



GOVERNMENT OF KERALA
KERALA STATE PLANNING BOARD

THIRTEENTH FIVE-YEAR PLAN
APPROACH PAPER

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Thirteenth Five-Year Plan Approach Paper

1 INTRODUCTION

1. 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 led by the Left have been the most important constituents of such public action.
2. The Government of the Left Democratic Front took office in May 2016 after winning a decisive mandate from Kerala's people. It did so at a crucial point in India's modern political and economic history.
3. Twenty-five 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. At the same time, the political environment in the country today is one in which secularism and democracy are under threat. Despite the talk of "cooperative federalism," there has been shrinkage of the federal space, thus further constraining the rights of States.
4. When the first elections in Kerala State were to be held in 1957, a June 1956 meeting in Thrissur outlined proposals for a document titled "Building a Democratic and Prosperous Kerala," which, in turn, provided the basis for the 1957 manifesto and for the policy agenda of the first State Government. Similarly, today, we have before us and as our basic document the LDF Manifesto, which was developed through detailed experience, through interactions with working people throughout the State (we may recall here the Chief Minister's travel across Kerala in February 2016), and indeed, through the International Congress on Kerala Studies, that is, with thinkers, scholars, and activists from different parts of India and elsewhere.
5. If the manifesto of the Left Democratic Front, then, represents the aspirations of the people, the task of the Plan is to structure those aspirations into workable economic policy for the State.
6. 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.

7. In Kerala, the process of a Five-Year Plan is an exercise in people's participation. 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, with a total of more than 700 members – scholars, administrators, social and political activists and other experts. The reports of most Working Groups have been submitted and will help in the formulation of our Thirteenth Plan document. The people and institutions of local government help draw, formulate, approve, and implement plans – and to monitor their implementation as well.
8. 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 countries that may have negative implications for the growth of international trade in the coming years.
9. 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.
10. The international economic context matters more perhaps for Kerala than for most other States of the Indian Union. 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 Malayalis is correlated with the performance of the international economy in general and the economies of the Persian Gulf in particular.
11. 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.
12. In Kerala, too, the new Government was handed a difficult legacy: 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.

13. The crises in the spheres of employment and material production are among the most troubling aspects of the legacy that this Government inherited from its predecessor Government. 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 21.3 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.
14. The importance of growth of the State's income in the present context can hardly be overemphasised. 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, 2015-16, was about 8 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.

Table 1 *Annual rates of growth of Gross State Domestic Product, Kerala at constant (2011-12) prices in per cent*

Sl. No.	Sector	2013-14	2014-15 (P)	2015-16 (Q)
1	Agriculture, forestry, and fishing	-6.31	-1.10	-2.95
1.1	Crops	-9.39	-3.86	-6.80
1.2	Livestock	0.62	1.65	2.31
1.3	Forestry and logging	-16.09	-1.13	-0.54
1.4	Fishing and aquaculture	5.69	8.43	2.05
2	Mining and quarrying	50.14	39.13	6.21
	Primary	-3.79	1.70	-2.08
3	Manufacturing	-4.65	2.46	12.65
4	Electricity, gas, water supply, and other utility services	8.11	-3.17	3.37
5	Construction	9.15	6.79	6.45
	Secondary	3.49	4.65	8.58
6	Trade, repair, hotels, and restaurants	2.23	8.28	8.04
6.1	Trade and repair services	2.66	8.74	8.45
6.2	Hotels and restaurants	-1.63	4.04	3.99
7	Transport, storage, communication, and services related to broadcasting	10.68	6.80	9.44
8	Financial services	11.02	8.37	8.37
9	Real estate, ownership of dwellings, and professional services	14.27	11.95	12.06
10	Public administration	-0.32	2.89	3.93
11	Other services*	2.37	6.87	6.82
	Tertiary	6.63	8.32	8.78
12	Total GSVA at basic price	4.29	6.48	7.35
13	GSDP	3.89	7.31	8.10

Notes: 1. *Includes health and education services.

2. P = Provisional; Q = Quick estimates; GSVA = Gross State Value Added; GSDP = Gross State Domestic Product.

15. In a State with our plant wealth, the growth rates of agriculture and allied activities actually *declined* by 3 per cent, and within that, the growth rate of crop production was about -7 per cent. 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.
16. 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 strong Left political movement that is sensitive to issues of development and growth, and has set itself the tasks of modern economic development and socio-political change, and is active in the movement to strengthen institutions of local government in the State.
17. The LDF government, in line with its election manifesto, is committed 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.
18. The XIII Five-Year Plan will attempt to regain momentum in the economic growth of the State by more than doubling Plan size over five years. The strategy for the XIII 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:
 - i. high-quality school education;
 - ii. people-friendly health facilities;
 - iii. nature-friendly (including organic) agriculture;
 - iv. waste management, a clean environment, and a litter-free Kerala;
 - v. clean water bodies and enhanced water resources; and
 - vi. 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.

19. The engine of economic change for which Kerala is justly famous in India and the world is the investment that it makes in its people. This effort was spearheaded by the first Ministry of 1957 and continued – particularly by Governments of the Left and in response to people’s movements – thereafter. Kerala’s achievements in human development are the basis of its national and international fame. With respect to education, Kerala has the highest levels in India of literacy, school enrolment, and retention for all children and separately for boy and girl pupils, pupils from the Scheduled Castes and Tribes, and rural and urban pupils. In respect of the main indicators of health outcomes – for example, life expectancy at birth, infant mortality, and maternal mortality – Kerala’s achievements are the best in India and drew international attention. Kerala leads the States with respect to the achievement of the United Nations Sustainable Development Goals that are to be achieved by 2030.
20. The State is entering a new phase with respect to the demands on its educational and health systems, and the role that public institutions must play with respect to the changing educational and health needs of a modern society and a population characterised by a new demographic structure. The main feature of the XIII Five-Year Plan in the spheres of health and education will be to restore the centrality of the public sphere in health and education, and to create people-friendly systems of health and education, systems on which the people rely and have confidence.

2.1 Education

School Education

21. We are acutely aware that children are young citizens, and of the role that school plays in inculcating progressive, secular, democratic values and the scientific temper in the young.
22. The bedrock of Kerala’s development achievements was school education, because it was the instrument that made progress in other fields possible. Our progress in health and different forms of social justice would have been impossible without schools. 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. This reality was recognised by the missionaries working in Travancore in the nineteenth century, by the movements inspired by Sri Narayana Guru and the great Sri Ayyankali, by the Travancore State, and by people’s movements of the twentieth century. “Without education,” Dr Palpu once wrote, no society “has attained permanent civilised prosperity.” While the groundwork for mass education had been laid historically, policy interventions initiated by the first Ministry in unified Kerala established the basis for universal school education and literacy, and to bridge the gender gap in school education and the disparities in school education as between the erstwhile Travancore, Cochin, and Malabar regions of the State.

23. Our task in the XIII Plan period is to make the best possible school education available to every child in the State, regardless of considerations of income, region, or social group.
24. After determining new technical specifications with respect to school infrastructure, we will invest in new-generation public schools throughout the State. School education policy will also focus on new syllabi, teaching methods, and pedagogy. School education policy will aim to resolve, to the extent possible by schools, 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 sport and new 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. Schoolteachers are the instruments of change in the sphere of school education, and the transformation that we envisage requires progressive change also in teacher training and in the administration of schools and school education.
25. The Planning Board will oversee baseline and concurrent studies on progress in school education in the State.

Higher Education

26. Higher education requires our immediate and careful attention. The XIII Plan will encourage programmes and schemes to
 1. improve the quality of infrastructure;
 2. encourage academic excellence in teaching and research and academic 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; and
 10. create an atmosphere of individual and institutional freedom and autonomy, particularly in private-sector institutions.
27. These programmes and schemes should cover the whole range of higher education, including the natural sciences, social science, humanities, and technical and professional education.

Skill Development

28. In addition to higher education, including higher technical education, the XIII Plan will

create facilities for skill development and continuous learning for wide sections of the working population and persons seeking work and in a wide range of activities.

29. The Government must consolidate different approaches to, and schemes for, skill development in various fields. Schemes will cover, among others, educated youth, women, people of the Scheduled Castes and Tribes, and people of the minorities. The beneficiaries will include migrant workers who return to Kerala, particularly return migrants from the countries of the Persian Gulf. Skill development schemes will be launched to aid persons who wish to work in diverse fields, including agriculture and allied sectors, manufacturing, construction, tourism, information technology, and other services. Skill training schemes will be coordinated with skill sector councils so as to improve productivity and livelihood opportunities.
30. The Community Skill Parks (CSP) that are proposed in all constituencies can help build the institutional network for skill development across the State.

2.2 Health

31. In the first phase of Kerala's development, the State made progress in preventive health care and against epidemic disease. With respect to key outcome indicators of the health status of the population, Kerala began to achieve, from the 1980s, standards comparable with countries of the developed world that were medium- to high- achievers. Kerala advanced substantially beyond the Indian average in respect of indicators such as life expectancy at birth, infant mortality, maternal mortality, and the ratio of males to females in the population.
32. Today we face important second-generation problems. These include problems of non-communicable disease, of the recurrence of certain diseases, and problems of palliative care for the elderly.
33. During the period of the XIII 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 XIII 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.
34. 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.
35. The creation of a people-friendly public sector in health is a crucial aspect of Plan policy. The Aardram Mission, the major part of which will be implemented during the Five-Year

Plan period, aims to transform the health care sector in the public sector by:

1. creating a primary care system capable of addressing challenges of the current epidemiological situation;
 2. providing quality treatment services at the secondary level; and
 3. generating a patient-friendly environment in government hospitals.
36. The Mission objectives are linked to the Sustainable Development Goals recommended by the United Nations.
37. 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 decentralized planning and the second phase of the People's Planning movement.
38. Kerala is India's leader in Ayurveda. The XIII Five-Year Plan will promote study and research in different branches of Ayurveda. Ayurveda also attracts large numbers of people from different parts of India and the world, and is thus an important potential contributor to Kerala's State income.

2.3 Labour and Labour Welfare

39. The State Government in Kerala is committed to protecting the rights and ensuring the welfare of the working people of the State.
40. One of the significant achievements of Kerala's labour movement has been that it has managed to provide some form of social security and assure dignity of labour among workers in the formal and 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 rate of casual workers in Kerala is approximately twice the corresponding national average.
41. The election manifesto of the Left Democratic Front has promised to consolidate Kerala's gains in the area of labour rights. Currently, daily minimum wages for unskilled workers in the State range between Rs 275 and Rs 549. The manifesto envisages ensuring a minimum wage of Rs 500 a day for all unskilled workers and workers in the services sector, including supermarkets, shopping malls and other such establishments.
42. There are many important challenges. First, 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 significant sectors in which highly skilled work is remunerated at rates that are low and disproportionate to the skills and education required.
43. The low wages of educated workers (such as nurses and teachers) employed in private hospitals and educational institutions, for example, have been issues of concern.

44. 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.
45. The Government has emphasised that it respects the rights of in-migrant workers and the duty of the State towards them. The State 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. In fact, the State's economy, especially in respect of activities involving manual labour, is now highly dependent on the supply of migrant labour. The XIII 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. We recommend that the State enact legislation for providing welfare benefits to migrant workers. Migrant workers will, upon registration, be made eligible for such welfare measures as may be legislated upon.
46. The State has initiated Special Residential Schemes for workers in addition to strengthening the existing housing schemes, which are being 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.

2.4 Gender and Development

47. 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, for example – 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.
48. The XIII 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. This share will, in fact, be above 11 per cent in the first year of the Five-Year Plan.

49. 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.

2.5 Scheduled Castes and Scheduled Tribes

50. The struggle against caste and the criminal practices of untouchability and similar forms of social exclusion is an intrinsic part of the struggle for freedom and socio-economic development in Kerala. This is a historical legacy that we cherish. 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.
51. In the XIII 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. At the Census of 2011, the proportions of Scheduled Castes and Scheduled Tribes in the State population were 9.1 per cent and 1.45 per cent respectively. In the very first year of the XIII Plan (that is, 2017-18), Plan allocations for the SCP and TSP were, respectively, 9.8 per cent and 2.7 per cent.
52. As the Table below shows, the share of Central allocations for schemes meant specially for the people of the Scheduled Castes and Tribes fell far below the corresponding shares of the population.

Table 2 Allocation for Special Component Plan and Tribal Sub-Plan as shares of total budget outlays, Union Budgets of the Government of India in rupees crore

Year	SCP	TSP
2014-15	8.8	5.6
2015-16	6.6	4.3
2016-17	7.1	4.4
Shares of SCs and STs in India's total population (2011)	16.6	8.6

53. In the Central Budget for 2017-18, the allocations for welfare of Scheduled Castes and Scheduled Tribes as a proportion of the total budget estimate were 2.1 per cent and 1.3 per cent respectively. As a proportion of capital expenditure, the share of allocation for welfare of Scheduled Castes was 0.07 per cent and allocation for welfare of Scheduled Tribes was

0.1 per cent.

54. The very fact that the Central Budget has shifted from a committed share of allocations to welfare schemes is, of course, a matter of much 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 Tribes, but has also increased that share.
55. The main thrust of the XIII Plan in respect of the people of the Scheduled Castes and Tribes will be in the following spheres:
 1. *Land, homesteads, and housing.*
 2. *Education.* Ensure full access to the best educational facilities at all levels: primary, secondary, and higher education and research.
 3. *Skill development.* Prepare a new generation for modern employment, enabling them to seek employment in Kerala and elsewhere.
 4. *Employment.* Ensure that places reserved for Scheduled Castes and Tribes are filled.
 5. *Food security.*
56. Over the XIII Plan period, in keeping with the letter and spirit of the Prohibition of Employment of Manual Scavengers and their Rehabilitation Act (PEMSRA) of 2013, the cleaning of all septic tanks and disposal of sludge will be fully mechanised.
57. The social-economic problems of the people of the Scheduled Tribes are also concentrated in specific habitations, localities, and regions where the homes of the Adivasi population are concentrated. These areas need special attention across a spectrum of development tasks. These include different types of service delivery, including in the spheres of housing, preventive and curative health, public food distribution, sanitation, drinking water, school education, land rights, livelihoods, and cultural facilities, and the amenities of modern life. The XIII Plan will design schemes to address and eliminate the scourge of absolute poverty in all Adivasi habitations.

2.6 Social Services and Social Security

58. 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. Left governments have, by means of innovative social security schemes, 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.”

Persons with Disabilities

59. The State Planning Board shares the view that it is “the responsibility and duty of the

government and society to create an environment where the disabled can exercise equal rights, develop their talents and live with dignity.” During the XIII Five-Year Plan period, allocations will be made to ensure disabled access to public buildings in all districts of the State. The Planning Board will 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. In this context, we note that the recommendations of the Working Group of the State Planning Board included prevention initiatives, early screening, early intervention through District Early Intervention Centres (DEICs), education support through special angan wadis, model child-rehabilitation centres, special schools, integrated schooling, vocational training, work centres for persons with disabilities, community-based rehabilitation, and assisted-living projects.

Senior Citizens

60. An important consequence of demographic transition in Kerala is that the share of the population above the age of 60 years is substantially higher than the corresponding proportion for India as a whole. The share is 12.6 per cent in Kerala and 8 per cent in India.
61. Owing to differences between men and women in longevity and in age at marriage in Kerala, the number of widows in the State is increasing. The current estimate is that, in Kerala, 58 per cent of women above the age of 60 years are widows. Special attention will be given to their economic, health, and welfare needs.
62. The Government of Kerala has announced that, during the period of the XIII Plan, it will enhance the size and scope of the pension scheme 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.

2.7 Housing

63. Kerala is, in general, ahead of other States in the quantity and quality of people’s housing. The State will take a decisive step forward in the XIII Plan period with the implementation of the Total Housing Mission. Within this Mission, the component titled “Livelihood, Inclusion, and Financial Empowerment” (LIFE) focuses specifically on households that are homeless or landless.
64. The ultimate objective of housing policy in Kerala is to provide comfortable, safe, and dignified housing to all people living in the State.
65. The declared objectives of the Housing Mission, which, as noted, will be implemented in the XIII Five-Year Plan period, include the following:
 1. to improve land availability and utilise land productively, including by means of high-rise options;
 2. to improve capital productivity through the use of new technology and skills;
 3. to position social housing towers strategically in order to address issues of urban

- sprawl;
- 4. to attempt innovative methods of resource mobilisation, focussing on issues of access to housing for the poor and socially excluded; and
- 5. to link housing policy with the creation of new means of livelihood.

2.8 Drinking Water and Sanitation

Drinking Water

- 66. 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.

Sanitation

- 67. Among the central tasks set for the Haritha Kerala Mission are the disposal of solid waste and the 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. Let us plan for a litter-free Kerala in the near future. Efforts and plan schemes in this regard will be integrated with the Suchitwa Mission, which will be responsible for achieving sustainable sanitation arrangements through local self-government institutions.

2.9 Food and Civil Supplies

- 68. An objective of the XIII Plan must be to create a hunger-free Kerala. 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 State's 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.
- 69. The implementation of the National Food Security Act (NFSA) in Kerala was delayed during the XII Plan period. An exclusionary policy design combined and an unwarranted delay in implementation have set back the present Government's efforts to ensure food and nutrition security of the people.
- 70. During the XIII Plan, the State Government will put the PDS back on its feet. In particular, the Plan will help ensure that a larger share of beneficiaries than envisaged by the original

NFSA design receives subsidised food grains. End-to-end computerisation of PDS network, which will streamline food supply and distribution and facilitate the identification of duplicate ration cards, will be completed.

71. New ration cards will be issued and distributed without delay. The Civil Supplies Corporation will be equipped to effectively intervene in the market in order to control prices. The Plan will encourage the intervention of co-operative societies in the consumer market, particularly during festival seasons.
72. The establishment of a hunger-free State requires other policy interventions as well. The XIII Plan will support efforts to strengthen and modernise the Integrated Child Development Scheme (ICDS) and the Mid-Day Meal (MDM) scheme. It will 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 free cooked food.

2.10 Absolute Poverty

73. With this legacy and foundation, and under the leadership of the Left Democratic Front Government in Kerala, we are also in a position to set an ambitious task – to make Kerala the first State in India to eliminate absolute poverty.
74. In terms of the Tendulkar poverty line, the head count ratio (HCR) of poverty was 9.1 percent in rural Kerala, and 5 percent in urban Kerala in 2011-12. In rural and urban areas together, the HCR was 7.1 percent. In absolute terms, 15.5 lakh rural persons and 8.5 lakh urban persons were below the poverty line.
75. The headcount ratio of poverty among the Scheduled Caste, Scheduled Tribe, and fishworker populations are higher than for the general population. The XIII Plan will pay specific attention to alleviating poverty among the Adivasi people. The Planning Board will also help formulate new programmes to expand rural production and eliminate multiple forms of deprivation in regions where Adivasis reside.
76. We believe that, by means of people's participation and a careful system of identification, analyses of the causes of poverty in each individual case, and solutions, we can work to overcome absolute poverty.

2.11 Statistics for Development

77. Effective planning requires a sound statistical database. A sound database, in turn, requires scientific concepts, definitions, and methods, and scientific methods of data collection, processing, presentation, and utilisation. Economic policy in Kerala today cannot be said to be informed or guided by high quality statistical data.
78. Over the XIII Plan period, the State Planning Board will make detailed recommendations

regarding official statistical data in Kerala, and the institutions required to improve functioning in this regard.

79. Data on land must have comprehensive information on land tenure, land use, land transfer, and production. We must ensure reliable databases on State income, and on the primary, secondary, and tertiary sectors of the economy. Information from national-level surveys – including, for instance, the National Sample Survey and the Annual Survey of Industries – must be extended and used to deal with State-level issues.
80. The needs of local governments, at the district, block, and grama panchayat levels, constitute “a new statistical domain” in India. We require effective databases for social and economic policy for local governments. A list of their requirements must be drawn up with the help of elected representatives at the local level.
81. As mentioned elsewhere, the State Planning Board has proposed a single spatial data portal for the State, to which all departments can add layers of data.

3 PRODUCTIVE SECTORS

3.1 Agriculture

82. Kerala and the North East of India are the two great repositories of plant biodiversity in India. 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 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 cooperation; and value addition.
83. Kerala is characterised by the existence of a series of micro-environments suited to diverse kinds of agriculture and related activity. It is our task to translate the potential of Kerala's biodiversity into incomes for our people.
84. 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 (and the scientific and technological problems that cause such failure);¹ 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.
85. The conventional view that agriculture in Kerala employs only a small number of workers is incorrect. In 2015-16, the primary sector in Kerala contributed about 12 per cent to the State's GSDP (in 2011-12 prices). According to data from the Census of India 2011, the agricultural workforce (cultivators and agricultural labourers) in the State constituted 17 per cent of the total work force, and 26 per cent of the rural workforce. However, the definition of agricultural labourers in the Census excludes workers in the fruit crop and plantation sectors. Any definition of the agricultural workforce in Kerala should also include workers in forestry and fisheries, which are occupations not included in the Census definition of cultivators or agricultural labourers. It is thus likely that the actual share of agricultural work force in the total workforce of Kerala is higher than 17 per cent (or 26 per cent in the rural areas). It is likely that, with respect to rural Kerala, about one-third of the total workforce is employed in agriculture and allied activities.²

¹ The yield gap of a crop is defined as the difference between the yield of a crop under optimum management and the average yield achieved by farmers.

² According to the Census of India, the agricultural work force constituted 54.6 per cent of the total workforce in India as a whole in 2011. However, according to the National Sample Survey on Employment and Unemployment, the share of workers engaged in agriculture and allied activities in India's total workforce was less: 47.6 per cent in 2011-12.

86. At the same time, compared to other Indian States, workers in Kerala are indeed less dependent on agriculture than on other sources of income. According to the Situation Assessment Survey of the NSSO, the share of “agricultural households” within all rural households in Kerala was 27 per cent in 2012-13 (which was the lowest among all States). Another interesting feature of agricultural households in rural Kerala was the multiplicity of sources of income: 61 per cent of agricultural households earned a major share of their income from non-agricultural sources. The sharp rise in input costs and a lack of progress in mechanisation have contributed to a decline in profitability in farming.
87. In the crop sector, commercial crops dominate Kerala’s cropping pattern. Of the State’s total geographical area of 38.9 lakh hectares, net sown area covers 20.4 lakh hectares (accounting for a share of 51 per cent). In 2015-16, rice was grown on 1.96 lakh hectares of land and coconut was grown on 7.9 lakh hectares of land. Another 7.05 lakh hectares was cultivated with tea, coffee, rubber, and cardamom. The remaining 3.5 lakh hectares was cultivated with vegetables, fruits such as banana, and other crops, such as cashew.
88. A rise in incomes of farmers is critically dependent on the rise of incomes from coconut, which is Kerala's primary cash crop in terms of area under cultivation.
89. There is a shortage in Kerala of workers 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 small-scale mechanisation in agriculture.
90. It is necessary to introduce policies to attract a new generation 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.
91. As noted, crops in Kerala are grown in different agro-climactic 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 lands 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.
92. 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.
93. Kerala’s agricultural growth prospects are closely linked to the performance of its major commercial crops. The prices of most of these commercial crops are significantly integrated with world agricultural prices. As a result, a part of Kerala’s agricultural growth prospect is

linked up with factors outside the policy reach of the State government. The free trade policies of the central government after 1994 have had, for small growers in particular, a harmful impact on Kerala's commercial crop sector.

94. Over the XII Five-Year Plan period, the State's agricultural sector declined. Using 2011-12 as base year, agriculture and allied sectors recorded a growth rate of 1.43 per cent in the first year (2012-13) of the XII Plan period. However, the sector declined during the following three years with growth rates of -6.31 per cent in 2013-14, -1.09 per cent in 2014-15 and -2.9 per cent in 2015-16. A major factor contributing to negative growth rates in agriculture between 2012-13 and 2015-16 was the poor performance caused by low output prices in the commercial crop sector.
95. Because of the part played by commercial crops in Kerala's cropping pattern, agricultural households in this 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.³ However, because the average size of holdings in Kerala was smaller than in other States, per household net income from cultivation and farming of animals was lower. In 2012-13, the net income from cultivation and farm animals for an agricultural household was Rs 4106 per month in Kerala, Rs 3844 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.
96. We have proposed the creation of special agricultural zones in Kerala, specialised zones for the production of rice, vegetable, banana, coconut, and flowers. Each zone will seek to bridge yield gaps in the specific crop, increase farmer incomes, and do so through sustainable agricultural practices. Each area requires a distinctive approach to the evaluation of yield potential and the selection of varieties. Support services with regard to agricultural information, soil and plant health, input costs and output prices, post-harvest market linkages, storage, and distribution. Value addition needs to be planned for each commodity in each agricultural zone.
97. In the contemporary period, our agricultural policy in general, and the special agricultural zones in particular, must accord concurrent importance to issues of productivity, profitability, and ecology. The Government will promote research in the development of seed varieties that are climate-resilient.
98. The Planning Board will undertake a major study of the forces and relations of production in rural Kerala.
99. While designing strategies for the XIII Plan, special emphasis will be given to increasing 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 was cultivated in Kerala in

³ Reference period: July to December, 2012.

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 XIII Plan period. To increase the area under rice, cultivation needs to be extended (more fallow land must be brought under cultivation) and intensified (must increase the number of crops sown in a year). 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, and the procurement and marketing of rice.

100. 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. A major objective of the Haritha Keralam mission of the State Government is to raise vegetable production significantly. Under the XIII Plan, the Government plans to establish special agricultural zones for vegetables in Devikulam (Idukki), Kanjikuzhy (Alappuzha), Pazhayannur, Ollukkara, Kodakara (Thrissur), Chittoor-Kollengode (Palakkad), and Mananthavadi (Wayanad). The focus in vegetable cultivation will be to ensure that irrigation facilities are improved; that group cultivation of vegetables is encouraged through the formation of vegetable producer companies; the reorganisation of existing farmer's groups; the 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.

101. The XIII 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.

102. The Government will give priority to protection of traditional seed varieties and the protection of biodiversity.

103. The potential of Kerala in the cultivation of flowers has been inadequately exploited. Wayanad has been selected a site for a special agricultural zone with respect to floriculture in the XIII Plan.

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

Animal Husbandry

105. In animal husbandry, a major concern is the falling growth rates in the production of milk, eggs, and meat. The production of milk in Kerala improved significantly between the X Plan and the XI Plan, but did not grow over the XII Plan period. The annual growth rate of milk production was negative for two years in the XII Plan period: between 2012-13 and 2013-

14, and between 2014-15 and 2015-16. In the case of egg production, while there was a steady increase in production over the XII Plan period, the growth rates of production over the last two years have been worrisome: the annual growth rate of egg production was just 1.08 per cent between 2013-14 and 2014-15, and -2.44 per cent between 2014-15 and 2015-16. Similarly, meat production in Kerala also decelerated during the XII Plan period.

106. The XIII Plan will focus on increasing productivity levels in milk, egg, and meat production. Our objective should be to improve the production and distribution of livestock feed; increase the 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 by means of unified software.

Fisheries

107. 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. In the XIII Plan period, the focus will also be on improving livelihood security among the fishworker population; the provision of better amenities – sanitation, health care, drinking water, electricity, and library facilities – in the coastal regions; and reducing mortality at sea.
108. With regard to inland fish production, the XIII Plan will focus on higher seed production and the establishment of fish feed mills and aquatic animal health labs. Kerala's annual requirement of fish is estimated at 7.5 lakh MT, and the total fish landings are estimated at 7.2 lakh MT. About 1.49 lakh MT of high value fish are exported to foreign countries. Thus, there is a deficit of about 2 lakh MT of fish, especially with respect to sardine and mackerel, which are currently imported into Kerala from other States. The XIII 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.
109. A major objective of establishing special agricultural zones of rice in the XIII Plan is also the promotion of rice-fish farming.

3.2 Industry

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

111. 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 (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).
112. 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.
113. Out of a total manufacturing workforce of 18 lakhs (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.⁴ Coir and cashew processing, two major traditional industries, employed 3.8 lakh and 2.5 lakh workers respectively in Kerala.⁵ Most of the workers in coir and cashew processing in Kerala are women.
114. The registered manufacturing sector (roughly equivalent to the factory sector) contributed only 3.5 per cent to Kerala's GSDP in 2011-12, 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.
115. 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.
116. 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.
117. In 2013-14, Kerala's share in total investment by Central Government public sector

⁴ The registered, or broadly the factory, sector comprises factories that employ more than 10 workers and operate with the aid of electric power as well as factories that employ more than 20 workers without the aid of electric power.

⁵ Source: Government of Kerala, *Economic Review 2015*

enterprises was only 1.9 per cent.⁶ 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.⁷

118. 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).⁸

Strategy for Future Industrial Growth

119. 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).
120. 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.

Traditional Industries, Food Industries, and Other Agro-Based Industries

121. With respect to traditional industries, we recommend a two-pronged intervention. 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.
122. 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

⁶ Source: Government of Kerala, *Economic Review 2015*

⁷ Source: *A Review of Public Enterprises in Kerala 2014-15*, Bureau of Public Enterprises, Government of Kerala.

⁸ Establishments are enterprises that employed at least one hired worker on a fairly regular basis during the reference year. Source: *Key Results of Survey on Unincorporated Non-agricultural Enterprises (excluding construction) in India*, NSS 67th Round, July 2010-June 2011, National Sample Survey Office, Ministry of Statistics and Programme Implementation, Government of India.

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.

123. Kerala must promote the 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.
124. 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.
125. 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, growing together 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.
126. 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.

Public-sector undertakings and high-technology enterprises

127. 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.
128. Kerala has a number of State and Central public sector units engaged in diverse areas of manufacturing, mainly chemicals, engineering, and electronics. Some 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). However, the performance of many of the PSUs in Kerala has been rather poor in recent times.

129. 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.
130. 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.
131. 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.⁹ 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.¹⁰
132. 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.
133. 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 the manufacture of 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.
134. 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

135. 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

⁹ Biochemical engineering deals with chemical processes that involve biological organisms or molecules.

¹⁰ Many experts believe that the core scientific principles underlying pharmaceutical innovations have shifted in recent times "from fine chemistry towards molecular biology." See Cooke, Philip (2005) "Rational Drug Design, the Knowledge Value Chain and Bioscience Megacentres," *Cambridge Journal of Economics*, 29 (3): 325-41.

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.

136. 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.
137. A third group that has much potential with respect to entrepreneurship is students, especially those enrolled in technical institutions across the State.

3.3 Science and Technology

138. Total science and technology (S&T) 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. State-level S&T investment must improve the capacity of the State Government to attract investment, develop local resources, and facilitate innovation.
139. 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 & Environment (KCSTE), 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 the S&T in the State. We recommend that the major focus remain on scientific research carried out in research institutions, University centres, and College departments recognised as research centres. State efforts should complement rather than substitute Central support for S&T.
140. 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.
141. 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.

142. 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.
143. 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.

3.4 Information Technology

144. Over the last 25 years, Information Technology (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.
145. The significance for Kerala of the IT/ITES sector cannot be overstated. It is an important source of modern employment and also attracts a work force from outside the State. Many well-known brand names in the IT/ITES sector have located centres of activity in the State.
146. 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. IT is now an ever-present fact of everyday life, and the access to high-quality IT based services has become a common expectation of citizens across social and economic strata. From education to entertainment, from official to personal communication, the average citizen increasingly uses digital means. Indeed, the absence of such access is increasingly seen as a form of deprivation. In this regard, Kerala may be regarded as more advanced than many other States in the country.
147. *Employment creation.* 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 included, which is then leased out to the private sector. The provision of such built-up space must be done sufficiently in advance so that it does not become a constraint to the entry of new firms. We expect that 10 million sq ft (capable of generating 100,000 jobs) of built-up space will be completed over the XIII Plan period.
148. *Human resources.* The State will be a source of attraction for the IT industry only if there is guarantee of adequately trained human resources. 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 XIII Plan is to ensure that skill development is delivered across all such teaching institutions, including by online educational means.

149. *Startups.* 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 XIII Plan will promote such an ecosystem in Kerala.
150. *Development Missions.* 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.
151. *Public access.* 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 XIII Plan period, the State will provide WiFi hotspots in a number of public locations. Public access to WiFi will also help tourism.
152. *Data Platform.* IT can help 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 XIII 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 may be uploaded by those who have collected and/or analysed the data. Such a spatial data portal may be named the Diamond Jubilee Spatial Data Portal, a suitable gift to the people of this State, with their high levels of education and strong IT awareness, in this special commemorative year.

4 EMPLOYMENT

153. 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.
154. In 2011-12, workers as a proportion of population (all ages) were 56.5 per cent and 55.2 per cent respectively among men in rural and urban areas of Kerala. These were marginally higher than the corresponding proportions among men in rural and urban areas of the country 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.
155. 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 a share of 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.
156. Kerala has high rates of unemployment, especially among females. 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.
157. Migration to other parts of the world especially to the 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.

Table 3 *Labour force as a proportion of population (all ages) or labour force participation rates in Kerala and India, 2011-12* in per cent

	Rural Males	Rural Females	Urban Males	Urban Females
Kerala	58.3	25.8	56.7	22.2
India	55.3	25.3	56.3	15.5

Note: Labour Force defined according to usual principal and usual subsidiary status of persons.

Table 4 *Workers as a proportion of population (all ages) or workforce participation rates in Kerala and India, 2011-12* in per cent

	Rural Males	Rural Females	Urban Males	Urban Females
Kerala	56.5	22.1	55.2	19.1
India	54.3	24.8	54.6	14.7

Note: Workforce defined according to usual principal and usual subsidiary status of persons.

Table 5 *Unemployed as a proportion of the labour force in Kerala and India, 2011-12* in per cent

	Rural Males	Rural Females	Urban Males	Urban Females
Kerala	3.1	14.2	2.7	13.9
India	1.7	1.7	3.0	5.2

Table 6 *Unemployed persons as a proportion of the labour force, among persons in the 15-29 age group, in Kerala and India, 2011-12 in per cent*

	Rural Males	Rural Females	Urban Males	Urban Females
Kerala	9.7	47.4	8.4	37.1
India	5.0	4.8	8.1	13.1

Table 7 *Kerala's workforce, by sectors, 2011-12*

Sector	Number of workers, in million, Kerala	Share in total workforce, Kerala (per cent)	Share in total workforce, India (per cent)
Agriculture and allied activities	2.6	20.5	47.5
Manufacturing	1.8	14.2	13.0
Construction	2.1	16.5	10.6
Services	6.1	48.0	27.9
Non-agricultural activities, total	10.1	79.5	52.5
Total Workforce	12.7	100	100

Source: (for all tables in this section) National Sample Survey report on Employment and Unemployment in India, 68th Round, 2011-12.

5 INFRASTRUCTURE

5.1 Transport

158. The XIII 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. We recommend a comprehensive Transport Plan for Kerala for the next 15 to 20 years that will be aligned with the larger goals of sustainable development and social equity.
159. Achieving the above objectives requires, first, strengthening the physical infrastructure (of roads and other aspects of transport); and secondly, restructuring the institutional framework in the transport system. Building a multimodal transport system will require coordination between various physical infrastructure providers, including the State Public Works Department, Railways, Inland Transport Authority, airports, and coastal shipping agencies.
160. During the period of the XIII 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 the building of 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.
161. Two major transport infrastructure projects that will come into effect during the XIII Plan period 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.
162. Ensuring road safety is of the utmost importance while devising policies for the State in the area of transport. 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.
163. KSRTC forms an integral part of the public transport system in Kerala. The State intends to initiate various steps to rejuvenate KSRTC, focusing on (i) human resources (ii) operational issues (iii) technical issues and (iv) efficient utilisation of infrastructure/ resources.

Ports and Water Transport

164. The State is committed to the successful completion of the Vizhinjam International Ship Terminal. At the same time, steps will be taken to develop a large number of small and intermediate ports across the State. Building a strong network of ports, including Vizhinjam, Kochi, Ponnani, Beypore, Azhikode and Bekal, will improve water transport in Kerala, particularly for the movement of cargo traffic.
165. 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 the tourism potential of the State. Innovative projects for developing minor ports are necessary, especially in the Malabar region. The State intends to make the National Waterway-3 functional by attracting more cargo and passenger traffic through it.

5.2 Power and Energy

166. 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 means of the reduction of greenhouse gas emissions and the promotion of renewable energy. At the same time, the techno-economic conditions of power generation, transmission, and distribution have also changed substantially.
167. 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 clearly the low levels of industrialisation, especially manufacturing, in Kerala's economy, and the relatively low levels of power consumption in the agricultural sector.
168. The mainstay of Kerala's domestic generation is hydel power. Hydel power, though vulnerable to monsoons, is a source of renewable energy. This fact is not yet adequately established in the public debate on hydel power, where many negative perceptions associated with dam construction for hydel power – even by means of small and medium projects – persist.
169. While developing domestic capacity for power generation, we must also take note and of the buildup of excess capacity at the national level, making available power for purchase through various long-term, short-term, and spot arrangements. The costs and benefits of these must be examined.
170. During the XIII Plan period, the transmission and distribution network, especially high-voltage transmission lines, have to be strengthened significantly.
171. While there is much public enthusiasm and awareness of the need for other forms of renewable energy, progress in increasing renewable capacity and generation has been

relatively slow. During the XIII Plan period, large-scale solar power generation will expand substantially (though the availability of land may set definite long-term limits to potential capacity). The State Planning Board recognises that the expansion of small-scale generating capacity requires a paradigm shift from stand-alone to grid-connected systems. The prospects for renewable energy generation within Kerala in general requires careful analysis of existing ground reality.

172. At the household level, the Government can bring electricity to all households in the XIII Plan period. With regard to the use of clean fuel for cooking, the current coverage in Kerala is good by all-India standards. The XIII Plan will assist households that still depend on cooking stoves and fuel with substantial particulate emissions to move to the use of clean fuels.

5.3 Irrigation

173. 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.
174. Over earlier Plan periods, the focus was on large and medium irrigation projects. The XIII Plan envisages a shift of focus from large and medium irrigation projects to minor irrigation projects. We 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 XIII Plan period will also be dovetailed with the establishment of special agricultural zones.
175. Drought management will be a special concern of the XIII Five-Year Plan. Kerala's agricultural growth rates were expected to revive in 2016-17 after negative growth rates in 2014-15 and 2015-16, but poor rainfall in 2016 has created substantial uncertainties. There was a 34 per cent deficit in the southwest monsoon and a 2 per cent deficit in the northeast monsoon across the State in 2016. Kerala confronts a major drought towards the end of 2016-17 and the beginning of 2017-18.
176. 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.

6 ENVIRONMENT

177. A clean, healthy, and sustainable environment is now recognized globally and nationally as a basic entitlement of the people. Together with incomes and basic needs such as food, clothing, shelter and health, a clean environment is an integral component of human well-being. The environment plays an important preventive role in preventive health care. Any failure in maintaining good-quality environmental services leads to an increase in disease burden, and in household and public expenditure on health care.
178. The origins of environmental problems are often multi-dimensional and may involve several social and economic sectors. At the same time, widespread environmental issues may permit simple solutions with a few critical regulatory measures.
179. 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.
180. The Haritha Kerala Mission recognises the problem of maintaining the cleanliness and environmental health of Kerala's water systems, including its rivers, is another important issue. Organic pollution of water is an outstanding challenge and its solution will involve a comprehensive approach to drainage and sanitation from habitations in river basins and in watersheds.
181. The Mission also recognises the importance of safe and scientific waste management, especially of urban solid waste. The XIII Five-Year Plan will pay special attention to these social-environmental issues.
182. Environmental guidelines need systematically to be integrated into developmental activity and not be treated as an addition, independent of the main planning process. An important aspect of environmental management is ensuring that the economic consequences of environmental efforts, particularly on the small-scale sector in business and the employment and livelihoods of the working people, are adequately studied. It is a challenge to ensure that solutions to environmental problems are equitable, scientifically sound and economically viable. One important aspect of meeting this challenge is to ensure that arrangements for employment and livelihood protection be made *before* the implementation of environmental norms, and not after, as is often the case.

6.1 Biodiversity

183. 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. A challenge for planning is to utilise the wealth of our biodiversity to enhance people's livelihoods, and to use biodiversity as the basis for enhanced productivity and value-added

production in the agriculture and forestry sectors. Biodiversity can also help a renewed effort to develop new drugs and pharmaceuticals from natural products. The XIII Plan will also promote a quantitative and specific understanding of biodiversity in addition to the basic classification approach.

184. Kerala is recognized as a hot-spot of biodiversity in the country. It also has the advantage of widespread awareness of its biodiversity potential and local knowledge of biodiversity. The People's Biodiversity Register, 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. The State must move towards a systematic method of building People's Registers, with people's participation, and institutionalise the collection and maintenance of information on biodiversity. The registers will be used as benchmarks to help the protection and regeneration of biodiversity.
185. 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 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.
186. The Planning Board will explore the possibility of developing biodiversity for livelihood enhancement. A beginning may be made by means of a few carefully selected pilot projects. We recognise the link between biodiversity and potential development in pharmaceuticals, including Ayurveda and modern medicine.
187. Adivasi communities and communities close to forest areas have substantial knowledge of biodiversity and they must find ways to enhance their livelihoods by using such knowledge.
188. The promotion of on-farm biodiversity in general will be encouraged.
189. National and State-level legislation provide benefit sharing arrangements as an important source of financial resources for all biodiversity-related activities. These provisions are underutilised in the State and the XIII Plan will encourage enhanced revenue arising out of access- and benefit-sharing.

6.2 Forestry

190. We will protect and preserve our forest wealth and forest area. The XIII Plan in 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.

6.3 Climate Change

191. Climate change is an emerging constraint for development. There are issues of the mitigation of greenhouse gas emissions as well as of the adaptation required to deal with the impact of climate change on various sectors.
192. One of the primary consequences of global warming is the stress it will place on agriculture and related sectors. Another such sector is infrastructure development. Coastal areas in general and coastal infrastructure in particular are at risk from sea-level rise. Serious efforts are needed to integrate future climate effects into current infrastructure planning and construction.
193. There are uncertainties in estimating the impact of future climate change. These uncertainties are caused by scientific and socio-economic factors. In this context, continuous monitoring of climate variables and climate impact on various sectors is essential. The current difficulties of small farmers and small producers in related sectors must not be ascribed unthinkingly to climate change, since vulnerability of small producers to weather shock is driven mainly by economic factors, national and international.
194. International cooperation in climate change often offers useful knowledge inputs, particularly in terms of scientific and technical knowhow. Nevertheless, aligning international, national and State-level policy for coping with global warming requires careful consideration, ensuring that the developmental aspirations of the population in the region are also given due consideration.
195. Action on climate change has already been initiated in Kerala, and a Climate Change Action Plan has been formulated. It will, however, need to be updated in the light of new knowledge and evolving climate policy during the period of the XIII Five-Year Plan. In the agricultural sector, the possibility of decrease in potential on-farm yields over time must be studied, considering all primary and secondary effects of climate change.
196. The State need to develop a consistent methodology to take current and future climate risk into account when planning infrastructure, construction and maintenance. The health impact of ongoing climate change needs continuous monitoring. The State needs to ensure systematic collection of data relating to climate variables, including extreme climate events at the State, district and taluk level. These must be enhanced in conjunction with related efforts by the Central Government departments concerned. The State must utilise the best of currently available scientific information on the nature of future climate change and integrate climate change information into the work of concerned State government departments on a systematic basis.
197. In addition to national and State efforts, local initiatives are necessary for climate change mitigation and adaptation. In climate change mitigation, the lowering of carbon footprint at

district or lower levels must be promoted through local self-governments.

6.4 Disaster Management

198. Disaster management is a multi-dimensional issue, covering different sources of hazards and different types of action in multiple 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.
199. 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.
200. A comprehensive and integrated approach to disaster management be developed during the XIII 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.

7 LOCAL SELF-GOVERNMENT

201. 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 is greater than elsewhere.
202. The first people's plan campaign broadened and deepened the process of democratic decentralization in the State. Subsequently, however, there has been criticism that people's participation has declined. The decentralization experiment has also been criticised for not having made a significant impact in the sphere of production, and for not effectively having drafted Five-Year Plans and basing annual plans on the larger view taken in five-year plans.
203. The State Government has now inaugurated the second People's Plan campaign. The XIII 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.
204. An important goal of the second 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 revitalization of water-bodies.
205. During the period of the XIII Plan, local governments will take a watershed-based approach to addressing problems related to agriculture, drinking water, and management of natural resources.
206. The State Planning Board emphasises the need for restoration of District Planning Committees to their rightful place in the process of planning and in drafting District Plans.
207. The second campaign will ensure that Five-Year Plans on decentralization are prepared. 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.
208. The XIII 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.
209. The XIII Plan will place high priority on the problems of urbanisation and urban planning and work towards a comprehensive action plan for urban development.
210. 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.

211. The XIII 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.
212. The Planning Board recommends that parallel bodies in the area of urban development be dissolved.
213. During the XIII Plan period, ISO certification will be sought for local self-government institutions.
214. In order to strengthen the Kerala Institute of Local Administration (KILA), the State Planning Board recommends the merger of the State Institutions of Rural Development (SIRD) with KILA.

215. The share of tourism in Kerala's Gross State Domestic Product is about 10 per cent. Tourism creates employment, brings in incomes, and opens out cultures to the rest of the country and 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.
216. After the boom period of the 1990s and early 2000s, the rate of growth in tourism arrivals declined in Kerala. Tourism, however, has continuing and promising potential in the State. There is potential in the traditional locations in Kochi, south of Kochi and in the highlands. There is the steady and unabated growth of pilgrimage arrivals, and there is the vast and relatively unexploited tourist potential of the northern parts of the State.
217. Tourism development requires technical expertise and all-round planning. It must cater to all sections of tourists, ranging from luxury tourism through lower-income family tourists to backpackers. It must be responsible tourism, and sensitive to carrying capacity and the needs of the State's environment and people. This is a task in which we certainly can succeed.
218. The XIII Plan will attempt a new growth strategy for tourism in the State. The major performance indicators are to double the arrival of foreign tourists, increase the arrival of domestic tourists by 50 per cent, and create some 400,000 jobs in the sector over the XIII Plan period.
219. Internationally, public spending on tourism generally focuses on tourism promotion in different forms, while 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 Plan allocation and promotion about 25 per cent. The XIII Plan will partially correct this imbalance, raising the shares of tourism promotion to at least one-third of allocation.
220. The State must explore and utilise the full scope of tourism – beachside, historical, heritage, cultural, forest and environmental resources, 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 tourism to a particular season.
221. The XIII Plan will allocate resources to developing destinations and diverse activities with potential in this sector, including Biennale, Kerala's multiple festivals in the arts, eco-tourism, sites and events linked to the Spice Route, the relatively unexplored tourist potential of northern Kerala, and so on.
222. Kerala needs more youth with the skill-sets required to deliver high-quality services in the tourism sector. This is in order not only to upgrade human resources in the field of tourism in the State, but also to prepare young people for employment in the tourism sector in other

parts of India and the rest of the world.

223. We propose the declaration of 2019 as International Come to Kerala Year. A year-long event of this kind requires detailed preparation. An apex organising committee must be established. It must set targets for tourist arrivals. It must plan the required infrastructure (including the upgrading of existing infrastructure). Campaigns to attract tourists must be organised in different parts of India and internationally. Travel journalists from leading international newspapers, magazines, and new-media outlets must be invited to visit well in advance to provide international publicity. Advertising campaigns have to be planned, as well as different kinds of packages.
224. The campaign to make a Come to Kerala Year successful will require simultaneous efforts in health, public health, sanitation, prevention of litter, solid waste management, purification of water bodies. The organising group must be able to coordinate the efforts of different departments – culture, environment, forest, health, local government, archaeology and museums, and agriculture, for example – to make the effort an all-round success.

9 YOUTH AFFAIRS, SPORTS, ART AND CULTURE

9.1 Sports and Youth Affairs

225. In 2011, Kerala's population was 33.4 million. Of the population, 5.4 million (16.3 per cent) were adolescents aged 10-19 years and 5.3 million (15.8 per cent) were youth aged 15-24 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 XIII Plan must be 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.
226. The XIII 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.
227. 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 XIII 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.
228. In Kerala, persons between the ages of 18 and 39 are defined as youth. As mentioned elsewhere, employment generation for youth is a major objective of the XIII 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 XIII 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.
229. The XIII Plan will assist programmes that reinforce the secular character and scientific temper of 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.

9.2 Art and Culture

230. Policy in the sphere of culture must take a new turn in the XIII 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. Our policy should absorb the creative features of Kerala's cultural history related to communal harmony, social equality, the emancipation of the victims of extreme social oppression, and enlightened art forms. It should also aid the emerging movements against casteism and oppression and deprivation based on caste, and against superstition and other regressive practices in the society.

231. There are numerous institutional features of Kerala's cultural history that need consolidation. Village libraries and reading rooms, cultural societies, film societies, local oral history projects, and popular art forms with secular messages have to be strengthened, utilising the potential of emerging technologies and new social media. Public policy, thus, should be a bulwark against the mindless commodification of art and culture that is a hallmark of our times.
232. The XIII Plan will give specific focus to integrated cultural planning, encompassing art and heritage planning. The Plan will increase the allocation of resources for art and culture substantially.
233. The Plan will enhance the dispersal and geographical spread of cultural facilities and spaces across Kerala.
234. There are strong inter-linkages between cultural policy and tourism policy. We need to 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 XIII Plan will also support the establishment of museums of repute in the State over the next five years.

10 NON-RESIDENT KERALITES AFFAIRS (NORKA)

235. The State Government has expressed its resolve to strengthen its engagement with the diaspora of Keralites spread across the world. According to an estimate by the State Government, 1.6 million Keralites lived outside India in 2011 (of whom 1.4 million were workers). They were concentrated in the Gulf countries, North America, the United Kingdom and Southeast Asia. According to Kerala Migration Survey 2014, the size of emigrant population from Kerala is higher: 2.4 million in 2014, up from 1.4 million in 1998. There is also a substantial population of Malayalee migrants in other parts of India (representing what has been termed the “domestic diaspora”).
236. Remittances from migrant workers have contributed to the mobilisation of savings and to the overall economic growth of the State. In fact, the incomes from remittances have created demand for a range of material and cultural goods produced in Kerala. 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.
237. 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.
238. Kerala is the first State in the country to set up a separate department for non-residents. 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 XIII 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.
239. The XIII Plan will aim to promote entrepreneurship by NRKs and also 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.
240. 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 organization. This will help to channel investments by the migrants into the development of productive areas within Kerala.

241. 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 save, invest and stimulate economic development. We believe that we have a Government with that credibility in Kerala today.

11 RESOURCE ESTIMATION FOR THE XIII FIVE-YEAR PLAN

11.1 Plan Resources and Outlay

242. In estimating the resources for financing the XIII Five-Year Plan, this Approach Paper has assumed that Kerala's State Domestic Product (SDP) will grow at a nominal rate of 13 per cent per year during this Five-Year Plan period (that is, between 2017-18 and 2021-22). This assumption is based on past trends in income growth in the State and also on expectations about inflation and other macroeconomic variables. We believe that our projection for income growth of Kerala over the next five years is realistic, especially given the emphasis attached to the building of physical and social infrastructure.
243. The XIII Five-Year Plan period will coincide with the remaining three years of the term of the XIV Finance Commission award and the first two years of the term for the XV Finance Commission award. The Fiscal Responsibility and Budget Management (FRBM) Act sets limits to expenditures by the State government. We have taken these factors into consideration while estimating Plan resources for the XIII Five-Year Plan.
244. The assumptions underlying the resource estimations for Kerala State for the XIII Five-Year Plan are as follows:
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 XIII Five-Year Plan period. This estimate is guided by projections about tax buoyancy in the State, given the likely adoption of the General Sales Tax (GST) regime and the expected improvement in tax enforcement in the State.
 3. Revenue expenditure in Kerala will grow at an annual rate of 18 per cent in the 2017-18 period (as per Medium-Term Fiscal Policy of the State) and at an 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 XIII Five-Year Plan period.
245. Based on the assumptions listed above, we have estimated that the resources for financing Kerala's XIII Five-Year Plan will amount to Rs 200,000 crore. However, if the State economy faces unforeseen challenges, particularly because of external factors, the resources for financing the XIII Five-Year Plan will have to be revised downwards, to Rs 180,000 crore.
246. We have estimated that Kerala will receive Rs 40,000 crore over the next five years under Centrally Sponsored Schemes. This is based on an assessment of the current position adopted by the Central Government with respect to intervention in social and economic spheres.

247. The year wise tentative outlays for the 13th Five-Year Plan are in the Table below.

Table 8 *Plan outlay, 2016-17 to 2021-22* in rupees crore

Year	Outlay	Percentage increase over previous year
2016-17	24000	--
2017-18	26500	10.4
2018-19	31800	20.0
2019-20	38478	21.0
2020-21	46558	21.0
2021-22	56664	21.7
Total	200000	

248. For meeting its development goals, we believe that the State should try to supplement the Plan outlay with resources raised through innovative interventions by the government in the area of finance. We outline here two such important interventions planned by the State during the XIII Five-Year Plan, that is, cooperative credit and through the Kerala Infrastructure Investment Board (KIIFB).

11.2 Cooperative Credit

249. 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 cooperatives are Kerala’s strength, a rich legacy of our freedom movement. People’s confidence in these institutions is part of Kerala’s historical heritage.” Today, these institutions form the backbone of much of rural economic activity in the State.

250. 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.

251. The State Government has decided not to remain inactive while the policies of the Central government restrict the co-operative credit sector. The formation of a Kerala Bank by amalgamating the District Central Co-operative Banks and the State Co-operative Bank is under active discussion. In addition, the XIII 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/ST co-operatives.

11.3 Kerala Infrastructure Investment Board (KIIFB)

252. A new feature of economic policy during the XIII Five-Year Plan is the part to be played by the Kerala Infrastructure Investment Board (KIIFB). KIIFB is an important innovation. Historically, the State has lagged far behind in infrastructural investment. KIIFB is a special purpose vehicle intended to overcome this backwardness in investment. The resources that are mobilised by these means will only be used for investments outside the Budget. KIIFB's resources come from shares of annual taxes and cesses paid by law, as well as from grants and income bearing infrastructure projects. These resources enable KIIFB to guarantee repayment of loans. This approach will help to ensure a leap forward in the sphere of infrastructure. KIIFB is an institution that seeks to raise funds for pro-people public investment, concentrating on projects that are important for equitable growth. It does so mainly by means of securitising regular flows of income to the State.

12 EVALUATION OF PROJECTS AND SCHEMES

253. During the course of the XIII Five-Year Plan, the Planning Board conduct concurrent and retrospective evaluation of different projects and schemes. This effort will include reviews of 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 should be designed to bring new levels of efficiency to programme management and the planned use of funds.

13 CONCLUDING NOTES

254. Our tasks and efforts during the period of the XIII Five-Year Plan will 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.
255. We are committed to the growth of the productive forces in Kerala's economy. This growth will be based on the application of science and technology to agriculture and industry. In the next five years, our 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. We have rich natural resources, an educated, skilled and politically conscious work force, and unique social achievements in the spheres of health and education.
256. In the next phase of Kerala's development, we will ensure that its environment is cleaned and its biodiversity preserved. We will rejuvenate our waterbodies. We will dedicate our curative and preventive health systems to the service of the broadest mass of our people. We will make the facilities and infrastructure in our public schools second to none. We will ensure that every family in our State is housed in comfortable, safe, and dignified homes.
257. We shall thus defend the historical gains of the toiling people, and strive to build a secular, democratic, Left alternative for social and economic development. The XIII Five-Year Plan of the State of Kerala will be a Plan for the working people, the poor, the socially deprived, and the environment.