While the predominant soils in Kerala are lateritic, the State is characterised by a rich diversity of soils. We have eight types of soils (coastal sandy soil, riverine alluvium soil, red soil, Kari soil, black cotton soil, laterite soil, hill soil and forest soil) belonging to eight different soil orders. Thus, historically, farmers in Kerala have learned to manage diverse soils.

In spite of rich soil diversity, the Department estimates that 67 per cent of the total geographical area of the State is subject to soil degradation for different reasons, including erosion, landslides, water-logging, acidification, laterisation, and soil pollution. In order to achieve sustainability in production, agriculture must rediscover the importance of healthy soil and healthy root growth. Managing soil health is an important component of sustainable crop production.

The organised efforts in the area of soil and water conservation began in the State in the First Five-Year Plan period. Apart from the Department of Soil Survey and Soil Conservation, three other implementing agencies are involved in strengthening Kerala's soil and water resources. There are the Kerala State Land Use Board, Kerala State Remote Sensing, and Environment Centre and Kerala State Land Development Corporation. The Kerala State Land Use Board (KSLUB) acts as an agency to assist the State Government to frame policies to optimise land use and natural resource management in the State. Kerala State Remote Sensing and Environment Centre (KSREC) was established in 1995 to carry out research, training and other related activities in the field of remote sensing and GIS applications. The Kerala Land Development Corporation (KLDC) was incorporated in 1972. Its functions are in the field of land development. It also undertakes consultancies, project preparation, design and execution of projects, and schemes.

### 12th Five-Year Plan

The details of outlay and expenditure in this sphere are given in Table 3.6.

Table 3.6 *Soil and water conservation, budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs crore

Department	Budgeted Outlay	Expenditure	Expenditure (in per cent)
Land Use Board	10.52	9.56	90.87
KSREC	10.13	8.56	84.50
Department of Soil Survey and Soil Conservation	172.10	163.94	95.26
KLDC	164	235.41	143.54
Total	356.75	417.47	117.02

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

Conservation of natural resources through a watershed approach is the approach and strategy of soil and water conservation. During the 13th Plan period, the Soil Survey and Soil Conservation Department proposes to generate spatial micro level databases at the panchayat level and a spatial databank on the classification of land in Kerala. Strengthening the soil museum with the objective of serving as a reference centre on soil resources of the State is also envisaged. Watershed development plans are proposed to be developed and integrated with the efforts of the Haritha Keralam Mission. Resource mapping, delineation of sub watersheds, watershed action plans for MNREGS, geospatial information systems for local self-government institutions, capacity-building in spatial planning and natural resource conservation awareness are the other major thrust areas in the sector.

#### *Key Initiatives in the 13th Plan*

1. Directorate of Soil Survey and Soil Conservation proposes to revive 60 traditional water bodies and springs to conserve rain water and to protect localities from the effects of drought.
2. Kerala State Land Use Board aims to prepare a Water Resource Conservation Plan for the entire State.
3. Preparation of comprehensive Wetland Information System (WLIS).

## FISHERIES AND COASTAL AREA DEVELOPMENT

### Overview

Kerala is rich in marine, brackish water, and fresh water resources. These water bodies are inhabited by a wide variety of aquatic fauna and flora. Kerala has a coastline of 590 km, a continental shelf area of 39,000 square kilometres, an exclusive economic zone of 2.19 lakh sq. km, and an inland water spread of around 4 lakh hectares. The development of fisheries in Kerala thus has great potential. The fisheries sector contributes significantly to the economy and provides livelihood to lakhs of people in the State. Fish production provides incomes and employment, nutrition, and inputs for industry.

The Gross State Value Added (GSVA) of the State has been increasing over years, but the share of primary sector and that of fisheries sector has been declining. Fisheries and aquaculture contributes around 8 per cent of GSVA from the primary sector. The share of fisheries sector in the GSVA was 0.99 per cent in 2015-16.

There are 222 marine fishing villages and 113 inland fishing villages in the State. The fish worker population was around 3.1 per cent of the population of the State (2011). The fish worker population of the State in 2015-16 was estimated at 10.24 lakh people. Out of this, 7.88 lakh fish workers worked in the marine sector and 2.36 lakh fish workers worked in the inland sector.

Total fish production in Kerala in 2015-16 was 7.27 lakh metric tonnes, of which marine fish landings accounted for 5.17 lakh tonnes and inland fish production was 2.1 lakh tonnes. Recent years have seen a decline in the quantity and value of marine products exported from Kerala. Kerala's fisheries sector is marked by the predominance of marine production over inland production; the reverse is true for India as a whole. Kerala is deemed to have already attained an optimum level of production in marine fish resources. We now need to move towards sustainable fish management measures, responsible fishing, and stock enhancement.

### 12th Five-Year Plan

Total State Plan outlay during the 12th period was Rs 1,420.89 crore and the expenditure was Rs 1,307.36 crore.

Table 3.7 *Fisheries and coastal area development, sector-wise budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Sector	Budgeted Outlay	Expenditure	Expenditure (in per cent)
Fisheries	82,490	77,025.50	93.37
Coastal Area Development	59,599	53,710.60	90.11
Total	1,42,089	1,30,736.1	92.01

\* Expenditure includes Supplementary Demand for Grants



Table 3.8 *Fisheries sector, year-wise budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Year	Budgeted Outlay	Expenditure*	Expenditure (in per cent)
2012-13	14,200	13,792.11	97.12
2013-14	15,780	13,563.19	85.95
2014-15	17,740	14,679.32	82.74
2015-16	17,840	14,476.62	81.14
2016-17	16,930	20,514.26	121.17
Total	82,490	77,025.50	93.37

\* Expenditure includes Supplementary Demand for Grants

Table 3.9 *Coastal area development, year-wise budgeted outlay and expenditure in Rs lakh*

Year	Budgeted Outlay	Expenditure*	Expenditure (in per cent)
2012-13	6,400	4,869.27	76.08
2013-14	5,835	4,875.83	83.56
2014-15	8,727	4,772.81	54.69
2015-16	18,937	20,117.46	106.23
2016-17	19,700	19,075.23	96.82
Total	59,599	53,710.60	90.11

\* Expenditure includes Supplementary Demand for Grants

*13th Five-Year Plan*

Our efforts in the 13th Plan period will concentrate on improving livelihood security among the fish worker population; providing better amenities – sanitation, health care, drinking water, electricity, and library facilities – in the coastal region, and reducing mortality at sea. With regard to inland fish production, the 13th Plan will focus on higher seed production and the establishment of fish feed mills and aquatic animal health labs. The 13th Plan will focus on making Kerala self-sufficient in fish production by promoting open water fishing and aquaculture. Within freshwater aquaculture, the focus will be on increasing productivity, adopting innovative technologies, and introducing new species, especially genetically improved varieties and locally preferred species. Kerala has much potential for reservoir fishing. In brackish water fishing, there will be special emphasis on sustainable fishing practices. A major objective of establishing special agricultural zones of rice in the 13th Plan is also for the promotion of rice-fish farming.

Marine fish production will be improved by adopting sustainable fishery management measures, responsible fishing and stock enhancement. Redeployment of the fishing effort from the over exploited continental shelf area to deeper waters will be encouraged. For management of brackish water fishing, the focus will be on checking the degradation of habitat and ensuring responsible fishing practices.

Conservation of river stretches and river stock enhancement through ranching shall be undertaken for management of fishing in rivers and lakes. With respect to reservoir fisheries, new technological interventions, newly developed fish varieties, and cage cultures will be introduced. Growth in freshwater aquaculture in the State will be brought about by increasing productivity, adopting innovative technologies, and bringing new species into the fold, especially the genetically improved varieties and locally preferred species. Aquaculture production will also be improved by ensuring the availability of good quality of fish seed. The State shall also try to evolve appropriate leasing policy for facilitating aquaculture operations. The State will have a good fish health management programme by ensuring farm hygiene and sound management practices including disease diagnosis and control as well as certification and quarantine. The ecosystem approach to aquaculture (EAA) will be adopted in the 13th Plan period for the promotion of aquaculture. Effort will be taken to get more species eco-labelled and certified so that the catch fetches better price. The rate of fish wastage will be brought down to 10 per cent of catch by ensuring a cold chain network from boat to plate.

Greater focus will be placed on the maintenance and modernisation of existing fishing harbours to ensure that all of them are fully functional throughout the year. All fishing harbours of the State should obtain EU approval for standards of quality so that exports can be enhanced.

Steps will be taken to provide alternative employment opportunities to fisherfolks, credit support for fishing, access to fishing implements, and social security to cover risks.

Making Kerala self-sufficient in fish production, adopting sustainable fishery management measures, conservation, checking the degradation of water bodies, adopting innovative technologies, ensuring the availability of good quality of fish seed, reducing fish wastage, maintenance and modernisation of existing fishing harbours, and improving the basic social facilities in the coastal areas especially housing are the thrust areas identified for the 13th Plan.

New Initiatives proposed during the 13th Plan period include increasing aquaculture production by strengthening Inland Matsya Bhavans, mitigating the problems related to housing of the fishworker population residing along the coastal areas that are prone to erosion and destruction, exploring the possibility of setting up an Oceanarium in Kochi, and full operationalisation of existing fishing harbours. Two new fishing harbours shall be constructed at Pozhiyoor (Thiruvananthapuram District) and Parappanangadi (Kasargode District).

The department has set the following targets in the 13th Plan.

1. Attain 6 per cent annual growth in GSDP from the fisheries sector. This involves enhancement of fish production from the existing 7.5 lakh mt to 9.5 lakh mt over the 13th Five-Year Plan period.
2. Enhance annual marine fish production to 6.7 lakh tonne.
3. Enhance aquaculture production from the 40,000 mt to 80,000 mt.
4. Establish district level disease management teams and eight aquatic animal health labs to ensure the quality of fish seed and to manage fish diseases.

5. Establish two university centres, preferably at Kannur and Kollam, under Kerala University of Fisheries and Ocean Studies to meet the requirement of fisheries professionals in the State.
6. Enhance the per capita income of the entire fishing community so that they can be brought above poverty line in the 13th Plan period.

*Overview*

Forests and wildlife, which play an important economic, social, and ecological role, are critical to the all-round prosperity of Kerala. While their economic importance received considerable attention in the past, their role in the provision of ecological services is gaining increased attention. As water scarcity becomes more acute and climate-change-related extreme events become more frequent, the role of forests in reducing ecological and economic vulnerability is becoming even more critical.

The forest policy of the State is guided by the 1988 National Forest Policy. The strategies adopted for the development of forest envisages maintenance of environmental stability through preservation and reduction of degraded forests, increasing substantially the forest cover through massive afforestation, and developing participatory forest management.

Forest and tree resources in the State can be broadly grouped into (a) forests primarily under government ownership and management and (b) trees outside forests, including patches of wooded land primarily under private ownership. The recorded area of reserved forests in the State is 11,309 sq. km or about 29.1 per cent of the State's geographical area. As per an assessment made by the Forest Survey of India in 2015, the total area under forests including plantations was 19,239 sq. km. However, the extent of very dense forests is only 1,523 sq. km, and open forests account for 8,415 sq. km.

*12th Five-Year Plan*

In the 12th Plan period, Rs 786.29 crore was budgeted for the sector. Total expenditure for the period was Rs 619.23 crore.

Table 3.10 *Forestry and wildlife, budgeted outlay and expenditure for the 12th Five-Year Plan* in Rs crore

Sector	Budgeted Outlay	Expenditure
Forestry and Wildlife	786.29	619.23

*13th Five-Year Plan*

The 13th Plan for forestry will emphasise forest protection and management. The Plan will support the construction and repair of cairns and stone walls, as well as the demarcation of forest land using modern surveying facilities. With respect to forest management, a major focus will be on reducing human-animal conflict by installing physical barriers and ensuring compensation for crop losses. Water management within forests will also be supported.

Soil and moisture facilities inside forests can significantly aid in ensuring the sustained flow of water in rivers and streams originating from the forests. An objective of forest policy in the 13th Plan period is to improve water supplies to the State by restoring the health of forest ecosystems,

and to improve other environmental functions of forests including biodiversity conservation, carbon sequestration, and amenity values.

#### *Challenges in the Sector*

1. Low and declining productivity of plantations.
2. Forest degradation and increase in the proportion of open forests affecting many critical forest functions.
3. Increasing incidence of human-wildlife conflict.
4. Increasing frequency and severity of fires.

#### *Key Initiatives in the 13th Plan*

Following are the key programmes for implementation during the 13th Five-Year Plan.

1. Management of natural forests for improved water yield and quality.
  1. Restoration and rehabilitation of degraded forest areas. Proposed to cover 440 sq. km during the Plan.
  2. Construction of water retention structures to enhance percolation and water storage.
  3. Fire protection to prevent watershed degradation.
  4. Demarcation of forest boundary by erecting permanent cairns and stone walls. So far, 2.30 lakh cairns and 1,050 km stone wall were constructed. 2,200 km of forest boundary yet to be demarcated.
  5. For consolidation of forest boundaries, 28,500 jundas will be constructed over a boundary of 2,200 km.
  6. Regeneration of denuded forests. It is proposed to undertake gap filling and fire protection in an area of 385 ha of degraded forests besides maintaining an area of 770 ha augmented during last two years.
  7. National Afforestation Programme under Green India Mission.
2. Bio diversity conservation and management of protected areas.
  1. Conservation of bio diversity and habitat improvement.
  2. Management of biosphere reserves.
  3. Integrated development of wildlife habitats.
3. Management of human wildlife conflict.
  1. Adoption of a long-term strategy during the 13th Plan.
  2. Preventive measures to reduce animal incursions to human habitations.
  3. Strengthening rapid response team.
  4. Compensation to wild-life inflicted damages.
4. Improvement of forest governance.
  1. Human resources development.
  2. Resource planning and research.
  3. Improvement of infrastructure and communications.
  4. Development of database and digitization of forest records.
5. Sustainable eco-tourism.
6. Rationalisation of management of forest plantations.
  1. Hardwood plantations.
  2. Industrial raw materials.

7. Trees outside forests including home gardens and urban forestry.
  1. Extension, community forestry and agro forestry.
8. Improvement of livelihoods of forest-dependent communities.
  1. Eco development programme.
  2. Non-wood forest products including promotion of medicinal plants.

## IRRIGATION AND FLOOD CONTROL

### *Overview*

A major constraint in expanding agricultural productivity in Kerala is the lack of irrigation facilities. In 2015-16, the share of net irrigated area to total cropped area was only 16 per cent. The share of gross irrigated area to gross cropped area was 18 per cent. Only 31 per cent of the area cultivated with rice, 9 per cent of the area cultivated with banana, and 8 per cent of the area cultivated with vegetables was irrigated.

For proper planning of the future, control and utilisation of the available water resources, the quantity, the quality and the temporal reliability of the resource shall be assessed. Total average annual yield of all 44 rivers within Kerala has been estimated as 70,323 million m<sup>3</sup> (Government of Kerala, 1974) and the utilisable yield stands at 36,300 million m<sup>3</sup>. As on March 2011, total annual ground water recharge of the State was 6,68,601.72 ha m. and the net annual ground water availability is 6,07,407.22 ha m. The net annual ground water availability for future irrigation development of the State is 30,634 ha m. The stage of ground water development of the State is 47 per cent.

In spite of large investments, there is still a wide gap in the creation and utilisation of irrigation potential across various types of irrigation systems. Infrastructure investment in the water sector includes expenditure on major and medium irrigation, minor irrigation, and flood control and coastal zone management.

### *Critical Areas to be Addressed*

1. *Long pending infrastructure projects.* Irrigation development in Kerala is mainly centred on major and medium irrigation projects. In spite of large investments, four irrigation projects that began in the 1970s and 1980s — Muvattupuzha, Idamalayar, Karapuzha, and Banasurasagar have not yet achieved the original targets.
2. *Underexploited minor irrigation.* The availability of large number of ponds, rivers, rivulets etc makes minor irrigation an important option for irrigation development in the State.
3. *Relatively low levels of ground water development.* The main source of ground water is recharge from rainfall, and the agricultural sector is the predominant consumer of groundwater. There is still room for expansion of groundwater irrigation.

### *12th Five-Year Plan*

The proposed outlay for the 12th Plan period was Rs 3,327 crore and expenditure was Rs 1,623.16 crore.

Table 3.11 *Irrigation outlay, expenditure, and relative share of sub-sectors during the 12th Five-Year Plan* in Rs lakh

Sub Sector	12th Plan Proposed Outlay	Budgeted Outlay (2012-17)	Total Expenditure (2012-17)	Relative Share of Budgeted Outlay (in per cent)
Major and Medium	2,22,700	1,77,743	45,825.25	69.43
Minor Irrigation	71,100	50,261	73,025.03	19.63
CADA	2,900	2,800	2,086.31	1.09
Flood and Coastal zone management	36,000	25,202	41,380	9.85
Total	3,32,700	2,56,006	1,62,316.6	100

*13th Five-Year Plan*

Over earlier Plan periods, the focus was on large and medium irrigation projects. The four ongoing major and medium irrigation projects are proposed to be completed in a time bound manner. The 13th Plan envisages a shift of focus from large and medium irrigation projects to minor irrigation project. It will specifically focus on the modernisation of canals and the expansion of irrigation in acutely water-deficient areas. The development of irrigation facilities in the 13th Plan period will also be dovetailed with the establishment of special agricultural zones.

The development of tanks and ponds, lift irrigation, and other minor irrigation structures should be emphasised to improve linkages between water resources and agriculture. By expanding the irrigated area in acute water-deficient regions, agricultural productivity can be increased and through these activities it is proposed to achieve the target of 31 per cent of the gross cultivated area. More emphasis would be given to the construction of water conservation and storage structures, and the modernisation of canals.

Drought management is a special concern of the 13th Five-Year Plan. Efforts must be made to drought-proof the State, for which steps are required in the short term, medium term, and long term. In the short term, the Government needs to ensure that three forms of security are ensured in the drought-affected regions: food security, water security and employment security. In the medium and long term, first, there has to be renewed focus on the development of drought-resistant crop varieties and hybrids that are grown in dry regions. The focus has to be specifically on food crops. Secondly, ongoing irrigation projects in the State have to be completed in a time-bound manner, and a social audit of these projects undertaken to correct design errors. Thirdly, a land use plan needs to be put in place, one that discourages the cultivation of water-intensive crops in regions prone to drought.

As part of water conservation, an Integrated River Basin Management Plan and Water Resource Information System (WRIS) are to be introduced during the 13th Plan period.



### *Key Initiatives in the 13th Five-Year Plan*

#### *Irrigation.*

1. Major emphasis during the 13th Plan is the completion and commissioning of the four long pending irrigation projects — Muvattupuzha, Idamalayar, Karapuzha, and Banasurasagar. State Planning Board has constituted a technical committee for evaluating these four projects. Based on the suggestions of the technical committee, it is targeted to complete and commission these four projects during the 13th Five-Year Plan.
2. Minor irrigation: The development of minor irrigation occupies a significant position in the 13th Plan. Small command areas can be irrigated by diverting water from rivers and channels and by effecting proper drainage by constructing sidewalls, sluices, crossbars etc. Schemes under minor irrigation are categorised into MI – Class I, Class II, lift irrigation schemes, ponds, and tanks.
3. Minor irrigation schemes can be integrated with the efforts of the Haritha Keralam Mission. The renovation and cleaning of existing water resources in order to ensure clean and safe water for drinking and irrigation purposes are the main objectives of water conservation. This effort also involves the construction of water conservation storage structures like checkdams/VCBs/regulators, and rejuvenation of natural drains/thodu/ponds.

#### *Flood management and coastal zone management.*

1. Construction and improvements of flood embankments, and erosion control works to be undertaken. Under the Kuttanad Package, seven schemes projects have been taken up for execution so far in addition to the works taken up under the 13th Finance Commission. Out of these seven schemes, 4 schemes have been approved by the Ministry of Water Resources, River Development, and Ganga Rejuvenation, Government of India for central assistance.
2. During the 13th Five-Year Plan, it is proposed to complete the four ongoing works – KEL-III, KEL IV, mitigation of floods in 397 Padasekharams of Kuttanad Taluk and modernisation of Thanneermukkom bund. It is targeted to complete all the ongoing projects of Kuttanad Package by 2017-18 and settle the payments by 2018-19.
3. Under coastal zone management, in areas where conventional sea walls cannot be constructed, groynes can be constructed.

## 4 RURAL DEVELOPMENT

### *Overview*

According to data from the Census of India, 2011, the rural population of India is 833.75 million (or 69 per cent of the total population). The corresponding numbers for Kerala are 17.47 million and 52 per cent. Rural development programmes focus mainly on poverty reduction, employment generation, rural infrastructure development, and provision of basic minimum services. The programmes in the State are undertaken as centrally sponsored schemes (CSS), State-sponsored schemes or schemes of local governments. Most of these schemes are implemented through local governments.

The strategy of 13th Five-Year Plan in the rural development sector is closely connected with the four major development missions of the Government. The activities of the Pradhan Mantri Awaas Yojana – Gramin (PMAY-G) is associated with the LIFE Mission. Mahatma Gandhi National Rural Employment Guarantee Programme, Pradhan Mantri Krishi Sinchai Yojana (PMKSY) – Watershed Component, Swachh Bharat Mission (Gramin), and Suchitwa Keralam are associated with the Haritha Keralam Mission.

### *12th Five-Year Plan*

The year-wise outlay and expenditure of State Plan schemes in the 12th Five-Year Plan are given in Table 4.1.

Table 4.1 *Year-wise budgeted outlay and expenditure of rural development sector in the 12th Five-Year Plan* in Rs lakh

Year	Budgeted Outlay	Expenditure	Expenditure(in per cent)
2012-13	46,769	43,863.27	93.79
2013-14	54,432	47,045.80	86.43
2014-15	61,723	34,835.47	56.44
2015-16	65,312	91,833.72	140.61
2016-17	84,476	83,230.20	98.53
Total	3,12,712	3,00,808.46	96.19

### *13th Five-Year Plan*

1. A combined effort involving local governments, the Kudumbashree mission, departments of the State Government, people's organisations, and individuals will take on the task of eliminating absolute poverty in the State.
2. The 13th Plan will support efforts of the local governments in their core areas of activity, including housing, sanitation, electrification, access to food, healthcare, insurance, access to school education, employment guarantee, welfare pensions, and special care for the differently abled, aged, and infirm.

3. Kerala is, in general, ahead of other states when it comes to housing coverage and the quality of housing. The State will take a decisive step forward in the 13th Plan period with the implementation of the 'Total Housing Mission. The "Livelihood, Inclusion, and Financial Empowerment" (LIFE) Mission will begin with a specific focus on households that are homeless or landless. The ultimate objective of housing policy in Kerala is to provide comfortable, safe, and dignified housing to all people living in the State. The declared objectives of the Housing Mission for the 13th Plan period include the following:
  1. Improve availability of land and utilise land productively using high-rise options.
  2. Improve capital productivity through the use of new technology and skills.
  3. Consider social housing towers to address issues of urban sprawl.
  4. Attempt innovative methods of resource mobilisation, focussing on issues of access to housing for the poor and socially excluded.
  5. Link housing policy with the creation of new means of livelihood.
4. Among the central tasks set for the Haritha Keralam Mission are the disposal of solid waste and cleaning of Kerala's water bodies. This has a "hardware" aspect – that is, the scientific and technical infrastructure necessary – and a "software" aspect – that is, changing the consciousness of people, particularly children, towards the disposal of garbage and litter. Efforts and Plan schemes in this regard will be integrated with the Suchitwa Mission to achieve sustainable sanitation arrangements through local self-government institutions.
5. Women's self-help groups, notably Kudumbashree, can play an important role in Kerala's industrialisation drive. Many Kudumbashree groups are engaged in food processing activities, but a majority of them are in the low-end of the value spectrum. They will now try to establish their presence in higher-value-adding industries. The 13th Five-Year Plan also proposes to establish umbrella companies that focus on employment of women in urban services.

#### *Key Initiatives in the 13th Plan*

1. Promote the convergence scope of Pradhan Mantri Awaas Yojana – Gramin (PMAY-G) scheme with Mahatma Gandhi National Rural Employment Guarantee Scheme and other schemes.
2. The plans for Mahatma Gandhi National Rural Employment Guarantee Scheme are to generate employment and create sustainable assets. With respect to watershed, panchayat level planning will begin in the highlands and upper midlands followed by the panchayats in midland and coastal areas. The guidelines, manuals, and documents of the watershed plan needs to be written and a State Resource Team has to be established for the purpose. National Training Centres will provide technical support to the State Resource Team. Kerala State Land Use Board (KSLUB) will provide the technical inputs required for the project.
3. Under the Pradhan Mantri Gram Sadak Yojana, construction of roads will be accompanied by establishment of a methodology to monitor the quality of work and establish benchmarks for the scheme.
4. During the 13th Five-Year Plan, Suchitwa Mission will undertake following activities.
  1. Green protocol activities will be encouraged in all institutions in the State.

2. Swap Shop (permanent) in all local bodies (at least one each).
3. Repair shop with all permanent swap shop.
4. A material recovery facility (MRF), a plastic shredding and bailing unit in all grama panchayats, a recycling park, septage treatment plants in each district, slaughter houses, crematoriums in all local bodies, eco-kiosks, and eco-friendly centres (production and sales) in all Block panchayats.
5. Sanitary landfill in three regions.
6. Promote extended producer responsibility.

## 5 ENERGY

### *Overview*

Efficient, reliable, and affordable energy supply is a necessity for economic growth and human development. Apart from its general contribution to economic development, it contributes specifically and significantly to revenue generation, employment, enhancing the quality of life and reducing poverty. Likewise, lack of access to reliable energy is a severe impediment to the process of economic growth and sustainable social development. For any developing country, therefore, the strategy for energy development must be an integral part of the overall economic strategy.

Planning for the power sector in the current situation in India has become a more complex task than before. New demands have been placed on the sector in terms of climate change mitigation by reducing greenhouse gas emission and the promotion of renewable energy. At the same time, the techno-economic conditions of power generation, transmission, and distribution have also changed substantially.

Kerala's annual per capita consumption of electricity (536 kwh/person/year in 2015) is lower than the all-India figure and among the lowest in the country. However, Kerala's annual per capita domestic consumption of energy compares favourably with the all-India figure. The reason for this is the low-level of industrialisation, especially manufacturing, and the relatively low-level of power consumption in agricultural sector.

The mainstay of Kerala's domestic generation is hydel power. Hydel power, though vulnerable to the monsoons, is a source of renewable energy. This fact is not yet adequately established in the public debate where many negative perceptions associated with dam construction for hydel power — even by means of small and medium projects — persist.

According to the 19th Electric Power Survey conducted by the Central Electrical Authority, projected energy consumption for the next 10 years for Kerala is 25,480 MU (million units, 1 unit=1kwh) in 2017-18, 29,924 MU in 2020-21, 34,393 MU in 2023-24, and 38,756 MU in 2026-27. Kerala's energy consumption, according to the survey, is estimated to increase about 52 per cent over the current consumption in the next 10 years.

Power development and related activities in the State are carried out by four agencies, the Kerala State Electricity Board Limited (KSEBL), the Agency for Nonconventional Energy and Rural Technology (ANERT), the Electrical Inspectorate, and the Energy Management Centre (EMC).

KSEBL is one of the driving forces behind the economic development of Kerala. It has been responsible for the generation, transmission, and distribution of electricity in the State, with the particular mandate to provide electricity at affordable cost for domestic use as well as for agriculture. ANERT is the nodal agency for the implementation and propagation of non-conventional sources of energy in the State. Energy Management Centre (EMC), Kerala is an

autonomous body with an aim to improve energy efficiency in the State, promote energy conservation and encourage technological development related to energy through research, training, demonstration programmes, and awareness creation.

In the 13th Five-Year Plan, the government will initiate steps to overcome issues in the Power sector. A significant issue is the need to ramp up the shift to renewable energy sources in accordance with India's commitments under the Paris Agreement on climate change. Other challenges ensue from a steady transformation of power sector through structural changes in the regulatory regime at the national and State-level set in motion by the Central Government. Such changes are challenging, especially in the context of Kerala's vision of keeping all aspects of power sector predominantly in the public sector and the State's overall vision of inclusive growth and development.

#### *12th Five-Year Plan*

The agency-wise budget outlay and expenditure during the 12th Plan period are given in Tables 5.1, 5.2, 5.3, 5.4, and 5.5.

Table 5.1 *Agency-wise and year-wise budgeted outlay and expenditure of energy sector in the 12th Five-Year Plan in Rs crore*

Agency	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure
KSEBL	1,118.7	771.6	1,176.1	877.8	1,314.2	1,006.3	1,409.4	1,177.6	1,564.1	1,372.1	6,582.7	5,205.4
ANERT	42.3	16.1	39.8	21.4	42.8	0.0	42.8	19.6	43.9	12.8	211.5	69.97
EMC	1.2	1.2	3.4	0.7	9.4	4.6	9.4	8.7	7.4	6.3	30.7	21.44
Electrical Inspectorate	3.2	2	3.4	3.4	3.6	0.9	5.6	5.7	7.3	1.9	23.1	13.87
Total	1,165.4	790.9	1,222.0	903.3	1,370	1,011.7	1,467.2	1,211.6	1,622.7	1,393.1	6,848.1	5,310.68

*Kerala State Electricity Board Limited (KSEBL)*

Table 5.2 *Budgeted outlay and expenditure of KSEBL in the 12th Five-Year Plan in Rs lakh*

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	1,11,875	77,158	69
2013-14	1,17,612	87,781	74.6
2014-15	1,31,426	1,00,631	76.6
2015-16	1,40,942	1,17,756	74.5
2016-17	1,56,412	1,37,214	87.7
Total	6,58,267	5,20,539.9	79.08

*ANERT*

Table 5.3 *Budgeted outlay and expenditure of ANERT in the 12th Five-Year Plan in Rs lakh*

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	4,226	1,613	38.2
2013-14	3,980	2,140	53.8
2014-15	4,280	0	0
2015-16	4,280	1,964	45.9
2016-17	4,388	1,280	29.2
Total	21,154	6,997	33

*Energy Management Centre (EMC)*

Table 5.4 *Budgeted outlay and expenditure of EMC in the 12th Five-Year Plan in Rs lakh*

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	120	120	100
2013-14	338	68	20.1
2014-15	938	460	49
2015-16	938	866	92.3
2016-17	740	630	85.1
Total	3,074	2,144	69.8

*Electrical Inspectorate*

Table 5.5 *Budgeted outlay and expenditure of Electrical Inspectorate in the 12th Five-Year Plan in Rs lakh*

Year	Budgeted Outlay	Expenditure*	Expenditure (in per cent)
2012-13	320	196.4	61.4
2013-14	340	339.8	99.9
2014-15	360	86.5	24
2015-16	560	573.2	102.4
2016-17	730	191.86	26.3
Total	2,310	1,387.7	60.07

\* Expenditure includes Supplementary Demand for Grants

Most of the agencies involved in power sector have performed well, with some significant gaps during the 12th Plan period. The shortfall in the performance of ANERT was mainly due to delay in getting administrative sanctions, and other governance and administrative issues. With regard to KSEB, though the slippages in generation targets were very large, the State's demand



was met through power purchase from outside the State. The context in which the target of self-sufficiency in power generation was formulated also radically changed over the end of the 11th Plan and the 12th Plan periods. The aggregate technical and commercial (AT&C) losses came down from 17.28 per cent to 15.71 per cent in 2015-16 because of the relatively better performance in the distribution sector.

The power sector faces certain important problems. These include aggregate technical and commercial (AT&C) losses, transmission losses, inadequate capacity addition, significant delays in upgrading the transmission and distribution network as planned, and limited penetration of star labelled products.

### *13th Five-Year Plan*

During the 13th Plan period, the aim is to develop domestic capacity for power generation mainly through hydro, solar, and wind projects. Large scale solar power generation is expected to expand at feasible locations. Small-scale generating capacity also requires a paradigm shift from stand-alone to grid connected systems. The prospects for renewable energy generation within Kerala in general require careful analysis of existing ground realities. The downscaling of the large-scale solar power projects at Kasaragod to 50 MW from the 200 MW originally envisioned, consequent on the non-transfer of land for the project, illustrates the nature of this challenge.

Developing domestic capacity for power generation must also leverage the opportunities arising from the availability of excess power at the national level for purchase through various long-term, short-term, and spot arrangements.

During the 13th Plan, the transmission and distribution network, especially high voltage transmission lines, will be strengthened.

The 13th Plan will assist households that still depend on cooking stoves and fuels with substantial particulate emissions to move to the use of clean fuels.

The 13th Five Year plan will assist agencies in the power sector to develop new solutions and ideas with respect to power generation, energy conservation, and electrical safety.

### *Strategy*

1. *Generate clean energy.* The 13th Plan aims to increase internal generation through small hydroelectric power (SHEP), solar, wind, and gas.
2. *Procure power from other States.* Procure power from other states through tenders and by strengthening inter-state corridors. (Edamon Kochi, HVDC)
3. *Improving quality of power.* The quality of power can be improved by strengthening both transmission and distribution network – Transgrid 2.0 and Disgrid.
4. *Manage demand.* In the 13th Plan, the aim is to manage demand through energy conservation activities and by using efficient equipment, star labelled products, and adopting the energy conservation building code (ECBC).

5. *Better customer satisfaction.* Aims better customer satisfaction through user-friendly systems and by adopting IT oriented services.
6. *Improving safety.* Electrical accidents can be reduced by promoting safer equipment) in homes.

### *Major Targets of Power Sector Agencies*

#### *KSEBL*

##### *1. Transmission*

KSEBL will aim to limit the transmission losses below 4 per cent and create facility to handle the additional energy import/injection.

##### *Inter State transmission corridors for Kerala.*

1. Edamon – Kochi 400 kV Transmission Line to be completed by December 2018.
2. Raigarh – Pugalur – Madakkathara 2000 MW HVDC Line to be completed by December 2019.
3. Madakathara – Areacode 400/220kV Multi Circuit Line, under Transgrid, expected to be completed by 2020 and Kottiyam 400 kV substation, expected to be completed by 2020 will help in evacuating power from 2000 MW HVDC line.
4. Transgrid 2.0 is aimed to enhance the import capability of the State and strengthen internal grid.

##### *2. Generation*

1. Proposed to add 165 MW installed capacity (522.48 MU annual generation) by completing 9 ongoing hydroelectric projects.
2. Proposed that 16 new hydroelectric projects with a total capacity of 160 MW (416.61 MU annual generation) will be tendered during the period, out of which 14 projects with a total capacity of 149 MW (385.8 MU generation) are expected to be completed within 2021-22.
3. *Distribution.* A three-year programme (Disgrid) to improve distribution network and quality and reliability of power to consumers. The major objectives of distribution sector include micro management of feeders (required under PAT and UDAY), metering all district transformers and feeders, energy auditing of all 11KV feeders, installation of automatic meter reading (AMR) and smart meters, innovating programmes to minimise loss, and make work sites accident-free.

Table 5.6 *Target of distribution works during the 13th Five-Year Plan* in number and in kilometres

Distribution works	Targets
1. Service Connections (Nos)	11,38,977
2. 11 kV lines (km)	10,725
3. Distribution Transformers (Nos)	508
4. LT lines (km)	10,954
5. 1 phase to 3 phase conversion (km)	17,754
6. Re-conductoring HT (km)	4,505
7. Re-conductoring LT (km)	43,519
8. Meter changing (Nos)	38,01,545
9. DTR Metering (Nos)	74,683

## *ANERT*

The major target of ANERT is to add 300 MW of decentralised renewable energy capacity during the 13th Five-Year Plan. It also aims to set up a hybrid solar-wind (3 MW capacity each, later to be expanded) plant with battery storage at Ramakkalmedu, Idukki and solar radiation resource assessment (SRRA) stations in Palakkad and Idukki. ANERT will set up centres for renewable energy facilitation, repair, and service in all 140 constituencies, renewable energy forums in 50 institutions, and integrated RE complex in all 14 districts.

### *Energy Management Centre (EMC)*

1. Energy Conservation Building Code implementation
2. Energy Audits in Designated Units
3. 50 kVA STG demo Plant in TTPL in place of PRV
4. Existing PRV: about 3.5 TPH steam, 33 kg/cm<sup>2</sup> to 7 kg/cm<sup>2</sup>
5. Awareness Creation among public, especially school children
6. Replacement of incandescent lamps with LED lights is estimated to save 1 MW by investing Rs 10 lakh.
7. Replacement of inefficient old ceiling fans and refrigerators with energy efficient 5 star labeled energy efficient ones.
8. Distribution transformer (DT) centered study on loss evaluation, rationalisation of secondary distribution and renovation of DTs.
9. Study of water treatment Plants of KWA and renovation of 1 Water treatment Plant
10. Capacity building programme for energy efficiency for industries
11. Financing Municipal Energy Audit and Energy Efficiency Projects

### *Electrical Inspectorate*

1. Introducing the Earth Leakage Circuit Breaker (ELCBs) in homes.
2. Free of cost for SC/ ST consumers under BPL category.
3. Subsidised rates for consumers under BPL category.
4. Safety awareness campaign.
5. Establish national accreditation board for testing and calibration laboratories (NABL) accredited meter testing and standards laboratories in all districts.
6. Establish Wiremen Institute and Skill Development Centre for electrician.
7. Effective implementation of quality control order.
8. Conduct power quality study (I and D Losses, effect of harmonics) in different licensees.

Conscious efforts are necessary on the part of all the agencies to transform energy sector in Kerala. Electricity generation from wind, solar photovoltaics, small and medium hydro projects should be encouraged. There is also a need to improve the performance of power sector agencies by formulating and implementing innovative schemes, which will attract more capital inflows in the sector. An integrated approach involving institutional changes, increased generation capacity, increased production of renewable energy, demand side management and energy conservation activities are needed in the future.

## 6 INDUSTRY

### *MEDIUM AND LARGE INDUSTRIES (INCLUDING STATE PUBLIC SECTOR UNITS IN THE INDUSTRIAL SECTOR)*

#### *Overview*

Industry creates value, incomes, and modern skilled employment, and has the potential to relieve employment of the worst forms of drudgery. High technology industry – whether in traditional or green field sectors – is the future. We are bound by a commitment to a programme of industrial production in different sectors – private, co-operative and in public sector enterprises – with funding from multiple sources of investment.

A striking feature of Kerala's economy is the relatively small size of its manufacturing sector. The share of manufacturing in gross state domestic product (GSDP) of Kerala was only 7.5 per cent in 2011-12. This was less than the contributions made by manufacturing sectors to gross domestic product (GDP) in India as a whole (15.8 per cent in 2011-12) and in China (31 per cent in 2012).

Although manufacturing contributed only 7.5 per cent to Kerala's GSDP, this sector employed approximately 14 per cent of the State's total workforce in 2011-12. In comparison, the manufacturing sector's shares in GDP and employment were 16 per cent and 13 per cent respectively at the national level. This points to some degree of lopsidedness in the structure of Kerala's manufacturing sector.

Of a total manufacturing workforce of 18 lakh (in 2011-12) in Kerala, only 3.8 lakh workers (in 2012-13) were employed in the factory sector. The rest of the manufacturing workers in Kerala were engaged in the unorganised or unregistered sector.

The share of the registered manufacturing sector (roughly equivalent to the factory sector) in Kerala's GSDP in 2011-12 was 3.5 per cent, substantially less than the share of this sector in India's GDP (11.2 per cent) in the same year. It is also striking that the size of registered manufacturing is smaller than that of unregistered manufacturing in Kerala. Workers engaged in cashew processing account for a large share of employment within the factory sector in Kerala.

Given the nature of Centre-State relations in India, State Governments have had limited freedom to intervene in industrial development. While States today have greater functional autonomy with respect, for instance, to giving clearances to industrial projects, States continue to have only limited financial autonomy. The shares of financial resources at the command of State Governments have not shown much increase over the years.

There has been a sharp fall in public investment in India since the 1990s. As a result, Indian States have been competing with each other to attract investments by foreign and large Indian corporations, mainly by means of tax and other concessions to the industrialists. The political-economy context described here has constrained the industrial development of Kerala.

Medium and large industries in the State play a major role in the overall development of the industrial sector. A striking aspect of Kerala's industrial structure is the virtual absence of the production of basic metals, motor vehicles, pharmaceuticals and electronic hardware. Some of these industries - motor vehicles and pharmaceuticals in particular – have been growing at fast rates in some other parts of the country, notably in the southern states of Tamil Nadu, Karnataka and Andhra Pradesh. At the same time, there is a large and growing demand within Kerala for motor vehicles, pharmaceuticals and all kinds of electronic goods. Kerala should aim to establish a modern industrial sector that builds on the distinctive advantages of the State.

The major agencies in the field of medium and large industries in Kerala are Kerala State Industrial Development Corporation Limited (KSIDC), Kerala Industrial Infrastructure Development Corporation (KINFRA), Public Sector Restructuring and Internal Audit Board (RIAB), Centre for Management Development (CMD), Kerala High Speed Rail Corporation Limited and Bureau of Public Enterprises (BPE).

#### *12th Five-Year Plan*

In the 12th Five-Year Plan, the State Government provided Rs 1,306.4 crore for the implementation of schemes under medium and large industries sector and the expenditure was Rs 1,041 crore, which was 79.7 per cent of the outlay. Year-wise Plan outlay and expenditure during the 12th Plan is shown in the Table 6.1.

Table 6.1 *Medium and large industries, Plan outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Schemes	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure
Kerala State Industrial Development Corporation (KSIDC)	8,792	4,327	7,082	5,182	5,004	0	7,401	2,409	8,752	7,548
High Speed Rail Corridor	100	100	1	0	1	0	1	0	1	0
Kerala Industrial Infrastructure Development Corporation (KINFRA)	8,000	7,500	8,668	9,168	14,879	1,711.7	5,507	4,484.8	10,120	5,264.8
State Food Processing Mission (75per cent CSS)							146	36.5		
Centre for Management Development	30	97.4	33	33	40	90	50	150	100	100
Public Sector Restructuring and Internal Audit Board (RIAB)	100	100	125	125	135	90	150	150	165	165
Rejuvenation and Revival of Viable Public Sector Units	7,020	11,683.7	8,000	5,876.13	10,000	3,662.75	10,000	8,937.04	10,000	11,411.5
Bureau of Public Enterprises	25	25	25	0	25	25	25	25	40	28.8
Implementation of Priority Schemes - Kerala Perspective Plan 2030							100			
Others		3087		4,764		605		4,195		944
Total	24,067	26,920.1	23,934	25,148.1	30,084	6,184.4	23,380	20,387.3	29,178	25,462

The total number of PSUs under Industries Department is 41. The details of sector-wise performance of PSUs during the 12th Five-Year Plan period are given below.

Table 6.2 *Financial performance of State PSUs in the chemical sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units(number)	7	7	7	7	7
Plan fund allocation	5.5	9.4	22.0	10.0	19.7
Turn over	1,132.9	1,216.7	1,123.1	1,191.5	1,324.5
Net profit	106.1	19.3	-43.7	12.9	44.2

Table 6.3 *Financial performance of State PSUs in the textile sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	9	9	9	9	9
Plan fund allocation	27.6	47.1	24.6	38.1	42.3
Turn over	167.3	149.5	139.2	96.3	82.2
Net profit	-23.1	-46.8	-58.6	-72.2	-71.1

Table 6.4 *Financial performance of State PSUs in the engineering sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	6	6	6	6	6
Plan fund allocation	35.1	20.5	13.7	9.0	24.9
Turn over	135.0	132.7	131.4	121.5	118.3
Net profit	-14.9	-18.3	-19.9	-34.2	-23.0

Table 6.5 *Financial performance of State PSUs in the electronics sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units(number)	3	3	3	3	3
Plan fund allocation	6.2	11.3	7.0	2.2	5.0
Turn over	379.5	381.0	368.5	483.9	450.6
Net profit	4.6	2.8	2.5	0.6	2.4

Table 6.6 *Financial performance of State PSUs in the electrical sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	4	4	4	4	4
Plan fund allocation	23.1	18.8	14.0	18.5	15.5
Turn over	262.7	380.0	360.7	395.6	420.0
Net profit	-17.2	-9.2	-46.3	-47.2	-15.3

Table 6.7 *Financial performance of State PSUs in the traditional and wood based sectors* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	7	7	7	7	7
Plan fund allocation	12.3	6.5	7.6	2.4	4.9
Turn over	106.9	118.4	138.8	147.5	138.9
Net profit	-10.0	-13.3	-14.3	-19.3	-18.3

Table 6.8 *Financial performance of State PSUs in the ceramic sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	2	2	2	2	2
Plan fund allocation	6.0	8.6	2.0	7.6	5.1
Turn over	9.4	12.3	15.2	5.5	4.1
Net profit	-3.8	-3.5	-3.5	-11.1	-9.7

Table 6.9 *Financial performance of State PSUs in the development sector* in numbers and in Rs crore

Items	2012-13	2013-14	2014-15	2015-16	2016-17
Total Units (number)	3	3	3	3	3
Plan fund allocation	0.0	0.0	0.0	10.71	5.50
Turn over	321.2	401.5	432.2	393.0	231.8
Net profit	68.6	45.4	34.7	38.5	10.2

### *13th Five-Year Plan*

The 13th Five-Year Plan aims to achieve a significant leap in industrial production in private, co-operative and public sector enterprises, with funding from multiple sources. It also envisages to build a strong manufacturing base in Kerala, with an emphasis on industries that have strong linkages with the State's agricultural, natural and marine resources and promote food and agro-based industries in the State.

The revival of manufacturing public sector units in Kerala will be one of the priorities of the State Government. The State will promote the use of latest advances in biotechnology, nano technology, biomedical sciences, and biochemical engineering to produce new and more value-added products. Besides, there are also plans to set up research institutes in the development and application of biotechnology. Given the large number of educated women job seekers in the labour market, the State will pay special attention to create adequate employment opportunities for them in organised manufacturing.

The State will also seek to promote entrepreneurship among engineers and professionals, and self-help groups (notably Kudumbashree).

### *Strategy for Future Industrial Growth*

It is widely agreed that industrial units that require vast tracts of land, industries that degrade the environment, or industries that are based solely on cheap and unskilled labour are not the industrial alternative that Kerala seeks. Kerala should aim to establish a modern industrial sector that builds on the distinctive advantages of the State. The industrial sector in Kerala must make effective use of advanced technologies, including biotechnology and nanotechnology. It should comprise units that are relatively small (particularly with respect to the requirements of land and capital), and yet can be characterised as "smart" (given their flexibility in production and adaptability to market conditions).



The strategy to build a strong manufacturing base in Kerala will have two important components. The first is with respect to industries (both existing and future) that have connections with Kerala's agricultural and natural resources. Kerala produces a rich variety of agricultural products, including rice, coconut, rubber, pepper, cardamom, banana, and pineapple. The State has substantial forest and marine resources. Kerala's traditional industries, such as coir and cashew processing, emerged in the State mainly on account of the local availability of raw material.

Another component of an industrial strategy for Kerala relates to the promotion of (a) specific segments of chemical, electronic, and engineering industries, and (b) enterprises that are based on advanced technologies such as biotechnology, nanotechnology and life sciences. The revival of a number of existing public sector units in the State will be crucial to this strategy. Modern industries in Kerala will have much to gain from and contribute to the health and education sectors in the State

#### *Public-Sector Undertakings and High-Technology Enterprises*

Kerala has a number of State and Central public sector units engaged in diverse areas of manufacturing, mainly chemicals, engineering, and electronics. Some public sector units (PSUs) in the State, such as Travancore Cochin Chemicals (TCC) and Keltron, have been pioneers in the country in their respective fields of production (caustic soda and electronics respectively).

A long-term revival of manufacturing PSUs in Kerala will require many of these units to rethink their product lines and technologies. Some units engaged in the manufacture of inorganic chemicals may have to diversify their production into speciality chemicals and biochemicals. Keltron will have to find specific areas for itself in the fields of industrial or power electronics.

The State PSUs have registered positive combined net profit (Rs 21.5 crore as on August 31, 2017) after incurring combined net losses for four years (loss of Rs 58 crore in 2013-14, Rs 201.6 crore in 2014-15, Rs 131.9 crore in 2015-16, and Rs 80.7 crore in 2016-17).

It is not enough that these PSUs turn themselves into profit-making entities. They must play a larger role by transforming themselves into facilitators for high technology enterprises in the private sector. They should deepen their links with the State's economy, getting more of their raw material from Kerala and aiding the creation of downstream industries.

In 2013-14, Kerala's share in total investment by Central Government public sector enterprises was only 1.9 per cent. Despite the relatively low investment by the Central Government, there were 96 State-level public sector units (PSUs) in Kerala in 2014-15. These included 62 PSUs that were fully owned by the State Government and eight PSUs that were jointly owned by the Central and State Governments.

Kerala should try to make use of the latest advances in biotechnology, biomedical sciences, and biochemical engineering to produce new and more value-added products based on its agricultural products and natural resources. Biotechnology, which involves the exploitation of biological

processes for industrial and other purposes, has wide applications in the fields of agriculture, medicine, industry and environment.

Multi-national corporations (MNCs) have dominated in research and development in biotechnology and its applications. This needs to change. China and Cuba have already devoted large amounts of public funds on biotechnology and biomedical sciences. It is important that India, and Kerala in particular, set up research institutes in the development and applications of biotechnology.

Modern industries in Kerala should capitalise on the State's strengths in the areas of health and education. There are, for example, significant opportunities in Kerala for manufacturing pharmaceuticals and medical equipment. These industries will have much to gain from the large numbers of hospitals, doctors and nurses in Kerala and also from the rising demand for health products in the State.

There is much potential in Kerala for shipping and port-based industrial development. The State can benefit from economic opportunities arising from its long coastline and rich marine resources.

### *Promoting Entrepreneurship*

The government must seek ways to promote entrepreneurship in the State. There are at least three groups of people who can potentially make vital contributions to the State's industrial growth. The first is the large body of Malayali engineers and professionals who have worked with the latest technologies and management practices in different parts of the world. The Government should encourage some of them to return to Kerala and start enterprises in the State. Some of these non-resident Keralites can act as mentors to technology start-ups from the State, providing technology, expertise and financial assistance to young entrepreneurs.

Secondly, women's self-help groups, notably Kudumbashree, can play an important role in Kerala's industrialisation drive. Many Kudumbashree groups are already engaged in food processing activities, but mostly in the low end of the value spectrum. They should now try to establish their presence in higher value adding industries. We also propose the establishment of umbrella companies that focus on employment of women in urban services. A third group that has much potential with respect to entrepreneurship is students, especially those enrolled in technical institutions across the State.

### *Thrust Areas for Development*

The thrust areas of development are agro based and food processing through mega food parks, cluster based ventures, fostering linkages, and cold storages; Petrochemicals, pharma and life sciences through parks for downstream development, by leveraging local consumption; electronics, defence electronics and electrical industries through parks, leveraging KSEB procurement; light engineering by developing a tool room based cluster leveraging on ancillary

development of Cochin Shipyard; and leveraging on the logistics advantages of the State, developing Special Economic Zone (SEZ) for export based industries

*Key Initiatives in the 13th Five-Year Plan*

The main targets in the 13th Five-Year Plan are the following.

*Kerala State Industrial Development Corporation (KSIDC).* During the 13th Five-Year Plan period, KSIDC will focus on the following areas:

1. Take steps to improve ease of doing business.
2. Launch Kochi-Coimbatore Industrial Corridor by 2021-22.
3. Achieve full-fledged operations in
  1. Mega Food Park, Cherthala by 2018.
  2. Life Sciences Park by 2021-22.
  3. Electronic Hardware Park, Amballur by 2019-20.
4. Take steps to foster start-ups through
  1. Advise, handholding and mentoring start-ups,
  2. Foster industry institution interaction,
  3. Incubation centres,
  4. Seed and angel funding and reserving 5,000 sq.ft. space in all SDFs.
5. Women Enterprise Initiatives.
  1. Dedicated parks and funding, especially of clusters.
  2. Reserving space in all Standard Design Factories.

*Kerala Industrial Infrastructure Development Corporation (KINFRA).* During the 13th Five-Year Plan period, KINFRA will focus on the following areas:

1. Acquisition of 2,745 acres of land in various parts of the State for industrial development.
2. Development of electronics manufacturing cluster, Kakkanad.
3. Setting up Petrochemical Park, Kochi.
4. Setting up Defence Park, Ottapalam.
5. Expanding the operation of Mega Food Park, Palakkad.

*Public Sector Undertakings (PSUs).* With regard to the public sector undertakings (PSU), the State is committed to the revival of all loss-making units and expanding production capacity of all profit making PSUs. In addition, focus will be on upgrading technology and diversifying product line.

Besides, to harness synergy among PSUs, merger of PSUs operating in similar lines of activities will also be explored. Steps would be taken to assist in the development of ancillary sectors and downstream ventures of PSUs in the State. Another consideration could be timely completion of statutory audit in PSUs and induction of experienced professionals to the boards of these companies.

*Draft Industrial Policy 2017.* The draft industrial policy focuses on increasing domestic and foreign investment and setting up industrial parks on public-private partnership (PPP) mode. The objective is to achieve 10 per cent industrial growth in the coming 2 years. The regulatory

process for the setting up of industries in Kerala will be relaxed with the objective of making Kerala as an industrial investment friendly State.

## *TRADITIONAL INDUSTRIES*

With respect to traditional industries, a two-pronged intervention is recommended. First, we recommend investment in modernisation of industries and diversification of output. Secondly, for those who remain in traditional forms of production, the Government will ensure decent levels of wages, employment, and incomes.

Kerala should take steps to modernise traditional industries, including coir, cashew, and handloom, in the State. These industries continue to employ a substantial part of the State's total workforce. The modernisation of traditional industries will include the mechanisation of production processes in these industries. Moreover, with modernisation, Kerala's traditional industries will strive to diversify into new products (such as geo-textiles in the coir sector), and evolve effective marketing and distribution strategies. Rather than displacing workers (a strategy involving mechanisation alone may result in this), modernisation will lead to overall expansion of the industry and the creation of greater value addition per worker.

Kerala must promote manufacturing of food, agro-based, and marine products in the State. There are possibilities in the State in storage, processing and value addition with respect to vegetables, fruits, fish, and meat. There is potential, in particular, in processing coconut, jackfruit, banana, pineapple, and tapioca. Wood and bamboo-based industries can also be developed in selected regions of the State.

A relatively large market for food and agro-based products exists within Kerala. Average per capita consumption expenditure in rural Kerala is almost twice the average per capita consumption expenditure in rural India (in 2011-12, according to National Sample Survey data). A large part of the domestic demand for consumer goods in Kerala is met by imports. Kerala's industries, especially food and agro-based industries, can take advantage of this domestic market.

The products of Kerala's traditional, food and agro-based industries will also find buyers in export markets, especially from the large community of overseas Malayalis. The growth of traditional, food and agro-based industries and of tourism can go hand in hand in Kerala, to create a globally recognised place for the State in these sectors. Kerala can learn lessons from countries such as Thailand, Malaysia and Vietnam in successfully combining agriculture, agro-based industries and tourism.

Local governments, empowered with funds devolved to them, should provide the pillar for rural industrialisation in Kerala. Activities ranging from agro-processing to tour operation can be carried out under the coordination of panchayats, with the active enterprise and participation of local population, and making effective use of new technologies including IT, biotechnology and nanotechnology.

Coir and cashew processing, two major traditional industries, employed 3.8 lakh and 2.5 lakh workers respectively in Kerala, with most of the workers being women.

## COIR INDUSTRY

### Overview

Coir industry is an important agro-based, rural industry in India providing employment to over 7 lakh workers. India is the largest producer of coir in the world, accounting for 55 per cent of the world production of coir and value added coir products, as per the latest estimates. The coir sector is the most important traditional industry in Kerala and it has played a crucial role in the social, cultural and economic development of the State.

Spinning, almost entirely operated by women, weaving, and value-added product sector are the main sectors in the coir industry. The activities and programmes of the coir sector in Kerala are coordinated by the Directorate of Coir Development, Government of Kerala. Kerala State Co-operative Coir Marketing Federation (COIRFED) is the apex body of coir co-operative societies functioning both in the yarn as well as the product sector. Apart from this, there are two public sectors under takings (PSUs) at the State level. They are Kerala State Coir Corporation Ltd (KSCC) and Foam Mattings (India) Limited (FOMIL). The research and development activities in the sector are implemented through the National Coir Research and Management Institute (NCRMI), Thiruvananthapuram, and the Central Coir Research Institute, Coir Board, Alappuzha. The arm of the Central Government for developing and promoting coir industry is Coir Board, and its head office is at Kochi, Kerala.

### 12th Five-Year Plan

In the 12th Plan, total budgeted outlay for the sector was Rs 562.94 crore and expenditure was Rs 448.24 crore till 2016-17.

Table 6.10 *Coir sector, plan outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Year	Plan Outlay	Plan Expenditure*
2012-13	1,0070	9,838.05
2013-14	11,137	6,640.76
2014-15	11,693.9	5,817.66
2015-16	11,694	6,916.09
2016-17	11,700	15,611.27
Grand Total	56,294.9	44,823.83

\* Expenditure includes Supplementary Demand for Grants

### 13th Five-Year Plan

The main issues facing the industry currently are low utilisation of locally available husk mainly due to the absence of procurement models that are suited to homestead cultivation of coconut in Kerala and lack of raw material (husk) and high cost of procurement.

In addition, the low number of fibre extraction units and absence of coir pith value chain is also affecting the sector. Low productivity due to limited mechanisation, weaving sector losing out to

PVC tufted units, lack of effective marketing strategies, and limited emphasis on non-woven applications of coir also plague the sector.

Even though several steps have been taken by the government, coir industry continues to remain stagnant. Coir industry is facing competition both in the domestic and international markets, especially from cheaper substitutes. The coir industry is highly labour-intensive and wages account for around 70 per cent of the total product cost. In the current context, the wages of coir workers cannot increase beyond a certain level, as that might be detrimental to the sale of coir products. Therefore, it is critical to evolve new strategies for revamping the coir sector.

The 13th Five-Year Plan of coir sector in Kerala concentrates on 5 major areas. They are technology-enabled procurement and decentralised fibre extraction, a distinct strategy for spinning and weaving, product diversification of industrial coir, institutional support for research and development, and support to COIRFED.

#### *Key Initiatives in the 13th Plan*

The following new initiatives have been proposed in the coir sector for the 13th Five-Year Plan.

##### *Technology Enabled Procurement and Decentralised Fibre Extraction*

Technology-enabled procurement process includes integration of procurement and establishment of a mobile based aggregated procurement platform, supply-demand through mobile application and payment through procurement based gateway. This scheme aims to streamline the procurement process and improve the coir fibre and coir pith production in Kerala. Major components under this are:

1. Establishment of a mobile based aggregated procurement platform.
2. Support to homestead/Kudumbashree units/farmer producer companies to implement the proposed procurement process.
3. De-centralisation of de-fibreing units.
4. Creation of a coir pith block value chain.

##### *Strategy for the Traditional Spinning and Weaving Sector*

The proposed strategy for the traditional spinning and weaving sector has been discussed on the key differentiators as follows;

1. History of coir and eco-tourism positioning.
2. Capacity building and training of homestead and Kudumbashree.
3. Spooling unit based tracking.
4. Design.

In addition to implementing the above strategy, support for improving the socio-economic conditions of the workers in the traditional sectors is also proposed.

### *Modernisation of Industrial Spinning and Weaving Sector*

Modernisation of industrial spinning and weaving units has been proposed under three broad heads:

1. Establishment of mechanised spinning units.
2. Establishment of units focused at woven geo-textiles.
3. Establishment of PVC tufted units.

### *Product Diversification of Industrial coir – Focus on Non-woven*

Product diversification on the infrastructure creation for non-woven products and institutional support includes the establishment of an institute for research and development of products, creation of marketing infrastructure, and robust management information systems (MIS) and review frameworks. While the current application of coir non-woven in India is limited to felt mats, there is significant potential for the development of the market for the following non-woven applications.

1. Non-woven coir geo-textiles.
2. Coir composites/injection moulded coir for automobiles.
3. Coir composite boards as a replacement for conventional plywood.

It is proposed to develop needle punch units and coir composite factories under public and private sectors in Kerala as a pioneer in the coir non-woven sector. This has been provided under two broad heads:

1. Establishment of needle punch units.
2. Establishment of coir composite factories.

In the Plan 2017-18, funds earmarked for the coir sector was total of Rs 128 crore earmarked for the coir sector and the major initiatives during the period are given below.

1. Modernisation, expansion, diversification, reorganisation, improvement of productivity and revival of coir units and factories. Of the total outlay, 10 per cent is earmarked for women workers, mainly for providing separate and secure retiring rooms for them with bathrooms, latrines and drinking water, and recreational facilities.
2. Grant for centres of research and development in coir technology to enhance productivity through innovations in mechanisation and technology, diversified coir products, and high value addition, and infrastructure development.
3. Production and marketing incentives (PMI) to provide assistance for production, marketing, and exports of coir and coir products.
4. Assistance to primary coir co-operative societies (420 working in yarn sector), mats and matting co-operative societies (31 working), COIRFED, and public sector undertakings.
5. Price fluctuation fund to stabilise the price of coir fibre, yarn, and coir products that will benefit small-scale producers and ensure statutory wages to the entire coir work force.
6. Assistance for publicity, opening of new showrooms and sales outlets, renovation of existing sales outlets and godowns, market study, and adoption of innovative marketing strategies, including payment of discounts. Assistance will also be provided for the introduction of e-commerce facilities, and upgradation of design facilities as per Government of India norms



(also using central share under market development assistance for the sale of coir and coir products scheme, with 50 per cent State share as matching fund)

## CASHEW INDUSTRY

### *Overview*

Cashew industry in Kerala is a traditional industry. It is mainly controlled by the private sector and is concentrated in Kollam district. Cashew is one of the most important commercial horticultural crops in India, and the country earns around Rs 5,000 crore per annum through the export of cashew kernels. The cashew industry employs about 2,50,000 workers in Kerala. More than 90 per cent of the workers are women and most of them belong to historically oppressed socio-economic groups.

At present, the area under cultivation of cashew is 10.4 lakh ha in India, with a production of 7.8 lakh metric tonne (MT) of raw cashew nuts and productivity of 753 kg/ha. India needs about 16.0 lakh tonnes of raw cashew nuts to meet the requirements of its cashew processing industry comprising nearly 1,800 medium to large and 2,200 on-farm level processing units. Hence, the balance requirement to the tune of 8 lakh mt of raw cashew nuts is being met through imports from other Asian and African countries.

With respect to the production of raw cashew nuts, Kerala had the top rank among Indian States in the early 1990s, but its position has now dropped to the 4th, behind Maharashtra, Andhra Pradesh and Orissa. Area under cashew cultivation and yield per acre of cashew cultivation has declined in Kerala, because of rapid urbanisation and the replacement of cashew with crops such as rubber.

Kerala has been an important player in the processing and exporting of cashew. Around 800 cashew processing units are functioning in Kerala, and the demand for raw cashew nuts for the industry is high. At present, the area under cashew cultivation in Kerala is 90,870 Ha with a production of 83,980 MT and the productivity is 962 kg/ha. If the area under cashew cultivation in Kerala can be increased to around 2 lakh ha, it can give a boost to cashew industry in the State.

The Kerala State Cashew Development Corporation (KSCDC) and Kerala State Cashew Workers Apex Co-operative Society (CAPEX) are the two main agencies of the State engaged in the cashew processing sector in Kerala. The Directorate of Cashew nut and Cocoa Development (DCCD) is a national agency primarily engaged in the overall development of cashew and cocoa in India. The research and development programmes in the cashew sector are implemented by Cashew Export Promotion Council of India (CEPCI) and various Cashew Research Centres under Kerala Agricultural University. Kerala State Agency for the Expansion of Cashew Cultivation (KSACC), the nodal agency for the promotion of cashew cultivation in Kerala, is approved by National Horticulture Mission (NHM).

*Kerala State Cashew Development Corporation (KSCDC).* Kerala State Cashew Development Corporation (KSCDC), which was set up in 1969, started commercial activities in 1971. The operations of KSCDC range from regulation of the industry to processing and value addition of cashew. KSCDC has been taking over some of the privately-owned cashew factories and by 1975

it had 34 factories with 30,000 employees. Currently, there are 30 factories under KSCDC with about 18,000 workers. A majority of KSCDC workers are women.

*Kerala State Cashew Workers Apex Co-operative Society (CAPEX).* The Kerala State Cashew Workers Apex Co-operative Society (CAPEX) was formed in 1984 to engage directly in cashew processing. Most of the factories owned by CAPEX were taken over from the private sector at a time when the private sector was unable to provide continuous employment to the workers. CAPEX with headquarters in Kollam, is the apex body of cashew workers' primary societies engaged in the procurement of raw cashew nuts and marketing of the processed kernels. The society owns 10 factories and one packing centre. Both KSCDC and CAPEX are functioning as a model employer in the cashew industry by giving cashew workers all the benefits as per the Government norms, by providing maximum days of employment, and thereby helping to avoid exploitation by private managements.

*Directorate of Cashew nut and Cocoa Development (DCCD).* Directorate of Cashew nut and Cocoa Development is a national agency engaged in the overall development of cashew and cocoa in India. DCCD carries out research and development programmes related to (a) production of high yielding varieties of raw cashew and (b) processing of cashew in an efficient and hygienic manner so as to meet international standards. Further research and development is required in mechanisation, value addition and diversification of cashew products. New facilities for certification need to be created.

*Cashew Export Promotion Council of India (CEPCI).* Cashew Export Promotion Council of India (CEPCI) was established by the Central Government in 1955 to promote export of cashew kernels and cashew nut shell liquid (CNSL). It provides various services to exporters who are members of the council. CEPCI also offers capital assistance to producers for the purchase of innovative technology and equipment. The council operates Central Plan schemes.

*Kerala State Agency for the Expansion of Cashew Cultivation (KSACC).* Kerala State Agency for the Expansion of Cashew Cultivation (KSACC) was constituted by Government of Kerala to overcome the crisis resulting out of the decline in the area of cashew cultivation in Kerala. The vision of the agency is to increase the annual domestic production of raw nuts from 65,000 MT to 1, 50,000 MT in a phased manner through promotion of high yielding cashew grafts and a steady supply of raw cashew nuts (RCN) to the industry in Kerala. Since 2008, KSACC has been organising promotional activities in cashew cultivation and distributing cashew grafts of high yielding varieties and financial assistance to farmers and institutions in the State. The agency has launched the project 'Cultivation of Organic Cashew and Establishment of Raw Nut Bank' from 2007-08 onwards.

*Cashew Research Centres under Kerala Agricultural University (KAU).* The Cashew Research Station, Madakkathara, Thrissur district is one of the eight centres of the All India Co-ordinated Cashew Improvement Project. This station has developed five cashew cultivars. Madakkathara-1, Madakkathara-2, Kanaka, Dhanya and Priyanka.

### 12th Five-Year Plan

The Plan outlay and expenditure of the cashew sector in Kerala from 2012-13 to 2016-17 is given in Table 6.11.

Table 6.11 *Cashew sector, Plan outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Year	Outlay	Expenditure	Expenditure (in per cent)
2012-13	6,500	6,500	100
2013-14	7,150	7,150	100
2014-15	5,450	3,350	61.5
2015-16	4,500	4,649.9	103.3
2016-17	4,500	12,900	286.7
Grand Total	28,100	34,549.9	122.9

\* Expenditure includes Supplementary Demand for Grants

Kerala's share in total cashew exports is on a decline. This is partly on account of the increased consumption of cashew within the country and also due to the decline in availability of raw cashew nut. During the first four years of the 12th Plan, the export of cashew kernels through Cochin port was 2,49,291 MT worth Rs 11,178 crore. At the same time the import of raw nut was 8,18,359 MT valued at Rs 36,694 crore. Export of cashew kernels had shown a sharp drop in 2012-13 but revived in 2013-14 and 2014-15, but declined again in 2015-16. Kerala's share in total exports of cashew kernels from India was 57.2 per cent in 2013-14 which marginally increased to 57.3 per cent in 2014-15.

#### *Issues Prevailing in the Sector*

1. Cashew industry is a traditional industry, which employs a significant number of workers, most of whom are women belonging to socially and economically disadvantaged groups. Among 2.5 lakh workers, approximately 25,000 are working in 40 factories under KSCDC and CAPEX. Rest of the workers (including migrant labour) are working in the private sector.
2. The cashew industry in Kerala faces multiple threats including shortage and high cost of raw material (raw cashew nuts); shortage of working capital; high operating costs, high dependence on imports and a highly competitive market for finished goods (cashew kernels).
3. The rate of growth of production of raw nuts in Kerala is very low and the productivity per hectare is also low. Area and production under cashew crop have declined.
4. The efforts to increase cultivation of organic cashew have not been successful.
5. One of the difficulties in expanding cashew cultivation is the time of distributing graft. Planting of cashew is effective only during the monsoon season.
6. Kerala used to be a dominant player but has now fallen behind in both cashew cultivation and cashew kernels production. Other States such as Maharashtra, Orissa and Andhra Pradesh have taken over as the leaders in raw cashew cultivation. These States have also entered into cashew processing in a big way through mechanical processing

7. Raw nut producing countries in Africa have started processing kernels and they have entered the world market, posing a serious threat to Kerala. Similarly, global market has also witnessed growing demand for substitute nuts and kernels in the place of cashew.
8. With the rise of the Indian middle class, there has been a significant growth in the demand for cashew kernels in India itself.
9. The cost of processing cashew in Kerala is relatively high compared to other States and internationally. The cost of processing can be reduced only with regulated mechanisation and modernisation of the industry.
10. Cashew factories work at low level of capacity utilisation and productivity.

### *13th Five-Year Plan*

The 13th Plan aims to rejuvenate cashew industry by increasing domestic raw nut production, partial mechanisation, value addition, product diversification, cost effectiveness, and ensuring better marketability. It also aims to promote exports and provide employment.

The Plan will promote modernisation and upgradation, branding and market awareness, and development of new value-added products.

### *Key Initiatives Proposed in the 13th Five-Year Plan*

1. *Kerala State Cashew Workers Apex Co-operative Society (CAPEX)*
  1. *Investment in CAPEX as share capital contribution for the procurement of raw cashew nuts.* Raw nuts are to be procured from local and international markets especially Ivory Coast, Indonesia, Tanzania, and Guinea Bissau to ensure steady availability of raw materials.
  2. *Modernise, rejuvenate, and upgrade cashew factories of CAPEX.* This project is to purchase modern cutting machine, peeling tables, grading tables with chairs for the workers, construction of modern stores and rest rooms in ten CAPEX factories. This will create a healthy and effective work environment.
  3. *Brand building and market awareness in India and international markets.* The scheme envisages carrying out market expansion programs such exhibitions, advertisements, and better packaging.
2. *Kerala State Agency for the Expansion of Cashew Cultivation (KSACC)*
  1. *Cultivation of organic cashew and establishment of raw nut bank.* In the 13 Five-Year Plan, KSACC will distribute 70,000 cashew grafts to farmers free of cost, assist women self-help groups in starting cashew apple processing unit, set up cashew farmers group to help them collect and market cashew, conduct training programme for farmers to popularise new techniques, and promote awareness about the cashew cultivation.
3. *Kerala State Cashew Development Corporation (KSCDC)*
  - (a) *Modernise and upgrade cashew factories.* It is proposed to mechanise the shelling operations and upgrade and modernise factories.
  - (b) *Brand building and market awareness.* In the 13th Five-Year Plan period, KSCDC proposes to build and leverage its 'CDC Brand' to sell more value-added products.
  - (c) *New products development.* KSCDC plans to develop and introduce value added products based on cashew apple such as cashew apple jam, cashew apple wine, and cashew

apple vinegar. It also proposes to market a range of consumer packed cashew kernels branded as ‘traditionally roasted with flavour retained’ and ‘handcrafted’ and other cashew based products.

- (d) *Establishment of new factories.* In the 13th Five-Year Plan period, it proposes to start 20 factories in regions of low employment of workers. This will generate employment for about 15,000 women workers.

#### *4. Establishment of Cashew Board*

The Kerala Government has constituted a Cashew Board as a special purpose vehicle with the aim of reviving the cashew sector in the State. The Board will take steps to procure and import raw cashew either within India or outside; process, value add and market the produce in domestic and international markets; supply raw cashew nut to domestic cashew processors at fair price; and promote scientific cultivation of cashew involving land owners, processors and other stake holders to enhance domestic raw nut production.

## *MICRO, SMALL, AND MEDIUM ENTERPRISES*

### *Overview*

Micro, small and medium enterprises (MSMEs) promote equitable development and innovation. The sector has potential to address structural problems such as unemployment and regional and intersectoral imbalances. Given their comparatively low capital costs and forward-backward linkages with other sectors, MSMEs can assist to build a diversified manufacturing sector.

There is a relatively large presence of micro and small industries in Kerala, especially in rural Kerala. In 2010-11, rural Kerala accounted for 8.6 per cent of all non-agricultural establishments in rural areas of the country (Kerala's share in India's population was only 2.8 per cent in 2011). The industries coming under this sector include handicrafts, handloom, khadi, food processing industries, garment making, textile industries, and industries related to coir, wood, bamboo, plastic, rubber, leather, and clay products. The State, with its excellent connectivity, communication network and availability of human resources is best suited for the growth of the micro, small and medium scale enterprises.

The Central and State governments have undertaken a number of schemes and programmes for the promotion of the micro, small and medium enterprises sector. They include Prime Minister's Employment Generation Programme (PMEGP), Credit Guarantee Trust Fund for Micro and Small Enterprises (CGTMSE), Credit Linked Capital Subsidy Scheme (CLCSS) for Technology Upgrading, Scheme of Fund for Regeneration of Traditional Industries (SFURTI), and Micro and Small Enterprises-Cluster Development Programme (MSE-CDP) for the establishment of new enterprises and development of existing ones. Some of the new initiatives include Udyog Aadhar Memorandum (UAM), Employment Exchange for Industries, framework for revival and rehabilitation of MSMEs and A Scheme for Promoting Innovation and Rural Entrepreneurs (ASPIRE). The implementation of Micro, Small and Medium Enterprises Development Act, 2006, Entrepreneurs Memorandum (Part-II) is another initiative by the government for the promotion and development of MSMEs.

The Department of Industries and Commerce acts as the controlling office of the 14 District industries centres, the common facility service centres at Changanacherry and Manjeri, and the documentation centre. Directorate of Industries and Commerce is the implementing agency of all policy decisions of the Industries Department. It also functions 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 and Textiles, Directorate of Coir and Khadi and Village Industries Board.

### *12th Five-Year Plan*

The total budgeted outlay provided for the MSME sector in the 12th Plan was Rs 43,082.4 lakh with Rs 39,692 lakh for small scale industries, Rs 1,015 lakh for commerce and Rs 2,375.4 lakh for handicrafts and the total expenditure was Rs 35,137.95 lakh (Table 6.12).

Table 6.12 *Micro, small and medium enterprises, outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Sector	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure*	Budgeted Outlay	Expenditure*	Budgeted Outlay	Expenditure
Small Scale Industries	5,455	4,795.85	5,755	5,078.14	7,796	3,786.81	9,632	6,478.33	11,054	11,907.75	39,692	32,046.88
Commerce	75	75	90	90	200	199.77	300	296.46	350	341.08	1015	1002.31
Handicrafts	350	348.25	431	386	521	423.24	518.40	577.4	515	351.87	2,375.4	2088.76
Total	5,880	5,219.10	6,276	5,554.14	8,517	4,409.82	10,450.4	7,352.19	11,919	12,600.7	43,082.4	35,137.95

\* Expenditure includes Supplementary Demand for Grants



### *13th Five-Year Plan*

The objective of the 13th Plan is to achieve substantial industrial growth over five years (2017-22) and intensive growth of efficient and competitive micro, small and medium enterprises. This will be done by building high quality infrastructure, upgrading technology, and providing business development services. The objective is to create one lakh MSMEs all over the State and thereby provide six lakh employment opportunities during 2017-22. One of the priorities will be to encourage entrepreneurship by women, especially those who are professionally qualified. The efforts of the Government will include creation of adequate infrastructure and appropriate climate to attract private investment, establishment of new technologies, and encouragement of diversification and modernisation.

There are certain issues to be addressed in the 13th Plan such as lack of infrastructure facilities, delays in land acquisition and environmental issues; delay in getting licenses and clearances; limited credit flow to MSMEs and shortage of skilled workers; lack of effective entrepreneurship development programmes and skill development programmes; inadequate collaboration between technology providers and entrepreneurs; slow process of modernisation and in the use of new designs and innovations; and inadequate marketing facilities and handholding support for forward and backward linkages.

The objectives of the schemes initiated in 2017-18 were to provide support for nano and household sector; provide start-up subsidy to create employment; strengthen linkages between universities and research institutions with enterprises and improve service delivery and e-office. The schemes initiated by different agencies are as follows.

#### *Directorate of Industries and Commerce*

1. Establish one lakh MSME units in the State in four years that would provide employment to about 6 lakh people.
2. Develop 5.86 lakh sq. ft. space through standard design factories.
3. Develop clusters.
4. Identify potential clusters through industrial potential surveys.
5. Develop industrial sheds with co-funding from local bodies in lands owned by local bodies.
6. Develop a web portal for marketing.
7. Monitor timely payment to MSME suppliers.
8. Monitor ancillaries and downstream development of big ticket investments.

#### *Traditional Sector Development*

1. Focus on the development of handicrafts, bamboo, beedi, and palmyrah sectors.
2. Implement an integrated artisans development programme combining cluster development programme, assistance to apex organisations, and employment generation in traditional sector.
3. Transform traditional artisans into entrepreneurs through ASHA.
4. Implement an integrated program for linking handicrafts sector to tourism by way of souvenirs and craft tourism.

5. Widen the product range in hand-woven fabric through NIFT.
6. Increase the use of mechanised techniques.
7. Re-focus rebates to encourage productive activity within the State.
8. Develop online marketing portal for hand-woven fabric of Kerala.
9. Expand the school children uniform cloth scheme to give sustained employment as a safety net to the sector.

#### *Handicrafts Sector*

1. Integrated development of handicrafts sector by brand marketing of products made in clusters.
2. Signature showrooms for Kerala handicrafts by a collective marketing strategy for the PSUs.
3. Design and technology intervention with the support from institutions such as NIFT and NID.

#### *Skill Development*

1. Develop and strengthen entrepreneurial quality of youth through motivational, managerial, technical, and training to setup enterprises.
2. Generate self-employment opportunities.

#### *Development of Entrepreneurial Culture*

1. Enhance entrepreneurial skills and knowledge through structured training and capacity building programs.
2. Establish entrepreneurship development clubs in technical institutions and management schools.
3. Establish business incubators in District Industries Centres (DICs) and selected institutions for encouraging start-ups and developing business ideas.

#### *Handholding and Other Support Services*

1. Handholding and other support services for existing entrepreneurs.
2. Establish business incubators have been in all DICs.
3. Establish Technology Business Incubators (TBIs) and Livelihood Business Incubators (LBIs).
4. Infrastructure support, including social infrastructure such as child care facilities, working women's hostels etc., skill and capacity building with market requirements, business planning, mentoring support, financial and market linkages, hand holding and intensive technology infusion etc.

## HANDLOOM AND POWERLOOM INDUSTRY

### Overview

In India, handloom weaving is the second largest employer after agriculture, providing direct and indirect employment to more than 43 lakh weavers and allied workers. Handloom is a major source of employment, especially for the poor and the women, in Kerala. The Directorate of Handlooms and Textiles, Kerala, which functions under the Department of Industries and Commerce, is responsible for the promotion and development of handloom and textile sectors in the State. The procurement and marketing of handloom fabrics are undertaken by two State-level organisations, namely Hantex and Hanveev.

Kerala State Handloom Weaver's Co-operative Society (Hantex) was registered in 1961 under the Kerala Co-operative Society Act of 1969. Hantex is the apex body of handloom co-operatives established for the distribution of required inputs to primary co-operative societies, processing of high quality yarn, marketing, and export of handloom products. Kerala State Handloom Development Corporation (Hanveev), which started functioning in 1968, is another agency for the upliftment of traditional handloom weavers in the unorganised sector in handloom industry, with its registered office at Kannur. IIHT (Institute of Handloom and Textile Technology), which is an autonomous institute under the Ministry of Industries, Government of Kerala, is the nodal agency in the State for providing technological inputs to the handloom sector. The Institute was established and registered under the Societies Registration Act of 1860 in 1987.

To promote the weaving sector, government provided budgetary support to powerloom co-operative societies in the State. Currently there are 52 powerloom co-operative societies in the State, and they own 550 looms out of a total of 575 powerlooms. The spinning mills in the State are mostly under Kerala State Textile Corporation Limited (KSTC) and Kerala State Co-operative Textile Federation Limited (TEXFED)

### 12th Five-Year Plan

In the 12th Plan (2012-2017), total budgeted outlay for the sector was Rs 349.9 crore, and the expenditure incurred was Rs 406.76 crore.

Table 6.13 *Handloom and Powerloom sector, budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Year	Budgeted Outlay	Plan Expenditure	Plan expenditure as per cent of Plan outlay
2012-13	6,807.0	7,168.1	105.3
2013-14	7,676.0	8,926.75	116.3
2014-15	6,714.5	6,652.4	99.1
2015-16	6,715.0	11,362.9	169.2
2016-17	7,073.0	6,566.08	92.8
Total	34,985.5	40,676.23	116.4

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

In the handloom sector, the 13th Plan aims to increase the number of registered looms from 29,100 to 35,000, number of working looms from 9,000 to 35,000, per day wage of the worker from Rs 250 to Rs 750, per day weaving metre age from 4 metres to 6 metres, annual production from 400 lakh metres to 630 lakh metres, annual production in value from Rs 340 crore to Rs 800 crore, export value from Rs 80 crore to Rs 350 crore, and average days of employment per year from 67 person days to 200 person days.

In the powerloom sector, the aim is to increase the number of co-operative mills from 17 to 18, total spindle capacity from 1,44,000 numbers to 1,95,000 numbers, capacity utilisation from 60 per cent to 90 per cent, and annual production from 90 lakh kg to 200 lakh kg.

The Government plans to strengthen the handloom industry. The measures will include, widen the product range in hand-woven fabric with assistance from NIFT (National Institute for Fashion Technology); develop private marketing channels for hand-woven fabric; modernise and re-organise HANVEEV and HANTEX outlets; increased use of mechanised techniques without depriving the essential character of the industry; provide rebates to encourage production within the State; develop online marketing portal for hand-woven fabric of Kerala; explore value addition through silk weaving and expand the school children uniform cloth scheme to provide sustained employment to workers in the sector.

The State aims to promote the handloom sector and improve the lives of handloom weavers and allied workers. The developmental activities that are planned can be broadly put into the following three phases.

#### *Phase I*

1. Identify new weavers and give training to them in handlooms.
2. Make use of facilities such as incubation centres and existing societies.
3. Provide raw materials and stipend to the beneficiaries.
4. Utilise the expertise of HANVEEV, HANTEX and IIHT.

#### *Phase II*

Support weavers to produce and market handloom products. Certain proposed steps include the following.

1. Address issues related to infrastructure such as loom, loom accessories, pre and post loom equipment, work sheds, buildings, outlets, dye house, and processing centres.
2. Provide assistance to procure raw materials, dyes and chemicals.
3. Conduct training and skill development programmes for workers.
4. Provide incentives to increase productivity and marketing and export incentives.

### *Phase III*

*Value addition to products.* The main aim is to encourage weavers to produce value-added products, and market them under a common 'Kerala Handlooms' brand, which would emerge as a premium product in niche markets. The following activities will be carried out to promote value addition.

1. Training and skill development programmes to produce more value added products.
2. Product standardisation, brand building exercises, standardisation of marketing outlets.
3. Participation in expos, exhibitions, and national and international fairs.

### *Key Initiatives in the 13th Five-Year Plan*

The programmes and schemes proposed by the department for the development of handlooms, powerlooms and spinning mills are the following.

1. *Capital Support Scheme.* It includes equity participation by the government in PHWCS and share participation by HANTEX and HANVEEV.
2. *Promotion and Development Schemes.* This scheme is to provide subsidy on quality raw material for weavers (almost 75 per cent of whom are women), provide margin money loan for quality raw materials, implement self-employment generation programmes and start business incubators in handloom sector, conduct motivation programme for weavers and allied workers, and establish handloom village and integrated handloom village.
3. *Incentive and welfare scheme.* This scheme includes contributory thrift fund scheme and group insurance scheme for handloom weavers.
4. *Production, marketing and training schemes.* This includes marketing and export promotion, modernisation of handloom societies, and promotion of value added products, training, skill and capacity development programme and training, study, propaganda and assistance for propagation of handloom mark scheme.
5. Survey of handloom weavers.
6. *Development of powerloom industry.* It includes powerloom business incubators and facilities for training, enterprise creation, and group insurance scheme for powerloom weavers.
7. *Modernisation of powerloom industry.* It includes share participation in powerloom co-operative societies and modernisation of powerloom societies under TEXTFED.
8. Revitalisation of spinning mills under TEXTFED which availed NCDC assistance.
9. Assistance to spinning mills, which did not avail NCDC assistance.

Regulated modernisation and adoption of new technology in production, design and marketing are crucial to reviving this sector. Effective product diversification and value addition methods in accordance with new trends are necessary. Handloom industry is facing severe threats from powerlooms and fully automatic machineries. Hence effective steps should be taken to upgrade the handloom industry to compete with other industries.

## *KHADI AND VILLAGE INDUSTRIES SECTOR*

### *Overview*

The primary objective of the khadi and village industries is to generate employment opportunities, particularly for the rural poor. The quantity and quality of employment generated are not satisfactory at present. Stagnation in Khadi sector is caused by the absence of improved technologies and facilities for repairing looms, outmoded range of products, the unintended build-up of stocks, constraints with regard to input supplies, and poor facilities for the provision of capital.

The employment in khadi and village industries in Kerala declined sharply from 1.29 lakh person days in 2011-12 to 0.99 lakh person days in 2015-16. In 2014-15, the sector produced goods worth Rs 136.35 crore and provided 1.09 lakh person days of cumulative employment. In 2015-16, khadi and village industries generated employment of 1.55 crore person days and produced goods worth Rs 21,675.89 crore.

Production and sales in the sector in the State have declined. Between 2014-15 and 2015-16, there was a decline in production and person-days employed by khadi and village industries in Kerala. A major reason for the fall in the number of workers engaged in the sector is the migration of workers to better paying jobs in other sectors or for higher education.

The Kerala Khadi and Village Industries Board is a statutory body constituted by the Kerala Khadi and Village Industries Board Act 9 of 1957, with the responsibility to organise and promote Khadi and Village Industries in the State. The board implements the programmes through co-operatives, registered institutions, individuals, and departmental units by availing assistance from the Government of Kerala, Khadi Commission and nationalised banks.

The Board is the State-level implementing agency of the programmes of Khadi and Village Industries Commission. The Board comprises a Secretary, 2 board level employees, 8 managerial staff, 49 supervisory staff, 325 lower level staff, 142 workers, and 7 other workers.

### *12th Five-Year Plan*

During the 12th Plan, total budgeted outlay for the sector was Rs 67.35. As against the budgeted outlay, the expenditure incurred was Rs 63.95 crore (94.95 per cent).

Table 6.14 *Khadi and village industries, budgeted outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Year	Budgeted Outlay	Expenditure
2012-13	1,210	1,306
2013-14	1,331	2490
2014-15	1,397.6	341.6
2015-16	1,397.6	1,088.6
2016-17	1,399	1,169
Total	6,735.2	6,395.2

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

Between 2014-15 and 2015-16, there was a decline in production and person days employed by khadi and village industries sector in Kerala. The Kerala Khadi and Village Industries Board started technological innovation to improve the production capacity of existing implements with the assistance of IIT Madras.

Some of the issues to be addresses in this sector are lack of new investment in industry, inefficient functioning of existing units, relatively high labour costs, and lack of adequate investments.

The Board proposes to create 10,000 new employment opportunities in the khadi sector during the 13th Five-Year Plan period.

The 13th Plan aims at integrated development of khadi and village industries sector. It aims to introduce solar charkhas to reduce physical strain of the artisans and thereby increase the productivity; develop capacity through training and refresher courses to the technical staff and artisans; increase the total value of khadi yarn production to Rs 50 crore at the end of 13th Five-Year Plan; increase the number of artisans under the Khadi Board from 15,000 to 30,000 including other Khadi institutions as well; generate 7,000 jobs in rural village industries section; modernise major sales outlets having a view to connect with tourism; and introduce a common brand name in khadi and village industries products such as honey, gingerly oil, and washing soap.

In the 13th Plan, efforts will made to reduce procurement and sales of khadi from outside the State and increase local production; establish modern designing centres and research and development wing; establish silk cloth manufacturing units in the State; organise training programmes for new artisans in khadi and village industries sector; and start new outlets in public areas, malls, and shopping complexes.

The Khadi Grama project proposes to provide, within five years, employment to 1000 artisans each year under Khadi Grama and additional employment opportunities of 500 per year with support of LSGs. Under the scheme, the Board provides charkas and looms to new artisans.

#### *Key Initiatives in the 13th Plan*

1. Strengthen silk reeling and weaving in Kerala.
2. Mini sliver plant at Kollam.
3. Skill training for young entrepreneurs.
4. Assistance to co-operative societies (for working units to meet additional requirements).
5. Working capital for bed units (PKC and Malappuram).
6. Khadi, Grama Vyavasaya Parks in Kasaragode and Wayanad.
7. Infrastructure facilities for Honey Processing Centre at Neryamangalam.

## *MINING AND GEOLOGY*

### *Overview*

The mineral wealth of Kerala includes deposits of heavy mineral sands (ilmenite, rutile, zircon, monazite, siliminite), gold, iron ore, bauxite, graphite, china clay, fire clay, tile and brick clay, silica sand, ignite, limestone, lime shell, dimension stone (granite), gemstone, magnetite, and steatite. However, mining activities on large scale are confined mainly to a few minerals such as heavy mineral sand, china clay, and to a lesser extent limestone, lime shell, silica sand and granite. In fact, heavy minerals sand and china clay contribute more than 90 per cent of the total value of mineral production in the State.

Framing policies for extraction of natural earth materials including minerals and rocks by adopting appropriate mining methods and ensuring environmental, ecological and social balances is an important task for the Government. Though, the share of mining and quarrying sector to Gross State Value Added of Kerala is below 1 per cent, the sector plays an important role in the economy of the State. There are 64 major mineral mines that are operational in the State as on March 31, 2017.

### *12th Five-Year Plan*

During the 12th Five-Year Plan, Rs 893 lakh was provided as outlay for implementing six schemes of the department. The Plan expenditure was Rs 536.1 lakh (60 per cent). During the 12th Five-Year Plan, the total revenue collected by way of royalty from major and minor minerals increased from Rs 50 crore in 2012-13 to Rs 138 crore in 2016-17. Details are given in Table 6.15.



Table 6.15 *Mining and Geology sector, Plan outlay and expenditure in the 12th Five-Year Plan* in Rs lakh

Schemes	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17	
	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp
Mineral Investigation	100	54.5	49	40.2	49	31.3	50	36.3	56	30.2
Human Resource Development/Training	10	9.4	10	4.3	7	6.6	6	4.4	6	1.1
Strengthening of Laboratories	20	16.6	51	0.1	2	1.6	7	19.8	8	3.7
Setting up of Sub Offices and Strengthening of infrastructure	21	15	20	8.7	20	3.7	15	7.6	9	2.1
Implementation of e-Governance	60	92.4	25	21	5	9.8	5	11.7	6	11.7
Modernisation of Mining and Geology Department			277	92.2						
Total	211	188	432	166.5	83	53.1	83	79.7	84	48.8

Exp= Expenditure

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The 13th Plan aims to continue the existing mineral investigation and take up new exploration works and other investigation; carry out multi-disciplinary studies in addition to the conventional mineral exploration studies taking into account the current scenario; and strengthen the department.

In addition to the ongoing programmes, the department proposes the following initiatives during the 13th Five-Year Plan.

1. Develop the Chavara Heavy Metal Complex through Kerala State Mineral Development Corporation Limited (KEMDEL).
2. Take steps to provide sand and metal to the construction sector in an environment-friendly manner as possible.
3. De-silting dam reservoirs and offshore mining will be among the other priorities.

### *Scientific Mining Policy – Way Forward*

A Draft Scientific Mining Policy, 2015 has been formulated in the State. This policy aims to assess the State's potential with respect to extractable natural earth materials, such as minerals and rocks and fine aggregates manufactured from rocks; promote mining activities that minimise or eliminate damage to the environment including water, air, soil and ecosystem (WASE); and highlight the Social Impact Assessment or SIA.

The Scientific Mining Policy should facilitate coordinated efforts by the Department of Mining and Geology and Geological Survey of India to map the distribution of extractable earth material in various parts of the State and keeping a GIS Geo database. The application of thirteen modern technologies in respect of minerals and rock resources of the State should ensure transparency and facilitate faster decision-making.

The Scientific Mining Policy shall also include modernisation of systems and processes in the issuance of leases, permits and closure plan; adoption of new technologies, as well as the creation of a rank of professionals in the area of mining engineering and Applied Geophysics. The digital photogrammetric monitoring of operating mines and quarries helps to assess and estimate the off take of the extracted material in a precise manner. This ensures plugging of revenue or royalty loss to the State. Alternatively, a new process of plugging revenue loss by taxing the end-user, as proposed and recommended in the Abandoned Quarry Reuse Report can be very efficient and transparent.

A single window clearance of lease or permit at the district level, by a committee headed by the District Collector and other line departments, for opening new mines and quarries is considered extremely imperative in the fast track development programs in the State. There should be a State Level Appellate Authority to review the decisions resolved at the district level. There should also be a High-Power Committee constituted by Government to ensure implementation of the measures outlined in a given timeframe.

Mining and quarrying is an important economic activity that may also have some adverse impacts on the environment. The Government is, therefore, diligent in adopting regulations to moderate the negative impacts of mining operations. Adoption of modern techniques and practices will reduce the adverse effects on environment to a large extent.

## 7 INFRASTRUCTURE

### INLAND WATER TRANSPORT

#### Overview

Inland water transport (IWT) is an energy efficient, environment-friendly, and safe medium of transport. Kerala has many rivers, backwaters, and canals that can be used for commercial inland water transport. Inland navigation was the principal mode of transportation in the State until the middle of the twentieth century. With modern, fast moving, road and rail transportation systems taking centre-stage, the navigation routes and canal systems remained neglected for the past fifty years. The canals lost their navigability because of poor maintenance and encroachments.

The use of inland waterways for passenger and cargo traffic in Kerala is beneficial for the environment, will reduce the pressure on the road and rail transport systems, and will also enhance tourism in the State. Innovative projects for developing minor ports are necessary, especially, in the Malabar region. The State intends to make the National Waterway III functional by attracting more cargo and passenger traffic through it.

There are 41 navigable rivers in Kerala. Total length of the inland waterways in the State is 1,687 km. The main arterial waterway in the State is the West Coast Canal. The West Coast Canal connects Hosdurg in the north with Kovalam in the south and is about 590 km long including the uncut portion from Vadakara to Valapattanam. The inland canal system can play an important role in the economy of the State as it connects rivers and backwaters. Most of Kerala's commercial and industrial cities and tourist destinations are located on the banks of the West Coast Canal. Speaking at the Kerala Legislative Assembly on July 28, 2005, former President Sri A.P.J. Abdul Kalam proposed 10 missions for the sustainable development of Kerala, one of them being the development of smart waterways.

The West Coast Canal is broadly divided into four sections as below:

Table 7.1 *Sections of West Coast Canal*

Serial No.	Sections	Distance (in km)
1	Kovalam – Kollam	74
2	Kottapuram – Kollam(N W III)	168
3	Kottapuram – Kozhikode extension of NW III	160
4	Kozhikode – Neeleswaram	188

As a part of the programme for developing waterways by the Central Government, 168 Km of waterway from Kollam to Kottapuram of the West Coast Canal including Udyogmandal and Champakara Canals were declared as National Waterway No III with effect from 1993. Now the National Waterway III has been extended up to Kozhikode by the National Waterway Act 2016. The canals coming under National Waterway III are as follows.

Table 7.2 *Canals coming under National Waterway III*

Serial No.	Route	Distance (in km)
1	Kollam – Kottapuram	168
2	Kottappuram – Kozhikode	160
3	Udyogmandal canal	23
4	Champakara canal	14
5	Alappuzha – Changanacherry canal	28
6	Alappuzha – Kottayam – Athirampuzha	38
7	KottayamVaikkom canal	28
8	AVM canal(Poovar – Erayumanthurai)	11

Kerala gives top priority to the development of the West Coast Canal connecting the National Water way III. Feeder canals to this waterway also need to be developed and brought up to National Waterway standards.

Table 7.3 *Inland waterways in Kerala – present status*

Reach	Chainage	Remarks
Parvathy to Puthanar	0 to 16.045 km	Not navigable
Veli to Kollam	16.045 to 74.18 km	Partially navigable
Kollam to Kottapuram (National Waterway 3)	74.18 to 242.18 km	Navigable
Kottapuram to Kozhikode	242.18 to 402.18 km	Partially navigable
(Extension of National Waterway 3)		
Kozhikode to Vadakara	402.18 to 450.08 km	Partially navigable
Vadakara to Mahe	450.08 to 467.69 km	Work in progress
Mahe to Valapattanam	467.69 to 526.20 km	Not navigable due to 3 uncut portions
Valapattanam to Neeleswaram	590.530 to 621.60 km	Under investigation

The State Water Transport Department, Kerala Shipping and Inland Navigation Corporation Ltd and Coastal Shipping and Inland Navigation Department are the agencies involved in the transportation and development activities of the Inland Water Transport sector of the State.

The State Water Transport Department with its headquarters in Alappuzha provides connectivity to the water-logged areas of Kuttanad with over 50 boats. Apart from the stretches of National Waterway III, the State Water Transport Department (SWTD) operates boat services in and around Kollam, Alappuzha, Nileswaram near Kannur, and Kasaragod, primarily meant for passenger transportation. The Kerala Shipping and Inland Navigation Corporation Ltd (KSINC) and other few private operators operate barge services in and around Kochi.

There are about 1,687 km of IWT route network in the State consisting of the National Waterway III from Kollam to Kottapuram, which is maintained by Inland Water Authority of India (IWAI), and other feeder canals maintained by the Coastal Shipping and Inland Navigation and State Irrigation Departments. Cargo transportation through mechanised barges operates along the National Waterway III. The Kerala Shipping and Inland Navigation Corporation is also engaged in IWT freight and passenger transport with 12 barges, 11 boats, and 2 jhankars. Over

10 lakh tonnes of cargo (mainly imported cargo for the use of the Eloor–Ambalamugal industrial belt) is transported to the hinterland per annum.

The IWAI has already set up 8 cargo terminals with allied infrastructure facilities in National Waterway III, and the ninth one is under construction in Alappuzha. Besides, Ro-Ro jetties were constructed at Bolghatty and Willingdon Island aimed at movement of containers at ICTT, Vallarpadam. However, these terminals remain underutilised due to unavailability of adequate cargo movement through National Waterway III.

#### *12th Five-Year Plan*

In the 12th Plan total budgeted outlay for the sector was Rs 72,600 lakh out of which Rs 18,992.86 lakh was expended.

Table 7.4 *Year-wise budgeted outlay and expenditure for IWT in the 12th Five-Year Plan* in Rs lakh

Sector	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure*	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure
SWTD	609	544.24	725	558.71	760	452.18	760	330.6	2,000	415.26	4,854	2,300.95
KSINC	1,200	1,200	1,200	1,201.77	1,200	0.00	1,200	1,229.35	1,202	812.21	6,002	4,443.26
CSIND	11,530	1,947.01	11,718	3,079.07	12,382	3,478.75	13,582	2,144.22	12,532	1,599.5	61,744	12,248.55
Total	13,339	3,691.25	13,643	4,839.55	14,343	3,930.93	15,542	3,704.17	15,734	2,826.97	72,600	18,992.76

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The Government of Kerala has undertaken works to improve the West Coast Canal to make it fully navigable as per State waterway standards. Action has been taken to improve and modernize the waterway along the Kollam – Kovalam stretch and the Kottappuram–Nileswaram stretch of the West Coast Canal utilising various funds. In the first phase, priority will be given to rendering the waterways navigable. Once this is achieved, all infrastructure facilities such as cargo terminals and various cross structures will be provided

Developing the West Coast Canal system from Kovalam in Thiruvananthapuram district to Bekal in Kasargod district (Ch. 0 km to 611 km) is an important project to be completed in the 13th Five-Year Plan Period. This involves the development of the existing canal system to State or National Waterway class 3 standards. Waterway from Ch. 74.180 km (in Kollam) to Ch.402.180 km (in Kozhikode) has already been declared a National Waterway and development activities are being undertaken by IWAI using central funds. Remaining portions are to be developed by the State Government.

The following are the targets set for the 13th Plan period.

1. Develop potential stretches of the West Coast Canal and its feeder routes – approximately 800 km (265 km of West Coast Canal + 535 km of feeder routes) of waterway with a target of 160 km per year i.e. Kovalam to Kollam stretch (74 km) and Kozhikode to Neeleswaram (Kooliyangalani cut) (191 km) stretch of West Coast Canal along with its feeder routes and also stretches of National Waterway III.
2. Increase the volume of passenger traffic from the present 150 lakh/annum to 300 lakh/annum.
3. Achieve 12 per cent modal shift in inland cargo to water transport sector (both coastal shipping and IWT) from the present level of seven per cent.

### *Strategies for the 13th Five-Year Plan*

The following are the strategies to achieve the above targets in the 13th Plan period.

#### *Fairway Development*

1. Full-fledged waterway development by Inland Waterways Authority of India (for National Waterways) and Coastal Shipping and Inland Navigation Department (for State Waterways).
2. Comprehensive master plan for development.
3. Use modern technology for fairway development.
4. Adopt modern dredging techniques.

#### *Transport Infrastructure*

1. IWT terminals to be developed as cargo and passenger multimodal hubs.
2. Deploy modern cargo handling equipment at terminals.
3. Use modern navigational aids and communication systems.
4. Use hybrid vessels with green energy (solar, CNG, etc.) for SWTD and KSINC.



5. Set up vessel banks.
6. Set up adequate vessel repair facilities.

#### *Training Institutions*

1. Trained human resources to be made available for terminal and vessel operation.
2. Business and tourism promotion experts to be made available.
3. Crew training and logistic training centres/institutes to be set up.

#### *Policy Matters*

1. Constitute State Maritime Board.
2. Integration of coastal shipping with IWT.
3. Incentivise movement of cargo/passenger through water transport mode — both coastal shipping and IWT.
4. Mandatory movement of hazardous cargo and certain per cent of bulk cargo through waterway mode, wherever it exists.

#### *Funding*

1. Major projects under KIIFB funding.
2. Explore Sagarmala funding for integration of IWT and coastal shipping to achieve IWT connectivity to all major and minor ports.
3. PPP funding for terminal construction, operations, and vessel operations.
4. Subsidy scheme for building new IWT vessels.
5. Alternate source of funding through World Bank, Asian Development Bank, KINFRA, etc.
6. VGF scheme for PPP projects.

#### *Key Initiatives in the 13th Plan*

Five major projects, which need huge capital investment has been identified which are:

1. Development of Parvathy – Puthanar (0.0 to 16.045 Km) (Kovalam – Akkulam)
2. Development of 2 tunnels at Varkala.
3. Development of Canoli canal in Kozhikode town.
4. Mahe – Valapattanam reach (Ch.467.690 Km to 526.200 Km) which includes 26 Km uncut portions.
5. Neeleswaram – Bekal reach (Ch 590.530 Km to 621.600 Km) which consists of 21.07 Km uncut portion.

Considering the huge capital investments required for these 5 components, financial assistance under KIIFB is expected and these works may be executed through a special purpose vehicle.

#### *Development Activities in Remaining Portions*

1. *Akkulam – Kollam reach (chainage 16.00 km to 74.00 km).* This reach of canal is currently partially developed with a 25 km long navigable stretch. This reach can be made fully navigable by 2020. Survey works towards this have been completed and boundary stones have been planted. The remaining work in these portions will be arranged during 2017-18 and 2018-19.

2. *Kozhikode – Vadakara reach (chainage – 402.18 km to 450.08 km).* This reach is partially navigable. Administrative sanction has been obtained for two reaches. Remaining work will be arranged during 2017-18 and 2018-19. Besides that, Payyoli lock is to be renovated and its investigation will be completed during this year and work will be arranged during 2018-19 with NABARD assistance.
3. *Vadakara – Mabe reach (chainage – 450.08 km to 467.69 km).* Work for this uncut portion was arranged in 5 reaches. Additional land acquisition is required for the 1st and 5th reaches and also for approaches to bridges. Additional land acquisition proposal submitted for negotiated purchase. If land is acquired work can be completed during 2017-2019.
4. *Sulthan Canal (chainage – 555.90 km to 559.750 km).* This canal is in need of some development work and be taken up during 2017-18.
5. *Construction of crossing structures.* Bridges and footbridges over canals are to be replaced with sufficient horizontal and vertical clearances. As per National Waterway Class-3 specifications, 32 m horizontal clearance and 6m vertical clearance are required. About 240 structures do not have those clearances. However, as part of the first phase of action 16 bridges having horizontal clearance less than 14m and vertical clearance less than 4m have been identified and will be replaced between 2017 and 2020.
6. *Development of feeder and link canals.* There are 1200 km feeder/link canals connecting to the West Coast Canal with many important destinations like commercial centres, ports, and tourism spots. NATPAC has been entrusted with the task of ascertaining the requirements for development of these canals, traffic forecast and State waterway classification etc. Based on the study report, a master plan will be made for the development of feeder canals, link canals, and terminal facilities.
7. *Development of jetties and terminal facilities.* Boat Jetties for passenger transport and tourism activities and terminal facilities for cargo transportation are to be developed including toilets especially for women as has been done in most of the existing boat jetties. Based on budget provision, these facilities will also be provided.
8. *Inland navigation promotion fund.* In order to promote cargo transportation, an incentive at the rate of Rs 1 per tonne per kilometre is provided in 2016-17 and 2017-18. This will be continued till 2020-21.
9. *Providing navigation facilities.* For the purpose of safe navigation, many aids including signals, buoys etc. are to be provided and these activities are to be arranged after completion of works in each reach. Aids will be provided by 2019-20.
10. The major development in this sector is the formation of Kerala Waterways and Infrastructure Limited (KWIL) as a special purpose vehicle to facilitate timely development of inland waterways in Kerala. KKWIL is a joint venture between the Government of Kerala and Cochin International Airport Limited (CIAL). The Government of Kerala and CIAL will each hold 49 per cent equity in the venture with the remaining 2 per cent shares with others.

The Chief Minister of Kerala shall be the Chairman of the new public limited company. The Managing Directors of KWIL shall be appointed by the Board of Directors of CIAL. The KWIL Board members shall be nominated equally by Government of Kerala and CIAL and the maximum strength of the Board will be limited to 12.

KWIL will be responsible for the following activities.

1. Supervise land acquisition for the development of inland waterways, including undertaking social and environmental impact assessments as required under the Land Acquisition Act and rehabilitation of project affected people.
2. Construction of new canals, widening of existing canals, dredging work and disposal of dredged materials, de-silting bank protection to conform to National Waterways Standards to facilitate passenger and cargo movements.
3. Construction of roads, bridges, walkways, etc. to achieve connectivity to the mainland.
4. Construction, operation, and maintenance of terminal facilities, boat jetties, fuel facilities, etc. along the alignment of the waterways at designated locations.
5. Mobilisation of resources for execution of the inland waterways project.
6. Promotion of the use of existing national waterways.

## ROADS, BRIDGES, AND ROAD TRANSPORT

### *Overview*

The 13th Five-Year Plan is committed to the development of an extensive network of multimodal transport that is reliable, of good quality, affordable, and is appropriate to Kerala's unique geographical needs. Strengthening a network of roads, railways, air and sea transport, and inland waterways in Kerala will contribute to greater geographical integration, regional balance, and overall development of the State.

The sector is dominated by road transport, both in terms of its share in passenger and freight carriage, and in terms of contribution to the national economy. Between the two main modes of transport, viz. road and railways, road transport carries about 90 per cent of the total passenger traffic and 67 of freight traffic. In terms of its contribution to the economy, road transport contributes about 3.3 of Gross Value Addition (GVA) of the total transport sector's contribution of 5 per cent. Kerala is endowed with all major modes of transport. Road density (528.8 km/100 sq.km) in Kerala is highest in the country, above the national average (387 km/100 sq.km). All villages in the State are connected by all-weather roads.

Kerala has one of the largest road networks in the country. Eighty per cent of motorable traffic uses arterial and sub-arterial roads, whose component parts are national highways (constitutes 0.47 per cent of road network), State highways (constitutes 1.09 per cent of road network) and major district roads (constitutes 7.04 per cent of road network). These arterial and sub-arterial roads are under the supervision of the Public Works Department. Major part of the road networks in the State are owned by local bodies including panchayats, municipalities and corporations. The major road network of Kerala are characterised by heavy traffic.

The National Highways Authority of India (NHAI) is upgrading national highways in the State.

Roads are maintained by various agencies in Kerala. These include local self-government agencies, public works departments (roads and bridges) and national highways, municipalities, corporations, irrigation, forests, and railways. Other agencies in the road sector are Roads and Bridges Development Corporation of Kerala (RBDCK), Kerala State Transport Project (KSTP), Kerala Road Fund Board (KRFB) and Road Infrastructure Company Kerala (RICK) Limited. Design, Research, Investigations and Quality Control Board (DRIQ Board), Kerala Highway Research Institute (KHRI) and National Transportation Planning and Research Centre (NATPAC) are research organisations engaged in research and development of the road sector. Transport activities are carried out by Kerala State Road Transport Corporation (KSRTC) and Motor Vehicles Department in the State.

### *12th Five-Year Plan*

The total outlay of the 12th Plan for the State was Rs 1,02,000 crore, of which the share of transport sector was Rs 8,540 crore. An amount of Rs 4,38,942 lakh was provided as outlay of

the 12th Plan for Roads and Bridges sector and the expenditure was Rs 10,03,790.80 lakh. The outlay for road transport sector was Rs 40,093 lakh and the expenditure was Rs 29,375.62 lakh.

An analysis of expenditure shows that major share of expenditure (36.01 per cent) incurred were for the development and improvement of major district roads, (9.6 per cent), construction of rural roads and bridges by utilising NABARD funding, and 11.2 per cent incurred for the development and upgradation of roads under Kerala State Transport Project (KSTP) with assistance from the World Bank. During the Plan period expenditure exceeded 228.68 per cent in the roads and bridge sector.

The excess expenditure was mainly due to clearance of pending bills of the 11th Five-Year Plan in the 12th Plan period, spill-over of the physical progress of the works to the 12th Plan period, and sanctioning of works in excess of the budget provision.

Table 7.5 *Major development indicators of road transport in Kerala*

Particulars	Year		
	2007	2012	2016
Transport Indicators			
Population (In lakh)	327.2	335.5	340.4
Roads			
National Highways	1,524	1,542	1,781.6
State Highways PWD	4,137	4,068	4,341.6
Major District Roads PWD	24,066	26,237	27,470.4
Total PWD Roads	28,203	30,305	31,812.09
Total Roads (in km)	1,62,149		2,05,545
Motor Vehicles			
Public Transport Buses	37,076	21,457	25,270
KSRTC	4,559	5,803	5,686
Omni Buses	1,01,840	1,24,290	64,051
Taxis	1,27,873	1,75,638	1,07,567
Autorikshaws	3,68,706	5,75,763	6,10,235
Goods Vehicles	2,94,491	4,50,902	1,36,938
Cars	5,67,294	12,26,691	20,70,665
Two Wheelers	24,18,092	41,27,227	64,72,335
Total Motor Vehicles	40,25,350	68,65,539	1,01,71,813
Rail Length	1,148	1,257	1,257

The transport sector in Kerala is highly dependent on fossil fuels and is one of the major causes for air pollution, especially greenhouse gas emission, which needs to be controlled and reversed. The future transport policy must be based on sustainable transport. There are several successful initiatives in several countries that achieved a greater degree of sustainability, which can be adopted in Kerala with locally focused changes.

Although Kerala is placed better than most other States with regard to road length and density, the condition of many of these roads is poor. The main emphasis, therefore, under road development in Kerala shall be to improve and upgrade existing roads rather than construct new

roads. This requires institutional strengthening, the application of standards set by Indian Road Congress (IRC), Ministry of Road Transport and Highways (MORTH), strict quality control, and acquisition of land and adoption of self-financing revenue models suited to the State. Significant levels of investment are needed in the road sector, which is beyond the scope of State resources. Hence, it is imperative to identify private, and non-governmental agencies willing to participate in road infrastructure development.

Land acquisition for roads remains a major hurdle in Kerala, particularly given the fact that land is scarce. A sound policy should be in place for monetary compensation and/or rehabilitation of displaced people.

The State is deeply concerned about the rising number of road accidents, injuries and fatalities in recent years. It recognises that road accidents now have become a major public health issue, and the victims are mainly the poor and the vulnerable. Therefore, road safety needs to be addressed on an urgent basis. It also recognizes that regardless of jurisdiction, Central and State governments have a joint responsibility in reducing road accidents.

In order to reduce air and noise pollution from means of transport, policy interventions such as the imposition of green tax on vehicles that are more than 10 years old from the year of manufacture, incentives for using green technologies, the use of advanced vehicle technology, and promotion of fuels like LPG, CNG, or hybrid should be considered. Electric vehicle charging points and related facilities have to be planned in order to encourage their use on a large scale. Future transport development must be based on the policy of sustainable transport development. The 13th Five-Year Plan of the State is to be structured in such a way that critical gaps in the 12th Five-Year Plan are identified and addressed and the priorities and policies are in alignment with the “Sustainable Development Goals,” especially the ninth goal which deals with industry, innovation and infrastructure.

### *13th Five-Year Plan*

The aim of the 13th Five-Year plan is to develop national, coastal, and hill highways in the State, establish a core road network linking north-south corridors and state highways, road safety and adoption of innovative technology to improve functioning and productivity across multiple areas.

The 13th Plan would concentrate on, first, strengthening the physical infrastructure (of roads and other aspects of transport); secondly, restructuring the institutional framework in the transport system. Building a multimodal transport system will require coordination among various physical infrastructure providers, including the State Public Works Department, Railways, Inland Transport Authority, airports, and coastal shipping agencies.

During the 13th Plan, the Government of Kerala will develop and expand various highways in the State, including national highways, state highways, hill highways and coastal highways as per national standards. NH 47 and NH 17 will be converted into four-lane roads. The strengthening of east-west corridors across the State is another important objective. Following the vision of an

environmentally sustainable Kerala, we emphasise building green corridors, and the promotion of green logistics and green vehicles (including fleet renovation programmes adopting innovative technologies). It is also important to develop facilities for non-motorised transport in cities, including skywalks, footbridges and allied facilities.

Two major transport infrastructure projects that will come into effect during the 13th Plan are the Kochi Metro and the Kannur airport. In the long run the State must attempt to shift traffic from road to rail across the length of Kerala.

Ensuring road safety is of the utmost importance while devising transport policies for the State. Injuries and fatalities on account of road accidents have been rising at an alarming rate in Kerala. The State intends to launch a number of steps to tackle this problem, including the installation of speed cameras and new measures for law enforcement and road safety auditing.

### *Targets for the 13th Five-Year Plan*

#### *Public Works Department (Roads and Bridges)*

The road density in Kerala is roughly three times the national average. The most important goals now are to take up works involving road improvements, repair and maintenance of existing roads, relaying and upgradation.

1. All highways and district roads will be modernized as bitumen macadam and bitumen concrete roads.
2. Special emphasis on completion of bypasses and roads over bridges (RoBs).
3. Works with an estimated cost of Rs 5,628 crore (for 182 road projects) and Rs 2,557 crore (for 69 bridge and RoB projects) are to be taken up with the financial assistance of KIIFB. These projects include development with maintenance contracts.
4. Natural Rubber Modified Bitumen (NRMB) will be used for surface bituminous layers.
5. Development and completion of the proposed hill highway.
6. Development and completion of coastal highway.
7. Procurement of mobile road repairing unit.
8. Maintenance contract to be included while tendering works of main roads.
9. To speed up land acquisition process, rehabilitation package will be introduced.
10. Road safety will be given prime importance in road projects. Junction improvement works and construction of footpaths will be taken up wherever required. Road safety audit will be conducted for all major roads by accredited agencies and an integrated program for pathways for cyclists and pedestrians to be worked out.
11. More drains will be constructed to protect roads.
12. Second phase of PRICE software for, submission of DPR to Government, computerized bill preparation (e-bill), e-measurement books and progress monitoring.
13. Development and Improvement of 9,000 km of roads (3,000 km SH and 6,000 km MDR). Priority will be given for surfacing with bitumen macadam and bitumen concrete.
14. A core road network will be developed connecting major roads, railway stations, bus terminals, ports, industrial areas, east-west connectivity etc. in each district.

15. The upkeep of roads and bridges using latest technologies in road maintenance will be taken up as per the new Road and Bridges Maintenance Policy.
16. City road improvement will be taken up for more cities and major towns as done for Thiruvananthapuram.
17. Propose to construct 60 bridges during the Plan period. Pre-stressing procedure will be used in the construction of bridges. Instead of conventional standard design, aesthetic design will be preferred.
18. Inspection of all the existing bridges has been carried out. 165 bridges are to be reconstructed, 200 to be rehabilitated, and 1,281 require urgent routine maintenance. Remedial measures will be taken to attend all defects and proper maintenance.
19. Construction of at least 100 km of roads per year using waste shredded plastic for surfacing/resurfacing.

### *Road Transport*

*Kerala State Road Transport Corporation.* KSRTC is looking forward to a radical change, with the objective of providing better amenities to the travelling public and improve operational efficiency. KSRTC plays a key role in public transport in Kerala. The State will take various steps to rejuvenate KSRTC by focusing on human resources, operational and technical issues, and efficient utilisation of infrastructure and resources.

1. Renovation and reconstruction of workshops, buildings and shelters of KSRTC.
2. Reduction in number of days of vehicle docking for repair and number of off-road buses through modernization including engine shop modernization, installation of wheel alignment machines in each district, air compressors, hydraulic lifts, construction of effluent treatment plants, paint booths etc.
3. To improve the productivity of KSRTC, proper training for drivers, technical personnel and officers will be provided for better utilization of super class services.
4. Introduction of CNG and electric buses and purchase of multi-axle vehicles for the operation of super class services within and inter State.
5. Technology upgradation including the use of electronic ticketing machine (ETM) and global positioning system (GPS).

*Motor vehicles department.* The Motor Vehicles Department envisions complete road safety and transparency in all the services rendered, to enforce Motor Vehicles Act and Rules effectively and to enhance tax revenue collection. The department proposes to carry forward the modernization and development activities undertaken during the previous Plans after taking into account the recommendations of the Working Group on Road and Road Transport and the relevant state and national policies.

1. Road Transport Safety Measures. Installation of speed cameras, signal violation dictation cameras, purchase of interceptors, GPS based vehicle tracking systems, modernization of fleet, Third Eye enforcement project and developing Road Safety Data Control Centre Training.
2. Implementation of e-governance – programs intended to improve the quality of service rendered by the department.



3. Establishment of vehicle stations cum driver testing tracks on PPP mode. The PPP mode is yet to be finalised.
4. Set up Model Inspection and Certification Centre sanctioned by Government of India. The project can be taken up on PPP mode.
5. Establishment of MVD unit offices to make the enforcement stronger and cater the road safety services to remote villages of Kerala.

#### *Other Transport*

*Light metro rail projects at Thiruvananthapuram and Kozhikode.* The Light Metro Rail Project is a Mass Rapid Transit System (MRTS) proposed to be implemented in Thiruvananthapuram and Kozhikode by a special purpose vehicle Kerala Rapid Transit Corporation Limited (KRTL). The detailed project report (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 cost of the project is Rs 4,219 crore for Thiruvananthapuram and Rs 2,509 crore for Kozhikode, totalling Rs 6,728 crore (including central taxes and land cost).

The revised DPR, based on the new Metro Policy of the central government is under review of the Mass Rapid Transit System of the Kerala Government.

*Water metro project.* Kochi Metro Rail Corporation (KMRL) proposes to implement the Kochi Water Metro Project at a cost of Rs 741.28 crore with the financial assistance of a German Financial Institution (KfW), with the state funding of Rs 103 crore. This is implemented as a part of the Unified Metropolitan Transport Authority (UMTA) project in Kochi. The project envisages the development of 76 km of inland canals in Kochi city.

## PORTS AND LIGHT HOUSES

### *Overview*

Kerala has a coastline of 590 kilometers. Besides the Port of Kochi (a major port governed by Major Port Trusts Act, 1963), there are 17 minor ports in Kerala. Of the 17 minor ports in Kerala, four are considered intermediate ports based on berthing, cargo handling and storage facilities available there. These are Vizhinjam, Beypore, Azheekal and Kollam ports. The other 13 minor ports in the State are Neendakara, Alappuzha, Valiyathura, Kayamkulam, Manakkodam, Munambam, Ponnani, Vadakara, Thalasserry, Manjeswaram, Neeleswaram, Kannur, and Kasaragod.

The major port of Kochi is under the Ministry of Shipping, Government of India, while the intermediate and minor ports are under the administration of the Government of Kerala. Most of the minor and intermediate ports in the State are seasonal, with insufficient infrastructure to handle even medium and small-sized vessels throughout the year. The Government of Kerala has decided to develop five non-major ports through public-private partnership (PPP) mode. These ports are Azheekal, Beypore, Ponnani, Alappuzha and Kollam. Apart from this, a major port, Vizhinjam Deepwater International Container Transshipment Terminal is under construction.

The State Government is committed to the completion of Vizhinjam International Ship Terminal. At the same time, steps will be taken to develop small and intermediate ports across the State to improve water transport in Kerala, particularly for the movement of cargo traffic.

The agencies involved in port development activities in the State are Department of Ports, Harbour Engineering Department, Hydrographic Survey Wing, and Kerala State Maritime Development Corporation Limited.

### *12th Five-Year Plan*

The year-wise budgeted outlay and expenditure in the 12th Five-Year Plan are given in Table 7.6

Table 7.6 *Year-wise budgeted outlay and expenditure of ports and light houses in the 12th Five-Year Plan* in Rs Lakh

Sector	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp	Budgeted Outlay	Exp
Port	24,753	26,223	6,203	14,449.6	8,123	4,599.6	10,049	19,385.3	10,721	9,578.6	59,840	74,236.1
Harbour Engineering	2,190	447.48	850	592.83	930	320.18	1,370	710.53	1,370	382.81	6,710	24,53.83
Hydrographic Survey Wing	816	130.7	816	446.14	816	357.7	510	350.64	510	220.21	3,468	1,505.39
Total	27,759	26,801.2	7,869	15,488.6	9,869	5,277.5	11,929	20,446.5	12,601	10,181.6	70,018	78,195.32

Exp = Expenditure

The 12th Five-Year Plan had focused on the development of port infrastructure to enable it to handle all types of cargo and passenger traffic. The 12th Plan had increased the outlay by 36.07 per cent over the 11th Plan outlay. Numerous schemes were delayed and many were dropped due to local protests. Delay in procedural formalities like administrative sanctions and letter of credit had hindered the timely completion of the projects. In spite of the above drawbacks, the 12th Plan was successful in developing the infrastructural facilities of Kerala's ports, giving a boost to port activities in Kerala. Still, the lack of appropriate and geared vessels, lack of skilled labour, lack of advanced customs, immigration and plant quarantine facilities, cost recovery charges of customs, high import duty on equipment, high competition from road transportation, lack of end to end transportation services and scarcity of return cargo are plaguing the sector. Appropriate government interventions and policy initiatives to solve these issues in the 13th Five-Year Plan are critical for the realisation of the full potential of the sector.

### *13th Five-Year Plan*

The 13th Five-Year plan envisages a multi-point strategy for the development of the sector aimed at increasing passenger and cargo traffic, promoting tourism by developing ports, developing coastal shipping, hinterland, and coastal community. Besides, the Plan also proposes steps to increase employment opportunities and enhance competitiveness of ports in the State not only nationally, but also globally.

Appropriate government interventions and policy initiatives for resolving the issues faced by the sector in the 13th Five-Year Plan remains critical for the realization of the full potential of the sector. The approach to the 13th Plan is as follows:

1. Completion of the Vizhinjam International Ship Terminal.
2. Develop large number of small and intermediate ports across the State.
3. Improve water transport in Kerala, particularly for cargo traffic by building a strong network of ports including Vizhinjam, Kochi, Ponnani, Beypore, Azhikode, and Bekal.
4. Develop coastal shipping in the State keeping in mind an Integrated Transport Policy framework through better co-ordination among different modes of transportation.
5. Make coastal shipping a sustainable green and viable transport alternative considering requirements and the potential of inland transport.
6. Shift 20 per cent cargo from roads to waterways by developing an integrated coastal and inland water transport system.
7. Sustainable use of all possible maritime resources for ensuring availability of cargo for viable coastal trade through port led industrial development.
8. Initiate a coastal transportation hub based regional development plan.
9. After considering the specific nature of each port, formulate a development mechanism in each port under green initiatives and adopt a focused approach to develop identified ports for shipping and passenger transport.
10. Tourism related initiatives through the development of ports.

### *Key Initiatives in the 13th Five-Year Plan*

1. *Development of all-weather port at Ponnani.* The port is being developed as a PPP project by M/s Malabar Ports Private Limited. The infrastructure development is planned for 350 acres of reclaimed land. The total estimated cost of the project is Rs 763 crore. Three berths, each for general cargo, dry bulk and containers, will be constructed in the first phase. The installed capacity by the completion of the 2 phases will be 20 million tonnes per annum. The rail connectivity to the port will cost Rs 100 crore. The operator was selected through the Swiss Challenge Method. The port will be made operational within 3 years.
2. *Azhikkal Outer Harbour development.* Government of Kerala has resolved to develop Azhikkal Port as a feeder port in Northern Kerala. The port will be developed in the first phase at an estimated cost of Rs 500 crore through a dedicated special purpose vehicle (SPV), wholly under the Government of Kerala. The Department is pursuing the formation of the SPV, 'Azhikkal Port Limited', under Companies Act 2013 with an authorised capital of Rs 100 crore and paid up capital of Rs 25 crore. The feeder port will be developed in 2 phases. The first phase of the port is expected to be commissioned by early 2020.
3. *Alappuzha Marina.* Alappuzha port is known for its cargo operation through its pier in the past. As the mode of operation has changed through container transportation, no operation is done through this port at present. The department has made a proposal to make a Marina port with public private participation. The preliminary master plan has been cleared by State Environment Impact Assessment Authority (SEIAA). Further proposals were made by the Port Department for the development of this port at an estimated cost of Rs 50 crore. Government of Kerala had sanctioned Rs 50 crore through Kerala Infrastructure Investment Fund Board (KIIFB) for the development of Marina at Alappuzha. Kerala Industrial and Technical Consultancy Organisation (KITCO) is entrusted to complete the Environmental Impact Assessment (EIA) study for the proposed project.
4. *Development of Kollam port.*
  1. *Development of multipurpose berth at Kollam port.* The project with an estimated cost of Rs 18.5 crore has already commenced and is expected to be completed by the end of 2018. The berth is one of the components included in the second phase of the development of Kollam Port. The completion of the berth will pave the way for 10.5 m to 11 m of draft vessel to Kollam Port. The berth will cost Rs 14.2 crore and the balance amount of Rs 4.3 crore is for the development of ancillary facilities. The proposed berth is of size 175 x 21 m<sup>2</sup> and will facilitate vessels of 185 m and 34,000 DWT.

The project has already commenced and the work is under way. The Harbour Engineering Department is undertaking the work and almost Rs 6.6 crore has already been spent on the project from the State Government funds. With the completion of this berth, a component of the second phase development of the Port, the capacity of Kollam Port will increase to 7 million tonnes per annum as per a report by Deloitte.

2. *Establishment of cement terminal at Kollam port.* The Government has sanctioned setting up of a cement terminal with an annual capacity of five lakh tonnes. Approximately 6 acres of land is earmarked for the project. The project to be implemented on a build

operate transfer model will offer Rs 2.5 lakh per annum as lease rent. The total estimated capital expenditure for the project is approximately Rs 24 crore.

5. *Development of 200 m berth at Beypore.* Beypore Port is handling an average of one lakh tonnes cargo, which includes mainly perishable goods and construction materials to Lakshadweep Islands. Due to the inadequacy of berthing space the waiting time for vessels is considerably high. The expected expenditure for developing the port is Rs 40 crore.
6. *Azhikkal port.* Development of cement terminal, multi-purpose terminal and container cum cargo terminal and shipyard.
7. *Kodungallur port.* Construction of Wharf.
8. *Vizhinjam port.* Extension of seaward wharf and strengthening of leeward.
9. *Dredging of port channel and basin.* For facilitating the movement of vessels and cater to the development of coastal shipping through non-major ports in Kerala, capital dredging will be undertaken at various ports to increase the depth by 10 m at Kollam, 5 m at Beypore, and 5 m at Azhikkal.
10. *Coastal shipping and coastal tourism.* The department will explore the possibilities of conducting shipping services by a chartered vessel through Kerala State Maritime Development Corporation Ltd. The Department will take steps to roll out facilities for transporting hazardous goods through ports. KSINC is entrusted with the consultancy. Water sports facility will be established at feasible locations in non-major ports.
11. *KIV Rules implementation.* The department will take steps to bring all inland vessels under the ambit of KIV Rules 2010 and ensure strict compliance of the provisions therein through a special task force. The Dry Dock at Alappuzha will be completed in PPP model. Arrangements will be made to ensure non-polluted sewage and septage disposal, procure inspection boats for the registering authority and create infrastructures like dry dock, jetties and vessels through private investments. Adequate technical staff will be appointed and the joint implementation team comprising revenue, police and port department will be formed at Alappuzha and Kottayam district. Jetties will be constructed exclusively to berth vessels and keep the vessels under security.
12. *Kerala Maritime Institutes.* The Department is developing two campuses of Kerala Maritime Institute under the Kerala Maritime Society at Kodungallur and Neendakara. Kodungallur campus is being developed at the cost of Rs 9.96 crore and Neendakara at the cost of Rs 36 crore. The Department, through a society under a separate establishment under Kerala Maritime Board, will run the institutes and acquire necessary affiliations from universities and organizations like Director General of Shipping and Indian Maritime University to launch on-shore and off-shore courses. Accreditation from top ranking national and international universities and institutes to offer quality training and research facilities and develop institutes to centers of excellence and satellite campuses of organisations of international repute like the World Maritime University will also be operationalised.

## *DRINKING WATER AND SEWERAGE*

### *Overview*

In keeping with the Sustainable Development Goal Number 6, that is “to ensure access to water and sanitation for all,” the policy of the 13th Five-Year Plan with regard to drinking water and sanitation will be to take into account “the entire water usage and sanitation cycle.”

The policy of the State towards drinking water and sanitation is a part of the government’s rights-based approach to development.

The State Government will draw up a road map to provide the entire population of the State with an assured supply of drinking water. Kerala also needs projects to meet urban water demand, especially in water-scarce cities. As more than 60 per cent of the people in Kerala depend on well water, special attention will be paid to the protection of wells. Appropriate measures to diminish distributional losses will have to be implemented in different water-supply schemes

The two main agencies involved in drinking water management in Kerala are the Kerala Water Authority and Kerala Rural Water Supply Agency (JALANIDHI).

The Kerala Water Authority was established on April 1, 1984 as an autonomous body of Government of Kerala by converting the erstwhile Public Health Engineering Department, constituted under the Kerala Water Supply and Sewerage Act, with a mandate for developing and regulating water supply and waste water collection and disposal. It has three regional offices, 15 circles, 51 divisions, 136 sub-divisions, and 293 sections spread across Kerala.

In 1999, Kerala Rural Water Supply and Sanitation Agency (KRWSA) was registered as a Society under Travancore Cochin Literary and Scientific Charitable Society Registration Act 1955. KRWSA is a special purpose vehicle (SPV), an institutional model set up to implement projects in selected grama panchayats (GPs) in drinking water and sanitation sector. The paradigm shift in implementation of the project is the role of the Government from provider to facilitator adopting "Demand-Responsive Approach" through participatory process, ensuring financial viability and sustainability of rural water supply services. The agency implemented projects in 112 GPs from 2000 to 2008 (under the JALANIDHI banner) and redefined water and sanitation services in rural households. It established an alternate service delivery model which is conceptualised, planned, and implemented by the beneficiaries as against the "top-down approach." Currently, the schemes are owned, operated, and maintained by beneficiary groups (BGs), in which 3 of the 7 executive members have to be women and in all treasurers are women.

Kerala Water Authority now provides water supply to nearly 54 per cent people from the existing 1,076 Water Supply Schemes through 19.4 lakh connections and 2.02 lakh public taps. The achievements already attained in the rural and urban water supply sector are through various water supply schemes implemented with the help of Central and State governments, and

financial institutions. Presently, KWA is distributing treated water to 502 panchayaths out of 941 panchayaths, 69 municipalities out of 87 municipalities and 6 corporations. Currently, Kerala Water Authority is supplying 2,644 million litres of treated water. There are projects worth Rs 5,782 crore under progress. When these projects are completed additional 1,328.2 million litre water will be available for distribution. JALANIDHI PHASE I project had been implemented in 112 GPs with 3,710 schemes, benefitting 1,91,865 households (HHs) with improved access to drinking water. Out of the total, 1,91,865 beneficiary households covered in the project, 1,88,115 have been provided with service in the premise and 3,750 households are benefitted from public taps. More than 60 per cent of the schemes are functioning satisfactorily by community-based management. Now in the second phase of the project, JALANIDHI II, Kerala Rural Water Supply Agency (KRWSA) is implementing projects in 115 GPs at a total project cost of Rs 1,358.8 crore.

#### *12th Five-Year Plan*

The total outlay for the 12th Five-Year Plan was Rs 4,276.3 crore of which Rs 3,258.8 crore was the expenditure. Out of the total outlay, Rs 3,152.06 crore and Rs 1,124.28 crore were the outlay for the KWA and KRWSA respectively.



Table 7.7 *Year-wise budgeted outlay and expenditure of drinking water and sewerage sector in the 12th Five-Year Plan* in Rs crore

Agency	2012-13		2013-14		2014-15		2015-16		2016-17		12th FYP	
	Budgeted Outlay	Expen diture	Budgeted Outlay	Expen diture	Budgeted Outlay	Expen diture	Budgeted Outlay	Expen diture	Budgeted Outlay	Expendi ture	Budgeted Outlay	Expenditure
KWA	629.7	572.1	649.3	484.7	568.8	344.3	631.8	497.7	672.5	465	3,152.1	2,363.8 (75 %)
KRWSA	126.3	50	199.7	105.8	205.2	150	268.6	268.6	324.4	320.6	1,124.3	895 (79.6 %)
Total	756	622.1	849	590.5	774	494.3	900.4	766.4	996.9	785.6	4,276.3	3,258.8 (76.2%)

### *13th Five-Year Plan*

The 13th Five-Year Plan proposes to ensure uninterrupted drinking water to the entire population of the State, protect water sources especially wells, reduce distribution loss and address urban water needs in water scarce areas.

1. Ultimate objective is to provide treated water to all households. It is intended to cover all the panchayaths and municipalities with treated water, with funding through KIIIFB/AMRUT/NABARD/ external aid, to execute projects to achieve the intended coverage.
2. Time bound implementation of the projects without any further delay. It is proposed to implement 24x7 water supply in three major cities, Thiruvananthapuram, Kochi and Kozhikode, with the assistance of ADB. Kerala Water Authority will also associate with Smart City scheme for this project.
3. It is proposed to increase the access of rural communities to improved and sustainable water supply and sanitation services in the State, using a decentralised, demand-responsive approach, an alternate service delivery to rural public. It is intended to take up 61 GPs and provide drinking water to whole population through the participation of rural public, conduct water quality (WQ) testing and establish monitoring mechanism in all JALANIDHI GPs on a periodical basis. Supports for community managed scheme are required for sustaining the investments made in the sector.

### *Key Initiatives in 13th Plan*

#### *KWA*

1. *Completion of ongoing National Rural Drinking Water Program (NRDWP).* As on April 1, 2016, there were 188 ongoing projects under NRDWP. Government of India has conveyed that central assistance will not be available for the projects where implementation has started but the physical progress is less than 25 per cent and has directed to complete such projects utilizing State funds. Hence, if adequate financial support is not ensured these projects will have to be dropped midway which will in turn result in unfruitful expenditure. But in order to complete the 84 projects, which have less than 25 per cent physical progress, Rs 1,011.61 crore is required without considering the tender excess, cost escalation etc. These schemes will benefit 25 lakh people when commissioned. It is therefore proposed to partially fund these schemes from the Plan.
2. *Information Education and Communication (IEC).* The scheme is to spread awareness about water conservation and sustainable utilisation of water without misuse among public through visual and print media.
3. *Quality surveillance.* One of the areas where KWA is found wanting in the past is quality assurance, both in asset creation and service delivery. The lack of supervision of construction activities has resulted in creation of mediocre assets even in the case of comparatively new schemes. Therefore, the quality monitoring cell needs to be strengthened and made more efficient. An independent water quality monitoring mechanism for monitoring water quality of all sector institutions is also mooted. A quality control mechanism exclusively for new construction activities is to be set up to ensure independent quality assurance on the field. The activities proposed include

1. Construction of new building of State Referral Institute for Water Quality at Nettoor. The facilities at Advanced Water Quality Analysis Laboratory will include an atomic absorption spectrophotometer with graphite furnace, a multi parameter tester to analyse metals and ions, an ion meter with multi electrodes to analyse the ion content, water purifier, etc.
2. Set up new district and regional labs in Thrissur, Kozhikode, and Thiruvananthapuram as the existing labs are inadequate.
3. Special quality drive in the construction activities by setting up regional material testing laboratories and employing third party quality surveillance agencies.
4. *Source improvement.* Due to climate change, drought has become a frequent phenomenon. Strengthening of streams and increasing storage capacity is a means of ensuring sufficient water in the sources. Hence check dams and regulators are essential in all the major sources for ensuring maximum storage of water.

#### *Kerala Rural Water Supply Agency (KRWSA)*

*Sustainability support to community managed water supply schemes.* KRWSA has implemented 3,710 schemes in Phase I of the project covering 112 GPs. Once the schemes are commissioned, the assets created would be handed over to the BGs for operation and maintenance). Neither the Government of Kerala nor the Local Self Government would render any post exit support. A recent performance assessment conducted by the Comptroller and Auditor General (CAG) found that nearly 35 per cent of the schemes have become partially or fully defunct due to technical, social, or financial issues after handing over to the BGs in 2008.

The key recommendations of the CAG report, in context of the continued sustainability of the schemes, are:

1. Government must ensure that KRWSA initiates measures to revive water supply schemes (WSS), which have gone defunct, to mitigate hardships faced by the beneficiaries and ensure strict compliance with provisions of the technical manual to prevent schemes becoming defunct in the future.
2. Government may ensure that KRWSA offers post exit support to BGs and consider extending financial and technical support to BGs to ensure that the WSS do not further deteriorate and potable water is available to the beneficiaries. Government should also urge the GPs to involve in post-exit management of schemes.

Under Phase II of the project, nearly 2,200 schemes are under implementation and are expected to complete by December 31, 2018. By then, additional 120 GPs will have schemes managed by the community. This makes all the more critical for a post implementation support to the community managed schemes for the continued sustainability of the investments and schemes.

Hence the following activities are proposed under the new scheme.

1. KRWSA intends to issue uniform operation and maintenance guidelines to JALANIDHI –Phase I and Phase II schemes to ensure joint ownership of BG and GP over the schemes. This will include schemes implemented in Phase I also.

2. The GP will be given capacity building training to monitor and support the BGs in post implementation.
3. The role of supporting organisation (SO) will be changed from providing technical assistance from project implementation to operation and management of the schemes. GPs and BGs can hire the SOs either as a competent and competitive operation and management agency or to develop local rural population to monitor sustainability and to bring in cost effective operation and management.
4. KRWSA will hire competent local technical and social institutions to provide solutions to technical snags and resolve challenging community issues that can hamper the smooth functioning of the schemes.
5. The State level Grievance Redress Monitoring (GRM) Cell will be the apex body to look in to the sustainability issues. Either at the regional or district, level the cell will be constituted to look into these issues with power to hire service of the institutes or competent professionals on need basis.
6. The GPs/BGs will have to share the expenses above Rs 25,000/-required for capital replacement of components to maintain the desired service delivery.
7. KRWSA through LSG will monitor the operation and management status of the schemes on a monthly basis and will furnish these data to Water Resources Department. To support the capacity of BGs and GPs for cost effective operations and management, 10 per cent of the Plan funds will be set aside.
8. Every Plan year in the 13th Plan, KRWSA intends to install Solar Water Pumps in one tribal GP each in Idukki and Wayanad districts to reduce the operational and management burden of tribal beneficiary groups for which funds from tribal and SC department will also be amalgamated to bridge the balance capital cost.

### *Major Ongoing Programmes*

*NABARD assisted rural water supply scheme.* The department is implementing projects with financial assistance from NABARD to accelerate the provision of potable drinking water to villages and augment the existing rural water supply schemes. Various projects sanctioned from NABARD under various tranches under RIDF have been able to achieve tremendous success towards providing potable drinking water to a large number of villages in the districts. As on April, 1 2017, there were 39 ongoing projects under NABARD. Out of 36 projects that have been sanctioned under RIDF XIV, 29 schemes were fully completed. The financial assistance from NABARD has been discontinued for RIDF XIV and further expenditure has to be borne by State. One scheme mainly WSS to Mattini in Kannur District was sanctioned under Tranche XVI could not be started due to non-availability of land from panchayath and hence the scheme has been dropped. As per the present status, under XIV, XVII, XVIII, XIX, XX, and XXII tranche 36, 2, 7, 8, 9, and 6 schemes have been sanctioned respectively. Tranche IX and Tranche XIV are already closed; hence further expenditure to these tranches have to be booked in State Plan. Rs 5,200 Lakh is required to complete all these schemes. In the absence of NRDWP funds, NABARD is one of the major sources for funding new rural schemes. It is proposed to take up schemes for 5 GPs every year under NABARD funding to cover a population of about 6 lakh in the Plan period.

*Optimisation of production and transmission.* Under optimisation of production and transmission the following schemes are envisaged.

1. *Renovation and capacity enhancement of old water treatment plants.* More attention will be given to enhance all old water supply schemes to reduce the distribution losses and to improve performance as per the IS standards.
2. *Replacement of old pipes of existing water supply schemes.* Gross value of assets of Kerala Water Authority is pipe lines and these pipe lines are more than 15 years old and the chances of breakage of the pipes are very high. The pipes are worn out and damaged, resulting in frequent leakages of pumping mains and distribution systems. One of the main challenges faced by Kerala Water Authority is interruption in water supply due to frequent breakage of pipes and the heavy losses due to it. To avoid such an obstacle, at least 10 per cent of these pipes need to be replaced every year to ensure smooth and proper supply of drinking water to the public as well as reduces loss to Kerala Water Authority.
3. *Energy conservation measures and rehabilitation of obsolete pumps and motors and other electrical installations.* KWA spends nearly Rs 240 crore a year as power charges. Various studies show that the organisation has a potential to save 20 per cent energy. Annual power charges and the power consumption of KWA can be reduced by installing static capacitors, replacing old and inefficient electrical and mechanical machineries, and converting deemed connections to high tension connections. KWA is facing issues such as power factor penalty, excessive contract demand, deemed high tension connections, and less efficient machineries which directly and indirectly become the reasons for higher energy cost.

*Sewerage schemes of Kerala Water Authority.*

1. *Thiruvananthapuram Sewerage Scheme (TSS).* The TSS area is divided into seven blocks (A, B, C, D, E, F, and G blocks) for the convenience of execution of sewerage system. The design period of TSS is already over as the A, B, C blocks were completed long ago but D and E blocks were only partially commissioned. The targets mainly under the scheme are to extend the sewerage system to partially commissioned D and E blocks of Trivandrum Sewerage Scheme, reconstruct the dilapidated man holes, extend sewer lines, replace undersized, old and damaged sewer lines, pumps and motors, and rehabilitate entire sewer system of Medical College Campus.

The existing Sewerage Treatment Plant (STP) at Muttathara, Thiruvananthapuram receives only one- third of its capacity. More sewer lines are to be laid to utilise the full capacity for STP.

2. *Guruvayoor drainage scheme.* Three million litre per day (MLD) sewerage treatment plant (STP) under Guruvayoor Drainage Scheme was fully completed except some finishing works and mechanical works. It required Rs 10 crore to lay sewer lines by horizontal direct drilling (HDD) method and to procure various types of sewer cleaning equipment. It is proposed to lay around 50 km of new sewer lines, rehabilitate the existing lines, and complete Guruvayoor drainage scheme in this Plan period.

## HOUSING

### Overview

Secure shelter is a basic human need and adequate housing is a human right. Every individual has the right to a safe, secure and decent housing. In general, Kerala is ahead of other States in coverage of housing and quality of housing. The State will take a decisive step forward in the 13th Plan with the implementation of the Total Housing Mission. The “Livelihood, Inclusion, and Financial Empowerment” (LIFE) Mission will focus on households that are homeless or landless.

The ultimate objective of housing policy in Kerala is to provide comfortable, safe, and dignified housing to all people living in the State.

The declared objectives of the Housing Mission, which, as noted, to be implemented in the 13th Five-Year Plan period, will include improving land availability and utilise land productively, including by means of high-rise options; capital productivity through the use of new technology and skills, to consider social housing towers to address issues of urban sprawl, attempt innovative methods of resource mobilisation, focussing on issues of access to housing for the poor and socially excluded, and to link housing policy with the creation of new means of livelihood.

More than 20 major agencies implement housing programmes in the State. These include public sector undertakings, government departments and agencies and non-governmental organisations like Kerala State Housing Board, Kerala State Development Corporation for SC/ST, Kerala State Nirmithi Kendra (KESNIK), Kudumbasree, Rural Development Department, Scheduled Caste Department, Scheduled Tribes Department, Fisheries Department, Sainik Welfare, Housing Commissionerate, Kerala State Co-operative Housing Federation, COSTFORD, and Habitat Technology Group.

Table 7.8 *Houses constructed for economically weaker sections during 2011-16 in Kerala*

Department	Number of houses constructed					Total 2011-2016
	2011-12	2012-13	2013-14	2014-15	2015-16	
Fisheries Department	0	2,906	3,667	3,123	4,998	14,694
Sainik Welfare Directorate	3	1	10	3	4	21
Labour Department	318	36	25	12		391
Minority Welfare Department	0	0	950	749	798	2,497
Housing Department	1,898	636	560	63	0	3,157
Local Governments	3,200	3,251	3,589	1,548	1,690	13,278
Rural Development Commissionerate	43,255	35,010	47,041	50,264	49,551	2,25,121
Urban Affairs Department	1,935	2,201	4,916	6,514	1,983	17,549
Scheduled Caste Department	3,631	5,096	6,658	4,640	5,299	25,324
Scheduled Tribe Department	985	554	672	392	92	2,695
Panchayat Directorate	34,938	23,497	22,274	25,006	18,772	1,24,487
Total	90,163	73,188	90,362	92,314	83,187	4,29,214

Source Office of the Housing Commissioner

Data from the annual Plan for 2017-18 on schemes related to housing sector reveal that 13 departments are undertaking construction of houses, the largest allocations being in the Local Self Government Department (carried out by the Commissionerate of Rural Development and Kudumbashree leveraging the centrally sponsored scheme PMAY for Rural and Urban areas) followed by the SC Department, Fisheries and ST Department.

#### *12th Five-Year Plan*

In the 12th Plan period, total outlay for housing sector was Rs 32,539 lakh, of which Rs 19,326.27 lakh was spent. Major allocation was to Kerala State Housing Board i.e., Rs 17,342 lakh and State Nirmithi Kendra Rs 3,757 lakh. The Department-wise and year wise outlay and expenditure in the 12th Five-Year Plan period is given below.

Table 7.9 *Department-wise and year-wise budgeted outlay and expenditure for housing sector in the 12th Five Year Plan* in Rs lakh

Department	2012-13		2013-14		2014-15		2015-16		2016-17		Total Outlay	Total Expenditure*
	BO	E*	BO	E	BO	E*	BO	E*	BO	E		
Kerala State Housing Board	3,052	838.6 (27.48)	2,865	2,179.3 (76.1)	3,259	0	3,881	2,678.6 (69)	4,285	3,198 (74.3)	1,7342	8,894.5 (51.3)
Technical Cell of Housing		25	259	100 (38.6)	270	900 (333.3)	270	0	170	0	969	1,025 (105.8)
Nirmithi Kendra	928	650 (70)	1,020	170 (16.7)	993	140 (14.1)	439	14 (3.2)	377	359.7 (95.4)	3,757	1,333.7 (35.5)
Kerala Police Housing and Construction Corporation	900	900 (100)	996	996 (100)	1,040	950 (91.4)	1,100	0	1,100	0	5,136	2,846 (55.4)
Kerala State Cooperative Housing Federation	350	350 (100)	400	400 (100)	410	410 (100)	410	410 (100)	410	410 (100)	1,980	1,980 (100)
Public Works Department	570	589.7 (103.5)	610	174.7 (28.6)	625	332.2 (53.2)	700	852.3 (121.8)	750	532.7 (71)	3,255	2,481.6 (76.2)
Kerala Govt. Secretariat Staff Housing Co-operative Society			30	30 (100)	30	0					60	30 (50)
Support Scheme to housing Co-operative Societies of Govt. Employees			20	0	20	0					40	0
Others				100				241.5		394		735.5
Total	5,800	3,353.3	6,200	4,149.9	6,647	2,732.2	6,800	4,196.3	7,092	4,894.5	32,539	19,326.3 (59.4)

\* Expenditure includes Supplementary Demand for Grants

Note BO = Budgeted Outlay; E = Expenditure; Numbers in parenthesis are in per cent



### *13th Five-Year Plan*

A safe, dignified and affordable housing to all is the strategy for the 13th Plan. This may be achieved by innovative methods of resource mobilisation, focusing on issues of access to housing for poor and socially excluded, utilise land productively, including by means of high rise options, improve capital productivity using new technology and skills, position social housing towers strategically to address issues of urban sprawl and link housing policy with the creation of new means of livelihood.

#### *New Initiatives during 2017-18*

*Aswas rental housing scheme near medical colleges-KSHB.* This scheme was declared in the Governor's speech and Budget speech 2017-18 for providing affordable rental accommodation near Medical Colleges to patients and their bystanders.

*Capacity building of housing (Technical cell) departmental staff.* This scheme is to facilitate co-ordination of data collected on homeless people and review the various housing schemes by various departments, with different subsidies and different unit costs. It includes up gradation of website for online submission of data.

#### *New Initiatives in the 13th Five-Year Plan*

##### *Kerala State Housing Board*

1. *Rental Housing Scheme using Prefab Technology (GFRG).* In the 13th Five-Year Plan, KSHB proposes to implement a new rental housing scheme using Prefab technology with GFRG (Glass Fiber Reinforced Gypsum) panels consisting of 48 two bed room flats in Board's own land at Kozhikode.
2. *All India Service Officers Quarters in Jagathy, Thiruvananthapuram.* The scheme is formulated as per the declaration in the State Budget 2017-18 for constructing 24 flats for All India Service Officers.
3. *Completion of Saphalyam Housing Scheme.* Saphalyam Housing Scheme was implemented in the 12th Plan for constructing houses (flats) for the landless EWS and BPL category by providing government subsidy @ Rs 2 lakh per flat. Due to the non-availability of loan from HUDCO and contribution from Panchayats, KSHB could not complete the projects under Saphalyam Housing Scheme. Additional funds have been requested for the completion of Saphalyam Housing Scheme.

KSHB proposes to continue their ongoing projects like revenue tower, mini civil station, revenue tower at Haripad, rehabilitation project at Bangladesh Colony, Kozhikode - Phase II etc with budgetary support in the 13th Plan.

##### *Nirmithi Kendra*

1. *Making of self-sustainable green habitat.* KESNIK proposes to implement a model sustainable housing scheme. It can be implemented in G+3 housing units, each unit having 500 sq.ft plinth area, and in any Panchayath where minimum of 50 cent land is available for

construction. KESNIK will incorporate alternate technologies and green concept in this project.

2. *Setting up of new production unit for pre-fab building components.* The component used in the prefab unit at PTP Nagar is an imported one. So KESNIK proposes to develop prefab components using available resources in the State especially coir.
3. *Research projects on sustainable construction materials and methods.* Laurie Baker International School of Habitat Studies (LaBISHaS) focuses to take up research studies on sustainable construction materials and methods.

#### *Housing (Technical Cell)*

1. *Kerala Climate Responsive Housing Design Fund.* Housing Commissionerate propose to create a Climate Responsive Housing Design Fund to provide financial support to various stakeholders in housing industry to bear the initial expenses of the project and popularize climate responsive housing. Climate responsive architecture takes into consideration seasonality, direction of the sun, natural shade provided by the surrounding topography, environmental factors, and climate data to design comfortable and energy efficient homes.

#### *Programmes Proposed during the 13th Five-Year Plan*

##### *Kerala State Housing Board.*

1. *Grihasree Housing Scheme.* Grihasree Housing Scheme is a subsidy scheme being implemented by the Kerala State Housing Board by providing government subsidy of Rs 2 lakh per house for construction with the participation of NGOs, voluntary agencies and philanthropic individuals to economically weaker sections and low income groups owning 2 to 3 cents of land.
2. *Housing scheme for Government employees in Government land.* The Scheme is for constructing residential flats as quarters for Government employees in Government land. The flats constructed will be handed over to the respective District Collectors for allotment.
3. *Training plan and office automation.* Training will be given to the technical and ministerial staff for the efficient functioning of the Board. KSHB proposes to complete the works of converting the 3 Regional Offices and 16 Division Offices of the Board as E-offices.
4. *Housing Complexes under Life Mission.* The Government of Kerala has rolled out Life Mission with the mandate of housing for all by 2022. KSHB proposes to construct flats under this scheme initially at Mukkam in Kozhikode District and Pattuvam in Kannur District for the consideration of Life Mission.

##### *Kerala State Nirmithi Kendra (KESNIK).*

1. *Nirmithi Kendra.* Kerala State Nirmithi Kendra (KESNIK) is an organisation engaged in housing and habitat development through the practice and propagation of cost effective, energy efficient and environment friendly construction techniques. It is engaged in introducing new green building products in existing production centres and setting up Kalavara units. Nirmithi is constructing demonstration buildings using Pre-Fab technology for creating awareness on new technologies to the general public.

2. *Laurie Baker International School of Habitat Studies (LaBISHaS)*. The Institute aims to focus on research activities by organising skill upgradation, training programmes, graduate and post graduate level courses in habitat development

*Kerala State Co-operative Housing Federation*. Kerala State Co-operative Housing Federation Ltd. is the apex body for financing primary co-operative housing societies in the State and would continue to construct houses at minimum possible cost and on easy repayment terms for its members

*PWD-Construction of quarters for government servants*. The Public Works Department is entrusted with the construction and maintenance of various government buildings which include government residential quarters, working women's hostels etc.

*Working Women's Hostel Projects*. The scheme of Working Women's Hostel, a centrally sponsored scheme, was included to overcome the shortage of accommodation faced by women employees. The Housing Board is implementing Working Women's Hostel Scheme by availing Central Government grant (60 per cent of construction cost), 40 per cent share of the State Government and balance is met by utilising Board's own fund.

## 8 SCIENCE, TECHNOLOGY, AND ENVIRONMENT

### *ECOLOGY AND ENVIRONMENT*

#### *Overview*

Kerala harbours some of the world's most productive and biodiversity-rich ecosystems including tropical rainforest, the coastal, freshwater and brackish water wetlands, and marine coral reefs. The environment is conducive to varying crop types, such as coconut and rice in the sultry lowlands, rice, tapioca, banana, arecanut, coconut, pepper, cashew and rubber in hot humid midlands and tea, coffee and cardamom in the cool sub-tropic highlands.

Together with incomes and basic needs such as food, clothing, shelter, and health, a clean environment is an integral component of human wellbeing. The environment plays an important role in preventive health care. Any failure in maintaining environmental services of good-quality leads to an increase in disease burden, and in household and public expenditure on health care.

The origins of environmental problems are often multi-dimensional and may involve several social and economic sectors. At the same time, widespread environmental problems be amenable to simple solutions with a few critical regulatory measures. Kerala, in common with the rest of the country, faces its due share of environmental problems. As a State with a long coastline and a coastal ecosystem of considerable economic, social and cultural value, it is important to safeguard and enhance the integrity of Kerala's coastal ecosystems.

Kerala is internationally and nationally recognised as a biodiversity hotspot. It also has the advantage of widespread awareness of its biodiversity potential and local knowledge of biodiversity. Biodiversity is crucial to sustainable development. Conservation of biodiversity is and will continue to remain an important objective of the planning process. At the same time, it is essential to demonstrate and develop biodiversity as a key element in development.

There has been significant and rising pressure on the environment and natural resources of Kerala over several decades despite the number of policies, regulations, laws, and institutions for environmental protection established over the years. Overuse of natural resources, pollution of water bodies, continued pressure and consequent degradation of wet lands, absence of adequate biodiversity conservation by participatory means, and sedimentation in reservoirs are some of the environmental concerns of the State. Climate change is an emerging challenge in the environmental sector and adequate mechanisms to investigate, study, and act to ensure climate change adaptation and mitigation are still in their initial stages.

The 13th Five-Year Plan envisages a clean, healthy, and sustainable environment. In particular, the Government of Kerala has instituted a special mission, the Haritha Keralam Mission that is involved in focused action on some of the key environmental concerns of the State.

### *Department of Environment and Climate Change*

The Department of Environment was established in 2006 to co-ordinate various environment-related programmes implemented by various departments, agencies, and panchayati raj institutions. The environment management agency, set up in 2007 under the Department of Environment, has been upgraded as the Directorate of Environment and Climate Change in 2010. The Directorate, in addition to carry out the works of the erstwhile department, facilitates research, and creates awareness for environment, climate change and conservation amidst all stakeholders of the society.

The department has initiated an assessment of effectiveness of the sectoral environment management programs and formulated strategies to undertake key environmental initiatives. This included setting priorities and promotion of research and development on relevant environment management issues, formulation of programmes on the conservation of natural environmental resources and coordination among sectoral agencies for action. Key development departments of the State are consulted to assess if their existing programmes have linkages with climate change issues and to make them more relevant.

### *Kerala Pollution Control Board*

The Board is the prescribed statutory authority to implement all statutes that deal with control and minimisation of pollution from various industrial and non-industrial activities. The Kerala State Pollution Control Board (KSPCB) has its head office at Thiruvananthapuram, three regional offices, and 14 district offices in the State.

### *Kerala State Biodiversity Board*

Kerala State Biodiversity Board is the statutory authority responsible for all biodiversity-related activities, such as the implementation of the National and State Biodiversity Acts and Regulations. The Board also oversees sustainable utilisation of the State's biodiversity. It takes initiatives to mitigate the multi-dimensional biodiversity conservation issues through programmes at various levels, including at the level of panchayats through the Biodiversity Management Committees (BMCs).

### *12th Five-Year Plan*

The budgeted outlay for the sector during the 12th Plan period was Rs 118.42 crore. During the 12th Plan period, Rs 80.66 crore was utilised to implement various schemes.

Table 8.1 *Year-wise budgeted outlay and expenditure of Ecology and Environment sector during the 12th Five-Year Plan* in Rs crore

Department	Budgeted Outlay	Expenditure*	Expenditure (in per cent)
Department of Environment and Climate Change	65.70	45.24	68.86
Kerala Pollution Control Board	33.80	22.28	65.91
Kerala State Biodiversity Board	18.92	13.14	69.45
Total	118.42	80.66	68.1

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The Approach Paper for the 13th Five-Year Plan reiterates the importance of a clean, healthy, and sustainable environment as a basic entitlement of the people of the State. A clean and safe environment is considered to be an integral component of human well-being. Environmental guidelines need to be integrated systematically into developmental activity and not be treated as an addition, independent of the main planning process. The economic consequences of environmental efforts are to be adequately studied. It is a challenge to ensure that solutions to environmental problems are equitable, scientific and economically viable. One important aspect of meeting this challenge is to ensure that arrangements for employment and livelihood protection must be made before the implementation of environmental norms, and not after, as is often the case.

The Haritha Keralam Mission recognises the problem of maintaining the cleanliness and environmental health of Kerala's water systems including its rivers. Water pollution is an important problem and its solution will involve a comprehensive approach to drainage and sanitation from habitations in river basins and watersheds. The Mission also recognises the importance of safe and scientific waste management, especially of urban solid waste. The 13th Five-Year Plan will pay special attention to these social-environmental issues.

The People's Biodiversity Register (PBR), a product of the People's Plan process, is a major achievement and a significant resource, and will continue to be supported by the Plan. PBR is a move towards a systematic method of institutionalising the collection and maintenance of information on biodiversity. The registers will be used as benchmarks to help the protection and regeneration of biodiversity.

More specific studies are needed on the role of biodiversity in crop production. Agro-biodiversity can also help to develop a rational use of inputs for crop production. At present, the use of chemical inputs in Kerala's agriculture is below the all-India average and well below the levels of States with high consumption levels of chemical inputs (although there may be hot-spots of intensive use in the State). This fact helps to enable a more sustainable use of organic and inorganic inputs in agriculture.

Our biodiversity will be explored to develop and enhance livelihood. The Plan also recognises the link between biodiversity and potential development in pharmaceuticals, including Ayurveda and modern medicine.

Adivasi communities and communities close to forest areas have substantial knowledge of biodiversity and it is important to enhance their livelihoods by using such knowledge. The promotion of on-farm biodiversity will be encouraged.

National and State-level legislation provide benefit-sharing arrangements as an important source of financial resources for all biodiversity-related activities. These provisions are under-utilised in the State and the 13th Plan will encourage enhanced revenue arising out of access and benefit sharing.

Managing the environment and ecology is central to sustaining life and to realise sustainable development goals. A transition to sustainable development is not possible without the active participation of the people at large.

The 13th Five-Year Plan will focus on strengthening the institutional structure for decentralised conservation of biodiversity. People's Biodiversity Registers open up the possibility of formulating registers-derived action plan at the local levels. One hundred model Biodiversity Management Committees (BMC) will be identified and pilot programmes will be initiated in these areas during the first three years of the Plan period. The resulting experiences will be shared and scaled-up in later years.

#### *Critical Gaps to be Addressed in the 13th Plan*

Some of the critical gaps to be addressed in the Plan period are given below:

1. Implement, in association with line departments, action plans involving climate change.
2. Strengthen the legal and institutional framework for environmental governance, enhance the technical and scientific capacity of institutions, increase local participation in environmental management and raise the awareness of the importance of the environment.
3. Ensure sustainability of biodiversity management committees (BMCs) and the effective use of biodiversity registers.
4. Implement access and benefit-sharing schemes on urgent basis.

#### *Key Initiatives in the 13th Plan*

There are 11 ongoing schemes in the Environment and Ecology sector, of which 9 are implemented by the Department of Environment and Climate Change, one each by the State Biodiversity Board and the Kerala State Pollution Control Board. The Environment Directorate has proposed two new schemes for the 13th Five-Year Plan. The new schemes proposed are: Kerala Centre for Integrated Coastal Zone Management (KCICZM) and Climate Resilient Farming, out of which KCICZM is a centrally sponsored scheme with sharing pattern of 90:10.

## INFORMATION TECHNOLOGY

### *Overview*

Over the last 25 years, IT and information technology enabled services (ITES) have developed into an important sector of the Indian economy. Kerala is an active participant in the growth of this sector, though on a more modest scale than some other centres associated with this sector.

The significance of the IT/ITES sector for Kerala cannot be overstated. It is an important source of modern employment and also attracts workforce from outside the State. Many well-known IT/ITES companies have offices in Kerala. The significance of IT is not limited to the IT industry. IT enables new ways of data management, information retrieval and process management in industry, services and governance that are valuable.

Access to high-quality IT based services has become a common expectation of citizens across social and economic strata in the State. From education to entertainment and from official to personal communication, the average citizen increasingly uses digital means. Indeed, the absence of such access is often seen as a form of deprivation.

Information and communication technology sector has been playing an important role in the development of Kerala since the 9th Five-Year Plan. The State Government has made efforts to create a world-class infrastructure for the sector. Kerala is now at the forefront amongst States in implementing information and communication technology projects, e-governance initiatives, e-literacy programmes, and in the creation of basic information technology (IT) infrastructure facilities.

The State has 32 million mobile telephone connections. Twenty per cent of households gain access to internet through broad-band and other 15 per cent through mobile telephone, making Kerala the State with the highest level of internet penetration. Kerala is one among the major IT destinations in India, though it ranks only 8th in exports by Software Technology Parks of India registered IT and ITES units.

The core digital infrastructure such as the State data centre, core connectivity infrastructure like KSWAN, allied software applications for delivering various e-services, digital literacy initiatives such as Akshaya and IT@School project, other associated infrastructure such as technology incubation centres, start-ups, IT parks, various capacity building initiatives, institutional mechanism and policy initiatives, constitute an ecosystem for Digital Kerala.

The information technology sector has recorded a steady growth over the last decade. Various frontiers are opening up in relation to the application of information technology in day-to-day life that include artificial intelligence, self-driving vehicles, internet-based business models. To stay competitive as an IT destination, the IT sector in Kerala must enhance the value addition it brings to the State's economy, attract investments in emerging areas, and not rely solely on established IT/ITES activities to continue along the same trajectory of development. As the Indian IT sector is grappling with issues of the changing focus and emerging issues within the



global IT sector, Kerala must also keep pace with these changes. At the same time, the considerable advances that have been made in the digital empowerment of the population and the spread of IT awareness must continue to be built upon and developed with further investment in appropriate infrastructure.

The agencies involved in the implementation and promotion of Information Technology in the State are Kerala State Information Technology Mission (KSITM), Indian Institute of Information Technology and Management–Kerala (IIITM–K), International Centre for Free and Open Source Software (ICFOSS), Technopark, Infopark, Cyberpark, Kerala State Information Technology Infrastructures Limited (KSITIL), IIITMK-Kottayam, and Kerala StartUp Mission (KSUM).

#### *12th Five-Year Plan*

In the 12th Five-Year Plan, Rs 1,602.65 crore was provided as total outlay and expenditure was Rs 1,291.78 crore. The agency-wise and year-wise outlay and expenditure during the 12th Five-Year Plan (2012-2017) are given in Table 8.2.

Table 8.2 *Budgeted outlay and expenditure of various agencies in IT sector during the 12th Five-Year Plan* in Rs lakh

Name of Department/Scheme	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17	
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure*	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure
KSITM	5,664	2,630.5	5,050	3,023	6,236	2,679	6,338	5,334	9,459	5,571.47
IT Cell Govt Secretariat	30	1.6	30	3.2	30	0	30	29.9	33	33
IIITM-K	1,000	1,000	1,330	1,533	1,560	320	1,850	1,840	2,050	2,050
ICFOSS	200		170		240	165	200	200	220	220
Technopark	4,300	10,469.1	6,500	12,004.1	6,845	11,377	6,900	14,584.3	7,600	23,399.80
Infopark	4,200		5,000		5,500		5,600		6,161	
Cyberpark	3,269		1,000		1,100		1,100		2,568	
KSITIL	1,700	1,700	2,405	1,700	2,600		2,100	2,100	5,780	1,106.04
IIIT-Kerala Pala				705		4,320	1,900	400	500	500
Knowledge City					1	0	1	0	1	0
TTBI (StartUp Mission)					2,500	1,500	5,000	4,000	6,000	400
Youth Entrepreneurship					1,795	762.6	3,000	2,020	4,000	2,000
Smart City		1,250.5				112				
Implementation of Priority Schemes under KPP 2030							100	0		
NeGAP State Share									3615	3615
Akshaya	400	400	550	550	600	375	300	300	300	0
Others	1,213	105.50	1223		2,326		992	525		262.96
Total	21,976	17,557.2	23,258	19,518.3	31,333	21,610.63	35,411	31,333.23	48,287	39,158.27

### *13th Five-Year Plan*

The vision of the department is to establish Kerala as a knowledge-powered digital society by 2020 through application of digital technologies within the governing principles of freedom, inclusion, transparency, safety, and security.

The IT sector is an important source of employment creation. The main means of employment creation in the IT sector is the provision of built-up space with basic infrastructure that is leased out to the private sector. The planning of such built-up spaces will be done sufficiently in advance for the new firms. Ten million sq. ft (capable of generating 1,00,000 jobs) of built-up space will be completed over the 13th Plan period.

Trained human resources are a prerequisite for the IT industry. To ensure and enhance the availability of youth with the requisite high level of skills requires that the curriculum in engineering teaching institutions and other institutions for vocational education are geared to this task. A task of the 13th Plan is to ensure that skill development is delivered across all such teaching institutions, including by online educational means.

Innovation is a key factor in the growth of the IT sector. Attracting a number of firms, of varying scales, in established sub-sectors of the IT industry is important. At the same time, continued growth also requires constant innovation through new start-ups that will constantly be developing new products and services. An IT sector in good health requires a start-up ecosystem, and the 13th Plan will promote such an ecosystem in Kerala.

As a technological multiplier to all development efforts, IT can significantly increase the quality of planning and expand the reach of the four missions proposed by the Government of Kerala. It also enables mission management and monitoring of the activities of the missions.

Public access to high-speed digital services to citizens, even as they are on the move in public places is an important way of using IT to provide access to services and information to the people. Good quality public access also requires quality last-mile connectivity. During the 13th Plan period, the State will provide WiFi hotspots in a number of public locations. Public access to WiFi will also help tourism.

IT can help in the integration of disparate kinds of data from a wide variety of Government departments, agencies and institutions on a common platform. Such integration will help prevent duplication of efforts by departments. The 13th Plan will address the requirement in Government to integrate spatial data from a large number of Government sources on a single platform. While the IT department will be responsible for maintaining the requisite hardware, operating systems, and basic software platform, the data itself will be uploaded by those who have collected and/or analysed the data.

## *Goals*

### *Kerala State IT Mission.*

1. Enable a harmonised, interoperable, interconnected, and integrated government.
2. World class infrastructure, integrated e-service architecture, digital citizenship.

*IT parks.* Establish Kerala as a preferred IT hub for emerging technologies

### *KSUM.*

1. To be a leading knowledge start-up ecosystem in India.
2. Creating a sustainable and inclusive ecosystem for developing Knowledge based start-ups through multiple interventions.

### *IITM-K.*

1. To be an iconic knowledge institution focusing on emerging technologies.
2. To develop as a sustainable Institution with national repute and global recognition.

*ICFOSS.* Leverage FOSS for enhancement of quality of life of the people through development of inclusive and assistive technologies.

*KSITIL.* Transform KSITIL into a top-class agency for development of physical and electronic Infrastructure required for IT sector.

*Hardware mission.* Act as a single point of contact for international connects and enable growth of electronics and hardware industry in the State.

The new initiatives in the 13th Plan include Skill Delivery Platform and Kerala Fibre Optic Network.

*Skill Delivery Platform Kerala.* Skill Delivery Platform Kerala will be one of the major initiatives to be taken up in the 13th Plan that will help the engineering colleges in the State to improve the employability skills. This platform links engineering colleges in the State with IT parks via tele-presence network connecting 150 hi-tech classrooms to deliver skills training to approximately 50,000 students in a year.

*Kerala Fibre Optic Network (KFON).* The aim of the project is to build a scalable and resilient core network and create an access network to connect more than 30,000 government institutions comprising offices and educational entities and collaborate with regional service providers to provide free internet to 20 lakh economically backward households through this network. This will be provided through a new optic fibre pathway created in parallel to KSEB electric power network.

The IT policy aims to generate projects that will build Kerala into a knowledge-based society. The main objective of the policy is to establish Kerala as a leading IT destination and to generate direct and indirect employment in the sector and build necessary infrastructure for the creation of an environment favourable to ICT development. The policy also aims to build the human capital necessary to produce and use innovative technologies. The State will do so by means of education and skill building and establishing Kerala as an IT destination by attracting investments from within and outside Kerala. The State shall focus on developing competitive advantages in new avenues, changing IT and ITES into major export revenue earner for the State.

1. Establish Kerala as a preferred IT and ITES hub and leverage ICT to contribute significantly to GDP and employment.
2. Create schemes to attract the global IT players to the parks.
3. Creation of 1 crore sq. ft built up space and provide 2.5 lakh employment.
4. Utilise the capabilities of corporative and the capital from NRIs to develop the parks.
5. Maintain a steady annual growth of exports in IT and ITES service and products.
6. Create a science and technology driven eco system for R and D, and innovation.
7. Increase the quality and competitiveness of small and medium IT enterprise and connect them to the international market.
8. Foster technology entrepreneurship culture and create a sustainable start-up ecosystem by creating technology hubs.
9. Provide inclusive, affordable, and accessible electronic service delivery system for public services.
10. Ensure universal open access to data, information, and knowledge resources in a digital domain.
11. Make the State 100 per cent e-literate and utilise ICT in all walks of life to ensure equitable and inclusive development of society.
12. Give special emphasis to and promote research and development in Malayalam language computing and develop tools for the same.
13. Develop a talent pool within the State in skills for sunrise industries and human resources capabilities for emerging and futuristic technologies.
14. Make IIITMK and ICFOSS centres of excellence for research and development in IT sector.
15. Create a safe framework for digital living in terms of cyber security, privacy, and freedom of the Internet.
16. Conduct training and awareness programmes and promote electronic transactions.
17. Leveraging IT in the day to day operations and in the delivery of services in hospitals.
18. Adopt open source and open technologies in public domain and promote the same in SMEs and industry.
19. Manufacturing of electronics goods and components will be made possible among all including home makers.
20. Strengthen the operation of Kenton so as to regain the prominence it had in the past.

21. Research and Development institutions will be established in the area of convergence of IT and biotechnology and technologies will be utilised to improve the quality of exports in fruits and vegetables, fish, and spices from Kerala.
22. Create an infrastructure to enable women to work in the IT sector ensuring them safe transportation and secure environment at the workplace.

*Overview*

Science and Technology (S&T) is an important element of national development and India's strength in many areas of scientific research, compared particularly to many emerging economies, is widely acknowledged. India has significantly invested in strengthening its S&T infrastructure, though the ratio of gross expenditure on research and development as a proportion of national GDP can be significantly improved, and is below countries such as China or the Republic of Korea.

Total science and technology expenditure by the Government of India dwarfs the expenditure by State Governments, and over the decade of the 2000s the expenditure by all States on S&T fell from approximately 18 per cent to 16 per cent of total national S&T expenditure. Nevertheless, State-level expenditure on S&T is essential in order to design programmes of research and innovation that are fine-tuned to the needs and potential of the State.

Public investment in the science and technology sector in Kerala aims to provide more income and employment opportunities for the people and to support balanced and sustainable economic growth. Kerala's Plan expenditure in various Plans under the head of Science, Technology, and Environment, has been significant compared to other States. A network of institutions has been developed. An apex agency, the Kerala State Council for Science, Technology and Environment (KSCSTE), which coordinates and directs S&T activity through these institutions and also supports a variety of other activities, including science popularisation, has been established. The scope of these activities is evidence of an all-round approach to the development of science and technology in the State.

Schemes and programmes within the sector are envisaged to promote science and technology in the State by providing support for scientific research, human resource and infrastructure development, technology and innovation, environment conservation, science promotional activities and incentivise for a scientific career in schools and colleges, science popularisation and so on.

Science and technology was explicitly brought into the purview of the Five-Year Plan during the Fifth Five-Year Plan period. The Plan supports the Kerala State Council for Science, Technology and Environment (KSCSTE) and Regional Cancer Centre (RCC).

The KSCSTE is one of the largest and well-structured State level science and technology councils in the country and its functional units include research and development (R&D) centres and grant-in-aid institutions. The main objective of the council is to plan and formulate science, technology and innovation policy for the development of high quality science education system in the State and strengthen infrastructure for basic research and promotion of science.

The Regional Cancer Centre, Thiruvananthapuram, is an autonomous scientific institution sponsored jointly by the Government of Kerala and Government of India. The centre was

established in the year 1980 as a tertiary referral centre for the diagnosis and treatment of cancer. RCC is rated in the top three of the 28 Regional Cancer Centres in the country. It is the only comprehensive, dedicated centre for diagnosis, treatment and control of cancer in Kerala. On an average 60,000 new cancer cases occur every year in the State and out of this nearly one third comes to RCC for treatment. The Centre undertakes basic, translational and clinical research and disseminates the knowledge.

Compared to the resources available from the Central government, it is important to use State resources optimally and complement to the Central investment. At the same time, every effort needs to be made to attract and strengthen Central government funded institutions in the State and utilise their knowledge capacities to promote the State's development.

In the long term, the vision for a science and technology sector in Kerala is to transform the institutions in the State into world-class scientific research institutions.

### *12th Five-Year Plan*

Over the Five-Year Plans, the State has developed a robust scientific infrastructure with a host of dedicated institutions and a pool of trained scientific personnel. In the 12th Five-Year Plan, the state adopted a multi-pronged strategy, with steps addressing multiple dimensions for the sector. The outlay and expenditure of the sector in the State during the 12th Five Year Plan is briefly listed below.

#### *Kerala State Council for Science, Technology, and Environment (KSCSTE)*

During the 12th Plan, efforts had been made by KSCSTE to address the issues pertaining to key sectors like land, forests, water, biodiversity, and transport and also strengthened education and research in basic sciences. The year-wise outlay and expenditure are given in Table 8.3.

Table 8.3 *Year-wise budgeted outlay and expenditure of KSCSTE in the 12th Five-Year Plan* in Rs crore

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	66.20	63.97	96.61
2013-14	78.95	51.36	65.06
2014-15	90.72	54.66	60.24
2015-16	99.79	66.24	66.38
2016-17	99.79	104.28	104
Total	435.45	340.51	78

\* Expenditure includes Supplementary Demand for Grants

The research and development institutions of KSCSTE are Centre for Water Resource Development and Management (CWRDM), Kerala Forest Research Institute (KFRI), Kerala School of Mathematics (KSoM), National Transportation Planning and Research Centre (NATPAC), Jawaharlal Nehru Tropical Botanical Garden and Research institute(JNTBGRI), Srinivasa Ramanujan Institute of Basic Sciences, Pambady, Kottayam, and Malabar Botanical Garden and Institute of Plant Sciences.



### *Regional Cancer Centre (RCC)*

The year-wise outlay and expenditure of RCC during the 12th Five-Year Plan are given in Table 8.4.

Table 8.4 *Year-wise budgeted outlay and expenditure of Regional Cancer Centre in the 12th Five-Year Plan (2012-17) in Rs crore*

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	34	34	100
2013-14	42.17	42.17	100
2014-15	40.4	20	50
2015-16	53.5	0	0
2016-17	59.36	28.05	47
Total	229.43	124.22	54

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

State-level investment in science and technology in the 13th Plan will be aimed to improve the capacity of the State Government to attract investment, develop local resources, and facilitate innovation. The major focus will remain on scientific research carried out in research institutions, university centres, and college departments recognised as research centres. State efforts will complement rather than substitute Central support for science and technology.

As the work of the research institutions progresses, it will be necessary to strengthen an appropriate system of regular reviews and quality output in keeping with national and global best practices. Periodic review of existing projects and suitable screening for continued funding is also necessary. New departments or organisations for research are best located within higher education or other existing research institutions, in order to gain advantages of scale. An adequate system of peer review, project evaluation, and timely delivery must also be ensured for research projects, research grants, and fellowships granted by the KCSTE.

Kerala's S&T profile is also enhanced by the significant number of centrally-funded institutions in the State. These are a valuable resource that can augment the capacities of State-level S&T institutions, and development in general.

A strength of regions that are global leaders in S&T is the industry-academia-government link that drives the growth of S&T-based value-addition in the industrial sector and the close connection between research institutes and the university sector. The Government will promote coordination and collaboration between research institutes and the higher education system.

A diverse and inclusive human resource base is of much value for S&T. The Government supports all efforts to improve women's participation and participation by persons from the Scheduled Castes and Tribes in the S&T sector.

## KSCSTE

The major objective of KSCSTE is to implement Science and Technology programmes to enhance the socio-economic development, quality of life, and environment of the State. The 13th Plan envisages the implementation of programmes to achieve excellence in S&T within the State. The Plan includes projects, schemes, and programmes for promotion, support and popularisation of S&T. The focused research programmes by the research institutions are expected to contribute for the overall growth and development of the State. The Plan proposal also focuses on science, technology, and innovation for sustainable development and inclusive growth in the socio-cultural and economic context of the State. Human resource development and creating critical number of scientists working in disciplines relevant to the development of Kerala are the major challenges. The thrust of the Plan is to deliver science- and technology-led solutions to improve the quality of life of the people and the environment.

The approach towards the science and technology development in the next five years will be focused on the developmental needs of Kerala. The present approach of funding to individual projects in the random order, on some general major theme, will be replaced by funding to integrated collaborative and multidisciplinary science and technology research by bringing all the R&D centres to specific goals. It is essential that science and technology institutions and funding in science and technology also contribute to the economic growth in the State. New and innovative projects in technology are particularly important in this regard.

### *Key Initiatives in the 13th Plan*

1. Green Technology Initiatives: Programmes on green technology are proposed to be undertaken through inter-institutional collaborations with CSIR-NIIST, CTCRI, universities, and the research institutions of KSCSTE.
2. Preparation of database of women in science in Kerala to analyse the representation of women in various sectors of S&T to address the concerns of under-representation in any of the S&T sectors. Baseline data on women in science will be collected through an online directory and analysed to arrive at the present status of women in various sectors of science profession which will help to address the concerns on their under representation in any of the sectors.
3. New programme to support the research and development on assistive technology.
4. Botanical garden in Munnar to nurture a sense of wonder and curiosity about the natural world.
5. Virology Institute of Kerala to strengthen epidemic preparedness, rapid response, and risk communication to the public apart from the high-end research in the area of basic and translational virology. It is also proposed to have appropriate bio safety measures in the institute to handle high risk viruses.
6. Green technology initiatives to make all activities of KSCSTE environmentally sustainable.

### *New Initiatives Proposed by the R and D Institutions*

1. KFRI – Specific programmes proposed by KFRI are as follows:
  1. Long term monitoring and assessment of forest ecosystems in the State.
  2. Sacred grove network for the State.

3. Ecosystem service assessment of major forest ecosystems in Kerala.
4. Developing field robotics centre, tree clinics for the State, and a nodal centre for alien invasive species research and management.
5. Mangrove conservation and extension centre at Kannur district.
6. Development of forest museum.
7. Forestry information cum teak information centre at Konni, Pathanamthitta.
8. Developing facility for centre of Plant molecular taxonomy and evolutionary biology lab.
9. Developing a centre for policy research in forests and forestry.
2. Kerala School of mathematics
  1. Mathematical Olympiad training.
  2. Focused research programmes with external mentoring in the areas of number theory and functional analysis and operator algebra.
  3. Initiating high quality post-graduate teaching in Mathematics.
3. NATPAC
  1. Preparation of GIS-based road network data base, accident black spot identification and shortest path identification for emergency vehicles.
  2. Preparation of Comprehensive Mobility Plan for Corporations.
  3. Preparation of GIS based sign board information system and accident information system.
  4. Preparation of GIS based database for waterway systems in Kerala.

#### *Schemes and Programmes of KSCSTE*

1. Science Education Centre to impart training to teachers and students of science stream.
2. Introduce certification courses in IPR.

#### *Gender Development*

The main programmes in the 13th Five-Year Plan providing support for and encouraging women scientists include

1. *Back-to-Lab*. Provide adequate opportunity for women who have moved out of scientific careers due to family commitments to come back to main stream scientific careers.
2. *Awareness programme*. Upliftment of rural women through popularising technological advances.
3. *Database of women in science in Kerala*. Project to analyse the representation of women in various sectors of S&T addressing the concerns on under-representation of any of the S&T sectors.
4. *Vocational Skill Oriented Reinstate Training (VSORT)* programme is aimed to provide skill-oriented training programmes for socially isolated and under-privileged women/girls to acquire science and technology skills that help them to be financially independent.

#### *Welfare of Scheduled Castes, Scheduled Tribes, Other Backward Castes, and Minorities*

Specific preferences are given to these sections in the following programmes:

1. *Biotechnology Innovations for Rural Development (BIRD)*. In order to promote the use of biotechnology for rural development, Kerala Biotechnology Commission of KSCSTE

initiated a programme called “Biotechnology innovations for Rural Development” which provides financial assistance for conducting training and demonstration projects with an objective to promote rural innovation for developing biotech based products. The programme is beneficial to the rural women and due preference given to the upliftment of the backward communities.

2. Due preference is given to tribal and rural schools in giving science training under Sathraposhini scheme and Nurturing Excellence in Science Teaching (NEST).
3. *Sastrabodhini programme*. This programme is to promote young talents in science and technology in Scheduled Tribe Model Residential Schools of Kerala.

Above mentioned programmes are ongoing and are proposed to continue.

#### *Major Initiatives in the Annual Plan 2017-18*

1. To create science talent among children to take Science as a career through Kerala Science Congress and National Children’s Science Congress Programmes, Rs 1.24 crore is provided.
2. Facilitating R&D Solutions and transfer of technology through technology development and transfer programmes, Rs 2.05 crore is allocated.
3. Women Empowerment in Science and Technology.
4. An amount of Rs 2.50 crore for
  1. Women Science Programmes – Rs 1.6 crore and
  2. STARS (Student with talent and aptitude in Science) – Rs 0.9 crore
5. *Human resources development in science and technology*. Rs 14.35 crore provisioned for various scholarship programmes like, Science Research scheme, Emeritus Scientist Scheme, Partnering Academic Industrial Research (PAIR) etc.
6. *Scaling up research and development institutions*. Rs 63 crore is allocated to the 9 institutions under the Council.

#### *Regional Cancer Centre (RCC)*

The vision of the Regional Cancer Centre in the 13th Plan is to emerge as a global leader in cancer control. The RCC aims to deliver highest quality cancer care at affordable cost, train professionals in cancer control, and conduct focused cancer research. It will also organise outreach programmes in cancer control to create awareness among public and health professionals.

#### *Targets and Initiatives in the 13th Five-Year Plan*

The targets of the regional cancer centre in the 13th Five-Year Plan include expansion of physical infrastructure (14-floor building), upgrade RCC as a State Cancer institute, augment facilities for early cancer detection, and set-up new campus at Pulayanarkotta.

The new 14-storied building will include 10-bed bone marrow transplant unit, 6 new operation theatres and surgical wards, 2 radiotherapy simulators, 2 linear accelerators, 8-bed nuclear medicine ward, robotic surgery unit, new blood bank, and advanced microbiology laboratory.

Government of India launched a new scheme in 2013 for upgrading tertiary cancer institute under National Programme for Prevention and Control of Cancer, Diabetes, Cardio Vascular Diseases and Strokes (NPCDS) with a 60 per cent central share and 40 per cent State share. Out of this Rs 36 crore have to be utilised for civil works and Rs 84 crore for the purchase of equipment and other infrastructure developments.

#### *Activities proposed by the Centre*

*Expansion of physical infrastructure.* RCC has undertaken construction of a new 14-storied building in RCC campus and modern dietary department in a phased manner that is proposed to include new 10-bed bone marrow transplant Unit, six new operation theatres and surgical wards, 2 radiotherapy simulators, two linear accelerators 8-bed nuclear medicine ward, robotic surgery unit, new blood bank, and advanced microbiology laboratory.

*Augmentation facilities for early detection and treatment of general cancer.* There is an urgent need to augment the infrastructure of early diagnosis and treatment of cancers. The activities taken up in this scheme include augmentation of facilities connected with treatment/diagnosis/aftercare in women-oriented cancer, paediatric cancer, tobacco-related cancer, and general cancer, purchase of various equipment, upgradation of blood bank, water supply, quality and safety measures, and other common infrastructure facilities. All equipment and machinery required for the newly 14-floor building which is expected to complete and commissioned in 2020, procurement of an MRI scanner along with accessories are also included in this scheme.

*Upgradation of training and research facilities.* Upgradation of training and research facilities and for modernising and equipping the library with all oncology-related materials.

#### *RCC: Challenges Ahead*

1. Tobacco related cancers in Kerala are high. The community oncology division intends to scale-up tobacco control measures to reduce the burden of tobacco related cancers in collaboration with various departments in the State.
2. Training of doctors and nurses in the State health services department to give prime importance to early cancer detection.
3. Community-based research activities in primary and secondary prevention of cancers.

## 9 EDUCATION

### *Overview*

Education, one of the four missions of the Government of Kerala, is a major thrust area for the 13th Five-Year Plan. The focus is to enhance the quality and upgrade the existing educational infrastructure to international standards. In addition, special focus has been given to make education system more inclusive by giving attention to the needs of marginalised sections and children with physical and intellectual disabilities. The 13th Plan proposes to make the best possible school education available to every child in the State, regardless of considerations of income, region, or social group.

To ensure quality education at school and higher education levels, increased amounts of Plan funds have been allocated to education in 2017-18. There has been an increase of 45 per cent in the Plan Fund in 2017-18 over the previous year.

### *SCHOOL EDUCATION*

#### *Overview*

The bedrock of Kerala's development achievements has been school education, because it was instrumental in making progress in other fields possible. Our progress in health and different aspects of social justice would not have been impossible without achievements in education. Kerala was the earliest State in India to understand the link between mass education and mass schooling, and between mass schooling, social development, and, ultimately, income growth.

The groundwork for mass education was laid historically. Policy interventions initiated by the first Ministry in unified Kerala established the basis for universal school education and literacy bridged the gender gap in school education, and disparities in school education among the erstwhile princely states of Travancore, Cochin, and Malabar.

There were 12,882 schools in Kerala in 2015-16. Out of these, 4,619 (36 per cent) were government schools, while 7,140 (55 per cent) were aided schools and were 1,123 (9 per cent) unaided schools. More government schools are functioning in lower primary section. Aided schools outnumber government schools in all sections. There are 1,373 schools in the State which are offering syllabi other than the one prescribed by the State government. These include 1,178 CBSE schools, 148 ICSE schools, 33 Kendriya Vidyalaya and 14 Jawahar Navodayas.

Girl students constitute 49.47 per cent of the total student enrolment in schools. Boys outnumbered girls in all the districts, except Thiruvananthapuram and Alappuzha. In 2015-16, scheduled caste (SC) students constitute 10.82 per cent of total students in the State. The percentage of SC students in government schools, private aided schools and private unaided schools are 13.66 per cent, 10.59 per cent and 4.03 per cent respectively. Students belonging to scheduled tribe (ST) communities constitute 2.1 per cent of total enrolment in schools in the

year 2015-16. The percentage of students from ST communities in government schools, private aided schools and private unaided schools are 3.92 per cent, 1.47 per cent and 0.35 per cent respectively in 2015-16.

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, mainly because of changes in demographic pattern because of low birth rate.

However, a positive change has happened in the State in terms of enrolment of students in government and government aided schools. Number of students has increased by 14,268 in LP section in 2017 over the previous year. Also, there is a decline in the enrolment of students in class 1st in unaided schools.

Table 9.1 *Change in number of students' enrolment between 2016-17 and 2017-18 in number*

Management	Class							Total I to X
	I	II	III	IV	Total (I to IV)	V-VII	VIII-X	I-X
Government	5,703	354	1,346	667	8,070	-5,192	-2,409	469
Aided	6,495	-1,243	216	1,302	6,770	-5,798	-17,143	-16,171
Un Aided	-1,122	63	-128	615	-572	-2,834	-1,729	-5,135
Grand Total	11,076	-826	1,434	2,584	14,268	-13,824	-21,281	-20,837

Source Directorate of Public Instruction

Kerala has already achieved universal elementary education and has a system to meet the educational requirements of all children up to 18 years. The school drop-out rate in Kerala is the lowest in the country and it is almost zero except among some marginalised sections. Hence, the present task is to introduce changes and reforms to enhance the overall quality of education. This includes enhancement in academic achievement levels, upgrading expertise and skills education for all children, encouragement of sports and fine arts for enhancing aptitude levels of children and development of all children including children with physical and intellectual disabilities to a minimum achievement level.

### *12th Five-Year Plan*

The outlay and expenditure of Plan Fund under various departments and agencies during 12th Five-Year Plan are given in Table 9.2.

Table 9.2 *Department-wise budgeted outlay and expenditure of school education in the 12th Five-Year Plan* in Rs lakh

Department	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	BO	E	BO	E	BO	E	BO	E	BO	E	BO	E
DPI	12,498	17,074.2	14,875	15,111	20,034.7	20,602.58	21,485	38,571.2	27,301	51,127.23	96,193.7	1,42,486.3
DHSE	6,617	4,579.8	7,190	1,434.5	7,936.2	2,089.75	8,020	3,143	9,830	7,565.5	39,593.2	18,812.71
DVHSE	1,000	770.7	1,000	460.8	1,100	601.1	1,100	433.1	1,290	821.53	5,490	3,087.31
SCERT	900	600	900	900	1,000	1,000	1,000	400	1,500	1,203.75	5,300	4,103.75
SIEMAT	200	200	250	300	300	260	300	160	330	164	1,380	1,084
KSLMA	1,200	1,200	1,600	1,600	1,500	800	1,500	1,050	1,500	1125	7,300	5,775
SIMC		117.7	500	304.4	700	355.1	700	170	700	436.72	2,600	1,383.93
IT@school Project			2,000	2,000	1,860	930	1,070	1,070	1000	0	5,930	4,000
RMSA	3,000	1,500	1,500	0	1,650	1,246.84	2,100	1,075.6	6,000	5,992.19	14,250	9,814.58
SSA	3,300	3,050	3,500	3,300	700	3,100	700	770.2	800	5,947.08	9,000	16,167.3
Total	28,715	29,092.4	33,315	25,410.7	36,781	30,985.37	37,975	46,843.1	50,251	74,383	1,87,037	2,06,714.9

BO = Budgeted Outlay; E = Expenditure

\* Expenditure includes Supplementary Demand for Grants



### *13th Five-Year Plan*

The approach of the 13th Five-Year Plan on school education is mainly focussed on quality and inclusion. Enhancement of quality includes provision of quality infrastructure as well as academic excellence. “Inclusion” means providing the best possible education to all sections of society including socially oppressed communities and children with physical and intellectual disabilities.

After determining new technical specifications for school infrastructure, we will invest in new-generation public schools throughout the State. School education policy will focus on new syllabi, teaching methods, and pedagogy. School education policy will also aim to resolve issues of social exclusion and cumulative deprivation among the socially oppressed, and to modernise norms of school conduct and social behaviour.

School education policy will seek to encourage sports, artistic, leisure, and extra-curricular activities. School education policy will accord careful attention to children with physical and intellectual disabilities and with other special needs. School teachers are the instruments of change in the sphere of school education, and the transformation that we envisage requires progressive change also in teacher training, administration of schools, and school education.

To support the newly announced Nava Kerala Mission, increased funds has been earmarked for school infrastructure and the IT@school project. There are plans for new schemes like Autism Parks, biodiversity in schools, Sraddha, Vidyarangam, and Studies on Faltering Areas of Education, to address the special needs and overall development of children. The new schemes will strengthen the “Pothu Vidyabhyasa Samrakshana Yajnam (Public Education Rejuvenation Campaign)” initiated by the Government of Kerala.

#### *Targets and Major Programmes in the 13th Five-Year Plan*

All the Government Schools in Kerala are functioning in *pucca* buildings. Buildings have to be constructed for 128 government schools which are now working in rented buildings. Local self-government institutions and programmes like Sarva Shiksha Abhiyan (SSA) have contributed to the overall development and improvement of physical infrastructure and common facilities in government schools in the State. Of all government schools, 98.55 per cent of government schools have access to drinking water and 99.7 per cent have urinals and latrine facilities. The facilities are to be upgraded and improved. Modern infrastructural facilities are to be set up in all the schools. Government has begun to upgrade 1,000 government schools to international standards and convert high school classrooms into high-tech classrooms. These projects are being implemented with the financial support of KIIFB and the Plan fund is also utilised for supporting this project.

*The Directorate of Public Instruction.* The Directorate of Public Instruction is the apex agency for the administrative activities of school education. Plan schemes in government schools are implemented by the Directorate. Government has announced its plans to upgrade the quality of school education to international standards. As a part of this programme, in the 13th Five-Year Plan, the target is to elevate government schools to international standard and achieve better

learning outcomes. The programmes and activities are designed to develop the child's potential inside and outside the classroom and to provide training and counselling for parents and teachers. Schools will also work to inculcate scientific temper in children and to develop their artistic and literary skills.

### *New Initiatives in 2017-18*

Apart from the ongoing programmes under five categories such as, infrastructure, academic excellence, student centric activities, modernisation and governance, and monitoring, seven new programmes have been started during 2017-18. Substantial allocation of Plan fund has been made for the construction and improvement of infrastructural facilities. The major new programmes are:

1. *SRADDHA (Remedial Teaching)*. This is a scheme to improve the performance of the students who are not performing to their full potential on account of various factors. The classes are conducted during Saturdays and holidays.
2. *Study on faltering areas in education sector*. Under this scheme, special issues of school education are studied. For 2017-18 a study on 'Causes of dropout of students in Wayanad district' has been initiated.
3. *Vidyarangam (Arts and Cultural Activities of Students)*. Vidyarangam is the cultural wing of General Education Department and is mainly meant for the cultural and literary empowerment of the students. Vidyarangam has two main projects – Vidyarangam Kalasahitya Vedi (school level literary club) and Vidyarangam magazine (the only publication of the General Education Department). Creative literary workshops and publishing of students' selective writings, teachers' trainings, literary competitions, interaction with literary leaders, study journeys to cultural and historical places, teachers' literary competitions, students' and teachers' workshops like Saksharam, exhibition of periodicals including the literary works of students and teachers are main activities under the scheme.
4. *Kerala School Kalolsavam*. Kerala State Child Rights Protection Commission and Provision in RTE Act prevent collecting money from students studying from Standard 1 to 8, for organising the Kerala School Kalolsavam. This has become a major financial burden on the Department. A total of 232 items are included in the Kalolsavam. Hence, Plan fund is earmarked for conducting Kalolsavam at various levels – sub district, district and State levels.
5. *Modernisation of statistics division and school data bank for general education department*. There is a large volume of data regarding students, teachers and schools in the State that needs to be collected and digitalized every year. For online submission, consolidation and analysis of data, modern ICT tools are inevitable. Under this scheme, it is proposed to procure computer gadgets for statistical division in Directorate and Statistical cell in district offices, civil, electrical and networking work for the above offices, Web portal design and software development- online data transmission, school data bank, database creation, data processing, school information register printing and dispatching, training on online software for school level data entry, computer and accessories.
6. *Free supply of school uniform scheme*. The Government has decided to supply handloom uniform cloth for students studying in standard 1st to 8th. In the first phase in 2017-18, handloom cloth was distributed only to the students studying in Standard 1st to 5th.

7. *Biodiversity campus in schools*: The aim of the scheme is to make the children aware of their surroundings and to extend the idea to the public as well and to make efforts for the conservation of natural resources. Creation of biodiversity parks in schools, conducting seminars and workshops, and incentives to the best performing school the major activities under the scheme.
8. *Autism Park*. The main objective of establishing Autism Park is to mainstream autistic children by helping them to discard behavioral abnormality by encouraging social participation and enhancing the communication levels. The project also aims to provide support services to parents to cope up with the myriads of demands of these children and to support teachers to involve the children in the learning process. Special education, speech and language therapy, occupational therapy, sensory integration therapy, behavior modification, discrete trial training, physiotherapy, cognitive behavioural management, remedial teaching, counseling to children and parents, and training programmes are the major activities envisaged under Autism Park.

The other major programmes proposed in the 13th Five-Year Plan are to provide girl-friendly toilets in schools, set up female-friendly rooms, online training to lady teachers on adolescence counselling techniques, life skill enhancement and attainment programme (LEAP), tribal education, empower women officers, administrative staff, and office heads, empower Parent Teachers Associations and School Management Committees, financial assistance to children excelling in science education, exposure trips to scientifically important places, create website for educational offices, set up disabled-friendly educational offices and mini conference hall in educational offices

#### *Directorate of Higher Secondary Education*

At present 817 government higher secondary schools in addition to 16 model residential schools located in areas of tribal concentration. There are 17 technical schools and 16 special schools. The target of the Higher Secondary Education Department has been set for the 13th Five-Year Plan as 'Adequate infrastructure in all Government Higher Secondary Schools, inclusion of the socially oppressed and deprived students and academic excellence in teaching'. In order to achieve this goal, the programmes have been formulated addressing the basic requirements of adequate infrastructure in all government higher secondary schools, well equipped libraries and laboratories, regularly trained teachers, proper training for selecting the career suited for students, facilities for adolescent counselling to overcome stress, schemes for rendering financial help to students belonging to BPL families, special programmes for focusing students who score below average marks in examinations, e-governance in administration, well trained ministerial staff and empowering principals for proper administration.

The new initiatives proposed in the 13th Five-Year Plan include addressing the issues of social exclusion and cumulative deprivation among socially deprived, motivation and training to tackle issues faced by target groups, imparting compulsory residential refreshment training to teachers, organising teachers Congress to encourage research among teachers, creating platform for transforming ideas and adopting schools with low performance and offer special training and remedial coaching in these schools.

### *Directorate of Vocational Higher Secondary Education*

Vocational education at the secondary stage allows to diversify education, improve chances of employment, reduce the mismatch between demand and supply of skilled manpower, and provides alternative higher options for higher education. The revamping of vocational education at the higher secondary level has already started. This is now aligned with National Skill Qualification Framework (NSQF). The target of Vocational Higher Secondary Education for the 13th Five-Year Plan is to revamp vocational education and provide additional options to students depending on their aptitude and requirements.

The programmes and schemes of Vocational Higher Secondary Education are categorised as 1) on job training 2) staff training 3) students centric programmes 4) modernisation of laboratories 5) skill development centres 6) school infrastructural development, and 7) e-governance.

The new initiatives include centralised on-the-job training, monitoring and placement system and high-end training labs for advanced technology training workshops.

Hi-tech school infrastructure and inception of modern class room is one of the major objectives of the Sampooran Vidyabhyasa Samrakshna Yajnam. In the 13th Five-Year Plan, it is also planned to build technologically modern class rooms, labs and other facilities of international standards.

1. *Kerala State Literacy Mission Authority (KSLMA)*. Kerala State Literacy Mission Authority is the nodal agency for implementing continuing education programme launched in 1988 through local self-governments and voluntary organizations. Presently, the authority has over 4,000 centres through, which the programme is being implemented in the State. The target of KSLMA during the 13th Five-Year Plan is to address illiteracy of special pockets. The new initiatives in the 13th Plan include Special continuing education for transgenders, Gender equality programme, Special project for people from scheduled tribe and scheduled caste, Environment literacy programme and Tribal literacy and continuing education programme.
2. *SCERT*. The State Council of Educational Research and Training is the co-coordinating agency for academic activities in the State and it was established by the Government of Kerala on the lines of NCERT at the national level. It is a resource body in academic matters for policy, research, vocational education, curriculum development, and teacher development programs. Apart from the ongoing activities under various divisions of SCERT, the new programmes proposed include internship programme for MEd and PhD holders, induction training programme for the newly appointed teachers of Kerala, converting DIETS as District Training Centers of SCERT, establishing a publication wing in SCERT to publish research journals and news, digitalising the textbook archives of SCERT and establishment of a web portal and purchase of server for SCERT.
3. *Rasthtriya Madhyamik Siksha Abhiyan (RMSA)*. Rasthtriya Madhyamik Siksha Abhiyan (RMSA), nodal agency for the Centrally Sponsored Schemes for secondary education, came into existence in 2009. The approach of RMSA during the 13th Five-Year Plan is in line with the Public Education Rejuvenation Mission of Government of Kerala and the target is fixed as high quality school education and skill and entrepreneurship development. With this target, RMSA proposed the following new initiatives in the 13th Five-Year Plan:

1. *Ideal Labs on pilot basis.* Lab there with facilities for doing all experiments in three different ways: experiments in text books, sequences of experiments for concept development and material for further advanced learning.
2. *Talent hunt.* This program aims to uplift inborn talents in high school classes. The students of standard 9 will be selected for this programme. There shall be five areas of training – robotics, astronomy, analytics, IT (application development), and innovations
3. *Digital text book.* Digitalisation of text books at secondary levels in collaboration with State Institute of Educational Technology
4. *Online training for teachers and resource pool.* Under this scheme it is aimed to develop a portal for teachers with content, transaction methods and all supporting materials. A resource pool will also be created for the purpose of online training.
5. *Student entrepreneurship development.* Trait based innovation programme to identify areas each child can excel.
6. *Gender development.*
4. *Sarva Siksha Abhiyan (SSA).* Sarva Siksha Abhiyan (SSA) is a flagship programme of Government of India to attain Universal Elementary Education in the country in a mission mode. Kerala has almost achieved universal school education. Near one hundred per cent children enrol in class one and almost all of them complete their class ten examination. The issue of access to an educational institution and retaining the child throughout the school education stage is a settled issue in the State except in very few pockets with SC and ST population and coastal areas. Hence the target of SSA for the 13th Five-Year Plan is to transform the Government and aided schools of the State as centres of excellence (in convergence to the mission of the State government).

The major proposed activities of SSA in the 13th Five-Year Plan are given below.

1. Transform block resource centre (BRCs) and cluster resource centres (CRCs) as centres of excellence.
2. Special package for enhancing the learning in three languages (Malayalam, English and Hindi), science and mathematics.
3. Micro level school based intervention strategies to enhance learning outcomes with support of CRCs and BRCs.
4. Proposal of digitalised class room, library and reading corner.
5. Proposal for improving the educational needs of marginalised sections, girls, and children with special needs.
6. New approach to the teacher training.
7. Reaching out to people and involving the community in school development process.
8. Conduct research studies and surveys to obtain an overall picture of what students in specific classes know and can do and use these findings to identify gaps and diagnose areas that need improvement.
5. *C H Memorial Koya Memorial State Institute for Mentally Challenged (SIMC).* The institute is an autonomous society registered under the Travancore-Cochin Literary Scientific and Charitable Societies Act 1955 and working under General Education Department. The institute imparts special education, training and rehabilitation services to the children with intellectual disabilities. The objective of this institute during 13th Five-Year Plan is to

“improve the quality of life of persons with intellectually challenged and their families at its maximum extend.”

The major ongoing activities are vocational training programmes, administrative expenses, Diploma Course on Special Education, Community Based Parents Training Programme, augmentation and documentation, early intervention programmes, Mobile Early Intervention Unit and Susthithi Project, and SIMC Service Centres in 13 districts. For the 13th Five-Year Plan, SIMC has also proposed construction of hostel for MC children, infrastructure facilities for apex institute and construction of new building of 2 regional centres.

## HIGHER EDUCATION

### *Overview*

Nine Universities come under the Higher Education Department. Of them, Kerala University, Mahatma Gandhi University, Calicut University, and Kannur University are general universities with affiliated colleges. Cochin University of Science and Technology and Kerala Technological University are technical universities and Sree Sankaracharya University of Sanskrit and Thunchath Ezhuthachan Malayalam University are specialised universities for language promotion. The National University for Advanced Legal Studies is another specialised university under the Department of Higher Education. Other than the Universities, four Law Colleges, Centre for Continuing Education (CCEK), and the K R Narayanan Institute of Visual Science and Arts come under the Department of Higher Education.

Further, there are 61 Government and 155 Government-aided Arts and Science Colleges, 4 Government and 17 Government-aided Teacher Training Colleges, 11 Arabic Colleges, 4 Music Colleges and one Physical Education College in the State.

### *12th Five-Year Plan*

The details of outlay and expenditure during the 12th Plan are given in Table 9.3.

Table 9.3 *Department-wise budgeted outlay and expenditure of higher education in the 12th Five-Year Plan* in Rs lakh

Department	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	B O	E	B O	E	B O	E	B O	E	B O	E	B O	E
DCE	7,425	5,045.9	9,347	14,802.46	12,096	5,066.98	11,975.8	12,793.7	11,105	8,628.2	51,948.8	46,337.3
Kerala University	1,700	1,700	2,000	2,050	2,150	1,612.5	2,200	2,184.45	2,500	2,695	10,550	10,242
Kannur University	1,700	1,500	1,900	1,570.4	2,050	1,175	2,100	2,537.5	2,400	1,300	10,150	8,082.9
Calicut University	1,700	1,400	2,000	1,650	2,150	2,150	2,175	2175	2,500	2,350	10,525	9,725
MG University	1,700	1,700	2,000	1,650	2,150	2,250	2,200	1,650	2,500	3,690.8	10,550	10,940.8
Sree Sankaracharya University	1,100	1,000	1,200	1,091.7	1,300	1,300	1,325	1,429.4	1,800	1,505.2	6,725	6,326.2
Malayalam University	50	50	500	500	1,000	700	765	765	765	765	3,080	2,780
Nuals	350	350	450	450	550	700	575	322	625	848.3	2,550	2,670.3
KSHEC	1,000	900	1,250	1,100	1,250		1,255	1,000.2	1,310	2,000	6,065	5,000.2
Law Colleges	400	1,739.1	450	2,076.1	550	1,806.4	570	3,279.2	650	2,434.7	2,620	11,335.3
KCHR	400	400	500		500	250	600	500	800	600	2,800	1,750
CCE	100	174	300	160	350	150	300	268	350	350	1,400	1,102
NCC	125	52.9	252	55.1	300	195.2	300	286.2	500	812	1,477	1,401.4
ASAP	250	250	750	750	8,500	2,613	23,468	10,100	23,468	12,270	56,436	25,983
Higher Education Department	2,200	2,200	1,900	800	1,900	201.4	701	1,003	1,400	939.3	8,101	5,143.7
HRNIVSA		400		540		85	170	1,150	170	1,229	340	3,404
RUSA					1	400	362.3	415.62	6,438	3,288.6	6,801.3	4,104.3
Total	20,200	18,861.9	24,799	29,245.77	36,797	20,655.45	51,042.1	41,859.26	59,281	45,706.1	1,92,119	1,56,328.4

B O = Budgeted Outlay; E = Expenditure

\* Expenditure includes Supplementary Demand for Grants



### *13th Five-Year Plan*

In terms of the number of universities, colleges and courses, the higher education system in Kerala has achieved significant progress since independence. State Plan outlays for higher education have increased after the third Five-Year Plan. During 11th and 12th Five-Year Plans, attempts were made to address the problems of quality in higher education. The 13th Five-Year Plan for higher education will concentrate on issues of access and quality.

Higher education requires our immediate and careful attention. The 13th Plan will encourage programmes and schemes to

1. Improve the quality of infrastructure.
2. Encourage academic excellence in teaching, research and interaction with institutions and scholars in other parts of India and the world.
3. Encourage research activity in institutions of higher education.
4. Encourage academic interaction between teaching and research institutions in Kerala.
5. Ensure adequate academic staffing.
6. Develop a long-term perspective for the regulation of the private sector in higher education, particularly in professional education.
7. Improve and regulate the conditions of work and employment of teachers in the private sector and temporary teachers in public and aided institutions.
8. Provide access to affordable higher education for the income-poor and for students from social groups that have historically been oppressed.
9. Improve and cut through red tape in academic administration.
10. Create an atmosphere of individual and institutional freedom and autonomy, particularly in private sector institutions.

These programmes and schemes should cover the whole range of higher education, including the natural sciences, social sciences, humanities, and technical and professional education.

#### *Ongoing Programmes and New Initiatives*

During 2017-18, in the higher education sector, 47 Plan Schemes (including Centrally Sponsored Schemes) are being implemented through various agencies in the State. Apart from the Directorate of Collegiate Education (DCE), autonomous agencies such as Kerala Council for Historical Research (KCHR), National Cadet Corps (NCC) of Kerala and Lakshadweep, 4 Law Colleges and 8 Universities are also implementing these schemes.

Kerala State Higher Education Council (KSHEC) is functioning as an advisory body to the Higher Education Department and to Universities in the State. Further, Additional Skill Acquisition Programme (ASAP), Rashtriya Uchchatar Siksha Abhiyan (RUSA) and State Project Directorate are working as project implementing agencies of the Department of Higher Education.

### *Directorate of Collegiate Education (DCE)*

The objective of the Directorate of Collegiate Education in the 13th Five-Year Plan is to “achieve academic excellence, enhance infrastructure development, promote qualitative and productive inter-disciplinary research, ensure need based industrial collaboration, improve employability, and initiate societal outreach programmes.”

Directorate of Collegiate Education implemented 30 Plan schemes in 2017-18. These include various scholarship schemes, programmes for academic excellence, capacity building of teachers, construction and improvement of infrastructural facilities in Government colleges, initiatives for the quality enhancement of teaching, etc.

Some of the ongoing activities are mentioned below.

1. Infrastructure facilities of Government colleges and hostels are being built and improved through the schemes of College Quality Improvement programme (CIUP), development of laboratories and libraries in government colleges, and accreditation of colleges with NAAC.
2. Honours Degree courses are introduced in Women’s College, Thiruvananthapuram (English), Victoria College, Palakkad (Commerce) and Brennan College Thalassery (Mathematics) in 2013-14 academic year and in Maharajas College, Ernakulum (Economics) during 2014-15.
3. Central and State sector scholarships of 14 types are being given to students. Various scholarships including Kerala State Suvarna Jubilee Scholarship (3000) and post-matric scholarships (93,264) were given during 2014-15.
4. Through the Scheme of Faculty Development, a large number of seminars, workshops and refresher courses are conducted for teachers.
5. As a part of IT Grid Project, connectivity has been established in all the government colleges and hostels. Under the Scheme of College Quality Improvement Programme (CQIP), facilities of Government colleges are being improved with the objective of obtaining NAAC accreditation.
6. Through Edusat Scheme, Satellite Interactive Terminals (SITs) have been installed in 39 government colleges. The lectures and classes of eminent scholars are recorded and transmitted through these SITs.
7. The scheme of Connectivity for National Mission on Education through ICT ensures high quality of e-content to teachers and students.

### *New Initiatives in the 13th Five-Year Plan*

1. *Setting up and operation of District Quality Assurance Circles (DQAC).* The primary responsibilities of the DQAC team will be to visit colleges in the assigned districts for mentoring and continuous monitoring of institutional growth (200 days/year), for meeting and trainings (40 days/year), organization of a minimum of 2 workshops at the cluster level to benefit 5 to 10 colleges. District Quality Assurance Circles, a three member peer team of experts would be formed in all 14 districts of the State, as a part of the initiative.
2. *Kairali research awards.* Under this scheme, research awards will be provided to the students who excel in doctoral research work.

The new schemes proposed include promotion of interdisciplinary research exposure in colleges, endowment for one student in each subject, common instrumentation centre, coaching for PSC tests and other competitive exams, and new scholarships for inclusion of backward and marginalized communities.

### *Universities*

In the 13th Five-Year Plan efforts will be towards infrastructure development, academic diversification, research and innovation, human resource development, dissemination and extension, improving the quality of teaching and learning process, set up people friendly health facilities, capacity building and lab and library development.

### *Law Colleges*

There are four Government Law Colleges – Thiruvananthapuram, Ernakulam, Kozhikode, and Thrissur – in the State. The Plan fund is mainly proposed for the infrastructural development and some specific academic activities. The 13th Plan will focus on building moot court halls and auditorium, playground, better class rooms, development of campuses and expansion of libraries. For the welfare of students from SC and ST communities, the Government Law College, Kozhikode will undertake remedial coaching language lab, career and skill development programmes.

### *Kerala State Higher Education Council*

Kerala State Higher Education Council has been constituted mainly to render advice and co-ordinate the roles of the Government, universities and other institutions of higher education in the State, evolving new concepts and programmes in higher education. The Council has been undertaking the activities and setting up a data bank on higher education, framing a policy on higher education, restructuring under graduate education, setting up of clusters of colleges, higher education scholarships and revision of university acts.

### *Kerala Council for Historical Research*

Kerala Council for Historical Research, established in 2001, is an autonomous institution, 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, bilateral academic and exchange agreements with leading universities and research institutes in India and abroad. KCHR is in the process of publishing a comprehensive volume on the scientific history of Kerala from pre-historic to the present times. 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. In the 13th Five Year Plan, the council will undertake research guidance programme and construction of an annex for KCHR library.

### *Additional Skill Acquisition Programme*

The Additional Skill Acquisition Programme is a sub programme of the Kerala State Skill Development Project launched in July 2012. This scheme is being implemented jointly by the General Education and the Higher Education Departments and seeks to equip students currently enrolled in the Higher Secondary and Undergraduate Courses in arts and science colleges. The major activities proposed by programme in the 13th Five-Year Plan include, community skill parks and skill development centres.

### *CCEK*

The Centre for Continuing Education is an autonomous institution functioning in the Higher Education sector. The Kerala State Civil Service Academy is functioning under the aegis of the Centre for Imparting Training to the students who are preparing for the Civil Service examination. The Centre is imparting need based training to the unemployed youth to increase their employability in key sectors of our economy. The new schemes proposed in the 13th Five-Year Plan are start coaching programmes for national level competitive examinations, set up web-portal to provide information regarding courses offered by institutions within Kerala and India and start online coaching programme for Civil Services Examination.

### *National Cadet Corps (NCC)*

The objective of NCC is to develop character, discipline and leadership qualities among students and youth. There are 5 Group Head Quarters, 41 units and 1 directorate of NCC in the State. The major activities proposed by NCC during the 13th Five-Year Plan include various kinds of infrastructural facilities like construction of training facilities, office buildings, construction of boat houses, construction and expansion of training academies to the headquarters, directorates and training academy of NCC in the State.

## *TECHNICAL EDUCATION*

### *Overview*

Technical education imparts knowledge in the applied sciences and modern technology and in doing so contributes to increasing labour productivity, technological innovation, and the general quality of life.

### *12th Five-Year Plan*

The department-wise outlay and expenditure in the 12th Five-Year Plan under technical education are given in Table 9.4.

Table 9.4 *Department-wise budgeted outlay and expenditure of technical education in the 12th Five-Year Plan* in Rs lakh

Department	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
	B O	E	B O	E	B O	E	B O	E	B O	E	B O	E
DTE	6,461	10,425.2	7,694	11,177	9,782	10,329.1	11,085	29,915.6	14,821	11,467.2	49,843	73,314.1
CUSAT	1,300	1,300	1,400	1,450	1,500	1,500	1,500	1,599.99	2,100	2,100	7,800	7,950
IHRD	1,000	1,000	1,200	1,225	1,300	1,100	1,300	1,359.5	1,350	2,119.7	6,150	6,804.2
KSSTM	575	575	620	620	710	710	1,210	1,210	1,350	1,550	4,465	4,665
A.P.J.Abdul Kalam Technological University	250	100	297	147	400	500	2,720	2,020	3,220	1,000	6,887	3,767
LBS	350	350	375	475	400	344.8	400	455.2	450	450	1,975	2,075
C-APT	173	173	200	200	230	100	230	100	250	380	1,083	953
Total	10,109	13,923.2	11,786	15,294	14,322	14,583.9	18,445	36,660.27	23,541	19,066.9	78,203	99,528.3

BO = Budgeted Outlay; E = Expenditure

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The advancement of knowledge through research is an essential function of all systems of higher education. An appropriate balance should be established between basic and target-oriented research. Rapid breakthroughs in the field of information and communication technologies offer opportunities to innovate course content and teaching methods, and to widen access to higher learning. Information technology changes the role of teachers in relation to the learning process. Technical education in the 13th Five-Year Plan will emphasise on both teaching and research, and pay special attention to the issues of innovation and skilling.

#### *The Directorate of Technical Education*

The Directorate of Technical Education is the nodal department for technical education in the State. During 2017-18, Directorate of Technical Education will implement 44 Plan schemes including the Centrally Sponsored Schemes. The Plan schemes are being implanted in Government Engineering Colleges, Polytechnics and technical high schools. The Plan schemes for IIT, Palakkad and Trest Park are channelled through DTE.

The vision of the 13th Five-Year Plan is to make technical education in Kerala achieve international standards and to develop a generation of young people who are high-quality professionals able to face local and global challenges, and contribute to the development of the nation. With this vision, the thrust areas of technical education under the Directorate of Technical Education are as follows:

1. Develop selected institutes as lead institutes with national eminence and international visibility.
2. Establish interdisciplinary centre for computation and informatics in selected engineering colleges.
3. Establish inter-disciplinary centre for research and development in one/two engineering colleges.
4. Product design and development in selected engineering colleges.
5. District framework for the lead institutes to become centre of excellence.
6. Technician level skilling master plan to produce employable human power.
7. Multi point entry exit skill corridor to integrate technical education of the state from school level to research and development.
8. Job oriented technical and vocational training and promotion of self-employment initiatives for the marginalised.

By identifying the above mentioned thrust areas, the Directorate of Technical Education has proposed the schemes for the 13th Five-Year Plan under five major sectors. These include development of institutions, modernisation of teaching learning process, upgrade technical education to international standards, implement schemes for students and strengthen the department.

### *New Schemes during 2017-18*

1. *Accreditation of Government Polytechnic Colleges in the State.* There are 45 polytechnic colleges in the Government sector and 6 polytechnic colleges in the aided sector functioning in Kerala. Accreditation makes more confidence and self-esteem in faculty and students. In addition to the above, AICTE has mandated that new programmes will be sanctioned only to the institutions with accreditation.
2. *Centre for Product Design and Development at CET.* It is proposed to set up a product design and development centre at College of Engineering Trivandrum as a pilot project, which could be replicated in other engineering colleges. The proposed centre will develop and test new designs for products and shall transfer the technology to prospective entrepreneurs. The centre will also impart training on product design to students and unemployed youth through specialized programs. The Centre shall utilise the Fab lab facility to be supplied to CET by Startup Mission Kerala.
3. *Re-usable building systems to ensure sustainability of expanding urban infrastructure.* The reusable building systems to ensure sustainability of expanding urban infrastructure would identify various research segments. The scheme would strive to provide leadership in areas of sustainability, particularly in built environment, and infrastructure development by appropriate incorporation of advances in engineering, technology and management.
4. *Rural Technology Development Centre.* The Rural Technology Development Centre (RTDC) is envisaged to act as a link between academia and local communities, for the transfer of appropriate technology specifically developed for the betterment of the rural technologies. The Rural Technology Development Centre is aimed to develop innovative solutions to develop efficient and effective mechanisms to uplift traditional technologies. The Centre can act as a nodal agency for the transfer of technological knowhow connecting the other technical institutions in the State including engineering colleges and polytechnic colleges with the community.
5. *Launching a Student Satellite: CET Satellite.* It is proposed to launch a student satellite by College of Engineering Trivandrum in collaboration with Indian Space Research Organization (ISRO). This is a long term project which can be materialized in 3 to 4 years. The project team will include undergraduate students, post graduate students and faculty members from all the departments of CET. The project will be coordinated by the newly established CET Centre for Interdisciplinary Research (CCIDR) of the College.
6. *E-Yentra Project (Robotics Lab).* The scheme e-Yantra is an initiative to spread education in embedded systems and Robotics by IIT Bombay sponsored by the Ministry of Human Resource Development through the National Mission on Education through ICT (NMEICT). The objective is to provide hands-on learning to engineering students who have limited access to labs and mentors. The goal is to create the next generation of (embedded systems) engineers in India.
7. *Cochin University of Science and Technology.* Cochin University of Science and Technology was established in 1971 to develop higher education with particular emphasis on post graduate studies and research in applied science, technology, industry and commerce. The major activities proposed by the University for the 13th Five-Year Plan include construction of new and additional buildings for various departments, a recreation centre and a university health centre in the Students Amenity Centre, construction and extension of hostels, campus development, road network, water supply, electricity (an exclusive feeder line), waste



disposal and effluent treatment, expansion of the activities of Centre for Science in Society (C-SiS) and infrastructural facilities in the Research Intensive Departments.

8. *Kerala State Science and Technology Museum (KSSTM)*. The Science and Technology Museum was started in 1984 with a view to popularize the different aspects of science and technology. Apart from the ongoing activities, KSSTM has proposed establishment of regional science centres in Kollam, Pathanamthitta, Idukki, Alappuzha, Ernakulam, Wayanad, Palakkad, Kannur, and Kasargod in the 13th Five-Year Plan.
9. *IHRD*. IHRD was set up in 1987 an autonomous body fully owned and controlled by the State Government. There are 9 engineering colleges, 8 model polytechnics, 44 colleges of applied sciences, 15 technical higher secondary schools, 2 regional centers, 7 study and extension centres, and 2 model finishing schools under IHRD. The engineering colleges, colleges of applied sciences and regional centers are functioning as self-financing institutions. The major activities proposed by IHRD in the 13th Five Year Plan are construction and maintenance of buildings, purchase of machinery and equipment, furniture, and library books, setting up of IT infrastructural facilities at IHRD headquarters, research and skill development schemes and gender development schemes, skill trainings and ladies' hostels.
10. *LBS Centre for Science and Technology*. In the 13th Plan the LBS Centre for Science and Technology proposes to setup technological incubator centres, purchase equipment, computers and software for laboratories and acquire land for expansion.
11. *Centre for Advanced Printing and Training (C-apt)*. Centre for Advanced Printing and Training (C-apt) formerly known as Kerala State Audio Visual and Reprographic Centre formed in the year 1992, is functioning as are source centre for all technical and non-technical institutions in Kerala. Several job oriented courses in printing and modern reprographic equipment are also being conducted by C-apt. Apart from the ongoing scheme, the new major activities proposed by C-apt in the 13th Five-Year Plan are to install four colour web offset machine at sub-centre, Pala, purchase of sheet fed offset printing machine at sub-centre, Ernakulam, install four colour web offset machine at sub-centre, Kozhikode and purchase bindery unit and other allied equipment.
12. *A.P.J. Abdul Kalam Technological University*. The Government of Kerala has established the Kerala Technological University in July 2014. The major activities proposed by the University for the 13th Five-Year Plan are completion of temporary campus, setup permanent campus, internationalise technical education in Kerala, academic support for inspiring the young, programme for professional skill development, set up a centre for excellence in telecommunications and develop innovative technology for society. Besides, there are proposals to set up a centre for speech and language process and a centre for engineering research and development.

## 10 HEALTH

### *Overview*

Kerala stands out among other Indian States in the health sector. In the first phase of Kerala's development, the State made progress in preventive health care and against epidemic diseases. Backed by these efforts, Kerala began to achieve, from the 1980s, standards comparable with developed countries that were medium-to high-achievers. Kerala advanced substantially beyond the Indian average in indicators like life expectancy at birth, infant mortality, maternal mortality, and male to female ratio in the population.

Kerala's health policy envisages higher standards of care based on the principles of social justice. Publicly funded health care system (ranging from Primary Health Centres to Medical Colleges) helped in providing healthcare facilities to people of all strata of society. Kerala's health model succeeded in attaining higher standards based upon social justice. This orientation has been widely recognised by international agencies such as World Health Organisation (WHO).

Today the State faces important second-generation problems. These include problems of non-communicable diseases, of the recurrence of certain diseases, and problems of palliative care for the elderly. Comprehensive efforts to tackle these problems will be an integral part of the 13th Five-Year Plan. The creation of a people friendly public sector in health is a crucial aspect of plan policy.

### *Health Care Infrastructure in Government Sector*

The health infrastructure in the State consists of 2,947 institutions with 56,009 beds. Besides, there are 5,403 sub centers under the Director of Health Services (DHS). Out of total institutions 44.3 per cent are under Modern Medicine, 32.07 per cent under Ayurveda and 23.5 per cent under Homeopathy department. Medical services are also provided through the co-operative sector, ESI hospitals and the private sector.

Table 10.1 *Health infrastructure in government sector during 2015-16 in numbers*

Serial No.	System of Medicine	Institutions	Beds	Patients treated	
				IP	OP
1	Modern Medicine (DHS)	1,281	38,400	32,49,248	9,36,79,945
2	Modern Medicine (DME)	26	12,035	47,8097	45,44,359
3	Ayurveda (ISM)	942	3,044	2,51,141	1,16,90,486
4	Ayurveda (DAME)	3	1,355	10,564	4,60,756
5	Homeopathy	693	975	45,667	1,55,43,791
6	Homeopathy Education	2	200	2,652	23,8702
Total		2,947	56,009	40,37,369	12,61,58,039

### 12th Five-Year Plan

The outlay earmarked for the implementation of schemes in the 12th Five-Year Plan was Rs 3,31,888 lakh (BE). The total expenditure reported during the Plan period was Rs 3,29,859 lakh.

Table 10.2 *Department-wise outlay and expenditure of health sector in the 12th Five-Year Plan* in Rs crore

Sector	2012-13		2013-14		2014-15		2015-16		2016-17		2017-18	
	BO	E	BO	E	BO	E	BO	E	BO	E	BO	E
DHS	205.6	207.6 (101)	245.3	239 (97.4)	296.9	275.5 (92.8)	322.2	323.7 (100.5)	521.7	534.6 (102.5)	1,591.8	1,580.4 (99.3)
DME	202.2	247.7 (122.5)	226.7	231.7 (102.2)	257.5	244.3 (94.9)	267	264.3 (99)	393.9	369.1 (93.7)	1,347.2	1,357 (100.7)
ISM	16.7	16 (96.2)	23.3	22.2 (95.2)	25.5	24.2 (95.1)	26.7	25.1 (93.9)	34.1	33.1 (97)	126.2	120.6 (95.5)
DAME	17.6	17.5 (99.4)	23	22.9 (99.4)	25.7	25.6 (99.9)	25.7	25.7 (100)	33.6	33.6 (99.7)	125.6	125.2 (99.7)
Homeo	17.2	17.18 (99.83)	14.8	16.7 (113.4)	14.4	19.7 (137)	14.4	18.2 (126)	19.8	18.5 (93.4)	80.6	90.3 (112.1)
Homeo Medical Education	10.7	5 (46.7)	8	4.5 (56.3)	9.5	5 (52.9)	9.5	5.1 (54)	9.9	5.5 (55.6)	47.5	25.1 (52.8)
Total	470	511 (108.7)	541.00	537 (99.3)	629.4	594.3 (94.4)	665.4	661.9 (99.5)	1,013.1	994.4 (98.2)	3,318.9	3,298.6 (99.4)

Figures in bracket indicate per cent; BO = Budgeted Outlay, E = Expenditure

\* Expenditure includes Supplementary Demand for Grants

### 13th Five-Year Plan

In the 13th Plan, the Government of Kerala will attempt to make the best possible preventive, curative, and palliative care available in the public sphere. It will attempt to pioneer a people-friendly State sector in health care. The thrust of the 13th Five-Year Plan policy is to transform the quality of the public sector in health, to improve access and affordability with respect to health care, to expand insurance coverage, to expand facilities for public health and sanitation, and, in general, to put into place schemes and programmes that are intended to tackle the health issues that confront contemporary Kerala.

The State will take special care to improve the health of victims of sectional deprivation, including, the Adivasi people, fishing communities, senior citizens, transgenders, and in-migrant workers.

The Aardram Mission, the major part of which will be implemented during the Five-Year Plan period, aims to transform the health care in the public sector. The programmes developed to achieve the objectives of the Aardram Mission concern the primary, secondary and tertiary sectors of the health sector. The management and implementation of these programmes will be closely linked to the process of decentralised planning and the second phase of the people's planning movement. The

Mission objectives are linked to the Sustainable Development Goals recommended by the United Nations.

Kerala is India's leader in Ayurveda. The 13th Five-Year Plan will promote study and research in different branches of Ayurveda, which attracts large numbers of people from different parts of India and the world, and is thus an important potential contributor to Kerala's income.

#### *Key Initiatives in the 13th Plan*

##### *Directorate of Health Services*

The following initiatives are proposed in the 13th Five-Year Plan.

1. *Strengthening of district, general hospitals and taluk hospitals selected under Aardram.* Aardram Mission envisages the development of super specialty service in district level hospitals and specialty services in taluk level hospitals based on the standardisation criteria. In the coming years of the Five-Year Plan it is expected to complete the institutional development. This will require development of infrastructure and machineries and hospital equipment for hospitals under the Aardram Mission.
2. *Developing super-speciality services in selected district level hospitals under Aardram Mission.* Considering the changing epidemiological pattern and morbidity status of Kerala there is a need to develop other super-specialty services in the government sector. Currently these services are mostly restricted to government medical colleges and private sector. Strengthening of cardiology, nephrology, neurology and urology departments would be considered for super specialty services in a phased manner.
3. *Patient friendly outpatient care in all hospitals including those selected under Aardram Mission.* In recent years the number of out-patients has substantially increased in all categories of health care institutions including district hospitals and taluk hospitals. Hence providing a system for systematic outpatient registration, comfortable waiting time in hospitals, systematic medical consultations and laboratory investigations, providing the facilities for outpatient medical interventions and getting sufficient generic drugs is very critical. There is a need for patient friendly transformation of all services in these hospitals including that of the very critical outpatient care.
4. *Developing Intensive Care Units, Cancer Care Units and other specialised service delivery areas in district level hospitals.* Considering the need of cancer services in Kerala, available facilities in Government Hospitals are very much inadequate. In recent years the initiative for developing district cancer care centers at district hospitals with facility for follow up chemotherapy has picked up very well. There is a need to further expand these activities by including palliative chemotherapy. There is a need to develop selected tertiary and secondary care hospitals with advanced life saving high dependency units including the intensive care units. These units would provide critical lifesaving interventions including ventilator facilities, and complicated post-operative case management facilities including that of trauma care. There is a need for developing

comprehensive secondary care facilities in district and taluk level hospitals. Only by developing such services, the complication of these diseases including the end organ complications would be minimised.

5. *Strengthening emergency medical services.* In order to address the higher incidence of road traffic accidents (RTA) and trauma deaths in Kerala there is a need for developing a network of systematic trauma care services at least in selected hospitals in areas with higher incidents of RTA. These facilities would be useful for the management of other surgical and medical emergencies like non RTA trauma, medical emergencies like myocardial infarction, cardiac arrest, snake bite, sepsis etc. Health services have already prepared an action plan based on these criteria. It is proposed to develop two levels of trauma care facilities in selected hospitals.
6. *Strengthening of diagnostic services of PH labs and PHC labs.* This scheme comprises of new public health labs in districts not having the same, developing the existing public health labs and developing the Family Health Centre Laboratories for necessary lab facilities.
7. *Strengthening maternity and reproductive child health services.* Strengthening of maternal and child health care service comprises of strengthening of first referral units per five lakh population, maternity wing including labor room, blood bank and blood storage facilities, improved facilities for newborn care and setting up infertility clinics and scaling up of existing infertility clinics.
8. Developing mental health care services.
9. Establishing two zonal entomological units at Ernakulam and Kozhikode.
10. Developing dental health care services in CHCs and starting mobile dental units.
11. Strengthening the ophthalmic wing of district and taluk level hospitals.
12. Extending secondary palliative care Services up to the level of CD Blocks (CHCs).
13. Developing isolation unit as a part of emergency epidemic preparedness.
14. Developing a mechanism for systematic solid and liquid waste management in all major government hospitals.
15. Developing 300 PHCs into Family Health Centers during the next financial year and the remaining PHCs during the next two years as part of Aardram Mission.
16. Developing the facilities of hospitals and other health care institutions in tribal areas.
17. Expansion of e-health and e-office system in health services.
18. Developing adolescent health care services up to the level of CHCs.
19. Developing and strengthening training centers at the district level.
20. Developing the Block-level CHCs into centres with basic specialty services and Block level public health coordination centers (proposed to be included in Aardram Mission).
21. Starting histopathology division at PH Lab Thiruvananthapuram and starting new district PH labs at Idukki, Kasargod, Thrissur, Palakkad, and Kottayam.

#### *Directorate of Medical Education*

At present, 11 Medical Colleges, 5 Dental Colleges, 6 Nursing Colleges, one Paramedical Institute, and 4 Pharmacy Colleges are functioning under this department. These institutions have full time

faculty, undergraduate and postgraduate courses and providing patient care and community oriented services. The following are the new initiatives of the department.

1. Strengthening radiological imaging facilities.
2. Strengthening trauma care facilities.
3. Setting up advanced cardiac care facilities.
4. Setting up molecular diagnostic facility in Medical Colleges.
5. Integrated center for maternal and child health, Thrissur.
6. Super specialty blocks at Medical Colleges, Kollam and Thrissur.

#### *Commissionerate of Food Safety*

The following are the new initiatives of the department during the 13th Five-Year Plan.

1. Infrastructure and office building for district food safety office and circle food safety office
2. Construction of State Training and Research Centre.
3. Food Safety Research Centre.
4. Setting up microbiological laboratories in Government Analysts lab Thiruvananthapuram and Regional Lab Ernakulam.
5. New food testing lab at Kannur.
6. District food testing lab at Pathanamthitta.
7. District food testing lab at 9 districts.
8. Toxicology section in regional labs.
9. Labs at check posts.

#### *Drugs Control Department*

District drug testing laboratories at Thrissur, Kozhikode and Pathanamthitta will be constructed in the 13th Five-Year Plan.

#### *Indian Systems of Medicine (ISM)*

Indian Systems of Medicine Department is headed by the Directorate at the State level and has 14 District Medical Offices. There are 814 dispensaries and 128 hospitals functioning under ISM Department.

1. In the 13th Five-Year Plan the department proposes to introduce, speciality services in district hospitals, detoxification clinics in five urban district hospitals and to accredit hospitals with NABH. Besides, it is also proposed to develop Government Ayurveda Research Institute Mental diseases, Kottakkal into centre of excellence, Naturopathy hospital Varkala as centre of excellence in naturopathy and children and adolescence care institute at Purakkattir, Kozhikode.
2. Plans are also proposed to implement KASH AYUSH standards in all district and all 30 and 25bedded hospitals, upgrade 9 district hospital to 100 bedded institutions, waste management

system and biogas plant in district hospitals, IT enabled services including telemedicine, digital library, tourist friendly Ayurvedic treatment facilities, establish training institute for ISM Staff and availing Naturopathic services in yoga clinics and units attached to district Ayurveda hospitals

#### *Directorate of Ayurveda Medical Education*

The Department of Ayurveda Medical Education was established in 2000. When the directorate commenced its functions, there were 3 Government Ayurveda Medical Colleges and 2 aided Ayurveda Colleges in the State. Now the total number of Ayurveda Medical Colleges including self-financing colleges in the State has increased to 19.

The directorate plans to start a new mental health hospital at Kannur, academic staff training institute for Ayurveda Doctors, a hospital for women and children at the Government Ayurveda Medical College, Kannur, and start new government Ayurveda medical colleges in Alappuzha and Idukki

#### *Homeo Department*

In the 13th Five-year plan the department plans to undertake the second phase of Kerala State Homeopathic Corporation Pharmacy (HOMCO) and standardise homeo institutions in the state.

#### *Major Initiatives in the Annual Plan 2017-18*

#### *Aardram Mission*

As a part of the Nava Kerala Mission of the Government of Kerala, Aardram mission has been launched in the health sector, aimed at making health sector patient friendly. Many of the government hospitals are overcrowded with patients. Government hospitals can be made people friendly to a large extent by ensuring quality health care with minimal waiting time for outpatient medical checkup and other investigation facilities. This would also enable to give adequate attention to inpatient services. Aardram Mission will be implemented in three stages in Government Medical College Hospitals, District Hospitals and Taluk Hospitals, and Primary Health Centres. By converting Primary Health Centres as Family Health Centres with adequate supply of drugs and assured treatment protocols will ensure better health among people and enhance their trust in the public health system. The mission aims to improve the efficiency of services and facilities in the government hospitals with a view to extend treatment at a reasonable cost, time and satisfaction. The major objectives of the mission are to transform outpatient wings of Medical College hospitals and other Government hospitals, standardise district level and taluk level hospitals, develop Primary Health Centres into Family Health Centres in a phased manner and ensure protocol and treatment guidelines in patient management in hospitals.

### *Directorate of Health Services*

The directorate intends to develop super-speciality facilities in selected district and general hospitals, developing primary health centres as family health centres, set up laboratories in primary health centres, create patient friendly hospital initiative, strengthen nursing service and undertake state specific Sustainable Development Goal (SDG) based interventions and special campaign.

### *Directorate of Medical Education*

The directorate proposes to revamp the existing infrastructure and maintain high-end equipment in Medical Colleges and create patient friendly hospital environment.

### *Indian Systems of Medicine (ISM)*

1. Establishment of Health Information Management System(HIMS)

### *Directorate of Ayurveda Medical Education (DAME)*

1. International level laboratory and education centre for research linking Ayurveda to modern biotechnology.

### *Gender Development*

An overall thrust in the 13th Five-Year Plan is to make Planning and Budgeting gender sensitive with at least 10 per cent of total outlay allocated for women specific schemes or schemes in which women's share is specified or identifiable based on gender disaggregated beneficiary data. The gender specific schemes included in the health sector include Maternity hospitals, maternity units, women and children hospitals (included in Ayurveda and Modern Medicine) nursing schools, training, family health centers, faculty improvement programmes, NRHM-RCH flexi pool, augmenting facilities for women in RCC, palliative care, mental health programmes, etc.



## 11 URBAN DEVELOPMENT

### *Overview*

Kerala, as per the Census 2011, is the third most urbanised State in India and also reckoned as the fastest urbanising State in the country. The urban population as a per cent of total population grew from 26 per cent in 2001 to 47.7 per cent in 2011. The corresponding national figures were 27.7 per cent and 31.1 per cent. The growth of urbanisation is not only due to the drift of people to the urban centres, but also on account of rural areas on the periphery of existing urban centres, acquiring an urban character. Development policy in the State so far does not appear to have taken note of the rapid urbanisation. The 13th Plan proposes to build in urbanisation into its policy framework. The 13th Plan will place high priority on the problems of urbanisation and urban planning, and work towards a comprehensive action plan for urban development.

The urban sector of Kerala consists of 6 municipal corporations and 87 municipalities. The number of Census towns as per the Census 2011 is 461. The issues of urbanisation are not confined only to urban local bodies. The nature of grama panchayats is also turning urban due to the distress in agriculture and waning of small scale production resulting in declining agricultural income. Therefore, urban issues are central to the planning process in all tiers of the local bodies.

In the international context urbanisation, while moving the global economy forward, has also raised levels of inequality and exclusion of the poorer from enjoying benefits of growth. Poverty and deprivation continue to be a major problem in the State too, which is severe in the case of aged, destitute, mentally and physically challenged. Growing labour migration to the urban centres poses another set of issues that needs to be addressed in the 13th Five-Year Plan. Kerala, as a model of inclusive development, has to reiterate its efforts on inclusion.

Urban challenges range from creating suitable and effective waste management system to affordable housing for all. Plastic and other solid waste from the domestic sector often block drainage systems resulting in floods during rains. In urban housing, the lack of a holistic habitat development approach and inadequate livelihood programmes create obstacles. The urbanisation trend has its adverse effect on Kerala's natural environment and biodiversity. Sensitive and delicate wetland, coastal areas, forest and hill regions have been affected by urbanisation. It is also a threat to climatic conditions and therefore sustainable urbanisation is considered as a key to mitigate its harmful effect on nature, environment and climate change. Planning and configuring cities and services spatially is central to the sustainable approaches, as everywhere, in our State also.

Rural Kerala was declared Open Defecation Free (ODF) by the State Government on November 1, 2016. In Kerala, out of 93 Urban Local Bodies (ULBs), 92 ULBs declared ODF by on 31st March 2017 and 20 ULBs were certified by Government of India. A total of 29,456 individual household latrines (IHHL) have been completed against a target of 29,597 (93.2 per cent).

The schemes under Urban Development have been implemented through the following Departments and agencies.

1. Urban Affairs Department
2. Town and Country Planning Department
3. Kudumbashree Mission
4. State Mission Management Unit (SMMU)
5. Suchithwa Mission
6. Kerala Urban and Rural Development Finance Corporation (KURDFC)
7. Development Authorities

#### *12th Five-Year Plan*

During the 12th Plan period, an outlay of Rs 4,421.25 crore was allocated for the sub-sector and the expenditure was Rs 1,275.25 crore, which accounts for 28.84 per cent of the outlay. The whole period of the Five-Year Plan had a poor financial performance and this will stress on the need for strengthening the implementation and monitoring of urban development schemes. This needs to be addressed in the 13th Plan.

Table 11.1 *Budgeted outlay and expenditure for urban development in the 12th Five-Year Plan* in Rs crore

Year	Budgeted Outlay	Expenditure
2012-13	969.00	278.72
2013-14	1,130.49	115.68
2014-15	1,179.87	240.42
2015-16	447.89	264.02
2016-17	694	376.41
Total	4,421.25	1,275.25

#### *13th Five-Year Plan*

The Approach to the 13th Plan lays emphasis on the following.

1. High priority on the problems of urbanisation and urban planning and work towards a comprehensive action plan for urban development.
2. Positioning the social housing towers strategically in order to address issues on urban sprawl.
3. The State Government will draw up a road map to provide the entire population of the State with an assured supply of drinking water and projects to meet urban water demand, especially in water-scarce cities.
4. The Haritha Keralam Mission also recognises the importance of safe and scientific waste management, especially of urban solid waste. The 13th Five-Year Plan will pay special attention to these social-environmental issues.
5. Planning for a litter-free Kerala with the help of LSGs and the Suchitwa Mission.

6. The departments concerned may also investigate and experiment with innovative forms of urban agriculture in Kerala.
7. Women's self-help groups, notably Kudumbashree, can play an important role in Kerala's industrialisation drive. Many Kudumbashree groups are already engaged in food processing activities, but mostly in the low end of the value spectrum. They should now try to establish their presence in higher value adding industries and propose the establishment of umbrella companies that focus on employment of women in urban services.
8. Work closely with the various Missions under Nava Kerala Mission and ensure effective convergence of various actions envisaged under each of them.
9. Dissolve the parallel bodies in the area of urban development.

Strategies of 13th Five-Year Plan related to urban development will be to work closely with the various missions under the Nava Kerala Mission and to ensure effective convergence on various actions envisaged under each of them. Under the sector, the activities of the scheme Pradhan Manthri Awas Yojana-Urban (PMAY-U) are linked with the LIFE mission. Waste management scheme for urban areas and Swachh Bharat Mission (Urban) are linked with Haritha Keralam Mission.

In the sphere of sanitation, the 13th Plan may focus on safe sewage and septage management through establishment of package septage treatment plants (PSTPs) in all districts and for resource recovery and recycling (Solid Waste Management) establish plastic shredding units in all urban local bodies and block panchayaths. The Plan may focus on housing for all as envisaged in LIFE Mission and ensure five lakh houses by 2022.

AMRUT, Smart City Mission and Pradhan Mantri Awaz Yojan (PMAY) are the centrally sponsored schemes announced by the Government of India in June 2015. Kerala's six municipal corporations and municipalities of Alappuzha, Palakkad and Guruvayoor are under AMRUT scheme.

PMAY-U scheme is implemented in all the 93 urban local bodies in the State. Thiruvananthapuram and Kochi are the two cities selected under the Smart City Mission. During the 13th Plan steps may be taken to get more cities to be selected under AMRUT. Implementation of projects under AMRUT and smart city project in Thiruvananthapuram district needs to be accelerated.

The State economy relies largely on income from international remittance than any other State in India. Agriculture is decelerating and there are no large scale industries in the State. Due to high land value and antipathy to large scale land acquisition, industry is unlikely to emerge as an engine of growth. Therefore, economy has to focus on those sectors where the State has a competitive edge like tourism, IT, education and healthcare.

The 13th Five-Year Plan should focus on these issues of the urban sector and aim at preservation of landscapes, natural resources and public spaces through a holistic approach to urban planning to ensure cohesion, participation and inclusion.

## 12 SOCIAL INCLUSION

### WELFARE OF SCHEDULED CASTES

#### *Overview*

The struggle against caste and the criminal practices of untouchability and similar forms of social exclusion was an intrinsic part of the struggle for freedom and socio-economic development in Kerala. This is a historical legacy that we cherish. There remain disparities with respect to land holdings, employment, education, and housing between the people of the scheduled castes and scheduled tribes and other social groups in the population. The planning process will work to protect the rights of the people of the scheduled castes and scheduled tribes and other social groups in the population, and to establish the principles of equity in socio-economic achievement between all sections of the society.

At the Census of 2011, the population of people of the scheduled castes in Kerala was 30.39 lakhs or 9.1 per cent of the total population of the State. There was from 7.5 lakh households in the State. The share of the people of the scheduled castes to total population in Palakkad district was 13 per cent followed by Thiruvananthapuram (12 per cent), Kollam and Thrissur (11 per cent) and Malappuram (10 per cent). The data show that more than half of the population of the people of scheduled castes is concentrated in these five districts. The following social groups have been identified as particularly vulnerable communities among the people of the scheduled castes: Vedar, Vettuvan, Nayadi, Kalladi, and Arundhathiar. These vulnerable social groups constitute 3.65 per cent of the Scheduled Caste population in the State.

The share of the funds allocated by the Government of Kerala from the State Plan outlay for the Scheduled Caste Sub Plan (SCSP) exceeds the share of scheduled castes in the population (9.81 per cent as per Census 2001). The ratio was 9.81 per cent in Annual Plan 2017-18. Certain percentage of funds are allocated to local self-government institutions to implement decentralised planning schemes.

The 13th Five-Year Plan will focus on the improvement of education, health care, sanitation, land holding, agricultural production, skill development, and other income generating activities for the people of the Scheduled Castes.

#### *12th Five-Year Plan*

The total outlay earmarked for the Scheduled Caste development during the 12th Plan was Rs 9,327.39 crore (9.81 per cent of State Plan), of which 48.75 per cent was allocated to the local governments to implement various schemes.

### *State Plan*

The total outlay earmarked in the Budget for Scheduled Caste Development Department during the 12th Five-Year Plan was Rs 4,780.09 crore and the expenditure was Rs 3,871.49 crore. The year-wise outlay and expenditure during the Plan period are given in Table 12.1.

Table 12.1 *Budgeted outlay and expenditure of Scheduled Caste Development Department during 12th Five-Year Plan in Rs crore*

Annual Plan	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	549.75	519.48	95
2013-14	839.50	790.16	94
2014-15	1,034.42	693.45	67
2015-16	1,040.92	752.19	72
2016-17	1,315.50	1,116.19	85
Total	4,780.09	3,871.49	81

### *Local Self-Governments*

During the 12th Plan period, Rs 4,547.3 crore was allotted to local self-governments to implement various schemes under Scheduled Caste Sub-Plan (SCSP). The details are given in Table 12.2.

Table 12.2 *Budgeted outlay and expenditure of local self-governments under SCSP during 12th Five-Year Plan in Rs crore*

Annual Plan	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	824.6	666	80.8
2013-14	828.2	882.5	106.6
2014-15	927.6	811.6	87.5
2015-16	927.6	856.3	92.3
2016-17	1,039.3	726	69.9
Total	4,547.3	3,942.4	86.7

As mentioned above, disparities between the people of the scheduled castes and the general population remain with respect to ownership of land and house, livelihood insecurity, achievements in higher education, modern job opportunities, modern residential infrastructure, and access to formal bank credit.

### *13th Five-Year Plan*

The main thrust areas of the 13th plan will be the provision of land, homesteads and housing, full access to the best educational facilities at all levels, the preparation of a new generation for modern employment, filling up places reserved for Scheduled Castes and Scheduled Tribes, and ensuring food security.

The fact that the Central Budget has shifted from a committed share of allocations to welfare schemes is a matter of concern. By contrast, the Government of Kerala in keeping with its egalitarian goals, has not only committed a share of total allocations to Scheduled Castes and Scheduled Tribes, but has also increased that share. In the 13th Five-Year Plan, allocations to the Special Component Plan (SCP) for the people of the Scheduled Castes and the Tribal Sub-Plan (TSP) for the people of the Scheduled Tribes will exceed the share of the population of Scheduled Castes and Scheduled Tribes in the State.

*Key Initiatives in the 13th Five-Year Plan*

1. Entrepreneur support scheme by providing capital support to micro, small, and medium enterprises.
2. Mentoring programme and a help desk in each district office to provide information about career opportunities and higher education possibilities in India and abroad.
3. Special coaching institutes in residential mode for dropout students at higher secondary level, engineering, and other professional courses.
4. Establish region-wise finishing schools and community college to help professional students to start self-employment ventures and start incubation centres to help young entrepreneurs.
5. E-resources-related career development and soft skill training system will be developed with the help of experts and institutions working in the area of information technology.
6. A training centre will be started for early dropouts to prepare them to write equivalency examination.
7. Revamp the pre and post metric hostels run by the department by providing all facilities and amenities required for students to pursue modern education. A monitoring system will be developed to ensure efficient working of these hostels.
8. Full health care support will be extended to the family of persons with disabilities.
9. Old age houses and geriatric care to provide support to the elderly.
10. Skill training may be given to candidates undergoing professional courses.
11. Regional centres will be opened for effective implementation of education and development schemes.
12. A stringent assessment mechanism should be adopted to evaluate the scholastic and non-scholastic performances of the learner based on periodic progress of the student.
13. Creation of knowledge centres with all modern amenities of learning.
14. Organise career orientation programme for the students at the higher secondary level to help them choose the right career for their future.
15. Establish hostels for post-matric students and working women in all districts.
16. Insurance linked schemes for girl child for the protection and holistic development.
17. An additional room and information facilities for study purpose.
18. Start pre-examination training centres (PETCs) in all districts and develop these centres similar to that of Institute for Civil Services Examination Training Society (ICSETS).

## WELFARE OF SCHEDULED TRIBES

### *Overview*

At the Census of 2011, the population of the people of the Scheduled Tribes in Kerala was 4,84,839 or 1.45 per cent of the total population of the State. According to the report on the Socio-Economic Status of Scheduled Tribes of Kerala (2008), there are 1,07,965 tribal families in the State living in 4762 hamlets. About 11 per cent (540) of scheduled tribal residential settlements are situated within reserve forests and 20 per cent (948) are located in the immediate vicinity of reserve forests.

Among the Scheduled Tribes, eight communities – Aranadan, Wayanad Kadar, Kudiya (Melakudi), Maha Malasar, Palliyan, Thachanadan Moopan, Malapanickar and Malai Pandaram – have been classified as minority communities, eight communities – Adiyar, Eravallan, Hill Pulaya, Irula, Malasar, Malayan, Mudugar and Paniyan are marginalised communities, and five communities – Kadar, Kattunayakan, Koraga, Kurumbar and Cholanaikkan – are the 5 particularly vulnerable scheduled tribe communities in the State.

Literacy among people of the Scheduled Tribes in the State lags behind the population as a whole. According to the Census of 2011 literacy rate of Scheduled Tribes in Kerala was 74 per cent. For all the progress that has been achieved with respect to Scheduled Tribe development, socio-economic disparities between the people of the Scheduled Tribes and the rest of the population persists. These disparities are apparent in schooling and education achievements, health standards, access to modern employment, housing, and general access to social infrastructure.

The problems of the people of the Scheduled Tribes need special attention across the spectrum of development tasks. These include different types of service delivery including housing, preventive and curative health, public food distribution, sanitation, drinking water, school education, land rights, livelihoods, cultural facilities, and the amenities of modern life. The 13th Plan will design schemes to address and eliminate the scourge of absolute poverty in all Adivasi habitations.

Socio-economic development and protection of the Scheduled Tribes from all kinds of exploitation are the twin objectives of Tribal Sub Plan (TSP). The Government of Kerala has allocated an amount that exceeds the share of tribal population in the State. Out of the total TSP Plan outlay, a certain percentage of funds are allocated to local governments for implementation of schemes under decentralised planning and the remaining to the Scheduled Tribes Development Department. As per the population Census 2001 and 2011, the Scheduled Tribes population constitutes 1.14 per cent and 1.45 per cent respectively.

### *12th Five-Year Plan*

During the 12th Plan Rs 2,602.25 crore was earmarked as TSP flow from the State Plan provision of Rs 95,010 crore. The outlay and expenditure of State Plan schemes of Scheduled



Tribes Development Department and local governments from the period from 2012-13 to 2016-17 are given in Table 12.3.

Table 12.3 *Tribal Sub Plan budgeted outlay and expenditure during 12th Five-Year Plan* in Rs crore

Year	Total Allocation	Percentage allocation of TSP to State Plan	LSG		Department	
			Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure
2012-13	325.05	2.32	123.62	102.00	201.43	205.33
2013-14	389.85	2.29	124.30	136.89	265.55	267.10
2014-15	600.00	3.00	139.22	121.61	460.78	390.46
2015-16	604.50	3.02	139.22	149.78	465.28	366.69
2016-17	682.80	2.84	156.00	124.69	526.80	475.4
Total	2,602.25	2.74	682.36	634.97	1,919.8	1,704.99

### *13th Five-Year Plan*

The 13th Five-Year Plan will seek to end the scourge of social disparity between the people of the Scheduled Tribes and other sections of the population. The planning process will work to protect the rights of the people of the Scheduled Castes and Scheduled Tribes, and to expand the socio-economic achievements of all people of the Scheduled Castes and Scheduled Tribes in the State.

The goals of the Plan are the following.

1. Solve the problems of lack of housing and land among scheduled tribes by providing housing for all houseless and landless.
2. Ensure 100 per cent literacy, quality education at all levels, and comprehensively address the issue of dropouts.
3. Improve the health indicators of tribes through inter-departmental convergence.
4. Ensure food and nutritional security by encouraging modern farming.
5. Ensure employment to educated unemployed youth through appropriate skilling programmes.
6. Ensure gainful employment to at least one member of every tribal family.
7. Improve the quality of life through appropriate infrastructure development.
8. Empower tribes, especially women, through community-based organisations such as Oorukoottams and self-help groups.

#### 1. Land, Homesteads and Housing

1. The 13th Five-Year Plan aims to solve the issue of landlessness among tribals by providing land to landless tribal families over the period of 13th Five-Year Plan. About 5,000 families can be provided right of rights (RoRs) under Forest Rights Act (FRA), 4000 families can be provided land in vested forests, and 8,261 families can be provided land by way of purchasing land.
2. During the 13th Plan period, the problem of houselessness and unfinished houses will be solved among the people of the Scheduled Tribes.

2. Habitat Development
  1. The Plan aims to ensure basic amenities in all the tribal hamlets including safe drinking water, electricity, sanitation, transport, healthcare, and marketing facilities. All the natural sources of water in hamlets will be conserved.
  2. Modern farming practices will be encouraged in the tribal hamlets where land is available and thereby attain food and nutritional security.
3. Education
  1. The 13th Plan aims to achieve 100 per cent literacy with the help of State Literacy Mission and similar agencies. Five finishing schools will be started, one each in Thiruvananthapuram, Ernakulam, Kozhikode, Wayanad, and Kasaragod to motivate students for competitive exams, interview preparation, develop soft skills, and language proficiency. In order to bring all tribal children to the education stream the Plan proposes to start model residential schools in Wayanad, Palakkad, Ernakulam, Kozhikode, and Kottayam. Also, 4 pre-matric hostels and 16 post-matric hostels will be started across the State to ensure higher secondary education.
  2. The rates of all educational assistance like stipends and grants to tribal children will be raised.
4. Health, Food Security, and Nutrition
  1. During the 13th Plan period, social upliftment campaigns will be launched to bring awareness about health, sanitation, education, parenting, de-addiction, and women empowerment. Comprehensive tribal health survey will be conducted to analyse the health issues among various communities. The reach of insurance schemes will be increased through Comprehensive health insurance scheme in association with Rashtriya Swasthya Bima Yojana (RSBY) and Aam Aadmi Bima Yojana (AABY).
  2. In addition to the existing 9 mobile medical units (MMUs), 10 more MMUs will be operationalised to provide antenatal and postnatal care to reduce problems of malnutrition, maternal mortality and infant mortality.
5. Employment, income generation, and skill development
  1. The target of the 13th Plan is to increase the per capita income of all tribal families by creating gainful employment opportunities through skill development programmes, provide 100 plus person days of employment under MGNREGA, and provide assistance for self-employment. The Plan will also make efforts to fill all vacancies reserved for Scheduled Tribes in the public sector.
  2. In order to address the linguistic barriers in the education of tribal students, 600 community study centres will be started in various hamlets across the State and 1000 mentor teachers with B.Ed or TTC (Teacher's training course) qualification will be appointed in primary schools to improve education standards.
  3. Ten de-addiction centres will be operated in areas where there is severe addiction. This will be operationalised with convergence of "Mukthi" Scheme of Excise Department.
  4. At least 5 traditional tribal healing societies will be formed by providing assistance for infrastructure and working capital.
6. General Schemes
  1. The Scheduled Tribes Directorate will take a leading role to ensure 100 per cent utilisation of TSP fund allocated to LSGIs through convergence of schemes of

various departments. The institutions, formed for the empowerment of the communities, such as Oorukoottams, Ooruvikasana Samithis, eco-development committees will be strengthened.

2. KIRTADS will be strengthened to take up professional training programmes and various research studies to help Scheduled Tribes department to fine tune policies on tribal development and help in the planning process.

7. Modernisation and Research

1. The 13th Five-Year Plan will aim to strengthen the service delivery of the department through e-governance, public grievance redressal monitoring system, call centres, IEC (Information Education Communication) activities, and training to functionaries. The Plan aims to establish more tribal extension offices (TEOs) and enhance the number of promoters and social workers in order to reach out to all tribal families.
2. After proper evaluation, the farms and societies under the Department will be strengthened in order to make them self-sustainable and provide more employment to tribes. Monitoring of schemes will be made more effective by leveraging technology.

## WELFARE OF OTHER BACKWARD CLASSES

### Overview

There are 83 communities included in the Other Backward Classes (OBC) list in Kerala and 93 communities in the Socially and Educationally Backward Classes (SEBC) list. The largest groups among the OBCs in Kerala are Ezhava and Muslim. Other backward communities with sizable populations are Viswakarma, Latin Catholic, Converted Christian, Hindu Nadar and SIUC Nadar, and Dheevera. In addition, there are 75 more communities classified as OBCs. Many of the OBCs Communities are engaged in specific traditional occupation.

### 12th Five-Year Plan

The total outlay for the welfare of other backward classes during the 12th Five-Year Plan was Rs 360.8 crore and the expenditure was Rs 252 crore. The year-wise details are given in Table 12.4.

Table 12.4 *Budgeted outlay and expenditure of the OBC Development Department during 12th Five-Year Plan in Rs crore*

Annual Plan	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	36.8	31.8	86.4
2013-14	60	54	90
2014-15	80	34.2	42.7
2015-16	90	61.16	67.95
2016-17	94	70.84	75.36
Total	360.8	252	69.84

### 13th Five-Year Plan

The major problems faced by people belonging to other backward classes are problems of access to higher education and appropriate job opportunities, limited economic opportunities, and poor credit facility. To overcome these social and economic problems, the development strategy will focus on inclusive and sustainable social development of backward classes in the State particularly the most vulnerable among backward classes.

### Objectives

1. Review and streamline the list of communities included in other backward classes (OBC) and socially and educationally backward classes (SEBC) and publish fresh list.
2. Upliftment of traditional occupations of communities, especially the most vulnerable groups (Thottian, Tholkollan, Kunduvadiyan, Chavalakkaean, Kumbaran, Perumkollan) through focused programmes.
3. Resolve issues related to land and housing of most vulnerable backward communities (Thottian, Tholkollan, Kunduvadiyan, Chavalakkaean, Kumbaran, Perumkollan).
4. Improve academic excellence and ensure employment for weaker sections among OBCs (Thottian, Tholkollan, Kunduvadiyan, Chavalakkaean, Kumbaran, Perumkollan, traditional fisherfolk groups, converted Christian, etc.)

5. Make unemployed youth employable through appropriate skilling by creating new finishing schools or utilising the existing ones.
6. Provide assistance to youth pursuing professional education.
7. Strengthen and modernise Backward Communities Development Department by creating regional offices and adequate staffing.

The 13th Five-Year Plan proposes the following physical targets:

1. Educational assistance to 20,00,000 students.
2. Assistance to traditional pottery workers that will benefit more than 3400 families.
3. Employability enhancement programme to 25,000 beneficiaries.
4. Impart skill development training and provide toolkit grant to 8000 beneficiaries of traditional craftsmen among OBCs.
5. Assist 4,280 beneficiaries under the scheme “Renovation of Traditional Barbershop.”

New Initiatives

1. Housing scheme for most backward communities.
2. Incentive for talented students in professional and post-graduation studies.
3. Infrastructural development and skill upgradation of traditional occupational groups.
4. Assistance to start small industrial ventures for professionals.

## WELFARE OF MINORITIES

### Overview

According to data from Census 2011, the share of people of minority religion in the population of Kerala was 48 per cent. Muslims and Christians constitute 27 per cent and 18 per cent of the population respectively.

### 12th Five-Year Plan

During the 12th Five-Year Plan, Rs 238 crore was earmarked for the welfare of minority communities. The expenditure incurred by the Minority Welfare Department was Rs 185.92 crore. The details are given in Table 12.5.

Table 12.5 *Budgeted outlay and expenditure for the welfare of minorities during the 12th Five-Year Plan* in Rs crore

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	20	0.9	4.70
2013-14	40	36.2	90.39
2014-15	55	25.3	45.92
2015-16	60	63.04	105.07
2016-17	63	60.48	96
Total	238	185.92	78.11

The major problems faced by minority people are housing, difficulty in getting access to opportunities for higher studies and appropriate job opportunities, limited economic opportunities, and poor credit facility.

### 13th Five-Year Plan

The 13th Five-Year Plan aims to address the socio-economic problems of Minorities by the provision of houses to all houseless people, quality education, skill development, training and entrepreneurship, employment generating programmes, and human resource development.

#### Mission

1. Instituting scholarships and fee reimbursement schemes to those studying from 10th standard to post graduate/professional courses.
2. Provision for houses to minority widows and abandoned women and also improve the condition of existing houses.

The 13th Five-Year Plan proposes to construct more than 12,000 houses for divorced women and widows, provide financial assistance to 4,640 minority community families that are below poverty line to improve facilities in existing houses, and provide career guidance for minority students, fee reimbursement for ITC students, and Prof. Joseph Mundassery scholarship for talented minority students.

*New Initiatives*

1. Scheme for reimbursement of course fee and hostel fee of minorities preparing for All India Civil Service Examination.
2. Overseas scholarship for minority students.
3. Self-employment scheme for madrassa teachers.
4. Establish a Chair for Minority studies and Research in the University of Calicut.

## WELFARE OF FORWARD COMMUNITIES

### *Overview*

Kerala State Welfare Corporation for Forward Communities Limited was incorporated on 8th November, 2012.

### *12th Five-Year Plan*

During the 12th Five-Year Plan an amount of Rs 102 crore was earmarked for the welfare of forward communities. The expenditure incurred by the Kerala State Welfare Corporation for Forward Communities Limited is Rs 113.55 crore.

Table 12.6 *Budgeted outlay and expenditure for the welfare of forward communities in the 12th Five-Year Plan* in Rs crore

Annual Plan	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2013-14	10	10	100
2014-15	25	13.51	54.05
2015-16	32	32.78	102.46
2016-17	35	57.26	163.67
Total	102	113.55	111.32

### *13th Five-Year Plan*

#### *New Initiatives in the 13th Five-Year Plan*

1. Reimbursement scheme for capital investment in micro enterprises run by women
2. Educational loan at subsidised interest rates for income poor student.



## 13 GENDER AND DEVELOPMENT

### *Overview*

Socio-political and economic advance among women in Kerala are not commensurate with the historic achievements of women in the spheres of education and health in the State. While the extraordinary historic gains of women in Kerala cannot be underestimated, there are still important spheres in which women's equality has not been achieved, and in which discrimination persists. Work participation rates among women are low, rates of unemployment are high, and gender differentials in the labour market persist across caste, income, and education categories. A substantial section of the women's labour force is concentrated in traditional occupations – coir-work, cashew processing, bamboo-work, handlooms, and plantation-work – that are now stagnant or in decline. The representation of women in elected bodies – Parliament, the Legislative Assembly – is low.

The women's movement in Kerala has drawn attention to domestic violence and other crimes against women in Kerala. Progressive social forces have correctly emphasised the need for policy that enhances economic independence, independent participation in political and social life, and freedom in public spaces for women.

Introducing the concept of gender in planning circles makes it possible to view practices that are oppressive to women not solely as women's issues but as issues embedded in the social construction of gender. Gender budgeting is a method of ensuring gender justice in economic policy.

Development policy in Kerala has been sensitive to gender equality in terms of human resource development. Social scientists are of view that women's human development achievements are associated with the fact that, historically, the State was relatively free from the conventional restrictions against women's education and restrictions on female property ownership, particularly in matrilineal family system. Further, social reform movements in the late 19th and 20th centuries widened the access of women and oppressed social groups. There are many spheres in which Kerala has a better record than other parts of India with respect to enhancement of women's capabilities. Literacy and schooling, life expectancy at birth, the proportion of women in population and the mortality rate are some of them.

From 2008-09 onwards, the State budget started to reflect the gender budgeting process. In 2008-09, the State Government took certain initiatives in terms of women targeted schemes by initiating the "Gender Awareness Programmes" including the implementation of the Protection of Women from Domestic Violence Act, 2005 and the "Flagship Programme on Finishing Schools" for women to enhance employability of women through skill training. In the budget 2010-11, a gender audit of these two schemes was conducted.

In addition, the Government assigned the task of undertaking Gender Responsive Budgeting (GRB) initially for the two years 2006-07 and 2007-08 to the Centre for Development Studies

(CDS) and the report was submitted to the Government. Subsequently the task of gender budgeting was transferred to the State Planning Board (SPB). During 2009-10 in order to co-ordinate and review the women development programmes implemented by different departments, a Gender Advisory Board (GAB) was set up with representation from almost all departments. The SPB and GAB conducted GRB for the years 2008-09, 2009-10, 2010-11, and 2011-12.

### *12th Five-Year Plan*

In 2012, Government introduced the Nirbhaya policy and programmes to address sexual violence and sex trafficking. A Nirbhaya Cell in the Directorate of Social Justice to coordinate the various aspects of Nirbhaya such as prevention, protection, rescue, rehabilitation, restoration, reintegration, and legal reforms was set up. To strengthen gender equality and women's empowerment in the State, Government enacted the Gender Equality and Women's Empowerment (GEWE) Policy on April 16, 2015.

### *Women Component Plan in Annual Plans*

The Women components identified in Annual Plans are provided mainly in agriculture and allied activities, industries, labour, and labour welfare, social security and social welfare.

Table 13.1 *Women Component Plan in Annual Plans* in Rs crore

Annual Plan	Total Allocation*	Allocation to WCP	Share of Total Allocation (in per cent)
2014-15	15,300	943.18	6.16
2015-16	15,200	537.00	3.53
2016-17	18,500	747.25	4.03

*Source* Plan Documents

\* Excluding LSGs Outlay

### *Women Component Plan of Local Bodies*

A pioneering attempt at integrating gender into budgeting was made at the local level as early as the 9th Plan itself. Efforts were made to incorporate gender issues into the *process* of planning, (a) by mandating that LSGIs should set apart 10 per cent of the Plan fund devolved to local bodies for preparing projects that directly benefit women; (women component plan) and (b) the gender impact of all schemes had to be assessed. The first form of gender budgeting was done 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 in the 9th Plan wherein 10 per cent of the Plan outlay of the local bodies was set apart for needs of women or women specific projects.

Table 13.2 *Allocation and expenditure of WCP in Local Bodies' Plan* in per cent

Five Year Plan	Per cent of WCP allocation	Per cent of WCP expenditure
11th Five-Year Plan	13.22	12.35
12th Five-Year Plan	8.84	10.22

*Source* Economic Review 2017

### 13th Five-Year Plan

The objective in the 13th Plan is to establish a caring and equitable society in which women live with dignity, contributing to development as equal partners in an environment free from violence and discrimination.

The 13th Five-Year Plan is committed to gender budgeting. The share of expenditure on schemes targeted wholly or substantially towards women will exceed 10 per cent.

Every year, the Plan will enhance allocations for women's wage employment, self-employment and livelihoods, skill development, special facilities at the workplace, childcare, the protection of women from violence, and victims of violence. Development schemes will also address specifically the development problems of transgenders and will address all the forms of gender discrimination. Kudumbashree is an asset of which the State can justly be proud. It shall be used as a means to advance women's empowerment, women's incomes, new forms of productive activity, and institutional change.

Though employment outcomes for women have been poor in Kerala for several decades, until 2004-05, the State had witnessed a growth in the labour force and high levels of unemployment, especially among the educated. In the past decade, however, this has seen a reversal with a decrease in unemployment alongside a decline in work participation rate. This is a matter for serious concern as it suggests that women may be discouraged and moving out of the labour force.

It is well known that high levels of unemployment among educated women in Kerala (Table 13.3) is largely on account of a mismatch between expectation of educated women (and the education they acquire) and the opportunities that are available in the labour market. The bulk of unemployed women in the State are those with higher secondary and graduate education without any specialized skills and the incidence of unemployment is very high for both genders in the age group 15-19 and 20-24 but even higher for females. There is a need to draw more women into vocational training. The gender stereotyping of vocational skills is also an issue that needs attention.

Table 13.3 *Unemployment and educated unemployment rates of age 15 years and above – Kerala and all-India, 2011-12*

	Kerala				All-India			
	Rural		Urban		Rural		Urban	
	Male	Female	Male	Female	Male	Female	Male	Female
Unemployment Rate	4.3	24.4	3.3	19.7	2.3	3.0	3.4	6.9
Educated								
Unemployment rate	6.5	25.8	4.9	20.8	3.6	9.7	4.0	10.3

Source NSSO Report 554, 68th Round

In the rural areas where unemployment rates are higher, we find that in the age group 15-19, 20-24 and 25-29, unemployment rates are 22.8 per cent 11.9 per cent and 6.3 per cent for male and

for female it is 59.4 per cent, 46.8 per cent and 46.1 per cent.<sup>1</sup> It is interesting to note that not only is female unemployment higher at entry; but also does not “decline” so sharply by age as in the case of men; even at the age 25-29 almost half the educated women are seeking employment.

### *Gender Budgeting*

#### *Gender Specific Programmes of Major Departments and Agencies in the 13th Five-Year Plan*

In the 11th Five-Year Plan, an innovation in the Government of Kerala’s budget was the introduction of gender budgeting at the State level to create awareness of its significance across departments, even among those which are apparently gender unrelated. Hence the initial focus in the 11th Plan was on 100 per cent women’s schemes which could be proposed and be easily identifiable in departments, like power, transport, ports, PWD and so on which have rarely come under the ambit of gender budgeting.

However, it is clear that more resources flow to composite schemes which benefit both women and men across sectors. Hence an overall thrust in the 13th Five-Year Plan is to make planning and budgeting gender sensitive through (a) outlays allocated almost entirely for women specific schemes (90-100 per cent), included in Part A of gender budget Statement; and (b) schemes in which women’s share is specified or identifiable based on gender disaggregated beneficiary data, Part B, and is less than the above. Hence, it is pertinent to identify allocations made for women-specific schemes and interventions (reported in Part A), and to identify, wherever possible, the allocations for composite expenditure schemes that benefit/can be expected to benefit women and girls (i.e. in Part B) based on gender disaggregated beneficiary data or in which women’s share has been specified.

In 2017-18, the first year of the 13th Plan, this exercise was done for select departments and would be expanded in the years to come. Aggregating the resources earmarked for girls and women across departments in 2017-18, it has been found that about 4.5 per cent of State Plan outlay (excluding local bodies) in Part A and almost 7 per cent in Part B is earmarked for them. It may be noted that the response of the departments in this effort was very positive.

Given below are some major initiatives on women specific schemes of Departments other than Social Justice, the nodal agency on gender and transgenders. Details of Social Justice Department are given in the chapter on Social Security and Welfare.

#### *Rural Development*

1. *Kudumbashree*. Kudumbashree is the poverty eradication and women employment programme implemented by the State Government.

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<sup>1</sup> In urban areas the per cent for males are 35.1, 9.5 and 1.0 in age groups 15-19, 20-24 and 25-29; for females the rates are 34.1, 49.0 and 28.9 per cent.

## *Education*

### *1. Directorate of Public Instructions*

1. Girl-friendly toilets: The aim of the scheme is to avoid unhygienic and unhealthy conditions faced by girls by supporting the construction of *girl-friendly toilets* (along with water and sanitation facilities) in the schools.
2. Setting up of girl-friendly rooms: The scheme aims to develop an environment favourable to girls to overcome their shyness to talk and act more freely.
3. Online training to lady teachers on adolescence counselling techniques.
4. Empowerment of women officers, administrative staff and office heads.

### *2. Directorate of Higher Secondary Education*

1. The Directorate of Higher Secondary Education conducts counselling and training programmes for adolescent girls. This programme will be strengthened in the 13th Five-Year Plan.
3. *Kerala State Literacy Mission Authority (KSLMA)*. The target of KSLMA in the 13th Five-Year Plan is to address illiteracy in certain pockets. With this target the following new gender initiatives have been formulated:
  1. Special continuing education for transgenders
  2. Gender Equality Programme
4. *State Council of Educational Research and Training (SCERT)*. The State Council of Educational Research and Training has designed a new life skill education programme, called *Ullasa Paravakal* in which focus has been given to gender sensitisation to school children.
5. *Rashtriya Madhyamik Shiksha Abhiyaan (RMSA)*. RMSA has formulated several projects for gender development which are to be taken up in the 13th Five-Year Plan. Self-defence training for girls and motivation camps are examples of such projects.
6. *Sarva Shiksha Abhiyan (SSA)*. SSA will implement programmes for improving the educational needs of marginalised sections, girls, and children with special needs.
7. *Higher Education*. The gender profile of higher education (mainly in arts and science colleges and universities) in terms of enrolment is presently dominated by girls. The approach of the 13th Five-Year Plan for higher education is mainly based on access, quality and excellence. The following measures will be taken in the 13th Plan.
  1. Enhance the facilities for women students in higher education in terms of better hostel facilities, transportation, and gender friendly infrastructure in campuses.
  2. Impart training in Institute of Human Resources Development (IHRD).

## *Department of Labour and Labour Welfare*

1. Studio Apartment for Working Women in Urban Areas – The Department proposes to implement a new project for providing good, decent, and safe accommodation for working women across Kerala in urban areas.
2. Expanding reach of ongoing scheme *Saranya* (Self Employment Scheme for the Destitute Women).

## *Kerala State Housing Board*

1. During 2017-18 it is proposed to construct working women's hostels in board's own land at Gandhi Nagar (Kottayam) (additional block-139 beds) and on revenue land (110 beds) in Peerumedu (Idukki). This scheme will be implemented with 60 per cent central assistance.

#### *Police*

1. Pink Patrol, gender awareness programmes and gender friendly infrastructure.

#### *Scientific Research and Services*

1. Programme for women in science (especially after breaks from child bearing).
2. Students with talent and aptitude for research (STARS).

#### *Department of Excise*

1. Provide two wheelers to women patrolling squad.

#### *SC/ST/OBC/Forward/Minorities*

1. An insurance linked holistic development scheme, Valsalyanidhi, for girl child.
2. Working women's hostels in all districts.
3. Gothravalalyanidhi, ST girl child endowment scheme.
4. JananiJanmaraksh.
5. Housing scheme for divorcees/widows/abandoned women from minority communities.

#### *Regional Cancer Centre*

1. State of the art mammogram facility.

#### *Transgenders*

1. Resources have been allocated for various schemes for transgenders for the first time in the 13th Plan.

### *Institutions for Women Empowerment*

#### *Kerala Women's Commission*

The Commission was established in 1996 to improve the status of women in Kerala and enquire into varied forms of injustices against women and recommend remedial measures.

#### *Kerala State Women's Development Corporation*

The Kerala State Women's Development Corporation was established in 1988 with the objective to formulate, promote and implement women welfare programmes and development schemes. Self-employment schemes for women, flagship programme on gender awareness and Finishing School, working women's hostels, and more recently menstrual hygiene management and installing she toilets, are the major programs of the Corporation. More details are given in the section on Social Security and Protection.

## 14 DECENTRALISED PLANNING

### *Overview*

Decentralised planning has been an inseparable part of the development process in Kerala over the last two decades. The 73rd and 74th Constitutional Amendments and consequent State legislation have served to institutionalise systems of local governance systems and decentralised participatory planning in Kerala.

Kerala's experience with local self-government has been distinct in three important ways. First, financial devolution is more important in Kerala than elsewhere. Secondly, the part played by local bodies in formulating and implementing Plans is greater in Kerala than elsewhere. Thirdly, the extent of people's participation in development planning in Kerala is greater than elsewhere.

The first people's Plan campaign broadened and deepened the process of democratic decentralisation in the State. However, there has been criticism that people's participation in the planning process is not as active as before. The decentralisation experiment is yet to make a significant impact in the sphere of production. Local Plans must be integrated with the overall Five-Year Plan perspective of the State.

The second People's Plan campaign emphasised that local Plans must be integrated with the overall Five-Year Plan perspective of the State. The 13th Five-Year Plan period will thus coincide with this important campaign. The State Planning Board will provide all support to local governments in the course of this campaign. The second phase of people's planning would be a breakthrough in the developmental path followed by the State, which will ensure effective public service delivery, gender equity, inclusive development and genuine people's participation in local governance.

Environment protection, conservation of natural resources, agricultural production, waste management, water management, problems of differently abled, children, women and marginalised sections will receive top priority during 13th Five-Year Plan period. As of now, there are 1200 local governments in the State (941 Grama Panchayats, 152 Block Panchayats, 14 District Panchayats, 87 Municipalities and 6 Municipal Corporations). The local governments will be provided allocation from the State Plan as recommended by the State Finance Commission.

### *12th Five-Year Plan*

The decentralised planning process initiated in Kerala during the 9th Five-Year Plan period has completed two decades. Over the last twenty years, the State government has strengthened and institutionalised the local governance system. The Plan grants-in-aid devolved from State government is the major financial sources to local governments in Kerala. During the 12th Five-

Year Plan period 22.9 per cent of the State Plan outlay was allocated to local governments. The details are given in Table 14.1.

Table 14.1 *Budget allocation of Plan funds to Local Governments in the 12th Five-Year Plan in Rs crore*

Year	State Plan Outlay	Budget allocation to LSGs	Percentage to State Plan Outlay
2012-13	14,010	3,228	23.04
2013-14	17,000	4,000	23.52
2014-15	20,000	4,700	23.5
2015-16	20,000	4,800	24
2016-17	24,000	5,000	20.83
Total	95,010	21,728	22.9

In the 12th Five-Year Plan, budgeted outlay to the local governments was Rs 21,728 crore and out of which Rs 19,001.82 crore was utilised. The details are given in Table 14.2.

Table 14.2 *Year-wise outlay and expenditure of local governments in the 12th Five-Year Plan in Rs crore*

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	3,228	2,741.97	84.94
2013-14	4,000	3,918.27	97.96
2014-15	4,700	4,033.94	85.83
2015-16	4,800	4,467.76	93.08
2016-17	5,000	3,839.88	76.80
Total	21,728	19,001.82	87.45

*Note* Expenditure includes unspent balance of the previous year

### *13th Five-Year Plan*

The two decades of Kerala's decentralised planning experience is unique and recognised world over. During the 13th Five-Year Plan period the State envisages revitalisation of the system of democratic governance by analysing the experiences of the past.

An important goal of the second People's Plan campaign is to enhance production, particularly by means of nature-friendly agriculture and agro- and food-based manufacturing. Other leading areas in the present campaign, as mentioned elsewhere, are waste management and the restoration and revitalisation of water-bodies.

During the 13th Plan, local governments will take a watershed-based approach to addressing problems related to agriculture, drinking water, and management of natural resources.

District Planning Committees would be restored to their rightful place in the process of planning and in drafting District Plans. The new campaign proposes new methods of intervention in priority



areas, making the expertise of different technical and professional agencies and individuals available to local bodies.

The 13th Plan will aim for a significant improvement in local resource mobilisation and will recommend combination of incentives to achieve the goals of people's planning.

The 13th Plan will place high priority on the problems of urbanisation and urban planning and work towards a comprehensive action plan for urban development.

A combined effort involving local governments, the Kudumbashree mission, departments of the State Government, people's organisations, and individuals will take on the task of eliminating absolute poverty in the State.

The 13th Plan will support local governments' efforts in their core areas of activity, including housing, sanitation, electrification, access to food, healthcare, and insurance, access to school education, employment guarantee, welfare pensions and special care for the disabled, aged and infirm.

It is recommended that parallel bodies in the area of urban development be dissolved.

#### *District Plans*

A district occupies a pivotal role in planning because of its administrative advantages. The coordination between various tiers of government and line departments will be strengthened to take up joint projects under District Development Plans. In this context comprehensive District Plans ensuring multilevel planning, will be formulated in districts. The District Plan formulation intends to achieve a balanced, integrated, and meaningful development of districts through spatial integration, sectoral integration, vertical and horizontal integration, and integration of resources. This will help in coordinated development of districts and a closer and more transparent linkage with State and national priorities

The Government has issued detailed guidelines for the preparation of District Development Plans under the auspices of District Planning Committees (DPC).

#### *Strategy and Thrust Areas*

1. The decentralised planning methodology has to be streamlined and simplified without compromising the avenues of people's participation.
2. The 13th Plan will ensure that the Plan preparation gets completed before March 31st and one complete fiscal year be made available for Plan implementation. Annual Plans of local governments would be integrated with their Budget.

3. Measures will be taken to strengthen gramasabhas and to widen the avenues of genuine people's participation in Plan formulation.
4. District Resource Groups will be formed on volunteer basis by availing the expertise of various groups of people and research centres. This will ensure and improve the quality of schemes and projects prepared by various tiers of local governments.
5. Mandatory minimum allocation in productive sector will be restored in the 13th Plan.
6. More emphasis will be given to multilevel planning to ensure greater integration between the development needs and priorities of smaller areas and different socio-economic classes with the State- and district-level.
7. Urban Governance is a challenging issue that has to be seen in an integrated manner. The problem of rural-urban continuum has not been addressed in Kerala so far under decentralised planning. This will be taken up in an integrated manner in the 13th Five-Year Plan.
8. There is a need to promote urban development that is sustainable, socially inclusive, and economically beneficial. The 13th Plan aims to improve urban governance in Kerala and will be integrated with the District Development Plans with adequate provision for rural development and land use planning. As Kerala is becoming more urbanised, separate guidelines will be formulated for urban and rural local governments for effective intervention in emerging urban issues.
9. The 13th Plan aims at reorganising local government institutions by giving more emphasis on de-bureaucratisation of planning process, local economic development, and improved service delivery.
10. The 13th Plan suggests formation of Planning Committees in all local government institutions for Plan formulation, implementation and monitoring of Plan schemes. This will ensure the active involvement of all stakeholders in local planning process.
11. The 13th Plan initiates new methods of intervention in priority areas and plan preparation process, making the expertise of different technical and professional agencies, universities, research institutes and individuals available to local bodies.
12. The local governments will be strengthened to leverage centrally sponsored schemes and integrate them with the development plans of various tiers of governments.
13. The Resident's Associations, Kudumbasree Ayalkootoms, self-help groups will be made the subsidiary organisations of gramasabha to make it more representative. Community-based organisations like self-help groups, neighbourhood groups, farmers clubs, Ooru Vikasana Samities, and similar association of marginalised communities may be promoted to take up new initiatives.
14. The four Development Missions – Aardram Mission, Harita Keralam Mission, LIFE Mission, and Education Mission – launched by the Government seeks to address the developmental problems of the State, needs active involvement of local governments. Activities of these missions will be integrated with the Plans of local governments.
15. The major partner institutions in decentralised Planning such as Suchitwa Mission, Information Kerala Mission, and Kudumbasree will be strengthened.

16. Waste management has become a serious public service delivery issue faced by the local governments in Kerala and it will be given immediate attention. This issue would be addressed with the technical support of Haritha Keralam Mission.
17. Gender responsive budgeting and gender equity will be adopted in local plans.
18. Networking of elected women representatives needs to be encouraged irrespective of political considerations in order to strengthen local government decision making and strategic involvement of women.
19. Local governments should concentrate on social and economic empowerment of the scheduled castes, scheduled tribes, fishworker communities, plantation labours, and other marginalised groups. The second-generation problems of the marginalised groups can be tackled at local-level by giving emphasis on active participatory activities.

## 15 SOCIAL SECURITY AND WELFARE

### *Overview*

Investment in social security – most particularly for the income-poor, victims of social discrimination, the economically vulnerable, the unemployed, senior citizens, the hungry, the sick, and persons with disabilities – has been a characteristic and acclaimed part of Kerala's modern political history. The commitment to social security began when the first government of Kerala assumed office in 1957.

The basic objective of social security is to use public means to prevent deprivation, vulnerability to deprivation, and a decline in living standards. The purpose of any social security measure is to ensure that individuals and families, especially from disadvantaged sections of society, receive basic social protection despite growing uncertainties. Modernisation and urbanisation have resulted in radical socio-economic changes and given rise to new conflicts and tension. It is well-recognised that certain social guarantees must be provided by the state, since they will not be delivered to the individual by the market. The demand for social security programmes have increased in the context of growing insecurity and uncertainties in a crisis ridden global economy. The growth of the informal sector in the economy has added to the need to formulate and implement effective social security programmes.

### *Social Security and Welfare Measures in Kerala*

A major message of the ILO Social Protection Floor Recommendation 2012 (No.202) is that social security is a human right and all people regardless of where they live should be guaranteed at least a floor of basic social protection (ILO 2012). Historically, Kerala has been a front runner among States in social security interventions. The social security schemes introduced in Kerala include statutory benefits to unorganised sector workers, wide reach of pensions, an inclusive health insurance programme, and, recently a major initiative for persons with disabilities. As the Approach Paper to the 13th Five-Year Plan points out, Left Governments in Kerala have attempted to put into effect Article 41 of the Constitution which enjoins the State to make “effective provision for securing the right to public assistance in cases of unemployment, old age, sickness and disablement and in other cases of undeserved want.”

The social security system in Kerala consists of schemes for institutional care and pension schemes. A major landmark in social security coverage in Kerala was the establishment of welfare fund boards for unorganised sector workers in sector-specific occupational categories. Social security measures covered by the welfare boards may include pension, provident fund and gratuity, children's education, medical assistance, maternity benefits, marriage assistance, unemployment allowances, and housing.

Social justice, social security, welfare policy faces fresh and challenges. New issues of gender discrimination gender-based violence, rapid growth and spread of dowry, and the increase in the number of households headed by single women. As a result of large numbers of women being

elected to local-government office, important positive changes have taken place with regard to the position of women in society. Nevertheless, policy must continue to fight social practices that perpetuate gender inequality. A changing demographic structure has brought forward the problems of an ageing population in Kerala. Social security and health policies in the 13th Five-Year Plan will also be concerned with the issues of mental health.

The Social Justice Department implements social security and welfare schemes in the State. The department also undertakes development and empowerment programmes for women implemented through the Kerala State Women's Development Corporation (KSWDC) and Kerala Women's Commission (KWC). Voluntary organisations and NGOs provide institutional care to the vulnerable sections. However, the Welfare Fund Boards come under Labour and would be discussed in the Section on Labour and Labour Welfare. Here we focus on vulnerable women, girls, transgenders, survivors of gender-based violence, destitute, the elderly, people with disabilities, and prisoners. The other activities of the department include social protection and care of children providing them a secure childhood.

Table 15.1 *Major Social security and welfare activities under institutional care and protection undertaken by Government Departments, Commissions, Institutions, and Corporations*

Department/Agency	Major Activities
Social Justice Department	Social security welfare activities, social defence activities, women empowerment, nutrition programme, protection of children.
Prison Department	Welfare, protection, employment, and economic uplift of prisoners.
Sainik Welfare Department	Welfare of ex-servicemen and war widows.
State Commissionerate for Persons with Disabilities	Fund monitoring and inspection in various institutions for the disabled; Conducting adalats, sittings, awareness seminars.
Women's Commission	Welfare and social justice measures, addressing atrocities against women, organising adalaths, legal workshops, Jagratha samithies.
Kerala State Women Development Corporation	Welfare, skill-development, economic development through income generating and employment schemes.
National Institute of Speech and Hearing	Welfare, education, health activities of disabled in speech and hearing
State Institute for the Mentally Handicapped	Welfare, education, skill development of people with intellectual disabilities.
Kerala State Handicapped Persons Welfare Corporation	Welfare, providing assistive equipments employment, income generating programmes of physically handicapped persons

There are 75 welfare institutions – 16 for women, 27 for children, 16 for senior citizens, and 16 for persons with disabilities – under the Social Justice Department that provide institutional care and support to various sections of the population.

Kerala has always focussed on strengthening delivery of services and extending the reach of social security network to the neglected groups, promoting skill development programmes for better livelihood and income generation in particular for empowerment of women, providing better facilities in the existing welfare institutions for effective service delivery. The Kerala Social Security Mission (KSSM) was launched with a view to converge various social security measures and facilitate wider coverage of the population who are in dire need of social provisioning.

#### *12th Five-Year Plan*

Total outlay earmarked during 12th Plan for Social Security and welfare was Rs 2,280.4 crore and expenditure was Rs 4,915.78 crore. The details are given in Table 15.2.

Table 15.2 *Department- and agency-wise budgeted outlay and expenditure for social security sector during the 12th Five-Year Plan in Rs crore*

Department/Agency	2012-13		2013-14		2014-15		2015-16		2016-17		Total Outlay	Total Expenditure
	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure	Budgeted Outlay	Expenditure		
Social Justice Department	289.67	238.98 (83%)	319.78	241.65 (76%)	391.02	725.18 (185%)	249.14	1310.82 (526%)	316.10	1,815.85 (574%)	1,563.69	4,331.68 (277%)
Kerala State Handicapped Persons Welfare Corporation	1.70	3.30 (194%)	2.50	5.50 (220%)	3	2 (67%)	3.75	7.2 (192%)	4.15	2 (48%)	15.1	20 (132%)
Kerala State Women's Commission	1.66	0.95 (57%)	2.25	1.17 (52%)	2.55	1.93 (76%)	2.80	2.18 (77.85%)	3.10	2.36 (76%)	12.36	8.59 (69%)
Commissionerate for Persons with Disabilities	0.35	0.34 (99%)	0.52	0.48 (92%)	0.80	0.80 (100%)	1.00	0.85 (85%)	1.10	0.01 (1%)	3.77	2.48 (66%)
National Institute of Speech and Hearing	5.50	5.50 (100%)	6.15	6.15 (100%)	8.00	8.00 (100%)	8.50	8.50 (100%)	10.00	10 (100%)	38.15	38.15 (100%)
Directorate of Sainik Welfare	0.10	0.10 (100%)	0.10	0.10 (100%)	0.13	0.07 (53.84%)	0.15	0.12 (80%)	15	0.1 (67%)	0.63	0.49 (77%)
Kerala State Commission for Child Rights					0.75	0.75 (100%)	0.68	0.67 (98.52%)	0.80	0.80 (100%)	2.23	2.22 (99%)
Kerala State Women's Development Corporation	6.44	6.44 (100%)	7.20	7.18 (99.8%)	8.25	5.99 (73%)	8.95	8.95 (100%)	9.50	8.5 (89%)	40.34	37.06 (92%)
Prisons Department	41.10	41.09 (99.9 %)	43.50	43.31 (99.56%)	45.50	44.46 (98%)	46.00	4.30 (9.1%)	50.21	38.66 (76.99%)	226.31	171.72 (76%)
Nutrition	20.70	30.19 (145.9%)	40.75	30.43 (75%)	45	34.08 (76%)	50	32.4 (64.8%)	22.13	176.29 (797%)	377.82	303.39 (80%)
Total	365.20	326.89 (89.5%)	422.5	335.97 (80%)	505	823.26 (162%)	370.97	1375.9 (371%)	616.48	2,053.77 (333%)	2,280.4	4,915.78 (215%)

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The objective of the Department of Social Justice is inclusive development to move on to a caring and equitable society in which:

1. senior citizens, persons with disabilities, and victims of abuse lead productive, safe and dignified lives,
2. women live with dignity, contributing as equal partners in development, in an environment free from violence and discrimination, and
3. children are well-nurtured with opportunities for growth and development in a safe and protective environment.

The responsibility and duty of the government and society is to create an environment where the people with disabilities can exercise equal rights, develop their talents and live with dignity. During the 13th Five-Year Plan period, efforts will be made to reach out to organisations of persons with disabilities and to others working in this sphere to design programmes that enhance the all-round capabilities of persons with disabilities. During the 13th Five-Year Plan, allocations will be made to ensure access to public buildings for persons with disabilities in all districts of the State. The priority will be given to disability prevention initiatives, early screening, early intervention through District Early Intervention Centres (DEICs), education support through special anganwadis, model child-rehabilitation centres, special schools, integrated schooling, vocational training and work centres for persons with disabilities, community-based rehabilitation, and assisted-living projects.

During the 13th Plan period, Government will enhance the size and scope of the pension schemes in the State. The Plan will also provide new allocations for the health problems of senior citizens, particularly in the sphere of non-communicable disease.

Regarding gender and development, there is a need to enhance economic independence, independent participation in political and social life, and freedom in public spaces for women. Every year, the Plan will enhance allocations for women's wage employment, self-employment and livelihoods, skill development, special facilities at the workplace, childcare, the protection of women from violence, and survivors of violence.

The development schemes will address specifically the development problems of transgenders and will address all forms of gender discrimination. The 13th Five-Year Plan is committed to gender budgeting.

### *Key Initiatives in the 13th Five-Year Plan*

#### *Social Justice Directorate*

##### *Children.*

1. First thousand days programme is to be extended to more backward areas.
2. Ensure that all anganwadis are equipped with child friendly toilets, located in child friendly buildings with safe drinking water and enough space for playing.



3. Efforts will be made to see that the supplementary nutrition under Supplementary Nutrition Programme given to various beneficiaries from the anganwadi is specifically designed for each category.
4. Early detection and intervention centres will be established in all maternal and child care hospitals in government and private sector and it should be made mandatory to undergo test for detection of disabilities at an early stage.
5. Promote and ensure legal adoption, foster care, and sponsorship.
6. Considering the increased number of sexual offences, sufficient numbers of children courts are to be notified and infrastructural facilities will be ensured in compliance with the Protection of Children from Sexual Offences (POCSO) Act.
7. Jatak Janani is to be made universal for real time monitoring.
8. Community based management of acute malnutrition (C-MAM) for areas of acute malnourishment.

#### *Women.*

1. Entrepreneurial support for widows, BPL women, unwed mothers in the form of business incubation, loans, training and capacity building based programmes.
2. Establishment of Gender Responsive Infrastructure.
3. Gender awareness to be made the norm everywhere, from anganwadi to school to workplace to households to be disseminated in appropriate ways.
4. Revise laws, if necessary and strengthen processes to reduce violence against women and also to address issues related to misuse of laws.
5. All Nirbhaya homes to be converted as model homes with definite after care programme in 5 years.
6. One stop centres in all districts.

*Senior citizens.* The 13th Five-Year Plan will ensure necessary services and facilities for the elderly through a comprehensive senior citizens welfare scheme (Saayamprabha). Old age homes will be made active rehabilitation centres. Day homes for elderly (Pakal Veedu) will be converted into a dynamic social space with provision for nutritional support, books, skill learning, exercise, health check-up, etc.

#### *Transgenders.*

1. Sensitisation of the society as a whole to mainstream transgenders.
2. Provide diverse livelihood opportunities, self-employment grants, access to education, and pensions.

#### *People with disabilities.*

1. Individual care plan for all.
2. Livelihood through skilling project in collaboration with UNDP, sheltered workshop for women, revamping of VTCs, micro-financing through self-help groups.
3. Assisted living centres for people with intellectual disabilities.
4. Set up specialised career guidance and coaching centres.

### *Social Security Mission*

1. *Cancer Suraksha Scheme.* Cancer Suraksha Scheme provides free cancer treatment to poor children below the age of 18. Through this project, over 6000 children have been benefitted in the last 6 years. During the 13th Five-Year Plan period, the department aims to give free treatment to all children under 18 years who are affected with cancer irrespective of their financial capability.
2. *Thalolam.* Thalolam scheme provides treatment to children of less than 18 years age with life threatening diseases. The department aims to give free treatment to all children under 18 years, who are affected with life threatening diseases irrespective of their financial status.
3. *Aswasa Kiranam.* The scheme is implemented to provide monthly assistance to the caregivers of persons with severe physical and intellectual disabilities. The beneficiaries of the scheme also include caregivers of 100 per cent blind, and bedridden patients in the following categories: old age, autism, mental illness, life threatening diseases like cancer. The 13th Plan aims to give monthly financial assistance to caregivers of about 1.8 lakh disabled persons.
4. *Sneha Sparsham scheme.* This scheme provides financial assistance at Rs 1000 per month to unwed mothers. Over the 13th Plan period, this scheme will reach out to all the needy in this category.
5. *Sneha Santwanam.* The scheme aims relief measures to endosulfan victims in the State. Under this scheme, financial assistance of Rs 2000 is given to bedridden endosulfan victims. Project in this period would also focus on phase-II of rehabilitation (setting up of model child rehabilitation centres, rehabilitation village and activities based on individual Plan).
6. *Vayomithram.* Vayomithram scheme provides free medical check-up and treatment through mobile clinics for people above 65 years. It is implemented in 6 corporations and 62 municipalities of the State. During the period of 13th Five-Year Plan, the department aims to extend Vayomithram project to all municipalities and block panchayats with the aim to provide comprehensive health care support service to elderly.
7. *Hunger free city.* This scheme is to provide free food for bystanders at major hospitals in the State. The scheme is implemented in Kozhikode Medical College Hospital, District Homeo Hospital Malappuram, Trivandrum Medical College, SAT Hospital, District and Taluk Hospital Kollam and Government General Hospital Calicut. This programme will be extended to all medical colleges and district hospitals with the cooperation of LSGIs and civil supplies department.
8. *Cochlear implantation in children with hearing impairment.* During the 13th Plan period, the department aims to provide cochlear implantation surgery for 200 children per year.
9. *Disability certification camp.* Disability certification camps were conducted across the State by the Social Security Mission to distribute disability certificates and identity cards to all the people with disabilities. During the 13th Five-Year Plan, the department aims to provide UDID (Unique ID for persons with disabilities) card along with medical certificates.
10. *Snehapoorvam.* The scheme is aimed to provide financial assistance to children who have lost father, mother, or both of them and the living parent is not in a position to look after the child due to financial constraints. The scheme aims to give educational assistance to children up to degree level. During the period of 13th Five-Year Plan Kerala Social Security Mission (KSSM) aims to provide Snehapoorvam educational assistance for 70,000 children per year.
11. *We care.* This programme was designed as a public payment gateway to mobilise funds for social and individual assistance activities undertaken by KSSM. The gateway is intended to

become a financial foundation to raise resources to fulfil medical, social or psychological needs of citizens of who does not have the wherewithal or access to such care. During the 13th Five-Year Plan, the department aims to build up a “we care system” and mobilise funds to help critically ill patients.

12. *State initiatives on disabilities (Anuyatra)*. Rights-based comprehensive life cycle approach to disabilities shall be the key approach of State Initiative on Disabilities in the 13th Five-Year Plan. The schemes and activities envisaged under Anuyatra have been evolved through a consultative process and shall be implemented in line with the new Rights of Persons with Disabilities Act (RPWD) 2016 with relevant modification and innovations during the 13th Five-Year Plan. Anuyatra means journey together which aims at a new Kerala that is friendly towards people with disabilities.

#### *Kerala State Handicapped Persons Welfare Corporation*

The Corporation provides economic empowerment and rehabilitation to the persons with disabilities. It is also a channelising agency for the National Handicapped Finance and Development Corporation (NHFDC) loans. The major programmes of the corporation include self-employment scheme (by providing subsidy for bank loans), proficiency awards, distribution of motorised vehicles and subsidy for motorised tricycles, modernisation of printing press of the corporation. Some of the new initiatives in the 13th Plan include establishment of medical stores, physiotherapy equipment stores, and cultural hubs for the people with disabilities.

#### *Kerala Women’s Commission*

The Commission was established in 1996 to improve the status of women in Kerala, enquire into unfair practices against women, and recommend remedial measures. The commission implements gender awareness programmes and undertakes legal workshops, seminars, and adalaths. The major components proposed to be strengthened during the 13th Plan are: training for members of Jagratha Samithi, strengthen media monitoring cell, short stay home, publication of Sthree Sakthi Newsletter, development of library and research and evaluation studies, awareness through documentaries and print media, gender awareness schemes in schools and colleges (Kalalayajyothi), printing and supply of brochures and booklets.

Some new interventions by the Kerala Women’s Commission include provision of premarital counselling; an innovative programme (Face to Face with Commission) for women’s organisations, groups, and activists to present their views; special awareness campaign to sensitise Keralites on gender equality.

#### *Commissionerate for persons with disabilities*

The State Commissionerate was set up as per the Persons with Disabilities Act enacted by the Government of India in 1995. The Commissionerate coordinates the programmes implemented by different departments and monitors the utilisation of funds for the benefit of the disabled in the State. The other functions of the Commissionerate include conducting awareness camps, redressal of the complaints of persons with disabilities, inspection of institutions. Besides their

programmes on printing and publications of hand book and brochures, seminars, and awareness programme for print and electronic media, in the 13th Plan the Commissionerate will focus on:

1. Conduct an inspection in connection with establishing the status in respect of the registration of institutions for persons with disabilities.
2. Legal aid and advice, entertainment via cultural and sports activities, and awards for literary works for persons with disabilities.

#### *National Institute of Speech and Hearing (NISH)*

NISH is a premier institute in the sphere of disabilities, declared as a National University for Disability Studies and Rehabilitation Sciences to provide an excellent environment for pursuit of higher studies for people with disabilities. The facilities of the NISH include audiological evaluation, speech languages rehabilitation, pre-school and parent guidance programme, ENT services, psychological services, speech therapy, degree courses for persons with hearing impairment, graduate and post graduate programmes in human resource development, and research activities. Based on the Approach Paper and Working Group Recommendations, following are the major components proposed during the 13th Plan period.

1. NISH online interactive disability awareness seminar.
2. NISH innovation model – inspiring stories (NIM-IS).
3. NISH innovation model – training for the inclusive educator (NIM-TIE)
4. Internship and volunteering, to exchange practical experiences between the trainee and NISH.
5. Introduction of new academic programmes in psychology, counselling, social work, and disability studies.

#### *Kerala State Commission for Child Rights*

The Commission functions as a statutory body to examine and review the existing laws for the protection of child rights, inquire into cases of violation of child rights, look into factors inhibiting the enjoyment of those rights, and suggest remedial measures. Following are the major components proposed during the 13th Plan.

1. Strengthen and improve the monitoring of the POCSO Act the Juvenile Justice Act and the RTE Act by taking up not only monitoring issues but also those relating to protection and development aspect of child rights.
2. Conduct universal children's week, studies, compilation, and analysis of data on child studies.
3. Conduct consultations, samavadam, interactions with local leaders and key functionaries at the district and panchayats levels to address problems of out-of-school children.

Some new interventions proposed by the Kerala State Commission for Child Rights include

1. Setting up of help desk in the Commission Office.
2. Make entire system online in collaboration with stakeholders and also create a dashboard for the data thus generated.
3. Online Complaint Management System.
4. Instituting Awards for LSG institutions of Kerala for Hygiene promotion in toilets and ensuring availability of water in schools.

5. Awareness creation to promote its presence on the social media platform, audio and print media, creating short videos, radio campaign on child rights, etc.

#### *Kerala State Women's Development Corporation*

The major programmes of the Corporation are self-employment schemes for women, flagship programme on gender awareness, and Finishing Schools. The major ongoing schemes and the new schemes proposed during the 13th Plan are given below.

1. Self-employment programmes financed by national finance corporations with subsidy by Government of Kerala, STEP programme for employment and training.
2. Awareness camps, vocational training, and entrepreneurship development programmes.
3. Construction of She toilets and awareness about menstrual hygiene.
4. Finishing school, gender awareness, women's Helpline 181.

#### *New Interventions*

1. Integrated Skill Development Centre for Tribal women.
2. Working Women's Hostel cum short stay homes (CSS).
3. Setting up of fresh-up centres in the State.
4. Broadening the reach of menstrual hygiene programme (She-Pad) to all districts.
5. Establish international women trade centre.

#### *Prisons (Home Department)*

In Kerala, the jail infrastructure consists of 44 jails and 11 prisons. The major programmes proposed during the 13th Plan include modernisation of prisons and strengthen welfare of prisoners.

#### *Directorate of Sainik Welfare*

Directorate of Sainik Welfare is engaged in rehabilitation of ex-service men, war widows, and their dependents by training them in vocational, professional, and technical courses. The 13th Plan will aim to transform these training programmes into employment- and income-generating programmes.

#### *Nutrition*

The Department of Social Justice and Health and Family Welfare are implementing various child centric policies and programmes related to nutrition. The State Nutrition Bureau and Nutrition Research Centre also conducts awareness programmes and advanced biochemical research studies, short term community nutrition research studies and survey to monitor nutritional intake. The objective in the 13th Plan is to build a healthy State through a development of the nutritional status of the people following a life cycle approach. The major policy goals include ensuring food security and adequate nutrition, eliminating under-nutrition among adolescents and women, providing effective therapeutic feeding for sick and malnourished children,

developing good nutrition status of adults, and controlling nutrition-related non-communicable diseases.

*Major initiatives in the Annual Plan 2017-18*

*Social Justice Directorate*

1. *Barrier Free Kerala.* The scheme will create barrier free and disabled friendly environment in all the government and public institutions in Kerala. As per the scheme it is visualised to construct ramps, handrails, barrier free lifts, restrooms and toilets, special signage in braille and other such infrastructure. This scheme was implemented successfully in Kannur district and shall be extended to more districts in Kerala.
2. *Anganwadi construction in convergence with MGNREGA (40 per cent State share).* This is a scheme of the GoI to construct Anganwadi buildings in convergence with MGNREGA scheme. For each construction 5 lakh will be provided from MGNREGA scheme and Rs 2 lakh will be allocated by Central and State Governments in 60:40 proportion and the balance amount for construction shall be met by the concerned LSGI.
3. *“Mobile” crèche for migrant workers.* In Kerala, a large number of migrant labourers are working in different construction sites or other areas of work. They move across different sites with their children and their belongings with little access to child care. As a pilot project, sites with higher migrant labourers will be selected and a crèche cum day care centre will be set up in such sites.
4. *Integrated Rural Technology Centre training to anganwadi workers in pre-school education.* The State has 33,115 anganwadi centres spread over 14 districts. It is important to transform anganwadi centres into centres providing quality pre-school education which follows appropriate pedagogic practices. Integrated Rural Technology Centre has developed a comprehensive training programme for quality transformation of pre-school component of anganwadis.
5. *Niramaya Health Insurance Scheme.* This is a health insurance scheme meant for the people with disabilities which come under the purview of National Trust Act 1999. The insurance premium amount for BPL persons of above categories will be shared by the State government and Central government (through the National Trust). Other categories of persons with disabilities may also join the scheme on payment of suitable premium amount. The objectives of the scheme are:
  1. To provide affordable health insurance to persons with Autism, Cerebral Palsy, Intellectual Disability and Multiple Disabilities.
  2. To encourage health services seeking behaviour among persons with disability
  3. To improve the general health condition and quality of life of persons with disability.
6. *Juvenile justice fund for implementation of child protection activities.* As per rule (83) of Juvenile Justice Model Rules of the Central Government, the State Government shall create a fund called the Juvenile Justice Fund for the welfare and rehabilitation of the children coming under the Act and the Rules. Accordingly, adequate budgetary allocation towards the Juvenile Justice Fund has to be provided for implementing the various activities of child protection starting with a token amount in 2017-18.
7. *SOS model homes for Nirbhaya inmates.* It may not be financially feasible to upgrade all the 11 Nirbhaya homes in the State. Hence it is proposed to set up two homes on the lines of SOS Model homes to house 25-50 inmates each. The present Nirbhaya homes may continue to

function as ‘reception centres’. After completing the investigation formalities, if the inmate requires prolonged stay, she could be transferred to this model home for a comfortable stay, study and rehabilitation

8. *Scheme for transgenders.* Kerala is the first State to launch a policy for Transgenders in India. According to the disability census conducted in Kerala in 2015-16, there were 1187 transgenders in Kerala. Most of them are reluctant to reveal their identity and are struggling for their day-to-day life activities. For mainstreaming them into the society, following schemes are proposed.
  1. Transgender Helpline (24x7) and crisis management centre with the help of accredited NGOs working in the field of transgenders.
  2. Financial assistance for vocational training and self-employment.
  3. Pension for destitute transgender above the age of 60 years
  4. Organising welfare programmes with accredited NGO and CBOs working for the welfare of transgender population
  5. Provide financial assistance for proper education as incidence of school drop-out is high, Sex re-assignment Surgery (SRS) in Govt. Hospital based on medical advice, opening HIV zero surveillance centre for Transgender.
  6. Sensitise the public, especially parents and family members, teaching and non-teaching staff, and student community of educational institutions, officers of Health Department, LSGD, Employment Department and Labour Department.
  7. Scholarship for transgender students.

#### *Social Security Mission*

1. *Comprehensive insurance scheme for people with disabilities (Savalamban).* This is a health insurance scheme implemented by Ministry of Social Justice and Empowerment, Government of India, in association with the New India Assurance Company Limited. The scheme provides affordable health insurance to persons with blindness, low vision, leprosy cured, hearing impairment, loco motor disability, intellectual disability and mental illness. This enables them to improve their health conditions and quality of life. The insurance coverage proposed is Rs 2.0 lakh for a period of 12 months and the PwDs of the above categories in the age band of 0-65 years are eligible for enrolment
2. *Social support for children affected with juvenile diabetes (Mittayi).* The scheme proposes continuous insulin supply for children affected with juvenile diabetes. It is estimated that there are around one thousand children in our State suffering from juvenile diabetes. Providing continuous insulin supply for children affected with juvenile diabetes and consultation meeting and training for social management of juvenile diabetes are the activities proposed.
3. *Sthree Sakthi Projects.* Government has launched a new lottery by name “Sthree Sakthi” for the overall development of various categories of women in the State. Kerala Social Security Mission has been entrusted to implement the various schemes proposed under this programme. The scheme which envisages the welfare, safety, employment, etc. for the overall development of women is to be prepared by the mission in consultation with the experts in this field. One of the initiatives would be setting up a few “work centres” for women with disabilities that are specially created environments in which people with disabilities can be employed.

4. *We care voluntary corps.* We Care Volunteer Corps are a network of volunteers willing to take care of the people living in isolation and agony. It is a web-based initiative to establish social security in the community by mobilising around one lakh volunteers in the network. This web-based platform will establish a link between the seeker and the care provider, colleges, schools, volunteer groups and self-help groups. To ensure proper care, volunteers will be trained in basic life support and palliative care. Project support centres will be established at State- and district-level. Visual, print, and social media can be used for the publicity and awareness of service.

#### *Kerala State Handicapped Persons Welfare Corporation*

The major initiatives of Kerala State Handicapped Persons Welfare Corporation include modernisation of manufacturing, repairing, servicing and training (MRST) centre, set-up regional offices in 4 districts, subsidy for National Handicapped Finance and Development Corporation (NHFDC) loan scheme for BPL category and provision of loan to persons with disabilities without any security

#### *Kerala State Commission for Child Rights*

Kerala State Commission for Protection of Child Rights started functioning from June 3, 2013 based on the provisions of the Commission for the Protection of Child Rights Act, 2005. Juvenile Justice Monitoring is the new component included in the 13th Five-Year Plan.



## 16 LABOUR, EMPLOYMENT, AND SKILL DEVELOPMENT

### *Overview*

The government in Kerala intervenes actively in the labour market. It intervenes in the spheres of freedom of employment, fair remuneration, workers' rights to organise, and collective bargaining. Historically, labour legislation and labour welfare schemes have played a more important role in Kerala than the other States.

One of the significant achievements of Kerala's labour movement has been to provide social security – and thus help ensure the dignity of labour – among the workers in the formal and the informal sectors (the latter accounts for close to 80 per cent of the State's total workforce). According to data from the National Sample Survey, the daily wage of casual workers in Kerala is approximately twice the corresponding national average. The government is committed to consolidate Kerala's gains in the area of labour rights.

Kerala's workforce numbered 12.7 million in 2011-12. A noteworthy aspect of Kerala's labour market is the relatively low share of workers engaged in agriculture and allied activities as their primary source of income. At the same time, labour absorption in modern segments of manufacturing and services has been relatively small in Kerala. The manufacturing sector contributes 14 per cent to the State's total workforce, but a substantial part of this employment is in traditional industries such as coir and cashew processing.

Despite its remarkable achievements in the spheres of education, health and other social sectors, Kerala has been facing a crisis with respect to employment creation. Kerala has high rates of unemployment, especially among women. In 2011-12, unemployed as a proportion of the labour force among rural females in the age group of 15 to 29 years was 47.4 per cent in Kerala compared to the corresponding proportion of 4.8 per cent in India as a whole. Workforce participation rates among females are low in Kerala: 22.1 per cent and 19.1 per cent respectively in rural and urban Kerala in 2011-12. It is indeed striking that female participation in the workforce is low in Kerala despite the progress that the State has made with respect to reducing gender disparities.

There are many important challenges. Despite the relatively large supply of skilled workers in Kerala, employment opportunities for skilled labour have grown rather slowly in the State. This has resulted in a mismatch in the State's labour market. There are many sectors in which remuneration for highly skilled work is low and disproportionate to the skills and education required. The low wages of educated workers (such as nurses and teachers) employed in private hospitals and educational institutions have been issues of concern.

Migration to other parts of the world, especially to Gulf countries, has been an important feature of Kerala's labour market. According to an estimate by the State government, 1.4 million Keralites were

working outside the State in 2011 (Pravasi Malayali Census 2011). At the same time, a rising stream of migrant workers from other States, mainly Bihar, West Bengal, and Odisha, meets the large demand for unskilled labour in Kerala. Estimates by the Gulati Institute of Finance and Taxation suggest that migrant workers in Kerala from other States numbered approximately 2.5 million in 2011. This was close to 20 per cent of Kerala's total workforce (12.7 million) at that time. In fact, the State's economy, especially in respect of activities involving manual labour, is now highly dependent on the supply of migrant labour.

Kerala's society is experiencing changes that have had a deep impact on employment and labour relations. On the supply side, Kerala's labour market is distinct from the rest of India in respect of two distinct features: its demographic structure, with an ageing population, and its relatively educated and healthy workforce. The supply of labour is also affected by international migration and the inflow of remittances. An important influence on the demand for labour is the structural shift to a service-oriented economy. Studies on Kerala's labour market have argued that the gains made through social and human development, political empowerment and institutional reforms successfully enhanced wages in the State, but their ability to tackle unemployment had been limited. In fact, high rates of unemployment and unemployment among the educated, in particular educated girls and women have been identified as the visible face of a mismatch between economic growth and human development in the State.

It is the task of the Plan to utilise the gains with respect to human development to create more skilled and high-quality jobs. The new labour market must ensure employment that is inclusive across social groups and brings more number of women in the organised labour force. We must utilise the gains in human development to create more and better-quality employment in the State.

#### *12th Five-Year Plan*

During the 12th Plan, Rs 2,108 crore was allocated for labour welfare programmes undertaken by various departments and agencies and the expenditure was around Rs 1,862 crore. The department- and agency-wise financial details during the 12th Plan are given in Table 16.1.

Table 16.1 *Department- and agency-wise budgeted outlay and expenditure for labour welfare programmes in the 12th Plan* in Rs lakh

Department/ Agency	2012-13		2013-14		2014-15		2015-16		2016-17		12th Plan	
	BO	E	BO	E	BO	E	BO	E	BO	E	BO	E
Labour Commissionerate	34,019	26,101.8	27,562	27,633.52	28,095	22,729.1	26,990.5	3,0637.2	30,863	28,499.01	1,47,529	1,35,600.64 (92 %)
Industrial Training Department	68,72.1	6,316.01	6,876	4,545.96	6,360	5,984.85	8,269.5	7,848.15	10,000	8,184.25	3,8378	32,879.22 (86 %)
National Employment Services	1,270	1,269.53	1,805	1,819.11	1,953	2,129.52	2,253	2,200.64	2,500	2,547.37	9,781	9,966.17 (102 %)
Kerala Institute of Labour and Employment	100	100	150	150	175	160	280	82.07	280	114.8	985	606.88 (62 %)
Factories and Boilers Department	300	150.41	350	481.76	550	2,04.35	200	370.78	500	108.38	1,900	1,315.68 (69 %)
Fire and Rescue Department	1,368.5	363.82	1,600	1,478.18	2,611	2,253.9	2,687.8	685.15	4,000	1,042	12,267	5,823.09 (47 %)
Total	43,929.3	34,301.59	38,343	36,108.53	39,744	33,461.75	40,680.8	41,823.96	48,143	40,495.86	2,10,840	1,86,191.68 (88 %)

\* Expenditure includes Supplementary Demand for Grants

BO = Budgeted Outlay; E = Expenditure

### *13th Five-Year Plan*

The 13th Five-Year Plan aims to achieve a job-induced growth in the economy to create new jobs for job seekers in both urban and rural Kerala. It also aims to create a unified and consolidated legislation for social security schemes, social infrastructure for women, reprioritisation of funds allocation to benefit vulnerable workers, long-term settlements based on productivity, reforms in labour laws, amendments to Industrial Disputes Act, 1947, and revamping of curriculum and course content in Industrial Training Institutes.

The Government has emphasised that it respects the rights of in-migrant workers and the duty of the State towards them. Kerala is host to a steady stream of migrant workers, initially from neighbouring States, mainly Tamil Nadu, but more recently from Bihar, Odisha, West Bengal and Assam. The 13th Plan will support the widest efforts of the State Government to protect the rights and livelihoods of migrant workers, and to invest in infrastructural requirements in this regard.

The State has initiated Special Residential Schemes for workers in addition to strengthening the existing housing schemes, which are implemented with the help of local government institutions. The coverage of the Employees' State Insurance Scheme (ESI) will be enhanced, especially in Idukki, Wayanad, and Kasaragod. Strengthening of Welfare Fund Boards in the State and developing a scientific labour information system are important tasks.

There are segments of the labour market in Kerala – such as traditional industries and the plantation sector – that need special attention. Workers engaged in the cultivation of tea, coffee, rubber, cardamom and the plantation crops have to be protected against crises in these sectors, particularly those arising from external shocks.

#### *Key Initiatives in the 13th Plan*

*Studio apartment for working women in urban areas.* New project to provide good, decent, and safe accommodation for working women across Kerala in urban areas.

*Study on the status of migrant labour in Kerala.* Propose to undertake a scientific study to understand the profile of migrant workers, their working and living conditions, the issues and requirements along with the estimate of workers at district-level.

*Mobile health clinic for inter-State migrant workers.* The Plan proposes to pilot mobile health clinics managed by a civil society organisation to explore the potential of mobile health clinic model to locate migrant workers and provide language enabled services at their convenience.

*Upgradation of ITIs.* The 13th Plan aims to upgrade 10 second class ITIs to world-class institutes by providing smart classrooms and modern workshops in order to attract the younger generation into

vocational education and training. To make ITIs more environment friendly, it is proposed that solar energy plants, bio gas and bio waste treatment plants, rainwater harvesting systems will be provided

*Production centres in ITIs.* It is proposed to launch a new programme of starting production centres at ITIs called “Earn While Learn.” The scheme envisages production of items which can be produced by using the infrastructure available in the ITIs and by using the skilled human power of the ITI trainees.

*State Skill Development Mission.* This would bring necessary synergy, coherence, oversight and uniformity in the implementation of various skill development schemes of the State. The mission is to achieve institutional strengthening at State and district levels, improving quality and market relevance of skill development programmes at the training provider level, enhancing access for women and disadvantaged groups and expanding skill training through private-public partnership.

*Navajeevan.* New programme for senior citizens registered in the employment exchanges with in the age group of 50 to 65.

#### *Programmes Initiated in 2017-18*

*Health insurance for ISM workers (AWAAS).* Awaas is a health insurance scheme for inter-State migrant workers to provide free treatment up to Rs 15,000 per worker from the Government Hospitals and empanelled private hospitals through Health Insurance cum identity card.

*Strengthening of apprenticeship training scheme (ATS).* Apprenticeship training is one of the most effective ways to provide skilled manpower to industry by using training facilities available in the establishments. It is the most promising skill delivery vehicle in the industrial training system of the country as it provides for a structured and rigorous training programme which helps apprentices becomes skilled.

*Rehabilitation and welfare of differently-abled registrants of employment (KAIVALYA).* A comprehensive package is envisaged for the rehabilitation and welfare of the people with disabilities registered in Employment Exchanges. The scheme intends to provide loan for self-employment, vocational career guidance, coaching classes for competitive exams and soft skill training.

#### *Skill Development and Employment*

Kerala’s social consumption and economic growth have been higher than the national average during most of the last two decades. There has been a transition in the State from an agrarian economy to one dominated by the service sector. Over 72 per cent of the urban male workforce and 68 percent of urban female workforce were employed in the services sector (NSS, 2009-10). The

corresponding ratios for rural males and females were 57 per cent and 38 per cent respectively. The development of human resource in the State has created the potential for skilled employment in production and services sectors, and important current need is to provide, on a social scale, training to youth for skilled employment.

#### *Priorities in Terms of Skills Generation*

*Refocusing the sectors.* Skill development planning must be based on a careful analysis of which sectors of the economy are generating employment for the modern and educated labour force.

*Rebooting self-employment.* The scope of skill development programmes should be extended to include training in development of entrepreneurial and managerial skills. Training in the scientific management of businesses, particularly in small production and service units, should be organised for potential entrepreneurs. Institutions of skill development must collaborate in this regard with organisations such as the Entrepreneurship Development Institute of India. In this context, ITIs may expand their sphere of activities to include training young people in entrepreneurship and encouraging entrepreneurs to make the transition from small self-employment to large entrepreneurial units.

*Problem of employability and private public partnerships in skill training.* Skills must match the industrial requirement and the private sector experience can help identify the areas of high demand.

*Technological change, skill obsolescence and re-skilling.* In a world where technology is advancing rapidly, the Plan will provide for re-skilling workers whose skills have become obsolete.

*Concurrent planning for skills.* The Plan will encourage manpower planning in the State.

## 17 OTHER SERVICES

### GENERAL ECONOMIC SERVICES

#### *Overview*

The General Economic Services comprise schemes of Secretariat Economic Services, Economic Advice and Statistics, Civil Supplies and other General Economic Services (Legal Metrology). General Services is an umbrella term covering Stationery and Printing, and Public works. There are 95 schemes under the above sectors/ subsectors implemented through 30 departments. The Secretariat Economic Services in turn is an umbrella term covering 23 departments including Police, Treasury, Registration, Revenue, Central Plan Monitoring Unit (CPMU), Vigilance, Institute of Management in Government (IMG), Centre for Development Studies (CDS), Gulati Institute of Finance and Taxation (GIFT), State Legislature, Kerala Public Service Commission, Excise, Local Fund Audit, Prosecution, High Court of Kerala, Special Purpose Vehicle for Development of Varkala, Survey and Land Records, State Planning Board, Legislature, Institute of Land and Disaster Management (ILDm), Disaster Management, State Innovation Council, and Commercial taxes.

Since these are mainly administrative services, modernisation and computerisation play an important role in the services. The schemes under the services also include software development, digitisation of land records, providing facilities for e-governance, cyber security disaster management, capacity building, training and awareness programmes, surveys and studies, and infrastructure development.

#### *12th Five Year Plan*

The 12th Five-Year Plan outlay of the sector was estimated at Rs 754 crore. But the budgeted outlay during 12th Plan period increased to Rs 5199.59 crore. This was mainly due to the implementation of the Major Infrastructure Development Project (Rs 4191.14 crore) that started in the 2nd year of the 12th Five-Year Plan. The budgeted outlay of 12th Five-Year Plan comprised Rs 5061.23 crore for Secretariat services, Rs 8.98 crore for Surveys and Statistics, Rs 89.41 crore for Civil Supplies, and Rs 39.97 crore for Other General Economic Services. The expenditure during 12th Five-Year Plan was Rs 3383.21 crore (65 per cent of budgeted outlay). Subsector wise details of outlays and expenditure during 12th Five-Year Plan is given in Table 17.1.

Table 17.1 *Budgeted outlay and expenditure for general economic services in the 12th Five Year Plan* in Rs lakhs

Sl No	Sector	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17		Total	
		Budgeted Outlay	Exp.	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.
1	Secretariat Economic Service	9414	8270.03	99431	15058.13	98696.9	21589.22	23001.3	100706.41	275580	183302.81	506123.2	328926.60
2	Economic advise and Statistics	186	89.78	170	144.05	185	114.44	175	127.26	182	202.60	898	678.13
3	Other General Economic Services	351	312.56	436	231.05	1042	190.67	1169.53	739.76	998	1426.19	3996.53	2900.23
4	Civil supplies	614	435.23	2764	3151.46	2874	522.43	1023.39	1186.48	1666	520.65	8941.4	5816.25
Total		10565	9107.6	102801	18584.69	102797.9	22416.76	25369.22	102759.9	278426	185452.3	519959.12	338321.2

Exp. = Expenditure

\* Expenditure includes Supplementary Demand for Grants



### *13th Five-Year Plan*

There are certain issues to be addressed in the 13th Five-Year Plan. These include improvement in the quality of training programmes by formulating a capacity building plan, improvement in co-ordination, implementation, and monitoring of activities of departments, enhancement in the quality of detailed project reports, and modernisation of departments.

#### *Key Initiatives in the 13th Five-Year Plan*

In the first year of the 13th Plan (2017-18), certain new schemes were initiated by the departments. The details of the scheme and outlay are given in Table 17.2

Table 17.2 *New schemes included in the first year (2017-18) of the 13th Five-Year Plan*

Sl No	Scheme Name	Budgeted Outlay (Rs in lakh)	Department
1	Awareness and antidrug activities.	220	Excise
2	Construction of Revenue Staff Quarters.	6,000	Revenue
3	Modernisation of Collectorate Conference hall.	210	Revenue
4	Construction of New Village Offices Smart Revenue Office	11,676	Revenue
5	Basic Amenities in Village Office	8,860	Revenue
6	Maintenance of Revenue Offices	480	Revenue
7	IT Infrastructure Development and Public Awareness and Capacity Development	16,000	GST
8	Implementation of NFSA	30,162	Civil Supplies
9	Hunger Free Kerala	2,117	Civil Supplies
10	Implementation of e-governance	4,786.4	High Court
11	Setting up of Model courts – civil	699.6	High Court
12	Setting up of Model courts – criminal	699.6	High Court
13	Modernisation of 500 subordinate courts	3,500	High Court
14	Scheme for surveillance system in all Districts	1,800	Police
15	Scheme for Minimum Casualties during Riot Control	450	Police
16	Scheme for Strengthening the infrastructure and Logistics for internal security	2,150	Police
17	Scheme for up gradation of Training Infrastructure	1,500	Police
18	Construction of district training centre, control rooms, barracks, lower subordinate quarters, upper subordinate quarters, and Police stations	9,450	Police

The department-wise initiatives proposed in the 13th Five-Year Plan are listed as follows.

## *Police*

Kerala Police is the law enforcing agency in the State for public safety and maintenance of law and order. Kerala has 527 police stations in 19 police districts. Out of the total strength of 60021, strength of force is 44607 personnel, which includes 4226 Women Police personnel. In the 13th Plan, the department aims the following.

1. Provide better quality service to citizens by improvement of facilities in Police Stations.
2. Better investigation, forensic investigation, and cyber security.
3. Better communication.
4. Implement Internal Administrative Processing System (iAPS).
5. Online tracking of vehicles and better control through ascertaining the location.
6. Strengthen Intelligence for Prevention of Crime.
7. Implement Janamaithri Suraksha Project and thereby ensure better policing.
8. Implement Student Police Cadets project.
9. Upgradation of policing in SC/ST colonies.
10. Ensure safety of senior citizen and thereby reduction in crime-rate.
11. Ensure safety of persons with disability.
12. Improve capabilities of the Police Officers by imparting training.
13. Secure life of women and children in the State.

The 13th Plan aims to empower and modernise the State Police by enhancing the use of Information and Communication Technology. The major programmes envisaged in the Plan are modernisation of police forces, empowerment of the force by enhancement of infrastructure facilities, better surveillance system in all districts, increase mobility, effective crowd management, strengthen intelligence set-up, implementation of GIS-enabled systems, introduction of new technology for cyber-crime investigation, upgradation of telecommunication facilities, providing additional space for police stations, setting up of district control rooms, and women safety programmes.

## *High Court*

Judiciary is one of the three pillars of the Government upholding the Constitution of India. The Department of Home is the administrative Department for the High Court and subordinate judiciary.

In the 13th Plan, the department aims to have a centralised data warehouse and automation of the process for retrieval of various reports; convert 56 Civil courts in the State into Model courts and to make them litigant friendly; convert 56 Criminal courts in the State into Model courts and to make them litigant friendly; modernise 500 subordinate courts, with scientific utilisation of work space, ergonomic furniture, and modern equipment.

## *Key Initiatives in the 13th Five-Year Plan*

### *Implementation of e-Governance in the High Court of Kerala*

Implementation of e-Governance will help to provide better service to litigants and public, increase transparency, provide information to the public and improve work efficiency. About 95,000 cases per year (anticipated number of cases filed annually) can be filed online through this facility. About 22 lakh cases and 2.4 lakh administrative records will be digitised, laptops and scanners will be provided, and biometric attendance recording of staff in the High Court will be started.

### *Setting up of Model Courts*

The Model courts will modernise offices using technology and rationalize procedures, within the existing legal framework. It is proposed to convert one Civil Court and one Criminal Court in each of the 14 judicial districts as Model Courts in every year of the Plan period, with an aim to convert a total of 112 Courts as Model Courts. The proposal aims to achieve the following objectives:

1. Improve case flow systems and record management.
2. Reforms in the Court Administration
3. Establish a facilitation centre to function for dissemination of information
4. Provide adequate infrastructure facilities for litigants and public to make the model courts litigant friendly such as ample parking space, public drinking water facilities, rest rooms, toilets, display boards to show current business at court, and uninterrupted power supply.
5. Start touch screen kiosk for dissemination of information.
6. Provide ergonomic furniture and modern seating arrangements for the staff.
7. Install dictation software to speed up disposal of cases and distribution of judgements.

### *Modernisation of Subordinate Courts*

The scheme envisages modernisation of 500 courts in the State including the new/additional courts, which are to be established. 500 subordinate courts will be modernised, with scientific utilisation of work space, ergonomic furniture, and modern equipment thereby increasing the work efficiency.

### *Institute of Management in Government*

Institute of Management in Government (IMG) is the apex training institute of the State. IMG has two regional centres—Kochi and Kozhikode. IMG imparts training to civil servants in the State. During the 12th Five-Year Plan, Rs 73.92 crore was provided as Plan assistance to IMG. Out of this, Rs 43.62 crore was provided for conducting training programmes and Rs 30.3 crore was provided for other developmental activities including infrastructure development.

At present the lacunae in the realm of training are that, several agencies and departments are conducting various training programmes which may cause duplication. Proper co-ordination within IMG in this area is needed and a system needs to be evolved to streamline all training programmes.

During the 13th Plan period, the objective is to develop a “Centre for Good Governance-Kerala (CGG-K)” in areas of importance in public policy and administration and conduct research programmes in the area of excellence in governance. The major activities of the Centre will include academic and action research, advisory and consultancy services, policy analysis and advocacy, conducting change management programmes for various departments, documentation of studies and reports, documentation and dissemination of good government practices and formulate performance standard.

At present, a number of autonomous and other grant-in-aid institutions namely Centre for Development Studies, Centre for Management and Development, Gulati Institute of Finance and Taxation, Kerala Institute of Local Administration, Institute of Land and Disaster Management, Kerala State Information Technology Mission and Information Kerala Mission are functioning in this field. Even though the focus of these institutions is not exactly capacity building as in the case of IMG, a hub and spoke model approach is essential for the improvement of overall capacity and good governance practice in the State. This will help the proposed CGG-K to establish a network of alliance with reputed local/State institutions whose expertise supplements the objectives of CGG-K.

#### *Treasury Department*

The Department of Treasuries plays an important role in the financial management of the State Government. The 13th Five-Year Plan aims to raise the quality of services offered by the treasuries to the level of modern banks and transform the treasuries of the State to modern treasuries. The Treasury Department has presently 4 Regional Directorates, 23 District Treasuries, 200 Sub Treasuries and 12 Stamp Depots. As per the nature of transactions, 157 are Banking Treasuries and 60 Non-Banking Treasuries.

The major programmes proposed by the department in the 13th Plan includes computerisation of treasuries for ensuring better and faster service delivery to the public, upgradation of infrastructure facilities of treasuries and empower treasury officials in tune with the changing environment for the implementation of e-governance initiatives.

#### *Excise Department*

Excise Department administers law related to liquor, narcotics, psychotropic substances, medicinal preparations containing alcohol and narcotic drugs. The Department as part of its monitoring and enforcement activities also monitors whether the above items are sold/consumed illegally.

Abuse of narcotic drugs and psychotropic substances has increased manifold in Kerala. Control of growing substance abuse among children and teenagers is a major challenge before the Department. Modern facilities including ICT and increased transportation network has facilitated substance abuse. This menace needs to be curbed.

At present the Department has 290 field offices, 14 administrative offices and one research centre (SEARC). The Department has to be equipped with modern facilities, technologies and techniques. Moreover, the infrastructure facilities are to be improved, analytical facilities like laboratories are to be strengthened and modernised. The Department also needs more vehicles for conveyance. The strength of the force has to be increased. Strengthening of enforcement activities, effective investigation and successful conduct of prosecution are the key initiatives of the 13th Plan.

The 13th Five-Year Plan includes activities like establishment of wireless communication system in the Department, modernisation of check posts, modernisation of field offices, infrastructure development, modernisation of enforcement activities, assimilating new technology, enhancing laboratory facilities, awareness programmes, and training for staff.

#### *Kerala Public Service Commission*

The duties and functions of the Commission have been laid down in Article 320 of the Constitution. This includes conduct of examinations for appointments to the services of the State, and advising the government on matters relating to the methods of recruitment to civil services and for civil posts. The Commission has different wings such as Recruitment Wing, Examination Wing, Departmental Test Wing, Advice/Consultation Wing, Secret Section and Research and analysis Wing. The Commission has three Regional Offices at Kollam, Ernakulam and Kozhikode. Besides there are District Offices of the Commission in all Revenue Districts to attend to selections relating to posts earmarked for district-wise selections.

The vision of the department is to conduct examinations and publish recruitment list in a time-bound manner to enable speedy appointment of personnel to various vacant posts in government departments. The Commission would use e-based technologies to modernise and speed up recruitment processes.

In the 13th Plan period, KPSC envisages construction of online examination centres in all districts, computerisation and implementation of e-office in State, Regional, and District offices, purchase land and construct office building for Regional and District offices, and conduct training programmes.

### *Vigilance and Anti-corruption Bureau*

Vigilance and Anti-corruption Bureau is a specialised agency for investigating cases of corruption. It has 14 District Offices, 4 Range Offices, 5 Special unit Offices and Directorate. To establish and maintain an ethical climate and probity in the public sector and for speedy disposal of cases, the Vigilance Department has to be strengthened and modernised. During the 12th Plan period, Rs 665 lakh was earmarked and 90 per cent of funds was expended.

In the 13th Plan, it is proposed to upgrade IT infrastructure, establish cyber cell, data archiving, and electronic file management system, procure surveillance gadgets, VPN and internal message system, purchase vehicles, conduct community outreach programmes, research and training, organize conferences and workshops, creative vigilance scheme, and strengthen infrastructure.

### *Kerala State Planning Board*

The Planning Commission has been wound up at the national level and a new entity NITI Aayog has been set up to frame policy inputs and advice to Government. Kerala is the only State in the country to continue the Planning Board and the Plan process. The State took a conscious decision to proceed with the 13th Five-Year Plan. The role of the Kerala State Planning Board vis-à-vis Government's action in development planning has indeed increased. The major functions of the Board include the following.

1. To formulate Plans including the Five-Year Plan and Annual Plans.
2. To prepare the Economic Review of the State
3. Conduct concurrent and retrospective evaluation of schemes
4. Facilitate decentralized planning in the State
5. Co-ordinate functions of departments

During the course of the 13th Five-Year Plan, the Planning Board will review long-pending Plan schemes, suggesting mergers or deletions of existing schemes where necessary, and proposing new schemes in the Annual Plans in accordance with the Approach Paper. Evaluation studies will be designed to bring new levels of efficiency to programme management and the planned use of funds.

### *Gulati Institute of Finance and Taxation (GIFT)*

Gulati Institute of Finance and Taxation (GIFT), an autonomous institution of Government of Kerala, is engaged in research, training, consultancies and publication in the fields of Public Finance, Law, Taxation and Accountancy and is a centre of excellence on public finance and taxation.

The Decentralisation Analysis Cell (DAC) set up in GIFT as part of the Kerala Local Government Service Delivery Project (KLGSDP) has conducted 25 studies on decentralisation in Kerala and three evaluation studies are nearing completion. As the KLGSDP will end soon, the DAC has to be

wound up. This will create a major gap in the area of study of the local government finances. Hence a local government cell has to be set up on the lines of GST chair to build a database of the finance of the LSGs and to carry out systematic studies on decentralisation. In 12th Plan, Rs 3.45 crore was allocated to the institute, out of which Rs 2.82 crore was spent.

In 2017-18, Rs 300 lakh was provided as one time endowment grant for conducting various studies pertaining to finance and taxation including two studies on Implications of GST in Kerala and Productivity of Public Expenditure in Kerala.

In the 13th Plan, it is proposed to conduct studies on GST and Local Government Finance (Corpus Fund), Budget awareness and legislation programme (two annual pre and post budget programmes involving students and young faculty from across the State), and conduct national seminar on subjects related to public finance and taxation.

#### *Centre for Development Studies*

Centre for Development Studies is a social science research and teaching institution. Its mission is to promote teaching, research and training in disciplines related to development. CDS has attained national acclaim and attracts talent from all over the country and abroad. CDS undertakes research on national economy with focus on Kerala. The Centre has six research units such as NitiAayog unit, Plantation Development unit, Local Self-government unit, RBI unit, International Migration unit, Kerala and World Economy unit.

In the 13th Plan, CDS aims to conduct the maintenance of campus, provide fellowship, research support, upgrade library, empower computer centre, provide basic infrastructure facilities, conduct workshops/seminars, introduce Enterprise Resource Planning (ERP) system, construct additional floor to faculty quarters, and install solar energy system.

#### *Legal Metrology Department*

The objective of Legal Metrology Department is to protect consumer interests by ensuring metrological accuracy in the field of trade and commerce and industrial production. The activities include original verification and periodical re-verification of Weights, Measures, and Weighing and Measuring instruments; conducting periodical inspection in trade premises, booking cases against the traders, industrialists and others who violate the Act and Rules; and implementation of Packaged Commodity Rules.

The Department has adopted sophisticated techniques to improve the quality of services. The Department has obtained international accreditation for its secondary standard laboratory and laboratory for testing purity of gold and laboratory for calibration of Sphygmomanometer.

The vision of the Department is to augment the quality of its services by improving calibration measurement capability of its laboratories and also to strengthen the infrastructure.

The Department strives to gain capability to verify and certify every kind of weight or measure specified under Legal Metrology Rules, 2011. The department aims to protect the rights of the consumers at large. But the Department is not fully equipped with adequate men, materials, machinery and vehicles for the successful performance of the tasks entrusted to it. The Department has initiated automation in the field of verification but infrastructure needs to be improved to enhance the quality of service.

In the 13th Plan, the Department aims to improve the quality and efficiency of verification of weights or measures and in enforcement of legal metrology statutes; and empower common people, especially women and downtrodden segments of society and consumers, by creating awareness about rights of consumers and functions and services of the Department and by making all services online. The outlay for the Department for 2017-18 was Rs 10 crore.

To achieve the above goals, the Department has proposed the following schemes in the 13th Plan period. It includes improvement in quality and efficiency of verification by modernisation of Legal Metrology Department, Consumer awareness creation programmes (Advertising and Publicity), Training programmes, Construction of office building, Enforcement of law, Development of dedicated departmental portal (LMOMS) and e-Governance projects, Infrastructural improvement of standards laboratories, Obtaining NABL accreditation to standards laboratories and establishment of consumer kiosk. Generating non-tax revenue by providing technical consultancy and calibration services to industries is a new initiative proposed by the Department in the 13th Plan.

#### *Commercial Taxes*

The Commercial Taxes Department administers the biggest financial reform of Goods and Services Tax. In order to ensure smooth operationalization of GST, the IT Infrastructure needs to be strengthened and upgraded. This includes replacement of obsolete IT equipment, connectivity upgradation, archival of old records, and digital signature procurement. In the 13th Plan, the programmes proposed by Department include GST training, capacity building, and construction of office building.

#### *Department of Economics and Statistics*

The Department of Economics and Statistics is the nodal agency and apex body of the State responsible for the systematic collection, compilation, analysis, objective interpretation and dissemination of statistics relating to various sectors of the Kerala economy. The Department of Economics and Statistics has proposed schemes such as strengthening of computer division in the



Directorate, in-service training to statistical personnel, Survey and Studies, strengthening of computer division in districts, Support for Statistical Strengthening Project, and Strengthening Vital Statistics for undertaking various data collection programmes. Apart from this, the central sector schemes such as Economic Census, Rationalisation of Minor Irrigation Statistics, Agriculture census, Strengthening of Vital Statistics in the State, IASS-EARAS (Establishment of an Agency for Reporting Agricultural Statistics) are also proposed to be undertaken in the 13th Plan.

#### *Major Infrastructure Development Projects*

‘Major Infrastructure Development Project’ was included in the Annual Plan from 2013-14 onwards. This was keeping in mind several bottlenecks in the timely utilisation of funds provided under major infrastructure development projects. Funds thus provided for such schemes very often got lapsed or got utilised for other schemes by re-appropriation. In order to avoid such a situation, a lump sum amount is provided under a single head with flexibility to utilise against any of the intended schemes depending on requirement and performance.

Thirteen major infrastructure development projects viz. Mono Rail Projects/Light Metro Systems at Thiruvananthapuram and Kozhikode, Vizhinjam International Container Transshipment Terminal (ICTT), Kochi Metro, Kannur Air Port, Annuity Scheme on 35th National Games, NH Bypass at Kollam and Alappuzha, new IIT at Palakkad, Mega Food Park at Palakkad, Electronic Hardware Park at Kochi, Integrated Water Transport System at Kochi, Kerala Rail Development Corporation Ltd, creation of judicial infrastructure and reconstruction of bridges, and culverts are proposed in the 13th Plan period. An outlay of Rs 1,552 crore was provided in the Annual Plan 2017-18 to facilitate smooth and timely implementation of these projects.

#### *Vision Varkala Infrastructure Development (VIVID) Corporation Limited*

Vision Varkala Infrastructure Development Corporation Limited, constituted during 2012-13 for the comprehensive development of Varkala, facilitates implementation of different projects in the Public Private Partnership and joint venture modes and investment by NRIs. In the 13th Plan schemes such as Centre for Performing Arts, Cliff Protection, Geological Museum, and low impact recreational activity at Varkala Cliff are proposed.

#### *Land Revenue Department*

Land Revenue Department is one of the oldest departments of Kerala. The 14 districts of Kerala are subdivided into 21 Revenue Divisions, 75 taluks and 1,664 revenue villages headed by District Collectors, Revenue Divisional Officers, Tahsildars and Village Officers respectively. For effective implementation of various e-governance initiatives of the government, the pace of modernisation and computerisation of revenue offices needs to be enhanced.

Implementation of Revenue Land Information System (ReLIS) and e-payment application for tax payment are steps initiated by revenue department to facilitate citizen-centric services.

The basic approach to the 13th Five-Year Plan would be to modernise land revenue administration in Kerala and to make it more sensitive, responsive to people's needs, and dynamic to development process. In the 13th Plan, the department aims to provide a transparent and client-friendly administration, evolve policy to address changing trends, simplify procedure in the delivery of services, identify and implement ways and means to enhance resource through proper land management and registration of documents and create a committed and responsive staff through capacity building and better personnel management.

The basic facilities for public in revenue offices needs to be improved, awareness on ReLIS and e-payment needs to be enhanced, infrastructure facilities needs to be augmented, full proof of land records for each parcel of land needs to be created, and ICT application need to be applied at all stages of land record maintenance. The Department also needs to facilitate online services to citizens.

The main schemes proposed in the 13th Plan include construction of new village office buildings and smart revenue offices, provide basic amenities in village offices, construction of staff quarters, conservation of heritage buildings, Land Bank Project, provide training programmes through Institute of Land and Disaster Management(ILDM), modernization of Collectorate Conference Hall, computerization of revenue offices, establish a monitoring cell for implementation of the Working Group Report on Land Records and create public awareness programmes.

In the 13th Plan, the department aims to construct 427 village offices, 300 staff quarters, conduct 4000 training programmes in ILDM and 1,236 training programmes in collectorate and taluk offices.

#### *Survey and Land Records*

Resurvey of the State started in the year 1964. Yet out of 1,664 revenue villages, 780 still remain to be surveyed. The emphasis in Plans has been completion of digital resurvey of the State and integration and continuous updation of land records through single window system. In the Twelfth Plan period, an outlay of Rs 11crore was allocated for the scheme 'Integration of Land Record Service Delivery'.

In the 13th Five-Year Plan period, the Department aims to train the staff to familiarise them with the latest technological advancement in the mapping domain. The Department plans to introduce modern techniques like aerial survey, digital mapping, and GIS technology. Complete automation of survey processes and elimination of manual errors in the records are also envisaged in the coming years. Another priority area of the department is a comprehensive integration of software and single window access of land records to the beneficiaries.

In the 13th Plan, the aim is to complete land surveys and modernise land records.

The strategy for the 13th Plan is to formulate an Act to survey, settle and modernise land records to provide clear and conclusive titles based on a common digitised textual and spatial database, which would provide clarity on land use and record real time changes in ownership of land.

The department aims to conduct digital survey of 15,620 sq km of area, digitize 8,84,000 Field Measurement Book (FMB) in 884 villages in all districts and modernize five training schools.

#### *ILDm (Institute of Land and Disaster Management)*

ILDm provides specialised training programmes to officers of Revenue and Survey department in the subjects of revenue and survey. In the 13th Plan period, ILDM has decided to provide seed money for three centres, namely, (a) Centre for Land Governance (b) Centre for Safety and Crowd Risk and (c) Centre for Lightning Research, conduct 1236 trainings in collectorate and taluk offices (decentralised manner), 4000 training in ILDM (centralised manner), construct museum on Land Revenue Administration, prepare Revenue vartha, Revenue Guide, and develop infrastructure of ILDM.

#### *Registration Department*

The Registration Department is mandated with the responsibility of registration of documents under different registration laws, specifically with the registration of documents related to land transactions, death, marriage, societies, companies, partnership, power of attorney, and issuance of encumbrance certificates. It collects stamp duty and document writer's fee. Nearly 80 per cent of its work pertains to registration of land documents.

The vision of the Department is to smoothen the process of registration thereby making registration process citizen-friendly. This includes conclusive proof of genuineness of documents, prevention of fraudulent transactions, ensure security of title deeds and issue duplicates in case the original deeds are lost or destroyed.

Modernisation, digitisation and computerisation of Registration Department are the major initiatives proposed in the 13th Five-Year Plan period with a view to streamline its activities. The new initiatives proposed in 13th Plan are the following.

#### *Digitisation and Archival of Records*

The most important step in the computerisation of Registration Department is to capture the legacy data records. This involves data entry of the index registers and scanning of copies of registered deeds which are bound and kept in the Sub Registry Offices. The legacy data is to be converted to

digital form so as to make it part of the Registration Database. This will allow delivery of services through Web/ Common Service Centers, so that the public need not visit Sub Registry offices for the same. An average of 2000 bound volumes containing 500 pages in each volume is estimated in a Sub Registry Office.

### *Building Construction and Maintenance*

About 60 per cent of the Sub Registrar Offices are functioning in private buildings, which lack basic facilities. Currently, the department is incurring Rs 200 lakh per year towards rental charges. The Department proposes to construct own buildings with all modern facilities for all the Sub Registrar Offices that are currently functioning in private premises.

### *Kerala State Disaster Management Authority*

Kerala is prone to multiple hazards. The State is prone to 17 Natural Hazards and 22 Anthropogenic Hazards that have disaster potential. The natural hazards include several climate induced hazards such as floods, drought, cyclones, and sudden onset events like flash floods, and landslides.

Disaster management is a multi-dimensional issue, covering different sources of hazards and different types of action in different situations. Natural disasters should not be confused with climate change; such a perception may lead to lack of action on risks which can be mitigated by short-term measures. Such measures should be a natural component of development efforts. At the same time, coping with current natural disaster offers valuable experience for a future of global warming and increased climate variability. Fresh hazards may arise due to ongoing development, as in the case of urban flooding

Natural disasters are a core concern for disaster management. Also important are human-made disasters and the mitigation of risk caused by them. The fireworks tragedy in 2016 offers lessons in this respect. A strong regulatory regime of techno-legal measures and its firm implementation can help ensure that such disasters are prevented. At the same time, a culture of safety awareness and awareness of the importance of safety regulations and their implementation in society at large is also necessary. Other man-made disasters may arise from electrical equipment in general, chemical process industries, behavioural issues such as crowd behaviour, fire risk in high-rise buildings, and so on. A general safety culture and a consistent and clear techno-legal regime can help ensure that these are reduced significantly.

The State Disaster Management Plan, 2016 provides a detailed analysis of the vulnerability faced by the State. Based on the multi-hazard vulnerability assessment, Kerala has identified 21 highly vulnerable taluks and 35 moderately vulnerable taluks. The Authority will focus on strengthening administrative systems and communities in these taluks to prepare effectively for disaster risk reduction from an ‘all hazards perspective’.

A comprehensive and integrated approach to disaster management needs to be developed in the 13th Plan period. The initiatives of local governments are essential for the promotion of a safety culture and regular safety audits. In the context of Kerala, community-based disaster risk reduction or community-based disaster management can be understood as LSG-based disaster risk reduction or LSG-based disaster management. This will provide a more accountable and a better institutional basis for disaster management at all levels

#### *New Schemes of KSDMA in the 13th Five-Year Plan*

The Section 8.7 of the State Disaster Management Plan, 2016 has identified 7 broad themes under the SENDAI framework of action for disaster risk reduction in the State in the 13th Five-Year Plan period. These themes were also subsumed into the New Delhi Declaration 2016 as adopted in the Asian Ministerial Conference for Disaster Risk Reduction. To achieve the long term (15 year) goals as laid out in the “Asian Regional Plan for implementation of the SENDAI Framework for Disaster Risk Reduction, 2016”, the National Disaster Management Plan 2016, and the “calls on governments” as in the New Delhi Declaration, KSDMA has formulated seven broad themes and have matrix-linked each theme to a specific point as in the New Delhi Declaration, for implementation.

#### *Civil Supplies Department*

The Civil Supplies Department discharges the important responsibilities of public distribution, enforcement of market discipline and promotion of consumer awareness and protection of consumer interests. The Public Distribution System (PDS) is being implemented in the State with effect from July 1, 1965 onwards.

Kerala’s Public Distribution System (PDS) was the earliest and best-functioning network of food security in India. The evolution of Kerala’s PDS is closely associated with a long history of public action, particularly after 1956. With regard to the supply of food grain within PDS, it was necessary that the Centre honoured its commitment to meet the States grain requirements from the central quota. These conditions changed after the 1990s. After 1997, the universal PDS was replaced by a targeted PDS. Methods of targeting and of the selection of beneficiaries were inherently faulty, and many needy households were excluded from the PDS.

The implementation of the National Food Security Act (NFSA) in Kerala was delayed during the 12th Plan period. There was delay even in the preparation and distribution of new ration cards. As a result, Kerala faces a deficit of more than 2 lakh tonnes of food grain every year.

The overall aim of the 13th Five-Year Plan is to strengthen the PDS through the implementation of National Food Security Act, 2013 and improve nutritional outcome among the beneficiaries by

improving access to quality food of right quantity at affordable price. In particular, the Plan will help ensure that a larger share of beneficiaries than envisaged by the original NFSA design receives subsidised food grains

The end-to-end computerization of PDS network will streamline food supply and distribution. The Civil Supplies Corporation will be equipped to effectively intervene in the market in order to control prices.

At the heart of this Plan is a roadmap for PDS for the next five years, where individuals and institutions collaborate to strengthen the Public Distribution System in Kerala in order to ensure food and nutritional security of the population. Online service for Ration Card Management System (RCMS) and Supply Chain Management System (SCMS) are expected to be fully functional by mid-2018. Electronic point of sale (E-PoS) machines have been installed in various Fair Price Shops (FPS); it is expected to be effective in the entire state by late 2018.

An objective of the 13th Plan is to create a hunger-free Kerala. The establishment of a hunger free State requires other policy interventions as well. The 13th Plan will support efforts to strengthen and modernise the Integrated Child Development Scheme (ICDS) and the Mid-Day Meal (MDM) scheme. It will also support efforts to distribute micro-nutrient-fortified food grain as part of these schemes. For the poorest, destitute, we shall encourage the establishment of feeding centres that will provide cooked food.

#### *Implementation of National Food Security Act (NFSA)*

The National Food Security Act, 2013 (also Right to Food Act) is an Act of the Parliament of India which aims to provide subsidized food grains to approximately two thirds of India's 1.2 billion people. It was signed into law on September 12, 2013, retroactive to July 5, 2013. Government of Kerala has decided to implement NFSA in the State with effect from November 1, 2016 and aims to provide 5 kg subsidised food grains per month to 52.63 per cent of rural population and 39.5 per cent of urban population (approximately 1.54 crore people). Besides, the State government also decided to provide food grains at free/subsidised cost to the beneficiaries belonging to unorganised sector and other eligible priority class.

#### *Annapurna Food Security Scheme for the Aged Destitute*

Annapoorna Scheme is a component of the National Social Assistance Programme and is implemented by this Department. The scheme provides 10 Kg of rice per month free of cost to destitute who have attained 65 years of age and eligible for national old age pension, but not getting pension for some reason. A quantity of 450 MT of rice is allotted per month for distribution to the beneficiaries of the scheme. The amount proposed is for meeting price of rice to be paid to Food Corporation of India at Below Poverty Line rate and for paying dealers commission to authorised

ration wholesale and retail dealers to cover transportation charges and handling charges incurred by them. The targeted number of beneficiaries in the State approved by Government of India is 44,980. But the number of beneficiaries identified at present is only 23,689.

#### *Council for Food Research and Development (CFRD)*

Government has established a Council for Food Research and Development (CFRD) as a registered charitable society to promote indigenous food items of Kerala and maintain competitive quality in the international market. In the 13th Plan period, the department aims to establish three Food Quality Monitoring Labs one each at Kollam, Thrissur, and Kannur. Also miscellaneous budgetary requirements are proposed for existing facilities of CFRD at Konni, Pathanamthitta in the 13th Five-Year Plan.

#### *Consumer Welfare Activities*

It is proposed to strengthen and modernise 14 Consumer Disputes Redressal Commissions.

#### *Open Market Operations and Modernisation of Supplyco Outlets*

Supplyco has about 1100 outlets under various categories of retail activity and needs to be revamped. In addition, works related to centralised design and re-branding also need to be undertaken. Moreover, we need to have ample scientific godown facilities to store the commodities procured. Until creation of own godown facilities, funds are required for hiring scientific godowns in the State as well as in the procuring areas.

#### *Hunger Free Kerala*

The objective of the scheme is to eliminate hunger in Kerala and eliminate hunger for nutrients (Malnutrition) in Kerala by 2022 to achieve international standard of health in Kerala. The project is intended to provide one time free meal a day for the needy. This scheme will be implemented with the help of (i) SHG canteens like Kudumbasree units (one canteen per district, 500 meals per day), (ii) Assistance in cash and kind to NGOs, institutions and which provide food to the needy (iii) Assistance in cash and kind to local self govt. institutions which have identified beneficiaries who are not in a position to cook food for themselves. Price support of Rs 10 per meal will be given. For eliminating nutritional hunger, fortification of PDS Atta, fortification of PDS Rice, and diversification of public distribution system is proposed with non-Plan assistance. The following critical gaps need to be addressed in the 13th Plan period.

1. Identification of nutrition deficiency of people in different regions of Kerala.
2. Designing a proper business model and road map for implementation of the scheme to address the malnutrition.
3. Linkage of various schemes like mid-day meal and ICDS with malnutrition.

### *Infrastructure Facilities for Civil Supplies Department*

In the 13th Plan, infrastructure development such as construction of eight office buildings, procurement of vehicles, setting up of workstation module in all offices, setting up modern record room and digitalization of records, implementation of paperless office/e-office needs to be taken up.



### *GENERAL SERVICES*

The schemes of General Services consist of Stationery, Printing and Public works. There are 9 schemes being implemented by these three departments. The activities mainly include modernisation computerisation, e-governance, capacity building, and infrastructure development. The 12th Plan outlay for the sector was Rs 336.71 crore consisting of Rs 47.48 crore for Stationery & Printing and Rs 289.23 crore for Public Works. Sub sector wise outlays and expenditure during the 12th Five-Year Plan is given Table 17.3.

Table 17.3 *Budgeted outlay and expenditure of general services in the 12th Five-Year Plan* in Rs lakhs

Sl No	Sector	Annual Plan 2012-13		Annual Plan 2013-14		Annual Plan 2014-15		Annual Plan 2015-16		Annual Plan 2016-17		Total	
	General Services	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.*	Budgeted Outlay	Exp.*
1	Stationery	130	114.93	132	114.38	147	139	137	181.6	50	54.15	596	604.06
2	Printing	837	240.62	850	130.64	950	423.9	715	273.32	800	118.18	4152	1186.66
3	Public Works	3600	6595.63	3885	5838.49	4669	4243.37	9537	12898.3	7232	12168.23	28923	41744.02
	Total	4567	6951.18	4867	6083.51	5766	4806.27	10389	13353.2	8082	12340.56	33671	43534.74

Exp. = Expenditure

\* Expenditure includes Supplementary Demand for Grants

### *1. Printing and Stationery*

The Printing and Stationery Departments, while remaining a service department need to be upgraded into a major department of the Kerala Government, to give them the authority to efficiently carryout all the printings and publication related work of the government. In the 13th Five-Year Plan period, the department proposes to restructure sections and departments within each press into following seven broad departments i) administration and accounts ii) planning and costing iii) pre-press: design typesetting and layout, scanning processing/reproduction (iv) press plate making and printing operations v) Post press: binding, lamination, finishing vi) storage and warehousing vii) repair and maintenance.

### *2. PWD Buildings*

PWD undertakes public works related to infrastructure in the State. It also provides technical advice to the Government for development of the overall infrastructure in the State. PWD Buildings and Local Works is a programme delivery wing of the PWD. It undertakes construction of office buildings and other public buildings construction. The major bottleneck in PWD building Plan execution system is the lag in completion of projects. While there is inadequate allotment of funds, there are more systemic issues to handle. The Department (and other Departments) issues administrative sanctions for amounts much higher than actual allocations; and even for works not listed in the annual Plan or budget. Time over-runs lead to cost over-runs. The cycle of work selection, approvals and executions get derailed when new works which were hitherto outside the list are taken up as high priority works.

The emphasis in the 13th Plan is to complete the on-going works in a time-bound manner giving emphasis on conservation s, rain water harvesting and waste disposal. The new constructions in the Plan period will be environment and disabled friendly. The schemes include construction of various public office buildings under the common pool, construction in Kerala Legislative Complex, court buildings, head office for State Election Commission, construction and renovation of village offices and other revenue offices buildings for other departments.

## 18 CULTURE, SPORTS AND TOURISM

### ART AND CULTURE

#### *Overview*

Kerala is well known for its rich heritage of art and culture. Many institutions work for the promotion and propagation of this cultural heritage. They include academic institutions, institutions of the performing arts, and organisations involved in promotional activities. Financial assistance to the sector is mainly provided through the Cultural Affairs Department. Major implementing departments coming under the sector are the Department of Archaeology, Department of Archives, Directorate of Culture, Department of Museums and Zoos, and the Kerala State Film Development Corporation.

Major institutions coming under the Department of Cultural Affairs are Kerala Kalamandalam, Kerala State Chalachitra Academy, Kerala Folklore Academy, Kerala Sahitya Academy, Kerala Sangeetha Nataka Academy, Kerala Lalitha Kala Academy, Bharath Bhavan, Kumaranasan National Institute of Culture, Vasthuvidya Gurukulam, Velloppilli Samskrithi Bhavan, Gurugopinath Natana Gramam, Jawahar Balabhavan, State Institute of Languages, Kerala Book Marketing Society, and Mahakavi Moyinkutty Vaidyar Mappilakala Academy.

Although there are multiple agencies, the share of Plan and non-Plan budgets allocated to the culture and allied sectors is rather meagre. The 13th Plan proposes substantial increase to the relevant departments in this sphere.

#### *12th Five-Year Plan*

In the 12th Five-Year Plan, Rs 388.22 crore was provided for the Art and Culture sector and the expenditure was Rs 336.77 crore. The details are given in Table 18.1.

Table 18.1 *Department-wise budgeted outlay and expenditure of art and culture sector in the 12th Five-Year Plan in Rs crore*

S. No	Department	2012-13		2013-14		2014-15		2015-16		2016-17		Total	
		BO	E	BO	E	BO	E	BO	E	BO	E	BO	E
1	Archaeology	20.5	11.52	14.6	4.74	15	9.24	16	7.08	18.20	10.84	84.30	43.42 (52%)
2	Archives	1.45	1.35	2	1.98	2.40	2.30	3	2.52	3.45	5	12.30	13.15 (107%)
3	Museum and Zoos	11	10.6	13	11.72	14.5	10.05	16.25	15.04	18.35	17.7	73.10	65.11 (89%)
4	Kerala State Film Development Corporation	2.75	2.75	5	5	4	4	4	5.5	4	4	19.75	21.25 (107.59%)
5	Directorate of Culture	0.45	0.43	0.45	0.44	0.75	0.47	1.05	1	1.15	1.14	3.85	3.48 (90%)
6	Kerala State Chalachitra Academy	2.55	4.30	3.45	3.45	4.50	4.50	4.75	4.75	5.10	6.89	20.35	23.89 (117%)
7	Other Institutions under cultural Affairs Department	22.35	29.63	26.6	29.69	30.85	24.75	34.79	36.64	35.50	29.84	150.09	150.58 (101.66%)
8	Other Institutions under Higher Education Department	3.95	2.23	4.90	2.91	5	3.03	5.16	3.44	5.47	4.2	24.48	15.81 (65%)
Total		65	62.83	70	59.96	77	58.37	85	75.97	91.22	79.61	388.22	336.77 (87%)

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

Public policy on art and culture should facilitate the evolution of a modern, secular, and democratic society. Such a policy represents continuity with the legacy of Kerala's cultural renaissance. It is also a progressive response to the contemporary challenges arising from majoritarianism and revivalism. The 13th Five-Year Plan will emphasise communal harmony, social equality, the emancipation from social oppression, and enlightened art forms that characterise the best of Kerala's culture. It will also aid emerging movements against casteism and social oppression, and obscurantism.

The Plan will encourage the use of new technology to strengthen village libraries and reading rooms, cultural societies, film societies, local oral history projects and popular art forms with secular messages. Public policy should be a bulwark against the whole scale commercialisation of art and culture that is a distinctive feature of our times.

The 13th Plan will give specific focus to integrated cultural planning, encompassing art and heritage planning. The allocation of resources for cultural activities will be enhanced.

The Plan will enhance the dispersal and geographical spread of cultural facilities and spaces across Kerala.

Cultural events of national and international significance are now held on regular basis in Kerala. The international film festival, international theatre festival, international short film festival, Kochi biennale and a wide range of literature, music, and dance festivals combine to create a unique cultural experience in the State. The 13th Plan will strongly support such efforts in this public sphere.

There are strong inter-linkages between cultural policy and tourism policy. The 13th Five-Year Plan will strengthen these linkages. Kerala is now a venue for successful and regular international exhibitions and festivals of cinema, theatre, the visual arts, folk art, and music. The 13th Plan will also support the establishment of museums of repute in the State over the next five years.

#### *Major Initiatives in the Annual Plan 2017-18*

##### *1. Archaeology Department*

*A comprehensive development plan.* A comprehensive development plan is to be prepared utilizing the services of experts in the field of Archaeology including monuments, museums, conservation and excavation. Support for research activities on the excavation projects is also envisaged.

## 2. *Archives Department*

*Participatory digitalization and development of archives in Kerala.* Digitization and awareness building on valuable records in the Archives will take many years if conventional methods are used. As a way out, a participatory method is suggested. The services of research community may be used to digitize and transliterate the available materials. Through this programme, department hopes to reach out to the society, create awareness about records, locate records through surveys, preserve or conserve them at their site and acquire records from those who are willing to transfer their custody.

## 3. *Culture Directorate*

*Diamond jubilee fellowship for young artists.* This scheme has twin objectives of encouraging young artists on the one hand and promoting local cultural development on the other. Thousand diamond jubilee fellowships will be issued to young artists graduating from recognized institutions in the State. The State Government will ensure a monthly fellowship of Rs 10,000 to the awardees. The fellowship will be operational when a local host is identified who undertakes to provide local hospitality to the fellowship holder. Schools and local governments will be encouraged to host the fellowship and provide local hospitality.

*Development and networking of museums.* This project aims at integrated development and networking of museums and tourism. The State has a strong history of cultural diversity formed out of association with other nations. The museums existing in Kerala brings out only certain facets of the culture of Kerala. A new museum of Kerala culture is envisaged which will showcase the history and cultural diversity of Kerala. A detailed project report is to be prepared with a specific story board and curatorial vision for which a museum display consulting firm is to be engaged. The content for the story board to be prepared by a panel of experts. The museum will be set up using the latest technologies for display.

*Livelihood for artists.* Kerala has a rich cultural heritage of folk arts and artists. In order to improve the living condition of these artists, craftsmen and craftswomen, a project in collaboration with organisations like UNESCO will be implemented to create rural art hubs to help the folk artists and craftsmen to enhance their skill, reach out to the global market and strengthen their livelihood. Capacity building and direct market linkage would be given priority. Exchange collaboration opportunities with other States and countries will help to create new avenues.

*Apex body for culture.* The Govt. of Kerala supports accredited organisations and autonomous bodies to revitalise and strengthen them to pursue cultural activities of different nature. This would create a platform to encourage and promote artists to perform and create a cultural awareness in the society. This support needs to be streamlined through an apex body headed by Hon'ble Minister for Culture as Chairperson and Secretary to Government, Cultural Affairs as the Member Secretary and with eminent persons from the Cultural sector as Members. The Director, Culture would function as the secretariat for the apex body. This committee would be instrumental in deciding the financial

support to be given to cultural organisations. The committee would plan and formulate the policies for the cultural sector in the State.

#### *New Schemes Proposed in the 13th Five-Year Plan*

##### *Archaeology Department*

1. *Comprehensive upgradation of numismatic wing.* Department of Archaeology possesses the largest and diverse coin collection in India. This project is mainly intended to document, conserve and catalogue the entire coins with the Department of Archaeology using modern technology.
2. *Village to Village Survey.* This project is intended to conduct a village to village survey in all the districts of Kerala to identify, document and list out such heritage buildings and artefacts remains etc and also to ensure their continued existence.
3. *Asset mapping of protected monuments and pre-excavation/ exploration study and data collection with geo spatial technology.* The aim of the project is to have aerial photographs, topographical mapping of protected zone and premises to identify the buffer zone.
4. *Heritage circuit.* Development of Gandhi Smrithi Mandapam and nearby historically important sites associated with freedom struggle.
5. Improve infrastructure related museum's security and visitor's care
6. *Digital database of antiquities.* This project is a web-based software which enables searching and retrieval of objects based on tagged parameters. The ultimate aim of this project is to create a digital web-based inventory.
7. *Promotion of heritage tourism.* Department intends to include a few of its monuments in the Heritage Tourism map. These monuments will be well conserved to manage the tourist flow.
8. *Policy on maintenance of museums, protected monuments, and sites.* Department of Archaeology will initiate steps in the 13th Plan to formulate policy on conservation of museums, protected monuments, archaeological remains etc.
9. *Establishing regional offices.* During the 13th Plan the department plans to establish 3 regional offices at Thiruvananthapuram, Ernakulam and Kozhikode.
10. *Constitution of technical and advisory committees.* Department proposes to constitute various technical and advisory committees with both departmental staff and outside experts.
11. *Developing barrier free solutions for museum with Bluetooth low energy devices.* The 13th Five-Year Plan period, department of Archaeology will initiate steps to install sophisticated, energy efficient devices in a few selected archaeological museums.

##### *Museums and Zoos Department*

1. *Renovation and conservation of Napier museum building.* The Napier museum is one of the oldest museum in India and the structure is 137 years old. The building is in need of renovation. Government constituted an expert committee to prepare a comprehensive report on the repairs to be urgently undertaken in the Napier Museum.



2. *Construction of new building for Sree Chitra Art Gallery.* The gallery is a modification of a residential building and is unsuited to display paintings. The department will construct a new gallery with adequate facilities for display and protection of precious paintings from fire and other damages.
3. *Establishment of regional museums.* The department has drawn up plans to establish museums across the State and giving emphasis to the local history, life, and culture of each region. Department has started the regional museums via heritage museum at Kunkichira, Wayanad, and Theyyam Museum at Kannur. It is proposed that by the end of 13th Five-Year Plan period at least five regional museums will become functional.

Under the Zoological Gardens, Department of Museums and Zoos proposes the ongoing activities such as construction of new enclosures, enrichment works, addition of new animals to the zoological garden, and the new activities such as visitor amenities in zoological garden and interpretation centre, establishment of a new aquarium in State Museum and Zoo, Thrissur.

#### *Kerala State Film Development Corporation (KSFDC)*

Government has selected KSFDC as a special purpose vehicle to implement four major projects through assistance from Kerala Infrastructure Investment Fund Board (KIIFB). These projects are: construction of cultural complexes in all districts of Kerala under the Cultural Affairs Department, conversion of Chitranjali studio, Thiruvananthapuram into a film city under KSFDC, construction of multipurpose film festival complex at Chitranjali studio, Thiruvananthapuram for the Kerala State Chalachitra Academy, and construction of 100 theatres in all over Kerala for KSFDC. In addition, KSFDC proposes following projects during the 13th Five-Year Plan period.

1. Bifurcation and modernisation of Chitranjali theatre at Chittoor.
2. Construction of a new additional theatre at Kozhikode with multi-layer parking facilities.
3. Construction of a new theatre at Thampanoor and Thiruvalla.
4. Modernisation of Chitranjali studio at Thiruvallom including purchase of camera, lights, new dubbing suits, editing facilities, floors, etc.
5. Bifurcation of Kalabhavan theatres.
6. Expansion of studio at Kakkanadu, Ernakulam with camera and outdoor units.
7. Construction of new theatres as per availability of land from the Government.

*Other Institutions*

Serial No.	Name of institutions	Activities proposed
1	Kerala Sahitya Academy	Literary conferences, Seminars, Academy awards, Fellowship, Appan Thampuran Smarakam, medical aid
2	Kerala State Chalachitra Academy	International Film festival, Documentary and short film festival, National Film Festival, film library, documentation and digitalisation, promotion of film societies, fellowship and research, children's film festival, Malayalam films, navathi celebration
3	State Central Library	Computerisation, purchase of books, journals, newspaper, library furniture and equipment, digitisation, promotional activities, construction of heritage model reference block, collection, co-ordination and distribution of valuable records, renovation of reading rooms, matching share of central scheme National Mission on Libraries, formation of new branches
4	State Library Council	Model village library, Academic study centres, Jail library service, children's home library service, hospital library service, hermitage library, library computerisation, construction of Headquarter building. New components proposed are reference books and CDs for district and taluk libraries, historic books corner in libraries, film clubs in libraries
5	State Institute of Encyclopaedia Publications	Publication of Sarva Vijnana Kosam volumes 17-20, Kerala Vijnana Kosam, Nava Sankethika Vidhya Vijnana Kosam, Law encyclopaedia, encyclopaedia on health sciences, encyclopaedia on social reforms, encyclopaedia on earth sciences, digitalisation and online publication of all volumes, revision of Sarva Vijnana Kosam volumes 11 to 15.
6	Kerala Lalithakala Academy	Workshop and camps for tribal art and culture of Kerala, inter disciplinary interactive programmes, curated exhibitions, Raja Ravi Varma memorial cultural complex, Kakkanappara Sree Kandapuram Kalagramam.
7	State Institute of Languages	Construction of building, modernisation of press, reprints of Ambedkar works, language development.
8	Guru Gopinath Nadana Gramam	Upgradation of galleries, landscaping of natana gramam campus, construction of building for art training classes, construction of entrance gate, construction of guest house, international dance festival.
9	Kerala Sangeetha Nataka Academy	Amateur drama festival, library development, museums, symposiums, kalothsavams, Swathy sangeetholsavam, professional drama competition, documentaries on great artists, international music festival, digital archives
10	Centre for Heritage Studies	Publications, Heritage Studies, Preservation, Seminars, Workshops, trainings, beautification of Hill palace museums

11	Kerala State Jawahar Balabhavan	Construction of girl's toilet, construction of roller skating ring, construction of retaining wall, construction of children's hostel building, conduct Balamela, Construction of clay modelling class, construction of art and culture museum and aero modelling, Setting up of recording studio.
12	Vylopilli Samskrithi Bhavan	Mampazhakkalam, Mudra dance festival, Unarv monthly programme, Chilanka Dance Festival, Rain Water Harvesting, renovation of open air auditorium
13	Vasthuvidya Gurukulam	Promotional activities for traditional architecture, promotional activities for mural paintings, translation, publication and library, seminar
14	Bharath Bhavan	National translation camp, weekly drama festival, cultural exchange programmes, Athidhi Devo Bhava, National Integration Programmes, cultural map
15	Kerala Book Marketing Society	Set up permanent sales outlet, renovation of branches, mobile bookstall
16	Malayalam Mission	Training for teachers, establishment of study centres, annual examinations, financial assistance for study centres, text books and handbooks, study tours to Kerala, seminars, Massive Open Online Courses
17	Kumaranasan National Institute of Culture	Golden jubilee celebration, production of a documentary about Kumaranasan, preparation of bibliography on Asan's Work, completion of bronze statue of Kumaranasan, completion work of the Kavya silpam, conducting various art, cultural, literary programmes and symposiums, construction of stage, open air auditorium, open reading room, construction work for the national heritage museum
18	Kerala Folklore Academy	Tribal festival, school/college folklore club, cultural programmes, international folk fest, cultural programmes in collaboration with other institutions, workshop and seminars, Bharatholsavam, Malayali associations, folk research centre
19	Kerala Kalamandalam	Construction of new campus and new kalari complex, development of Nila heritage campus, completion of South Indian Art Museum, set up sub centres inside and outside Kerala, organising international dance-music festival, repair and annual maintenance
20	Mahakavi Moyin kutti Vaidyar Mappila Kala Academy	Museum development, research library, theatre, photo gallery, publication, documentary, fellowship.

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## *SPORTS AND YOUTH AFFAIRS*

### *Overview*

In 2011, Kerala's population was 33.4 million. Of the population, 5.4 million (16.3 per cent) were adolescents aged 10 to 19 years and 5.3 million (15.8 per cent) were youth aged 15 to 24 years. Given Kerala's early gains in health and nutrition, it is no surprise that its young sportspersons, particularly its athletes, have gained substantial national honours. The objective of the 13th Plan is to create a vibrant culture of sports in Kerala. Sportspersons will be encouraged to participate in competitive and high-performance events. The culture of sports in the State must be based on the achievements of social goals of good health, cultural well-being, broad-based recreational facilities, and social inclusiveness.

In Kerala, persons between the ages of 18 and 39 are categorised as youth. As mentioned elsewhere, employment generation for youth is a major objective of the 13th Plan. This Plan will attempt to attract youth to agriculture by making agriculture economically rewarding and intellectually stimulating. Rural economic activities need modernisation and technical change to ensure the elimination of drudgery; only then can we expect youth to stay back in the rural areas. The 13th Plan will also expand programmes to develop skills for youth, in order to shape them to be potential workers in modern workspaces, globally and domestically.

The development of sports is closely associated with economic and social progress of a State. In terms of social progress, an active participation in sports improves community health and productivity, reduces medical expenses, imbibes discipline in character and enhances social cohesion. Economically, organising of mega sporting event helps in developing infrastructure, generates employment, secure the capital from various places and generates economic activities. Kerala is known beyond the nation's boundaries for its great sporting culture, the State having nurtured some of the most eminent sports persons that India have ever produced. Further, Kerala's talented men and women have donned the India colours many a time, doing the country proud in the international sports arena, also symbolising the latent talent among the populace of the State for sports and games. The core responsibility of the government is to ensure the promotion and development of sports and games in the State of Kerala and co-ordinate all sports activities of the State and ensure mass participation in sports and games especially or rural sportspersons to utilise the available talents and potentials. In addition to that providing suitable infrastructure involving agencies like Local Self Governments, Educational institutions, Voluntary Organisations and people's representatives are other concerns.

The positive attitude and the passion currently exhibited by the Government in boosting the sports activities in this State in a big way, definitely places much more responsibility on the department necessitating its involvement at regional, district and sub district level trickling down to the grass

root level viz. Grama Panchayat. This essentially calls for strengthening the existing administrative machinery of the departments.

There are two agencies in the State related to Sports. The Directorate of Sports and Youth Affairs was established in the year 1986 for the promotion and development of Sports and Games in the State of Kerala by encouraging sports activities at the grass root level itself thereby ensuring mass participation and national and international laurels for sporting excellence.

Kerala State Sports Council is a statutory body formed as per Kerala Sports Act 2000 (Act 2 of 2001). Kerala State Sports Council was established in 1954 under Charitable Societies Registration Act and reconstituted in 1974 for promoting sports in Kerala under the name of Kerala Sports Council. The Kerala Sports Council was dissolved and Kerala State Sports Council came into existence and is at present functioning as per Kerala Sports Act 2000 and Kerala Sports Rules 2008. There are 25 centralised sports hostels, 53 college sports hostels, 43 school sports hostels are functioning under Kerala State Sports Council. Different training schemes in various disciplines are also being conducted.

#### *12th Five-Year Plan*

During the 12th Five-Year Plan period Rs 963.56 crore was earmarked as Plan fund for Sports and Youth Affairs and the expenditure incurred against the outlay was Rs 814.13 crore. The financial performance is given in Table 18.2.

Table 18.2 *Financial performance of Sports and Youth Affairs (Plan Fund) in the 12th Five-Year Plan* in Rs lakh

Department/ Agency	2012-13		2013-14		2014-15		2015-16		2016-17		12th Plan	
	Budget ed Outlay	Expendit ure	Budgete d Outlay	Expendit ure	Budget ed Outlay	Expendi ture	Budget ed Outlay	Expenditu re	Budgete d Outlay	Expendit ure	Budget ed Outlay	Expenditu re
Directorate of Sports and Youth Affairs	5,795	5,784.2	1,641	9,793.8	23,301	23,261	10,278	12,860	3,682	8,608.16	44,697	60,307.16 (135 %)
Kerala State Sports Council	2,297	2297	2,947	2,302	3,150	3,363	3,150	3,150	3,150	2,700.1	14,694	13,812 (94 %)
Directorate of Public Instruction	40	39.63	16,915	79.99	25	48.99	25	49.75	60	64.93	17,065	282.93 (1.64 %)
Directorate of Collegiate	100	100	10,237	100	125	98.95	125	67.92	105	69.63	10,692	436.5 (4.08 %)
Kerala State Youth Welfare Board	1,500	1,500	1,750	1,283	1,864	1,300	1,864	1,340	1,865	861	8,843	6,284 (71.06 %)
Kerala State Youth Commission						31.03	100	70	100	65	200	166.03 (83 %)
Bharat Scouts and Guild	25	25	30	30	35	35	35	35	40	0	165	125 (75.75 %)
Total	9,757	9,745.8	33,520	13,589	28,500	28,137	15,577	17,572	9,002	12,368.22	96,356	81,413.12 (84 %)

\* Expenditure includes Supplementary Demand for Grants

### *13th Five-Year Plan*

The 13th Plan will provide for three types of intervention in sports. First, the Plan will provide for integrating physical education into curricular educational institutions, and will upgrade sports hostels and training institutes. Secondly, the Plan will increase funds for modern infrastructure in sports, including stadiums, equipment, and other material and for the upkeep and maintenance of existing infrastructure in sports. Thirdly, the Plan will attempt to popularise sports on a mass scale in the State. The Plan will also make special efforts to encourage sports for the persons with disabilities.

The Directorate of Sports and the Kerala State Sports Council are the two leading institutions in the sports sector in Kerala. Currently, the activities of the two overlap. The 13th Plan will attempt to restore each to its original functions, with the Directorate in charge of creation of infrastructure and procurement of equipment, and the Council in charge of ensuring that the aims of the sports policy are realised.

#### *Agencies and Schemes in the Sector*

*Directorate of Sports and Youth Affairs.* Based on the recommendation of Kerala State Sports Commission, the Directorate of Sports has set up a Sports Development Fund Trust with the aim of mobilising funds from various sources including private sector in addition to government funding for development of sports in the State. There are various activities undertaken by the Directorate. Every year financial assistance are provided to selected institutions and individuals for the procurement of sports equipment, conduct competition and coaching camp. Rajeev Gandhi Sports Medicine Centre functioning under the Directorate of Sports and Youth Affairs is lending scientific and prompt medical assistance and rehabilitation therapy to sports persons. “Play for Health” programme implemented in schools for developing sports from the primary schooled level. “Swim N Survive” is another programme to develop minimum skills needed by target group in the State to survive an unexpected fall into deep waters. The administration of G.V. Raja Sports School is vested with the Directorate of Sports and Youth Affairs and the Sports Engineering Wing oversees various infrastructure development schemes across the State. It develops available grounds as play spaces for volleyball, basketball, tennis, and other minor games using modern synthetic surfaces.

#### *Kerala State Sports Council.*

1. *Operation Olympia 2024.* Operation Olympia 2024 aims to groom 250 top and elite potential sports person from 11 sports disciplines across the State and train them with state-of-the-art infrastructure and training facility including services of foreign coaches, and provide exposure in international events. The focused disciplines are sprints, middle distance jump events, women boxing, women wrestling, shooting, archery, canoeing and kayaking, rowing, fencing, badminton, cycling, and swimming.
2. *Kayika Kshmatha Mission.* The Kayika Kshmatha Mission aims to improve physical fitness of the citizens of Kerala. As part of phase 1 of the project, the overall fitness of the students in

the school was assessed. In the assessment, it is found that a major portion of the students in schools in Kerala is below desirable fitness level. Hence the phase-2 of the Kayika Kshmatha Mission aims to create awareness about physical fitness, improve physical fitness of students, the general public. For the programme, the entire population of the State will be categorised into following four for the ease of implementation and monitoring.

1. Nursery to 4th standard students
2. 5th standard to plus two and University Students
3. Youth and working professionals
4. Senior citizens

This programme will be implemented with the collaboration of various departments viz. Kerala State Sports Council, Department of Education, Department of Local Self Government.

*Youth Affairs.* The 13th Plan will assist programmes that reinforce the secular character and scientific temper in Kerala's youth. Kerala also needs mass campaigns to ensure gender justice and freedom for women; the Plan will support programmes that focus on youth in this respect.

Kerala State Youth Commission and Kerala State Youth Welfare Board implements programmes related to youth affairs in the State.

*Kerala State Youth Commission.* Kerala State Youth Commission is formed to implement programs to educate the youth about their rights and to function as a protector of their rights. The Kerala State Youth Commission is a quasi-judicial institution. The Commission intends to undertake various programmes for the 13th Five Year Plan.

*Kerala State Youth Welfare Board.* The main objective of the board is to co-ordinate the schemes related to youth welfare and development. The board has 21 members – 11 ex-officio members and 10 members nominated by the government. The list of programmes are given below.

1. *Keralotsavam.* Keralotsavam is a unique youth festival conducted mainly for the youth who have no proper platform to present their cultural and physical talents. In this festival, youth in the age group of 15-35 can participate in cultural, arts and sports competitions in block, district-level and State-level.
2. *Yuva Sakthi.* Yuva Sakthi is a project initiated by the Kerala Youth Welfare Board for tapping the potential of youth in Kerala. The new project, being implemented in association with local self-governments will institute coordination committees at the panchayat and municipality level. The coordination committee comprises 11 members including three subject experts. A youth co-ordinator also will be selected from each of these local self-government institutions. 100 village panchayats and five municipalities of the district would benefit from the scheme. This project would help strengthen youth activities under various local self-government bodies. Yuva Sakthi will enlist the help of registered youth clubs and associations to bolster up its activities.
3. *Yuva Karma Sena.* The main objective of this scheme is to channelise youth resources for rural development. A total of 50 dedicated youth volunteers will be selected from each block



and the block youth co-coordinator will be entrusted the responsibility of each block youth community. They will be provided with a two-day intensive training on disaster management, first aid, and community work. These volunteers will be provided with a resource kit and an identity card. The service of 7,600 trained youth volunteers can be ensured throughout the State in the event of natural calamities, unexpected accidents, riots. The youth clubs will play a vital role in organising and implementing various awareness programmes, environmental awareness, social forestry programmes, and formation of nature clubs at local levels.

4. *HIV/AIDS Prevention Programme.* HIV/AIDS is a serious area of concern. Several steps have been taken by the government for the prevention and awareness of HIV/AIDS. Youth Welfare Board through a network of State and District Youth Centres and youth clubs can function effectively in combating this disease. The activities will be done in collaboration with National AIDS Control Organisation (NACO), UNAIDS, State AIDS Cell and other voluntary organisations.
5. *Adventure activities.* Government of India is providing support to youth adventure activities through State governments. The Kerala State Youth Welfare Board supports youth adventure training program to infuse the spirit of adventure among the youth. A National Adventure Academy has been established at Devikulam, Munnar in Idukki district that conducts adventure training programme such as paragliding, mountaineering, and trekking.

## *TOURISM*

### *Overview*

The share of tourism in Kerala's Gross State Domestic Product (GSDP) is about 10 per cent. Tourism creates employment, brings in incomes, and opens our society to the rest of the country and the world. A feature of tourism is its interconnection with other spheres of development. Tourism cannot be successful without concurrent development in health, sanitation, urban and rural planning, transport, connectivity, local self-government, and other spheres. After the boom in 1990s and early 2000s, the rate of growth in tourism arrivals declined in Kerala. Tourism, however, has a continuing and promising potential in the State. There is a steady and unabated growth of pilgrimage arrivals, and there is the vast and relatively unexploited tourist potential of the northern parts of the State.

Internationally, public spending on tourism generally focuses on tourism promotion in different forms. And infrastructure and "destination development" is mainly the task of local governments. In Kerala, this situation is reversed, with destination development taking up more than 60 per cent of the Plan allocation and promotion about 25 per cent. The 13th Plan will partially correct this imbalance, raising the shares of tourism promotion to at least one-third of allocation.

The State will explore and utilise the full scope of tourism – beachside, historical, heritage, cultural, forest and environmental resources and medical – in Kerala. It will encourage the development of non-traditional tourism destinations and products, thus extending tourism to the entire year rather than confining to a particular season.

The 13th Plan will allocate resources to develop destinations and diverse activities, including Biennale, Kerala's multiple festivals of arts, eco-tourism, sites and events linked to the Spice Route, the relatively unexplored tourist potential of northern Kerala, and so on.

Kerala needs more youth with the skill-sets required to deliver high-quality services in the tourism sector.

The State Government has been actively supporting the tourism sector from the second Five-Year Plan onwards. The major chunk of government spending has been on infrastructural projects like development of basic amenities at 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. The second focus area in government spending has been marketing. 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 road shows, seminars and workshops, and conducting familiarisation trips for tour

operators, leading travel writers and journalists and participation in trade fairs. Besides, social media campaigns have been used for promotion. The government has promoted new brands like The Great Backwaters of Kerala, Kerala-Home of Ayurveda, Your Moment is Waiting, Dream Season, etc in a big way. Kerala is the first State in the country to actively promote tourism in domestic and international markets.

### *12th Five-Year Plan*

The budget outlay for the tourism sector was Rs 1,101.4 crore in the 12th Plan and expenditure was Rs 1,051.77 crore (95.5 per cent). The year-wise outlay and expenditure for tourism sector is given in Table 18.3.

Table 18.3 *Year-wise budgeted outlay and expenditure of tourism in the 12th Five-Year Plan* in Rs crore

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	170.91	169.60	99
2013-14	189.23	191.23	101
2014-15	206.65	194.19	93.97
2015-16	223.04	205.59	92.17
2016-17	311.57	291.19	93.45
Total	1,101.4	1,051.77	95.5

### *13th Five-Year Plan*

The challenges faced by Kerala's tourism sector include competition from neighboring states and countries (Especially from Sri Lanka and other Asian countries), lack of connectivity to domestic and international markets, poor connectivity within the State, problems of infrastructure facilities, waste management, safety measures among others. The 13th Plan will work on specific action plans to solve these issues.

The 13th Plan will attempt a new growth strategy for tourism in the State. The major task is to double foreign tourist arrival, increase the number of domestic tourists by 50 per cent, and create 400,000 jobs in the sector. The tourism industry in the State must cater to all sections of tourists, ranging from luxury tourists, lower-income family tourists to backpackers. The development of this sector should be based on the principles of responsible tourism, and sensitive to the State's environment and people.

Today, Kerala's tourism sector is known by its world-renowned brand, consistent growth, diverse products and presence of local enterprises. The targets will be achieved by effective marketing, increased spread and intensity, consolidation in traditional markets and opening up new markets. Focus will be given to providing government support by involving other departments in tourism activities and special focus will be on human resource development.

Step will be taken to increase the number of tourism establishments and service providers. As a part of this initiative, steps would be taken to double the number of classified rooms in hotels and resorts, 1,000 new classified home stays, 500 house-boats in the Ashtamudi and Malabar backwaters, 30 trekking routes, 30 camping sites and 10 adventure tourism centres. Besides, new foreign target markets and segments will be identified.

The Government will work on a strategy to refresh the Kerala's brand and make it more appealing to all segments of travelers, develop new products such as Kochi Muziris Biennale, Spice Route, utilise the potential of tourism development in Malabar and set up quality infrastructure and facilities at destinations.

In the 13th Five-Year Plan steps would be taken to complete Phase I of the Malabar River Cruise by connecting seven rivers of North Malabar, build boat jetties, and develop river islands. In addition, the first phase of the Thalassery Heritage Project will be completed by March 2019). The heritage project will have components like pier road, performance centre, Wellesley's Bungalow Museum, Moidupalam heritage bridge and Gundert Bungalow Museum. The phase II of the Kochi Muziris Biennale project will be completed by March 2021.

#### *Alappuzha Heritage Project (March 2018)*

Alappuzha Heritage Project is also been developed during this Plan period.

In addition, option will be explored to use the assets of Forests Department for tourism, provide employment to local tribal youth and renovate and refurbish of 65 properties.

#### *Guest Houses*

Four guest houses under construction at Sulthan Bathery, Kozhikode, Munnar, and Ponmudi are scheduled to be completed by 2018. Besides, four new guest houses will be constructed in Guruvayur, Kanyakumari, Thiruvananthapuram, and Sabarimala (scheduled to be completed by 2021).

#### *Other Projects*

The Kerala Tourism Development Corporation (KTDC) will upgrade and renovate Waterscapes at Kumarkam (by March 2018), Samudra at Kovalam (by March 2018), and Muzhappilangadi Beach Resort. Solar plants will be set up at Malampuzha and Neyyar. The Kerala Tourism Development Corporation will develop the Veli Tourism Hub.

#### *Employment Generation*

1. Stimulation of investment in Malabar region - area development projects (Malanad – Malabar Cruise Tourism Project, Thalassery Heritage Circuit Project, BRDC) – 1 lakh.
2. Establish community partnerships through responsible tourism (RT Mission) – 1 lakh.

3. Employment generation in hotels and services– 1,50,000.
4. Employment generation outside the State – 50,000.

## 19 NON-RESIDENT KERALITES AFFAIRS (NORKA)

### *Overview*

Migration and remittances supported and sustained the much-acclaimed “Kerala Model” of development. External migration has become an all-pervasive phenomenon in the economic and social life of the State and affects every facet of life in Kerala. The Non-Resident Keralites (NRK) have contributed significantly to the socio-economic development of the State. Remittances from migrant workers have contributed to the mobilisation of savings and to the overall economic growth of the State. Incomes from remittances have created demand for a range of goods and services. The close ties that migrants maintain with their families and friends in Kerala have benefited the State in many ways, including by helping new generations of Keralites to find employment outside the State.

Emigration has had an impact on the consumption pattern of households in Kerala. Households have undergone transition in recent years – transition in household structure and household assets, income and expenditure, amenities and methods of financial management. Ownership of house, land, quality of house and possession of a variety of consumer durables have been influenced by remittances. The impact obviously was not confined to the migrant households. On the contrary the migration remittances phenomenon had overwhelming influence on the commanding height of the Kerala economy.

According to the 6th Kerala Migration Survey (KMS) 2014 undertaken by the Centre for Development Studies, the number of emigrants was 24 lakh. The number of return emigrants according to the same survey was 12.52 lakh. There is also a substantial population of Malayalee migrants in other parts of India, representing what has been the domestic diaspora.

In order to ensure the rights of emigrants, redress their grievances, and rehabilitate returning migrants, NORKA (Non-Resident Keralites Affairs) Department was formed in 1996 as a single-window agency. Kerala is the first State in the country to set up a separate department for non-residents. The NORKA Department implements various schemes directly as well as through “NORKA ROOTS,” which is the public sector undertaking of the department.

Migrants form part of a larger Kerala society. They participate actively in multiple spheres of Kerala’s economy, society and culture (including literature, music, cinema, and religious events). Given such a context, it is important that the members of diaspora are given an opportunity to participate in debates and social processes in the State.

### *12th Five-Year Plan*

During the 12th Plan period (2012-17) Rs 104.5 crore was earmarked as Plan fund for implementing various programmes of NORKA Department and the expenditure reported during the same period was Rs 83.86 crore. The year wise outlay and expenditure during 12th Plan is given in Table 19.1.

Table 19.1 *Outlay and expenditure of NORKA in 12th Five-Year Plan* in Rs lakh

Year	Budgeted Outlay	Expenditure	Expenditure (in per cent)
2012-13	1,665	931.9	56
2013-14	1,665	1,264.64	76
2014-15	1,984	1,469.33	73.9
2015-16	2,334	2,205.58	94
2016-17	2,800	2,527.48	90
Total	10,448	8,386.09	80

\* Expenditure includes Supplementary Demand for Grants

### *Major Existing Programmes*

The following is an account of the major existing schemes and programmes for the Non-Resident Keralites.

Table 19.2 *Major existing programmes of NORKA*

Name of the Programme	Objective / Activities
Santhwana	“Santhwana” is a Distress Relief Fund for NRKs for extending financial Assistance to the NRK returnees. Assistance is available under this scheme for death, medical treatment, purchase of artificial limbs or crutches and marriage.
NORKA Department Project for Return Emigrants (NDPREM)	This scheme offers assistance to return migrants to develop sustainable business models for livelihood and offers a subsidy of 15 per cent of the total project cost subject to a maximum of Rs 3 lakh. An interest subvention of 3 per cent is also extended to the beneficiaries under this scheme.
Job Portal and Overseas Recruitments Project	NORKA-Roots is a registered recruitment agency under Ministry of External Affairs and is carrying out overseas recruitment. The NORKA Job Portal acts as a meeting point for employees and employers to facilitate recruitment.
Pre Departure Orientation Programme	Pre-Departure Orientation Programmes are conducted to impart awareness to overseas job aspirants about general job situations abroad, the chosen country of employment, their culture and labour laws and essential information relating to visa, emigration rules, employment contract, customs regulations, and travel formalities.
Awareness Campaign on Illegal Recruitment and Visa Check	To ensure safe migration, reduce the risks associated with migration and prevent people from getting cheated, the Government spreads awareness through various mediums of communication.

Karunyam	Karunyam is a scheme for extending financial assistance for repatriation of the mortal remains of the NRK who die abroad or in India outside Kerala.
Pravasi Identity Card	The NRKs who are either residing or working abroad for at least 6 months and have completed 18 years of age are eligible for applying the card. Insurance coverage of up to Rs 2 lakh to the cardholders for accidental death, permanent or total and partial disability of the cardholder. A unique master policy number is depicted in each card.
NRK Insurance Cards	The NRK Insurance cards (Marunadan Malayalee) are introduced for the people who are either residing or working in the other states in India for at least 2 years and has completed the age of eighteen years. Insurance coverage of up to Rs 2 lakh to the cardholders for accidental death, permanent or total and partial disability of the cardholder. A unique master policy number is depicted in each card.

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### *13th Five-Year Plan*

The State Government has expressed its resolve to strengthen its engagement with the diaspora of Keralites spread across the world. The 13th Plan proposes to make a major shift in the government policy towards NORKA. First, the new Plan will substantially augment the allocation given to NORKA. Second, there will be a major overhaul of the programmes undertaken.

The State intends to launch a number of policy interventions for the diaspora. Periodic migration surveys and the creation of an online real-time database of NRKs are high on this list. At the same time, the State will work with the Central government to formulate an enlightened emigration policy. The 13th Plan will support steps to provide legal aid to the needy among the migrants, impart finishing skills to potential migrants through pre-emigration training, ensure speedy authentication of relevant certificates, and regulate the activities of intermediaries and service providers (such as airline companies). The State will design insurance and social security programmes to benefit migrants, and evolve a comprehensive rehabilitation programme for migrant returnees.

The 13th Plan will aim to promote entrepreneurship by NRKs and seek investments by them in Kerala. Kerala will welcome a “reverse brain drain” and transfer of knowledge, technology and expertise to the State through its migrants. The State will promote business and cultural visits to and from Kerala by teams involving NRKs. The Plan will support global cultural festivals involving non-resident Keralites.

Another policy priority will be to form a non-profit trust namely the Kerala Development Fund (similar to the India Development Fund) to raise funds from any NRK individual or organisation. This will help to channel investments by the migrants into the development of productive areas within Kerala.



China's experience with overseas Chinese has shown that when the home territory has a government that has credibility and in which non-residents have confidence, material and moral incentives can be mobilised among the overseas population to invest and stimulate economic development. We believe that we have a Government with that credibility in Kerala today.

#### *New Initiatives in 2017-18*

1. *Creation of online registration system and a data base.* Those migrants and returnees who register online with NORKA Roots will be benefited with an attractive insurance package.
2. *New initiative for market research, skilling, pre-recruitment, recruitment, and post recruitment services.* The existing agencies presently dealing with recruitment are not fully equipped to meet the changing demand of the labour market and address all issues in the area. To streamline the process of recruitment, training, skill development, and legal aspects, a new initiative in a public private participation mode may be formed which will look into all aspects of recruitment.
3. *Loka Kerala Sabha.* Considering the importance of the interaction between State and NRKs, the Loka Kerala Sabha was formed with members of the State Legislative Assembly and representatives of NRKs nominated by the State Government in proportion to the percentage of population of NRKs in host countries/regions. The recently concluded first meeting of the Sabha decided to start a Non-Resident Chambers of Commerce for connect with NRK entrepreneurs and industrialists. There will be separate chambers for each global region. The Government will foster NRK industry and commercial entrepreneurship partnerships abroad by linking them with the chambers of commerces actively functioning in Kerala. Besides, it is also planned to set up Kerala Development Fund.
4. *Global Kerala Cultural Festival.* Global Kerala Cultural Festivals involving NRKs needs to be promoted whereby NRKs can be invited to participate in cultural activities of the State as well as share the art and culture of the country, region and State they are presently residing. The cultural programmes may be arranged in a manner that will include children, youth, and seniors. It can be linked with Loka Kerala Sabha meetings.
5. *Emergency ambulance services at the airport.* It is noticed that NRKs often need assistance at airports for emergency purpose where they need to be given immediate medical aid. This service can also be utilised to take dead bodies to the respective destination and for emergency treatment purpose of NRKs. The emergency ambulance services can be provided free of cost.

#### *Key Initiatives Proposed in the 13th Five-Year Plan*

The State Government recognises the vital role of Non-Resident Keralites in the socio, economic, political, cultural development of the State and is prepared to work towards addressing all the concerns and issues of NRKs through an innovative approach in the Plan period.

1. Sector of migration would be constantly subjected to detailed analysis for assessing opportunities for gainful employment.
2. Labour and employment opportunities in developed economies and newly emerging markets would be mapped for focussed access to such avenues. Short to medium term deployment of

highly skilled and highly remunerated professionals in developed countries would be emphasised.

3. Skilling would be elevated to international standards ensuring due certification from accredited agencies of repute also so that Keralites can ensure their footprint in developmental sectors throughout the globe. Customised and expert level training would be given to chosen candidates after ascertaining specific requirements of major international organisations with assurance for deployment in such organisations.
4. More concerted efforts would be taken in association with key stakeholders for revamping the rehabilitation package for returned non-resident Keralites.
5. Recruitment division would be strengthened and it would be transformed into such a dynamic division that reputed employers around the globe choose NORKA ROOTS for its staffing requirements.
6. Detailed and specific qualifications and experience of employees shall be provided. An expert agency's assistance will be obtained in verifying the credentials of employees to ensure their correctness.
7. Pre-departure training and orientation would be modernised to reflect latest aspects of safe migration. Intensive awareness campaigns would be exercised to make migration a gainful one.
8. Online database of NRKs would be constructed and maintained as a permanent platform to dynamically reflect their status and other vital information.
9. Institute of migration studies will be formed for high-level research and study on all issues related to migration and allied subjects.
10. Awareness Campaign on visa cheating would be priority. Strategies as to periodicity, frequency and mode of advertisement will be devised after detailed study of individual programme.

## *20 CONCLUDING NOTES*

The tasks and efforts during the period of the 13th Five-Year Plan will be to build on the legacy of our State. Kerala is famous the world over for the investments it has made in its people, particularly in the areas of education, health, social and gender justice, and people's participation in Government.

The 13th Five-Year Plan is committed to the growth of the productive forces in the economy. This growth will be based on the application of science and technology to agriculture and industry. In the 13th Five-Year Plan period, the task is to ensure sustainable, environment-friendly economic growth, and high levels of skill development and decent employment. In this new phase of economic development, Kerala has special resources on which to draw. The State has rich natural resources, an educated, skilled and politically conscious work force, and unique social achievements in the spheres of health and education.

In the next phase of Kerala's development, the 13th Five-Year Plan will ensure that its environment is cleaned and its biodiversity preserved. It will aim to rejuvenate the water bodies in the State. The Plan will aim to expand the curative and preventive health systems to the service of the broadest mass of our people. It will make the facilities and infrastructure in our public schools second to none. It will also ensure that every family in the State is housed in comfortable, safe, and dignified homes.

The Plan will thus defend the historical gains of the toiling people, and strive to build a secular, democratic alternative for social and economic development. The 13th Five-Year Plan of the State of Kerala is a Plan for the working people, the poor, the socially deprived, and the environment.