



# INFRASTRUCTURE STATISTICS

KERALA 2015-16



**TRANSPORT**



**ENERGY**



**COMMUNICATION**



**STORAGE**



**IRRIGATION**



**DRINKING WATER**

**DEPARTMENT OF ECONOMICS & STATISTICS**





Government of Kerala

# **Report on Infrastructure Statistics 2015-16**

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***Department of Economics and Statistics,  
Government Kerala***



## **P R E F A C E**

**I**nfrasturcture development in the State has been receiving the much needed thrust. Several major projects will become operational in the coming years. Through Kerala Infrastructure Investment Fund Board, the State is aiming to address the constraints of resource availability in financing infrastructure projects. This has been one of the innovative and decisive steps taken by State. This report provides a single comprehensive and reliable statistics for the variants such as transport, energy, communications, water infrastructure and food grains storage facility. The State is creating a niche in the field of startups and has taken several encouraging measures in this regard. Much procurement is to be needed in the field of energy as the State relies heavily on hydro sources of power for generation of electricity. The deficient rainfall has worsened the situation on this front. Availability of a sound infrastructure, including power supply is required to support the other sectors of the economy. The renewed thrust and focus on infrastructure needs to be continued with vigour for propelling the State's economic growth as well as social prosperity.

*I express my deep gratitude to all the data source agencies for their active co-operation, contribution and support extended without which it would have not been possible to this department to bring out this publication.*

*This publication is an effort of I & ES Wing at the Publication Division under the leadership of Sri. P.V. Babu, Addl. Director (General). Comments and suggestions with regard to the improvement of the report is highly appreciated including the quality, contents and presentation of report.*

Thiruvananthapuram  
20/02/2020

**V. RAMACHANDRAN**  
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## INTRODUCTION

### *Infrastructure Statistics*

*In India, the notion of infrastructure was discussed extensively by the Rangarajan Commission while examining the statistical system of India. The Commission stated that the Infrastructure is important in determining the availability of inputs that are crucial to a wide variety of productive activities and an important input for industrial and overall economic development of a country. There is no clear cut definition of infrastructure nor did its characteristics define which can differentiate infrastructure sectors from other sectors. Based on the necessity of infrastructure activities like Power, Transport, Telecommunication, water, sanitation, disposal of waste etc which are central to the activities of household and economic production, these could be treated as essential inputs to the economic system.*

*Although definition and concepts of infrastructure has different meanings in different contexts, Central Statistical Office (CSO) has compiled statistical publication on economic infrastructure of the country i.e. infrastructure required to facilitate the economic development of the country.*

*The publication includes statistical information on various aspects of infrastructure subsectors like Transport, Energy, Communication, Drinking water and Sanitation, irrigation and storage that were recommended by the Standing Committee on Infrastructural Statistics (SCINS) , Government of India based on the above parameters.*

*It was felt that a similar publication needs to be compiled at state level as that would facilitate the planning of infrastructure at state level. “Infrastructural Statistics” is prepared to guide the State Statistics Offices in preparing State level Infra structure statistics. Thereupon DES started publishing “Infrastructural Statistics Kerala” from 2012-13 onwards collecting data from secondary sources like State Planning Board, various Central Ministries, and State Government departments dealing with infrastructure subsectors.*

## Chapter - 1

### TRANSPORT

#### 1.1 Introduction

The various means of Transport available in Kerala are; road transport, rail transport, air transport and water transport. Road transport is the dominant mode both in terms of share in passenger and in terms of contribution to the state economy. The transport system consists of 2.01 lakh km of roads, 1050 km of railways, and 837 km of inland water ways and 111 statute miles of airways. This chapter provides data on different transport parameters. It focuses on the contribution of transport sector in state economy, information on the road network in the state, in terms of National Highways, State Highways, and Other PWD Roads etc. Apart from this, the information on registered motor vehicle population has been provided in this report. Another major areas covered are; water transport, rail transport and air transport. The data and indicators presented in this chapter are based on the details provided by State Public Works department, Kerala State Road Transport Corporation, Motor Vehicle Department, State Crime Records Bureau, Trivandrum Railway Division, Palakkad Railway Division, Port Trust Kerala, Irrigation Department, Cochin Airport Authority, Directorate of Civil Aviation etc.

#### 1.2 Contribution of Transport Sector in State Domestic Product

The contribution from transport sector to Gross State Domestic Product (GSDP) in 2011-12 at constant price (with base 2011-12) was 6.58%. It increased to 6.7% in 2012-13 and to 6.92% in 2013-14. During 2014-15, it slightly decreased to 6.9% and further to 6.61% in 2015-16. Out of the total share of 6.61% of the GSDP from transport sector in 2015-16, road transport sub-sector accounted for 5.81% followed by railways (0.33%), air transport (0.26%) and water transport (0.04%).

## Infrastructure Statistics 2015-16

The share of various sub-sectors of the transport sector in the State and National GDP since 2011-12 is given in Table 1.2.1. While comparing the contribution of transport sector in State and National GDP, it is seen that, contribution of transport sector in Kerala state economy is always higher than the national average. In 2011-12, the transport sector contributed around 6.58% on the state GDP. Then it slightly increased to 6.7% in 2012-13 and to 6.92% in 2013-14.

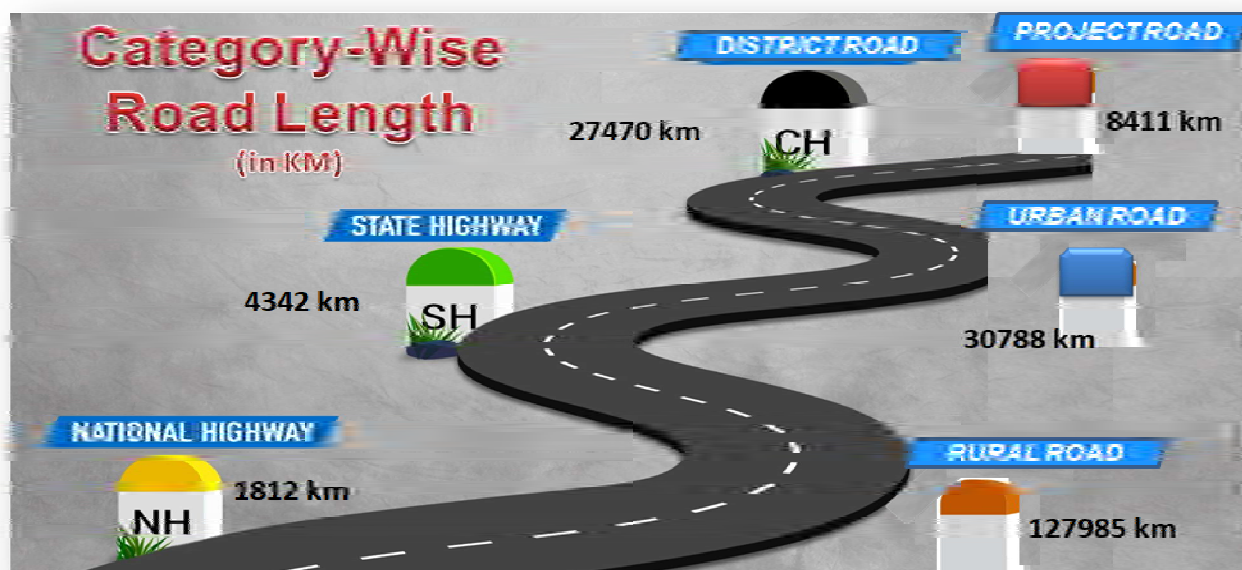
Table 1.2.1: Contribution of transport sector in GDP (base 2011-12)

Sector	2011-12		2012-13		2013-14		2014-15		2015-16	
	Kerala	India	Kerala	India	Kerala	India	Kerala	India	Kerala	India
Railways	0.29	0.75	0.33	0.81	0.32	0.8	0.33	0.81	0.33	0.82
Road Transport	5.95	3.24	5.98	3.3	6.29	3.3	6.18	3.28	5.81	3.26
Water Transport	0.08	0.09	0.07	0.08	0.05	0.08	0.06	0.08	0.04	0.08
Air Transport	0.08	0.05	0.14	0.05	0.1	0.05	0.16	0.05	0.26	0.06
Services Incidental to Transport	0.18	0.78	0.18	0.78	0.16	0.77	0.17	0.77	0.17	0.77
<b>Transport - Total</b>	<b>6.58</b>	<b>4.91</b>	<b>6.7</b>	<b>5.02</b>	<b>6.92</b>	<b>5</b>	<b>6.9</b>	<b>4.99</b>	<b>6.61</b>	<b>4.99</b>

### 1.3 Road Transport:

Road transport is the most commonly used mode of transport within the state. Roads are the primary infrastructure for road transport. Kerala road network includes national highways, state highways, district roads, rural roads, urban roads and project roads. As on 31<sup>st</sup> march, 2016, Kerala has a wide network of roads comprising of 2.01 lakh kilometers. Chart 2.3.1 gives the category wise length of roads as on 31<sup>st</sup> march 2016 in Kerala. It can be seen from the chart that the share of rural roads was the highest in the total road length(64%) followed by urban roads (15%), district roads (14%) project roads (4%), state highway (2%) and national highway (1 %).

Chart 1.3.1: Category wise length of roads as on 31st march 2016



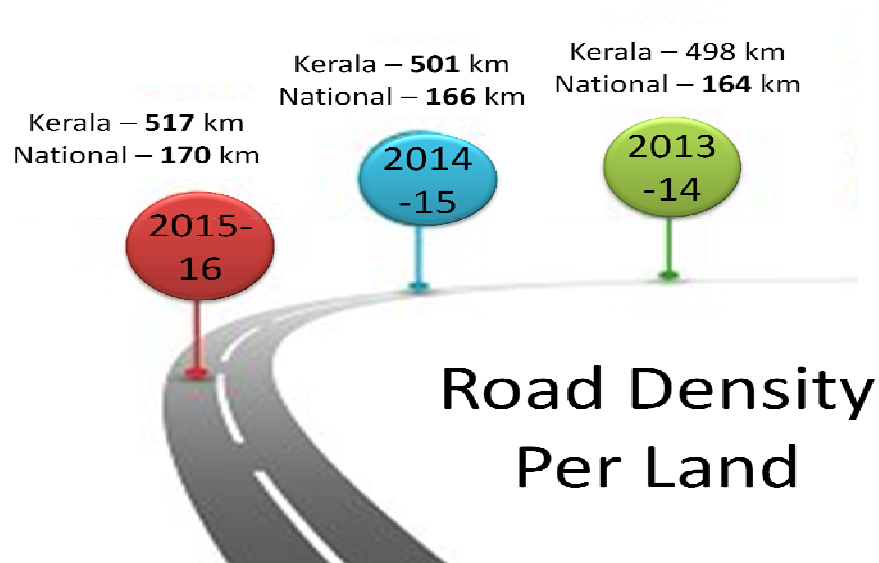
Category wise length of roads as on 31<sup>st</sup> March 2016, at the State and National levels can be seen in able 2.3 of Appendix A.

### 1.3.1 Road Density (per Land/Population)

Road density per land is the ratio of length of total road network to the total geographical area. As on 31st March 2016, Kerala has a road density of 517 km/100 Sq.Km, which is far ahead of national average of 170 Km/100 Sq.Km. The road density per land in Kerala has increased from 497.88 km as on 31<sup>st</sup> march, 2014 to 516.78 km as on 31<sup>st</sup> march, 2016, registering a growth rate of 4%

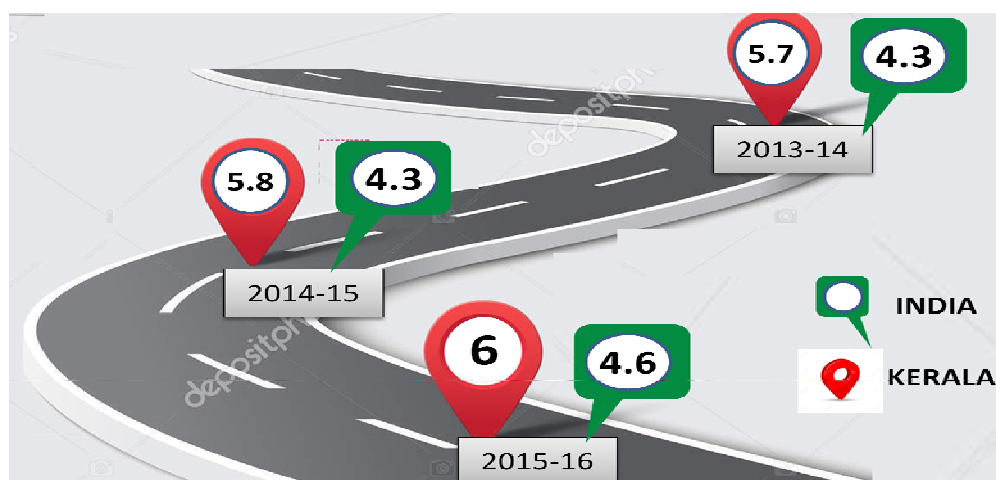


Chart 1.3.1.1: Road density per land



The road density per population, defined as the average road length per 1000 population, was 6.01km in Kerala, as on 31<sup>st</sup> march, 2016. This was around 1.38 km higher than the national level figure (at the national level, this was 4.63 km). At the state level, density per 1000 population increased from 5.79 km as on 31<sup>st</sup> march, 2014 to 6.01 km as on 31<sup>st</sup> march, 2016, whereas at the national level this increased from 4.36 km to 4.63 km during this period.

Chart 1.3.1.2: Road density per population

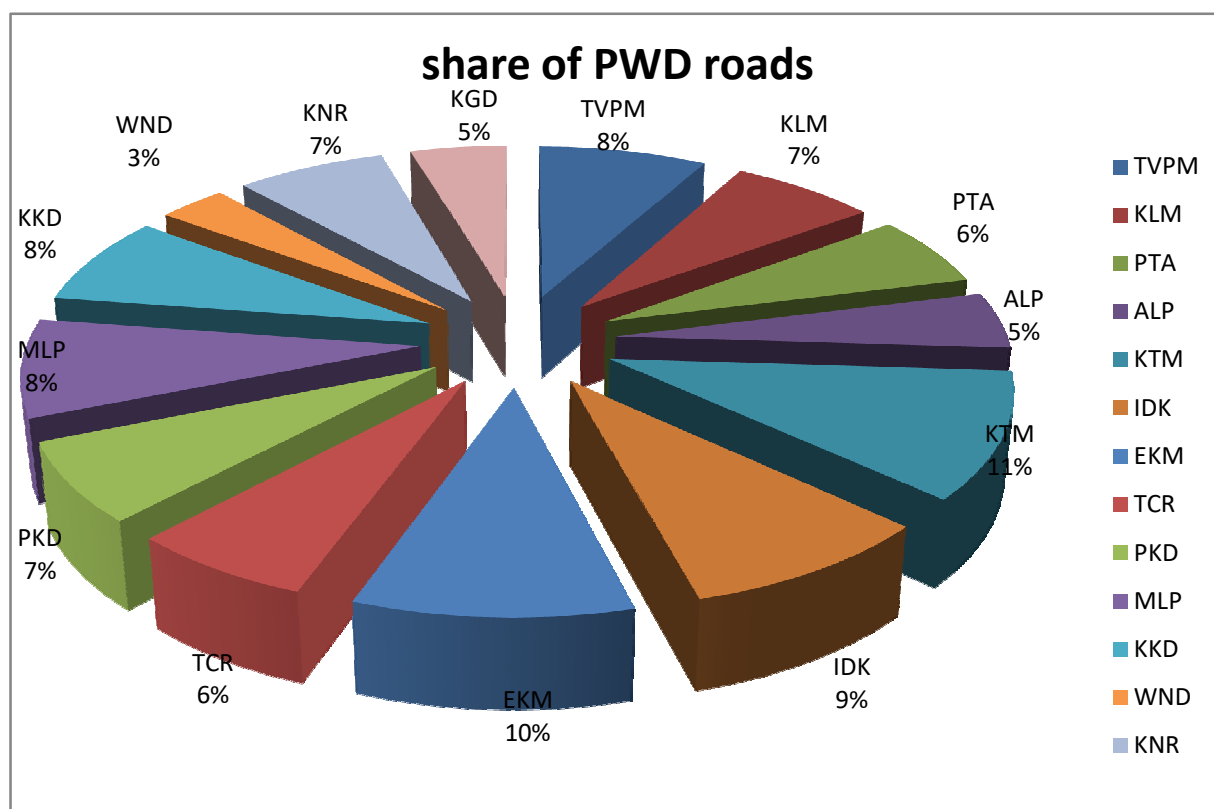


## 1.3.2 Public Works Department Maintained Roads:

Kerala Public Works Department (PWD) plays a major role in the construction and maintenance of National Highways, State Highways and Major District Roads. The National Highways are maintained by PWD for the Government of India. State Highways and Major District Roads are managed by Public Works Department with state funds.

The district wise share of roads maintained by the PWD is represented in Chart-1.3.2.1. Of the 14 districts in the state, Kottayam district has the largest share (11%) of PWD roads with a length of 3456.214 kms followed by Ernakulam with 3085.281 kms (10%) and Idukki with 2867.366 kms (9%). Wayanad has the lowest share with only 3% (1029.314 kms) of the total PWD maintained roads. District wise and category wise length of roads maintained by PWD during 2015-16 prescribed in Table 1.1 of Annexure A

**Chart 1.3.2.1: District wise share of PWD roads in Kerala**



### 1.3.3 Newly Registered Motor Vehicles

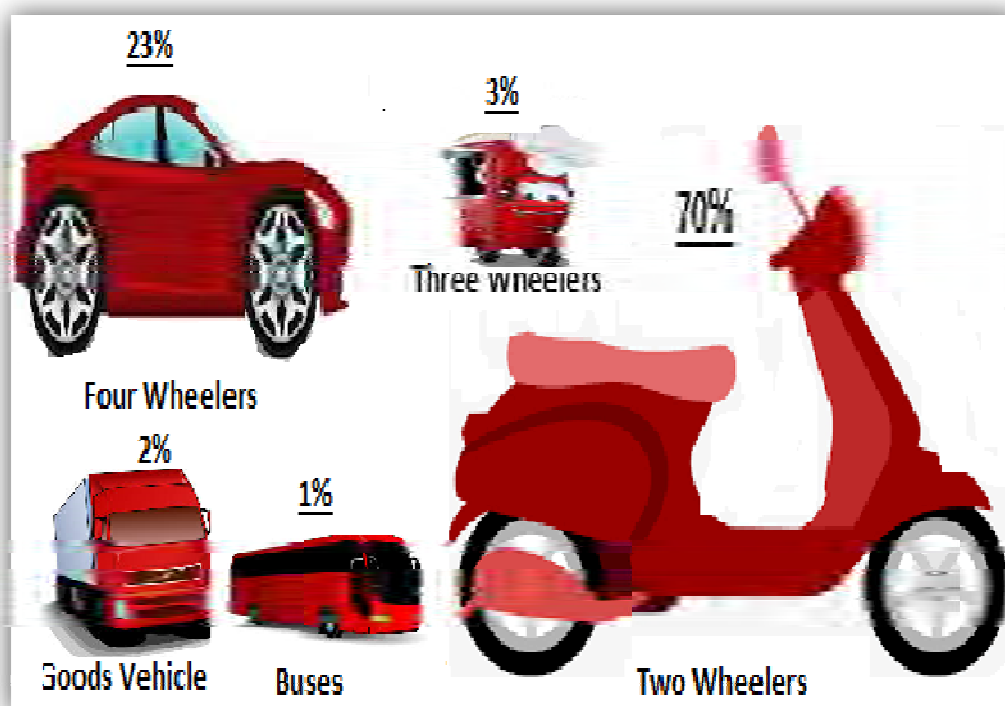
Category-wise number of newly registered vehicles during the periods 2011-12, 2012-13, 2013-14, 2014-15 and 2015-16 are given in the Table 1.3.3.1. The total number of newly registered motor vehicles increased from 8.4 lakh in 2011-12 to 9.7 lakh in 2012-13. After that it has shown a downward trend and reached 8.6 lakh in 2015-16. Category wise number of newly registered vehicles from 2011-12 to 2015-16 is given in the table 1.3.3.1.

**Table 1.3.3.1: Category wise number of newly registered vehicles from 2011-12 to 2015-16**

Vehicle Category	Number of newly registered vehicles				
	2011-12	2012-13	2013-14	2014-15	2015-16
Goods	33595	36993	28917	19928	19310
Buses	5117	5800	5515	4588	5987
Four Wheelers	183383	186645	206750	186647	195692
Three Wheelers	68772	64998	37018	27951	23364
Two Wheelers	529338	654194	637546	634221	606669
Others	20672	17139	12972	8884	10301
<b>Total</b>	<b>840877</b>	<b>965769</b>	<b>928718</b>	<b>882219</b>	<b>861323</b>

A pictorial representation of percentage distribution of newly registered motor vehicles during 2015-16 may be seen on Chart 1.3.3.1, below. It is clear from the chart that, during 2015-16, out of the newly registered vehicles in Kerala, 70% were two wheelers and 23% were four wheelers. The combined share of goods vehicles, buses, three wheelers tractors and others was only 7%.

Chart 1.3.3.1 Percentage Distribution of newly registered vehicles during 2015-16

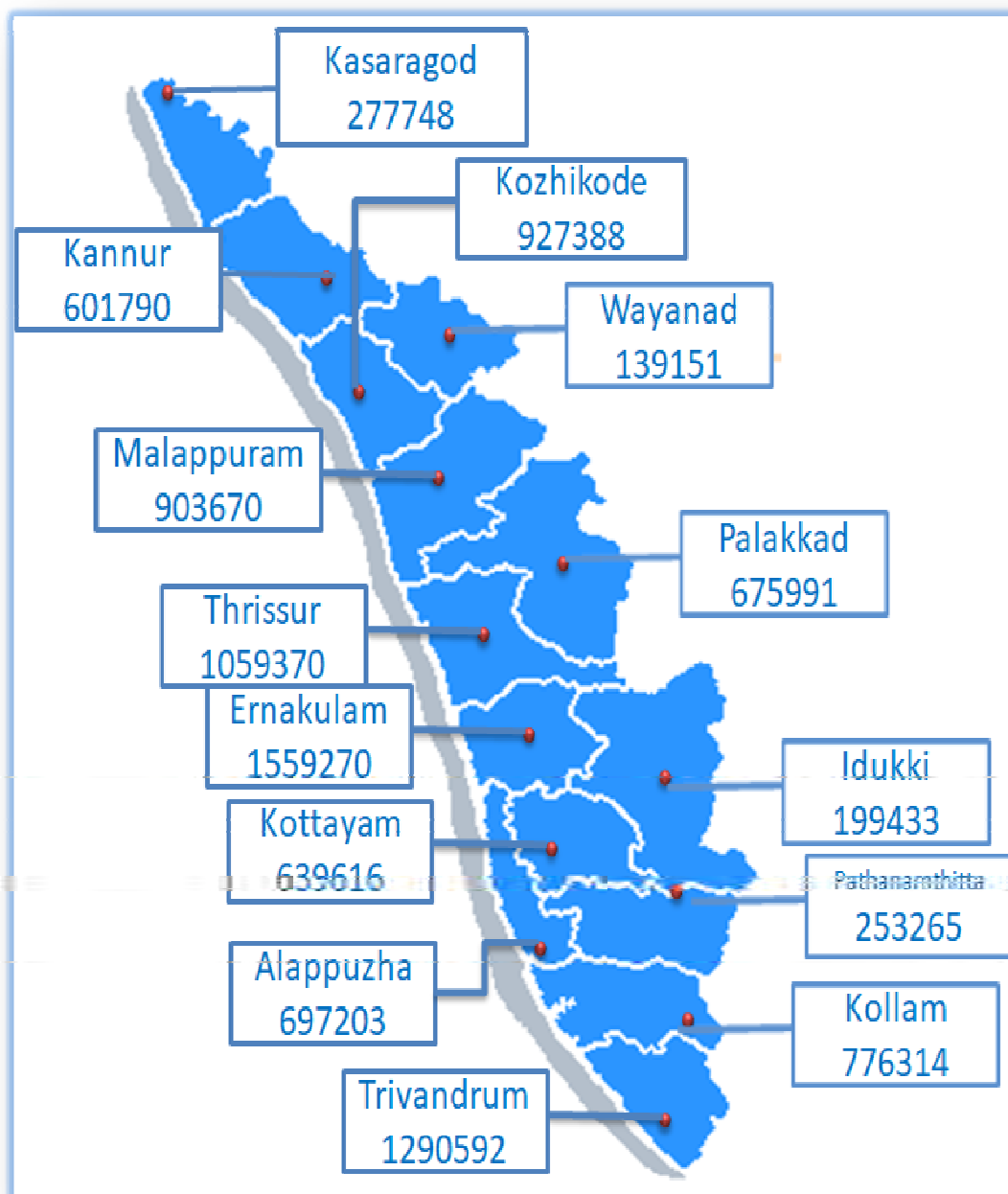


District wise and category wise number of vehicles registered during 2015-16 is presented in Table 1.6 and Table 1.7 of Appendix A. Apart from this detailed category wise newly registered vehicles from 2011-12 to 2015-16 at state level is included in Table 1.8 of Appendix A.

### **1.3.4 District -wise Distribution of Registered Motor Vehicle Population**

Out of the total 101.72 lakh registered motor vehicles up to 31st March, 2016 in Kerala, Ernakulam accounted for the largest share (15%) followed by Thiruvananthapuram (13%), Thrissur (10%), Kozhikode (9%) and Malappuram (9%). These five districts together accounted for 56% of the total vehicles registered in the state. Wayanad has the smallest share of 1% in the total registered motor vehicles in Kerala. District wise number of registered motor vehicles up to the period 31st March 2016 is illustrated in Chart-2.3.4.1 below. District wise broad category-wise number of registered vehicles in 2016 is shown at Table 2.13 of Appendix A

Chart 1.3.4.1: Total number of registered motor vehicles (as on 31/03/2016)



Ernakulam (16%), Thiruvananthapuram(13%) and Thrissur(10%) districts together accounted morethan one-third of the total registered cars in Kerala. In the case of two wheelers these three districts (Ernakulam -16%, Thiruvananthapuram - 13% and Thrissur – 11%) together accounted about 40% to the total two wheelers.



Chart 1.3.4.2: Total number of registered motor vehicles

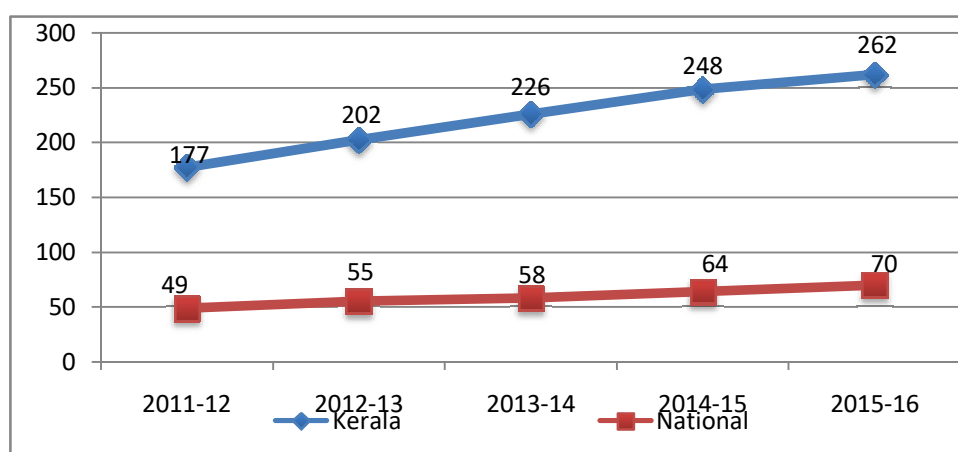
The total number of registered motor vehicles in Kerala has increased from about 68.9 lakh in 2011-12 to 101.7 lakh in 2015-16 (shown in chart 1.3.4.2); recording a growth rate of about 48%. At the national level the total number of registered motor vehicles has increased from about 1594 lakh in 2011-12 to 2300 lakh in 2015-16, registering a growth rate of 44%.

### **1.3.5 Vehicle Density:**

Vehicle density is the number of vehicles in Kerala per square kilometre of road length. In 2011-12, vehicle density was 177 vehicles per square kilometer in Kerala, which has gone up to 262 vehicles per sqkm during 2015-16. Kerala's Vehicle density during 2015-16 was almost four times higher than the corresponding number at the national level. Vehicle density at the national and state levels during the period from 2011-12 to 2015-16 is presented in chart 1.3.5.1

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Chart 1.3.5.1: Vehicle density during the period from 2011-12 to 2015-16



The Chart 1.3.5.1 shows that, vehicle density at both national and state levels have grown over the last five years. The vehicle density in Kerala grew 48% between 2011-12 and 2015-16 and the vehicle density at national level was up by about 43% during the last five years.

The chart 1.3.5.2 gives the comparison of districts of Kerala according to the value of vehicle density as on 31/03/2016. This chart clearly shows that Thiruvananthapuram is the most vehicle-dense district with 590 vehicles for every one kilometer of road, which is almost two times higher than the corresponding state average. Ernakulum is the next most vehicle-dense district with 509 vehicles per square kilometer followed by Alappuzha (493 vehicles) and Kozhikode (395 vehicles). Idukki and Wayanad stood last with 46 and 65 vehicle densities respectively. The vehicle density for two wheelers and car at the district level during 2015-16 may be seen at Table 1.12 of Appendix A.

Chart 1.3.5.2 District-wise value of vehicle density





### **1.3.6 Vehicle Penetration:**

Vehicular penetration is the number of vehicles per 1000 persons. The vehicle penetration in Kerala as on 31/03/2016 was 304 (per 1000 people) and at the national level this was 190. This implies that in Kerala, 304 people out of a thousand owned any vehicle, while at the national level 190 people per 1000 owned a vehicle. The penetration level of two wheelers and cars in Kerala as on 31/03/2016 is presented in Table 1.3.6.1. In Kerala, 62 per 1000 owned car and 194 per 1000 owned two-wheeler.




Table 1.3.6.1; Vehicle Penetration

Type of Vehicle	Vehicle Penetration
	194
	62
All Vehicles	304

The data shows that there exist large intrastate disparities in vehicle penetration. The following table gives the district-wise, vehicle category-wise vehicle penetration as on 31/03/2016. Ernakulum is the district with the highest car penetration in Kerala with 103 cars per 1000 persons. In Ernakulum, one out of every ten owns a car. This was around three times higher than the car penetration of Wayanad (34). The districts with the highest cars per 1000 people are Ernakulum (103), Pathanamthitta (89), Kottayam (87) and Thiruvananthapuram (84). In terms of car penetration Wayanad (34) is at the last position followed by Palakkad (35) and Idukki (42).

Another point to be noted is that the two-wheeler penetration is much higher in Kerala, compared to that of car penetration. In two-wheelers also Ernakulum stood first with 306 two-wheelers per 1000 persons. Unlike in the case of car penetration, Thiruvananthapuram attained the second position with 253 two-wheelers per 1000 persons. In terms of car penetration, Thiruvananthapuram was only at the 4<sup>th</sup> position. The districts Pathanamthitta and Kottayam were at the 2<sup>nd</sup> and 3<sup>rd</sup> positions respectively, in terms of car penetration whereas in two-wheeler penetration these districts were at 5<sup>th</sup> and 8<sup>th</sup> positions respectively.

Table 1.3.6.2; District-wise, category-wise vehicle penetration

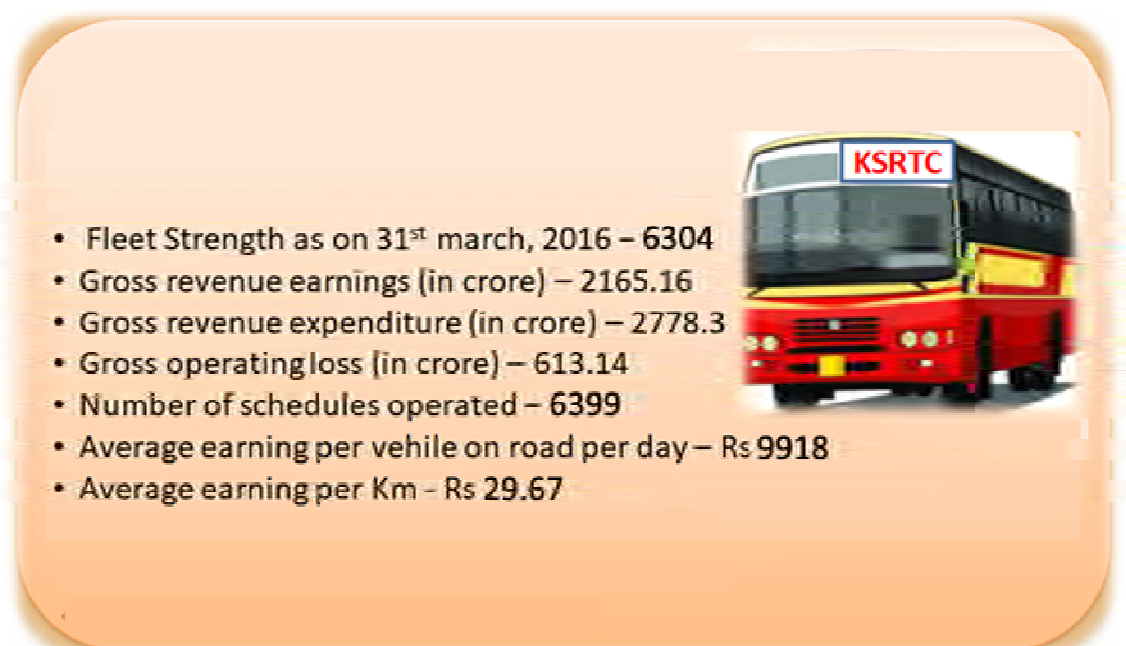
Vehicle Penetration per 1000 persons					
				All Vehicles	
EKM	306	EKM	103	EKM	475
TVPM	253	PTA	89	TVPM	390
ALP	230	KTM	87	PTA	354
TCR	225	TVPM	84	TCR	339
PTA	212	TCR	63	ALP	328
KKD	207	KLM	59	KTM	324
KLM	192	ALP	54	KKD	300
KTM	179	KNR	53	KLM	295
PKD	166	KGD	52	PKD	241
KNR	137	KKD	50	KNR	239
MLPM	132	MLP	43	MLPM	219
KGD	119	IDKY	42	KGD	212
WND	94	PKD	35	IDKY	180
IDKY	92	WND	34	WND	170

### **1.3.7 Kerala State Road Transport Corporation:**

The Kerala State Road Transport Corporation (KSRTC) is the large public sector corporation in Kerala. KSRTC provides bus-based public transport system and offers a cost effective alternative to various modes of transport in urban and rural areas. During 2015-16, a total of 10137.76 lakh passengers travelled in KSRTC. As on 31/03/2016, the corporation has 6399 schedules and 6304 buses. The average earnings per kilometer works out to round about Rs. 29.67 and the average earnings per bus works out to Rupees 9918. During the period 2015-16 KSRTC had a gross

revenue of Rs. 2,165.16 crore, gross expenditure of Rs. 2778 crore and the operating loss estimated was around Rs. 613.14 crores.

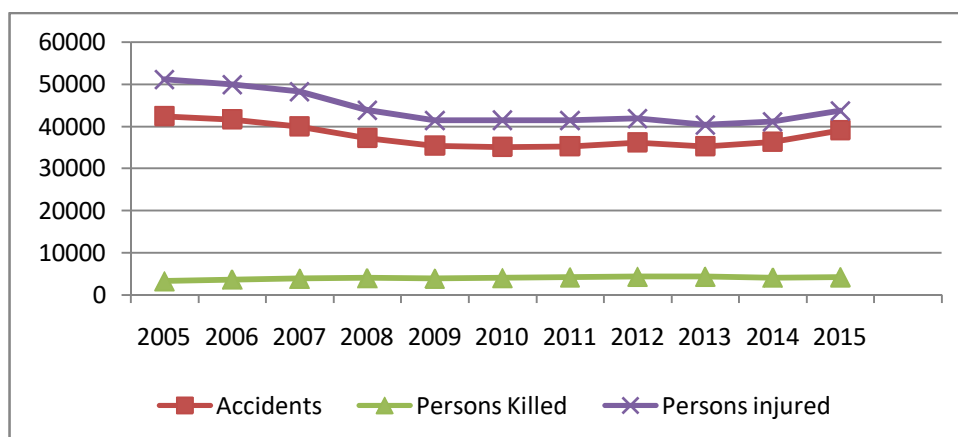
Chart 1.3.7.1: Major internal indicators of KSRTC



### **1.3.8 Road Accidents:**

A total of 39014 road accidents have been reported in Kerala in the calendar year 2015, claiming 4196 lives and causing injuries to 43735 persons. That is, in the calendar year 2015, on an average 107 accident and 12 accidental deaths happened every day in Kerala. An overview of road accidents from 2005 to 2015 is presented in chart 2.3.8.1. The chart shows a fluctuating trend in the incidence of road accidents. It declined from 42363 in 2005 to 35216 in 2011 and thereafter showed an upward trend and reached 39014 in 2015.

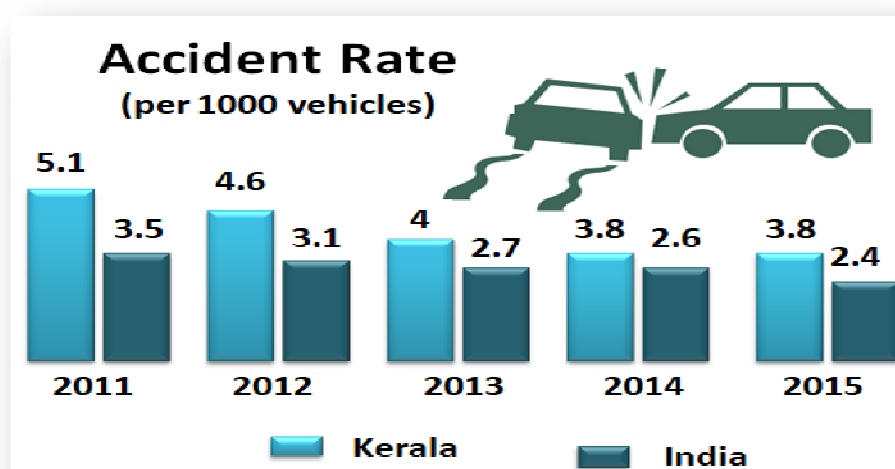
Chart 1.3.8.1 Road accidents during 2005 to 2015



In terms of accidents on road categories, the National Highways accounted for 24% of total road accidents and 33% of deaths in 2015. Accidents on State Highways and other roads constitute 18% and 58% respectively. In case of fatality, State Highways and other roads accounted for 20% and 47% of total road accident deaths, respectively.

Two-wheelers accounted for the highest share in total road accidents (37%) followed by the combined cars, jeeps and taxis category of vehicles (26%), then buses (12%), three wheelers (12%), the combined vehicle category comprising trucks, lorries, tempos, tractors etc (10%).

Chart 1.3.8.2: Accident Rate



Accident rate is used to explain road accident relative to vehicular population in the country. It is measured by the number of road accidents per 1000 vehicles. Chart 2.3.8.2 gives the trend of road accident per 1000 registered vehicles in Kerala and at the national level. The chart shows that, accident rate at both national and state levels have declining trend over the last five years. The accident rate in Kerala declined from 5.1 per 1000 vehicles in 2011 to 3.8 per 1000 vehicles in 2015. At the national level this declined from 3.5 to 2.4 during the last five years.

### **1.4 Water transport:**

Inland water transport is a fuel efficient and environment friendly mode of transportation. Inland water transport for passengers and freight movement involves lower operating cost and environmental pollution than road, rail or air mode. Inland water transport in Kerala includes rivers, canals and backwaters. Govt. agencies engaged in the operation of inland water transport are Coastal Shipping and Inland Navigation Department, State Water Transport Department, and Kerala Shipping and Inland Navigation Corporation Ltd.

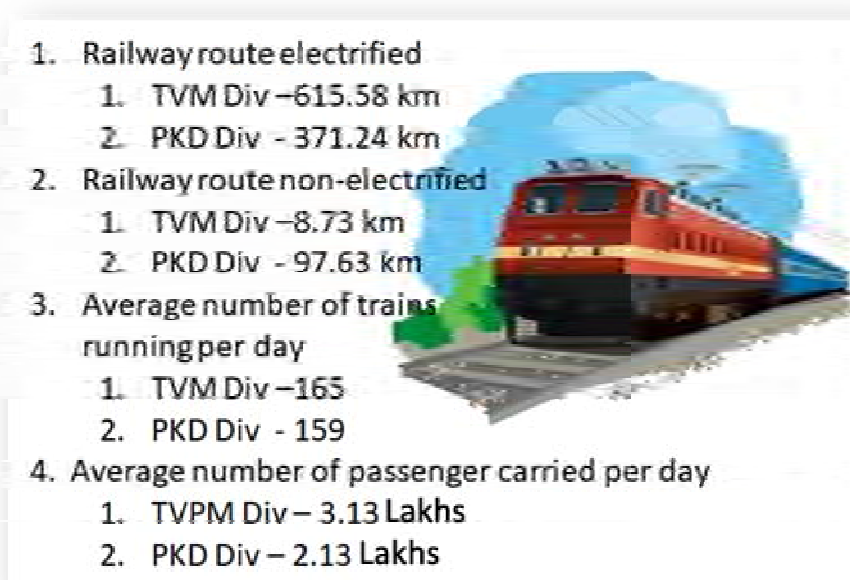
Inland Waterways Authority of India (IWAI), a statutory body under the Ministry of Shipping, is responsible for the planning, development, maintenance, management and regulation of the national waterways in India. The West Coast Canal of National Waterway No 3 is a 168-km stretch inland navigational route located in Kerala, runs from Trivandrum to Kasargod. In addition to the main stretch, Champakara (14km) and Udyogmandal(23km), Alappuzha – changanassery canal (28km), Alappuzha – Kottayam Athirampuzha canal (38km) and Kottayam-Vaikom canal (42 km) are navigable national waterways in Kerala.

### **1.5 Rail Transport:**

Indian Railways is one of the world's largest rail networks with 66687 route kilometers of route lengths (as on 31 March, 2016). In Kerala, there is a well connected network of Trains across the state connecting major cities and towns except those in highlands Idukki and Wayanad district. Rail connectivity in the

southern side is better as compared to the northern region. The operations are controlled by Thiruvananthapuram, Palakkad and Madurai divisions. The total route length of railway in Kerala state is 1050 km, as on 31<sup>st</sup> march 2016. 989.82 km route has been electrified under Thiruvananthapuram and Palakkad divisions and an average of 165 and 159 trains running per day in Thiruvananthapuram and Palakkad divisions respectively. Major internal indicators of Railway – Kerala region is given in chart 1.5.1.

Chart 1.5.1: Performance of railway divisions in Kerala



### 1.6 Air Transport:

Air transport plays a significant role to provide connectivity to major cities within the country and abroad. There are three international airports in Kerala, handling both international and domestic flights. Thiruvananthapuram and Calicut airports are owned by Airport Authority of India and the Kochi airport was developed under Public Private Partnership.

Passenger, Aircraft & Cargo movement in airports are shown in table

**Chart 1.6.1: Passengers carried per day (scheduled operations only)**



In 2015-16, around 135 million people in India travelled by air. Among this 85.2 million were domestic passengers and 49.8 million were international passengers. Out of the total 14.25 million air passengers in Kerala, 31.6% were domestic passengers (4.51 million) and 68.4% were international passengers (9.74 million). The chart 1.6.1 gives the number of air passengers travelled per day in scheduled operations.

In Kerala, a total of 98031 flights (57901 – international, 40130 – domestic) took off during the year 2015-16, i.e. 11 flights per hour. In terms of number of flights, Ernakulam International Airport stood first with 25953 domestic and 29798 international flights followed by Thiruvananthapuram (domestic – 9947, international – 16429) and Kozhikode (domestic – 4230, international – 11674) airports. Details of both Domestic and International flights operated by various agencies from airports in Kerala are given in Table 1.38, Table 2.39 and Table 1.40 of Appendix A.

During 2015-16, Indian and foreign airlines carried a total of 2028 metric tonne of freight to, from and within India and approximately 240.796 metric tonne of freight from airports in Kerala. The cargo movement from Kerala airports during 2015-16 is given in Chart 1.6.2.

**Chart 1.6.2: Freight traffic in Metric Tonne (MT)**





## Chapter 2

### ENERGY

#### Introduction

Energy plays a vital role in the socio economic development and human welfare of the nation as it is required to meet the demand of industry, commerce and domestic users. Growing economy needs to have stable and sustainable sources of energy supply as it plays important role in production process. Affordable energy directly contributes changes in the reduction of poverty, upliftment of productivity and improvement of health and education system.

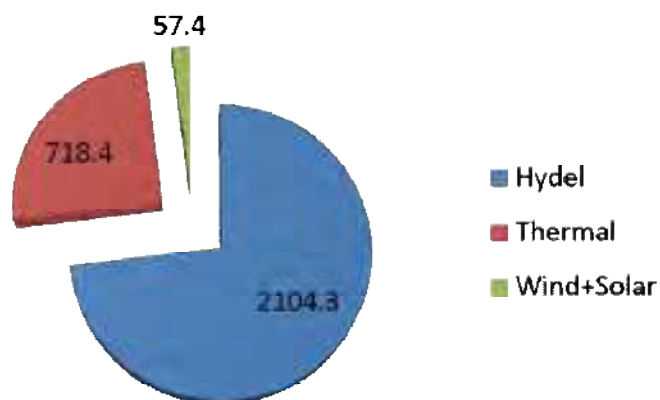
#### Power Sector in Kerala

Kerala generates power from four sources – hydel, thermal, wind and solar. Of this hydel power generation is dominant whereas wind and solar power generation make only marginal addition. Monsoon is essential to withstand the hydro power base and storage in rainfall usually arises power crisis since hydel energy is most reliable and dependable source. The most visible form of energy, identified as the power commonly called electricity. In 1957 Kerala State Electricity board was established under the authority of Department of power in Kerala government. Then onwards the board had taken seasonal initiatives for the physical and financial improvement of the sector. KSEB is responsible for the production transmission and supply of electrical energy from hydroelectric power project

#### Total Installed Capacity during 2015-16

Total installed capacity of power in the State as on March 2016 is 2880.20 MW. Of which, hydel contributed the major share of 2104.3 MW (73.06 per cent); while 718.46 MW was contributed by thermal projects, 43.27 MW from wind and 14.15 MW from solar. The total installed capacity of Kerala from hydel, thermal and renewable sources.

## Infrastructure Statistics 2015-16



Source: KSEB

The total additional capacity added from all sources during 2015-16 was 44.5 MW and scheme wise addition are detailed below

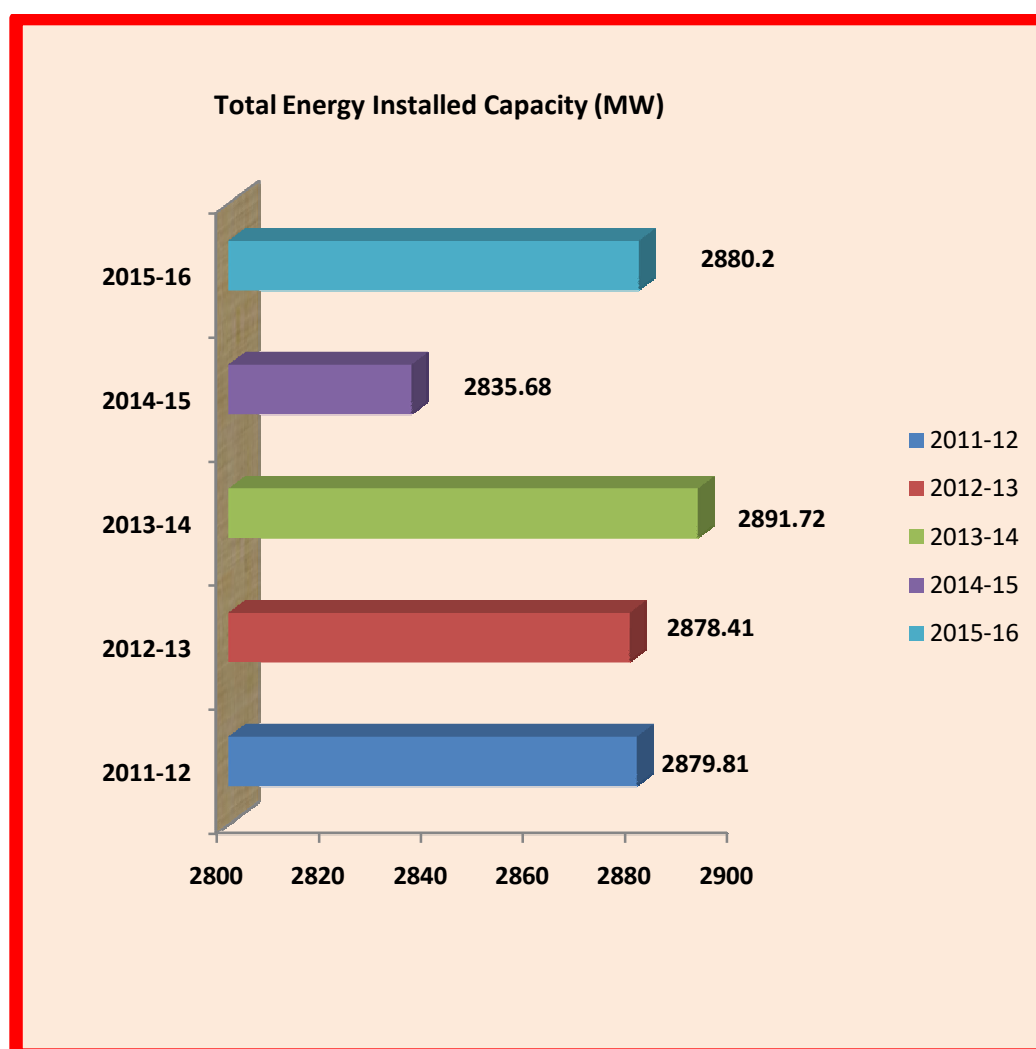
Sl.No	Name of Power stations	Installed Capacity (MW)			Date of commissioning
		Hydel	Solar	Wind	
1	Chimmony HEP	2.5			22.05.2015
2	Adyanpara HEP	3.5			03.09.2015
3	Barapole HEP	15			29.02.2016
4	Peringalkuthu HEP (capacity enhancement)	1			29.5.2015
5	Solar Kanjikkode		1		20.08.2015
6	Solar Power Project at Chalayoor Colony, Agali		0.096		31.8.2015
7	Solar Power Project at Peringalkuthu Power House		0.05		10.9.2015
8	Solar Power Project at Banasurasagar,Wayanad		0.01		21.01.2016
9	Wind Power Project by M/s. Ahali Alternate Energy Pvt Ltd (IPP)			8.4	22.02.2016
10	Solar Power Project by M/s. CIAL (IPP)		13		18.08.2015
	Total	22	14.156	8.4	

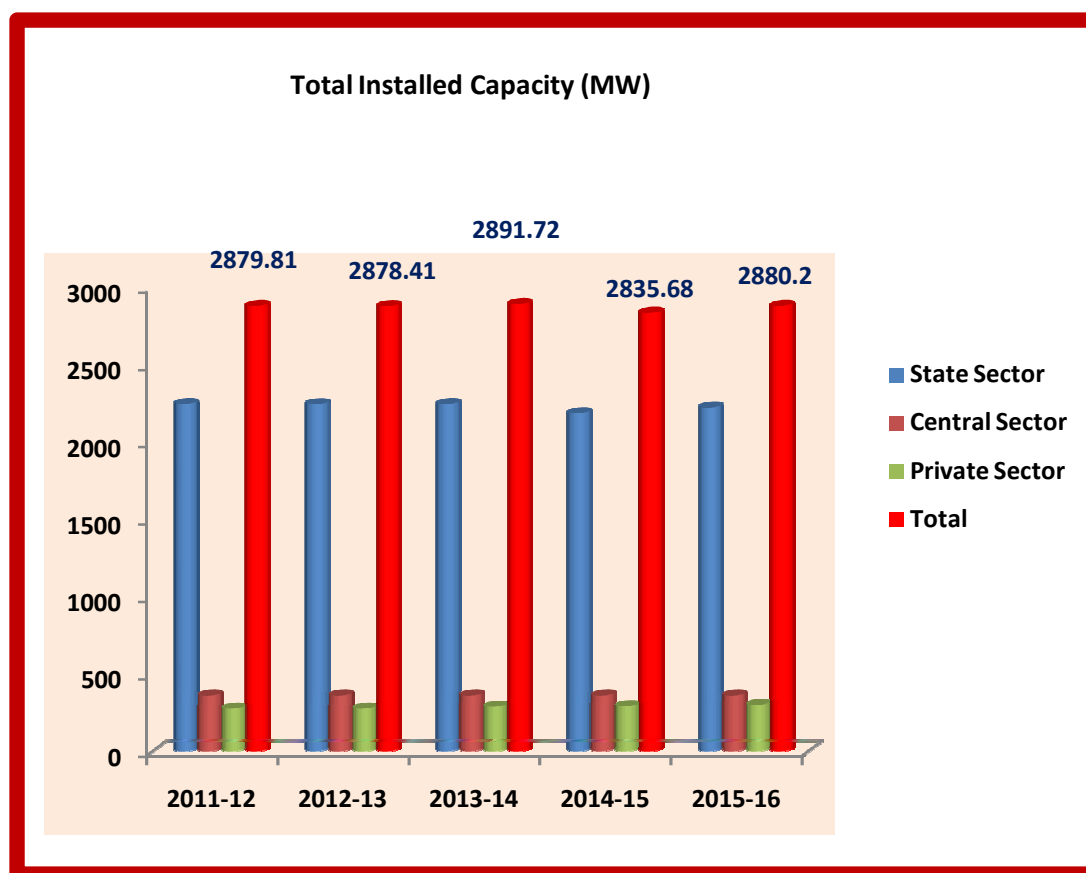
Source: KSEBL.

## Infrastructure Statistics 2015-16

In the reference year 2015-16, 22 MW from Hydel source, 14.16 MW from Solar and 8.4 MW from wind was added to the installed capacity of the State although it is produced by different agencies.

Chart & Table 3.1 shows the details of energy source and its installed capacity during the last five years while sector wise details are shown in Chart & Table 3.2 of the total installed capacity of 2880.20 MW during 2015-16, the contribution of State sector is 2209.2 MW (76.7 per cent), Central sector 359.6 MW (12.4 per cent) and Private sector 311.31 MW (10.8 per cent). Details of power availability in Kerala for the period 2011-2015 is shown Table 3.3





### Performance of Power Sector Agencies

Power development activities in the State are carried out mainly through four agencies viz, Kerala State Electricity Board Limited (KSEBL), Agency for Non-conventional Energy and Rural Technology (ANERT), Electrical Inspectorate and Energy Management Centre (EMC). The Outlay and Expenditure (in lakhs) of these departments for the last two years of the 12th Plan are detailed below

Sl.No	Department	Annual Plan 2015-16			Annual Plan 2016-17		
		Outlay	Expenditure	Per cent of Exp	Outlay	Expenditure*	Per cent of Exp
1	KSEBL	140942	105005.35	74.50	156412	68,378.42	43.72
2	ANERT	4280	2107.71	49.25	4388	2.41	0.05
3	MTSL	560	354.82	63.36	730	1.63	0.22
4	EMC	938	751.21	80.09	740	230.98	31.21
	<b>Total</b>	<b>146720</b>	<b>108219.09</b>	<b>73.76</b>	<b>162270</b>	<b>68,613.44</b>	<b>42.28</b>

*Source: Plan space\* Expenditure as on December 5, 2016*

### **Transmission**

Transmission of electricity refers to the bulk transfer of power over a long distance at high voltage, generally of 110 kV and above. A good transmission system is necessary for effective distribution and to procure power from outside the State. In the Transmission sector, many planned works could not be taken up due to land acquisition and right of way related issues. In the year 2015-16 out of the target of 12 numbers of 110 kV substations, 8 substations was completed and in the case of 66 kV substations, 3 substation was completed against the target of 4. In the case of 33kV substation, 3 substations was completed while there is no progress in the case of 220kV sub stations. Kerala's transmission system consisting of substations and its connected lines are given in Table 2.4 and Table 2.5

### **Distribution**

In the distribution segment, there are 57650 Kms of 11 kV lines, 285970 Kms of LT lines, and 73460 nos. of distribution transformers. During the financial year 2015-16, 3 81247 service connections were given (against the target of 4,59 ,020), 2,022 kms of 11 kV lines (against the target of 2377kms) and 3312 kms of LT line (against the target of 4826 kms) were commissioned. Power consumption and revenue collection from different category of consumers the year 2015-16 is stated in Table 3.6 the target and achievement of the distribution infrastructure during 2015-16 is given in Table 2.7 to Table 2.12

## Chapter 3

### COMMUNICATION

Communication plays a vital role in the socio economic development of a nation. In Kerala, almost all the modern means of communications are available including Postal communication, Tele communication, Newspapers and periodicals, Radio and Television, Internet, mobile phones etc, even in the village level.

**Postal Communication:** India has the largest postal network in the world. In our country there are about 1.5 lakhs post offices out of which 5055 post offices are in Kerala. Detailed report on division wise category wise Post Offices are shown in Table 3.1. Services that are provided by Postal circle include Speed Post, Logistic Post, Direct Post, Business Post, e-payment, Money transfer etc.

**Telecommunication:** The Indian Telecom services industry has experienced great changes and developments for the last two decades. Kerala Telecommunication has an impressive record in the growth, development and modernization of Telephone facilities in the state. Kerala was the first state in India with all Telephone exchanges fully automatic, the first to link all the exchanges through STD facility, the first to provide public telephone facilities in all Panchayat Headquarters. Kerala Telecommunication has a large network of modern digital switches linked through reliable and high capacity optical fibre media. First phase of Next Generation Network (NGN) has commissioned in Kerala circle on July 2015. The tele density, the total of telephones per 100 inhabitants is considered as one of the parameters closely related to the development of a state. The overall tele density in Kerala is 110 against the national figure of 83 at the year end. The growth of Tele Communication in Kerala is at a very fast pace and is very impressive. District wise details of Telephone net work is shown in Table 3.2

**Television & Radio:** Doordarshan is the state-owned television broad caster. Various general, news, entertainment and religious channels telecast their programmes. The only Government owned channel in Malayalam is VICTERS, educational channel which is working under IT@school project of General Education Department Kerala.

**Print media:** The habit of reading newspaper in Kerala is widespread. Majority of people subscribe at least one newspaper in their homes. The principal languages of publication are Malayalam and English. Dozens of Newspapers and Periodicals are published in the state.

**Internet:** Kerala realizes the importance of high speed communication through internet. There are many internet cafes in the state that provide facilities of surfing the net at minimum cost and almost everyone in the state is well versed with internet.

**Akshaya Centres:** Kerala is the first state in India to take initiative for the mass transformation of Information and Communication Technology by the implementation of district wide e-literacy project Akshaya' with an intention of empowering Kerala. The Government's focus on digitization of the state has entailed a revolution in the design and operation of public services through the reinvention of service delivery channels. Emergence of digital organizations to create services led to better opportunities to meet citizen's needs directing to increase social inclusion. At present 2628 Akshaya e-centres spread across Kerala with at least 2 centres in each panchayat. Details of Akshaya centres in districts are shown in Table 3.3

## Chapter 4

### Irrigation

Agricultural production relies primarily on climatic conditions. The natural climatic hurdles in production cannot be beaten by man. These factors are very important in considering the productivity and economy of the state. Our state receives about 90% of the annual rainfall during the monsoon months from June to August and from October to November. The remaining period from December to May is practically dry. Most of the rain water received during monsoon period flows to sea within 48 hours of rainfall due to the characteristics of the geographic terrain of the state. Though there are various methods for providing irrigation water, the best and the most reliable method which can be used for Kerala is the construction of storage reservoirs for impounding water during the monsoon and utilizing the water for critical periods of the crops when there is insufficiency. Hence, major and medium projects were taken up and a major portion of the cultivable land could be made ayacut under these projects.

First significant attempt to supply water on controlled basis was through a Lift Irrigation scheme constructed in 1942. The scheme consisted of lifting water from Periyar River by electric pumping and feeding through channels for paddy cultivation. Malampuzha Irrigation Project in Palakkad district is the 1st large-scale irrigation system in Kerala. The project consists of a dam constructed across the river Malampuzha, a tributary of Bharathapuzha and a network of canal system to irrigate an area of 21245 ha. The dam is straight gravity type masonry structure with an earthen saddle, completed in 1966. Malampuzha Reservoir provides drinking water for Palakkad Municipality and 6 adjacent panchayaths. Kerala has total irrigated area of 413833 hectare during the year 2015-16 shown in Table 4.1.



## Infrastructure Statistics 2015-16

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There are 54 dams in the State. Out of this, 14 dams and 6 barrages are maintained by the Irrigation Department. The live storage of reservoirs under Irrigation Department in the State is estimated as 1431 Mm<sup>3</sup>. The 4 ongoing irrigation projects viz., Muvattupuzha, Idamalayar, Karapuzha and Banasurasagar that commenced in 1970s and 1980s, but still continuing with consequent time.

At the same time the irrigation water is one of the most ill-managed resources, which creates a severe scarcity of water, both for drinking and irrigation in some region and environmental problem such as water logging in some region. It is now widely recognised that a paradigm shift from the traditional supply orientated mind set towards the concept of water conservation and demand management, is essential for the sustainability of water resources and the environment, as well as economic efficiency and social development. Source wise net average irrigated during 2014-15 and 2015-16 are stated in Table 4.2. Live storage position in the reservoirs for the period from 2014 to 2016 is stated in the Table 5.3 and average storage position for 2014-15 is stated in Table 4.4

## Chapter 5:

### Drinking Water supply and sanitation

#### Drinking Water

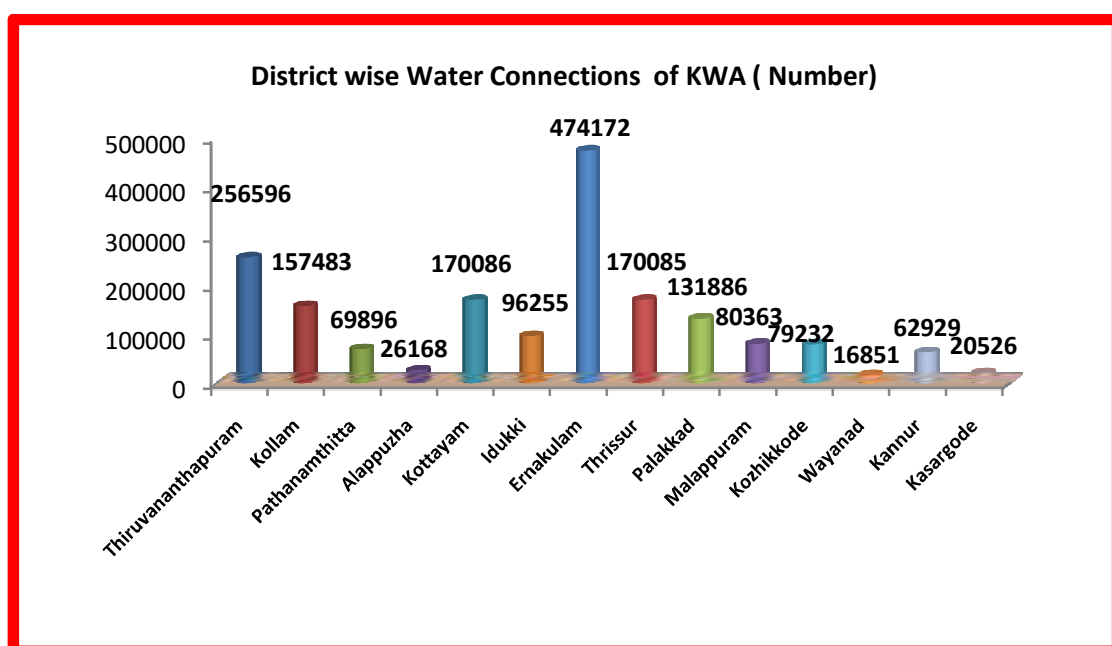
Safe drinking water, its supply and proper sanitation are basic requirements of a society. The World Water Development Report 2015 says that around 748 million people today still do not have access to an improved source of drinking water. The complexity of linkage between water and development provide us to rethink the present development challenges through the lens of water scarcity. The availability of fresh water resources on the earth has remained same but the gap between supply and demand of fresh water has increased over the years. The world is going to face the problem of global water deficit in the near future unless we could restore the balance between demand and limited supply of drinking water. The progress in social, economic and environmental dimensions of sustainable development is bound by the limits imposed by the management of water resources. Kerala is considered as the land of water resources with high rainfall, rivers, backwaters, lakes and many streams. However, Kerala is frequently facing drought and acute water scarcity in many districts. There are 44 rivers (medium -4 & minor - 40) in Kerala, all but three originating in the Western Ghat, 41 of them flow westward and 3 eastward. When compared to rivers in the other parts of the nation, the significance of rivers in terms of water discharge is very minimal. The State doesn't have a single major river as per the national norms. Kerala is also bestowed with a number of lakes and backwater lagoons.

Government of India as well as State Government is committed to provide safe water to the people. Safe drinking water not only reduces the risk due to water born diseases but also enhance the quality of life. Piped water coverage in State is

## Infrastructure Statistics 2015-16

only 52.43% whereas most of the families depend on Private water sources, which are usually open wells. Most of these are dry up by early March and remain so till the monsoon. Studies shows that spread of bacteriological contamination are common in open wells, bore wells and surface sources.

Kerala Water Authority is an autonomous agency established for the development and regulation of water supply and waste water management in the state. Water quality management in India is accomplished under the provision of water (Prevention to control of pollution) Act 1974. Main objective of the act is to prevent the pollution of water by Industrial, agricultural and household waste water that can contaminate our water source. The water quality information is being used to manage the quality of water from the source of pollution. The upstream water stations of rivers are having good water quality compared to the downstream stations.



Providing quality drinking water to all segments of the society is a major challenge in water supply sector. There are mainly two agencies viz. KWA and KRWSA (Jalanidhi) involved in the distribution of drinking water in Kerala. KWA is implementing major schemes and mainly focused in Urban Water Supply, while Jalanidhi concentrates on minor Rural Water Supply Schemes.

Water Supply schemes of Kerala Water Authority covers around 1.75 crore population which accounts, 52.43% of the total population. The district wise analysis shows that Ernakulam has the highest coverage of 81.51% followed by Thiruvananthapuram 72%. Kasaragod District has the least coverage, which is only 19.26% as detailed in Table 5.1. District wise water supply connections and distribution of street taps are stated in Table 5.2. There are three types of viz. domestic, non-domestic and industrial water supply connections. Number of such distribution is stated in Table 5.2. KWA has a total of 18,12,528 water supply connections and 2,08,034 number of street taps in the state. The total water supply schemes of KWA in operation as on March 31, 2016 is 1078, of which 1029 are Rural and 49 are Urban. As detailed in the Table 6.3, Thrissur District has the highest coverage and Wayanad has the lowest coverage of water supply schemes.

### **Sanitation**

Sanitation refers to public health conditions related to clean drinking water and adequate treatment and disposal of human excreta and sewage. Sanitation systems aim to protect human health by providing a clean environment that will stop the transmission of disease, especially through the fecal–oral route. Kerala has a coastal belt of 590 km, which covers 15 per cent of the total area of the State. Majority of drinking water sources in our state are getting polluted due to unscientific sanitation practices and indiscriminate dumping of waste. A large majority of drinking water supply sources are bacteriologically and chemically contaminated. The main bacteriological pathogens are E coli and coliform. The use of polluted water causes several water borne diseases, which may be fatal. The district wise analysis shows that total 941 grama panchayats completed 174720 numbers of toilets construction as detailed in the Table 5.6

### **Water Management**

Water Management is important since it helps determine future Irrigation expectations. Water management is the management of water resources under set

policies and regulations. Water, once an abundant natural resource, is becoming a more valuable commodity due to droughts and overuse.. Water resource management is the activity of planning, developing, distributing and managing the optimum use of water resources. It is a sub-set of water cycle management. Ideally, water resource management planning has regard to all the competing demands for water and seeks to allocate water on an equitable basis to satisfy all uses and demands. As with other resource management, this is rarely possible in practice. At present only about 0.08 percent of world's fresh water is exploited by mankind in ever increasing demand for sanitation, drinking, manufacturing, leisure and agriculture. The mission of the Water Management uses provides a forum for publishing new findings on Engineering principles and technology. Currently our primary research objective is to encourage and assist the development of better and faster measures of engineering activity. In cases where we believe we can contribute directly, as opposed to through highlighting the work of others, we are producing our own measures of Water Management.

## Chapter 6

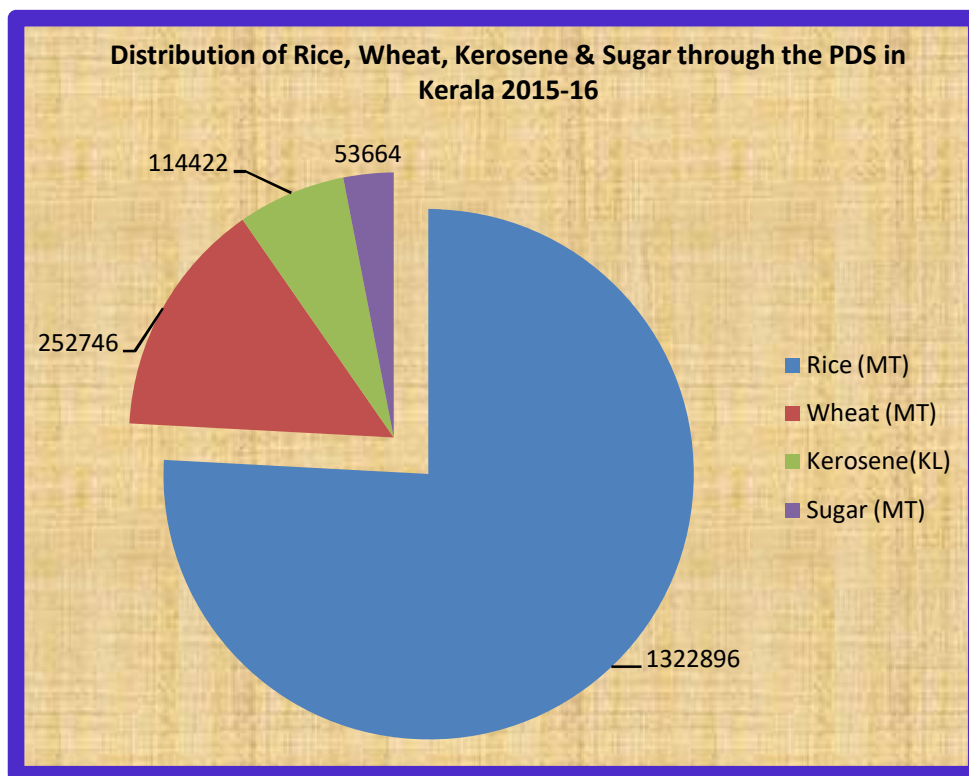
### Storage Facility

The storage function assumes paramount importance in organization such as Food Corporation of India because of its requirement to hold huge inventory of food grains over a significant period of time. Adequate scientific storage is pre-requisite to fulfill the policy objectives assigned to the Food Corporation of India for which FCI has a network of strategically located storage depots including silos all over India. Besides having own storage capacity, FCI has hired storage capacities from Central Warehousing Corporation, State Warehousing Corporations, State Agencies and Private Parties for short term as well as for guaranteed period under Private Entrepreneurs Guarantee Scheme.

Since Kerala is a deficit state, FCI undertakes the major role of providing scientific storage of food grains in the state and thereby distributing adequate stocks timely under GOI schemes to ensure food security. FCI is having 24 depots controlled by 9 District offices. During the year 538566 tones of food grains can be stored in the FCI, Kerala Region, District wise details are given in Table 6.5. Kerala has well organized Public Distribution Systems which ensure reasonable supply of cereals to the public by Civil Supplies Department. As on 31<sup>st</sup> March 2016, there were 8359573 numbers of ration card holders who are receiving Food grains through the system. These items are also getting in the subsidized rate from the wholesale shops including Co-Operatives, Supplyco, other outlets and retail shops relating to number of ration cards and permits, outlets opened by the civil supplies corporation, No. of FCI depots, district wise state ware houses & central ware houses, cold storage and container depots are stated in the Table 6.1 to 6.4 District wise FCI godowns storage capacity is illustrated in Table 6.5. During the year 2015-16 1322896 MTs of rice, 252746 MTs of wheat, 114422 KLs of kerosene and 53664 MTs of sugar were distributed through the

## Infrastructure Statistics 2015-16

Public Distribution System. Distribution for the year 2010-11 to 2015-16 is stated in Table 7.6 and details of cargo storage are presented in the Tables 6.7



Kerala State Warehousing Corporation is a statutory corporation having 50% share capital by Central Warehousing corporation and 50% share capital by Govt. of Kerala. It has its corporate office at Ernakulam with 3 zonal offices, 9 regional offices and 55 warehouses scattered all over the state. All types of agricultural commodities and other commodities notified by the Government from time to time are accepted for storage in a warehouse. This idea behind the whole warehousing scheme is to give scientific storage to the agricultural produce, to arrange easy credit and also holding power to agriculturists to enable them to get better price for their produces. A warehouse Receipt incorporating the quantity, quality, market value and particulars of insurance against fire, theft will be issued to the depositor.

*Appendix -Chapter 1*

**TRANSPORT**

**TABLE 1.1**

**District wise and category wise length of roads maintained by PWD 2015-16 (in Km)**

SI No.	District	State Highways	District Roads	Total
1	2	3	4	5
1	Thiruvananthapuram	180.36	2377.384	2557.744
2	Kollam	123.79	2079.079	2202.869
3	Pathanamthitta	170.841	1782.178	1953.019
4	Alappuzha	249.194	1301.493	1550.687
5	Kottayam	406.531	3049.683	3456.214
6	Idukki	998.372	1868.994	2867.366
7	Ernakulam	325.206	2760.075	3085.281
8	Thrissur	374.033	1690.183	2064.216
9	Palakkad	245.987	1938.706	2184.693
10	Malappuram	374.764	2305.388	2680.152
11	Kozhikode	377.173	2077.474	2454.647
12	Wayanad	128.955	900.359	1029.314
13	Kannur	244.665	2020.577	2265.242
14	Kasaragode	141.78	1318.882	1460.662
<b>Total</b>		<b>4341.651</b>	<b>27470.455</b>	<b>31812.106</b>

*Source: PWD, Roads*



## Infrastructure Statistics 2015-16

**Table 1.2**  
**Agency wise distribution of State roads during 2015-16**

SI No.	Name of Department/Agency	Length (km)	Percentage
1	2	3	4
1	Panchayats	265421.120	80
2	PWD(R&B)	31812.106	10
3	Municipalities	18411.870	5.6
4	Corporation	6644.000	2
5	Forest	4575.770	1.38
6	Irrigation	2611.900	0.79
7	National Highways	1568.000	0.47
8	Others (Railway, KSEB)	328.000	0.09
	<b>Total</b>	<b>331372.766</b>	<b>100</b>

*Source: Roads Website, PWD Roads*

**Table 1.3**  
**Category wise length of roads (in Km)**

	State Highway	National Highway	District	Rural	Urban	Project
Kerala	4341.65	1812	27470.46	127985	30788	8411
India	176166	101011	561940	3935337	509730	319109

**Table 1.4**  
**Details of Bridges, Flyovers & Culverts in Roads**

SI No.	Item	Total
1	2	3
1	Total No. of Bridges	2545
2	Total No. of Flyovers	4
3	Total No. of Culverts	42850

*Source: PWD, Roads*

## Infrastructure Statistics 2015-16

**Table 1.5**

**Road Density (in Km)**

Year	Per Land		Per Population	
	Kerala	India	Kerala	India
2013-14	497.88	164	5.79	4.36
2014-15	501.46	166	5.83	4.36
2015-16	516.78	170	6.01	4.63

**Table 1.6**

**District and Category wise number of Newly Registered Motor vehicles during 2015-16**

Sl. No.	Name of District	Three Wheelers	Two Wheelers	Car, Jeeps and Taxis	Buses	Goods Vehicles	Others	Total
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	4791	66703	22456	1272	1569	1187	97978
2	Kollam	1739	52262	14647	294	1304	658	70904
3	Pathanamthitta	881	22847	9646	200	757	394	34725
4	Alappuzha	917	39031	11201	293	1207	443	53092
5	Kottayam	1036	29318	13684	510	1341	752	46641
6	Idukki	942	12854	4154	215	617	235	19017
7	Ernakulam	1982	75574	27559	811	2849	1444	110219
8	Thrissur	1429	60701	18073	557	1756	881	83397
9	Palakkad	1117	46620	10694	338	1197	590	60556
10	Malappuram	2586	63442	19366	429	2123	1145	89091
11	Kozhikode	2356	66703	16796	400	1824	881	88960
12	Wayanad	776	11169	3009	65	522	250	15791
13	Kannur	1782	40838	15565	473	1716	944	61318
14	Kasaragode	1030	18607	8842	130	528	497	29634
<b>Total</b>		<b>23364</b>	<b>606669</b>	<b>195692</b>	<b>5987</b>	<b>19310</b>	<b>10301</b>	<b>861323</b>

*Source: Motor Vehicle Department*

## Infrastructure Statistics 2015-16

**Table 1.7**

**Valid registered Motor vehicles in districts 2015-16**

SI No.	District	Goods vehicles		Buses		Four Wheelers			Three Wheelers	Two Wheelers	Tractors / Trailers			Total
		Four Wheelers & above	Three wheelers including tempos	Stage Carriages	Contract carriages/ Omni buses	Cars	Taxis	Jeeps	Auto rickshaws	Scooter/Motor cycles	Tractors / Tillers	Trailers	Others	
1	2	3	4	5	6	7	8	9	10	11	12	14	15	16
1	Thiruvananthapuram	1112	457	886	386	21578	878		4791	66703	37		1150	97978
2	Kollam	983	321	31	263	14089	558		1739	52262	14		644	70904
3	Pathanamthitta	530	227	12	188	9223	423		881	22847	7	1	386	34725
4	Alappuzha	904	303	19	274	10247	954		917	39031	18	1	424	53092
5	Kottayam	1082	259	99	411	13054	630		1036	29318	11	1	740	46641
6	Idukki	487	130	57	158	3944	210		942	12854	3		232	19017
7	Ernakulam	2362	487	97	714	25365	2194		1982	75574	35	1	1408	110219
8	Thrissur	1320	436	105	452	16774	1299		1429	60701	36	2	843	83397
9	Palakkad	875	322	88	250	10007	687		1117	46620	57		533	60556
10	Malappuram	1448	675	96	333	18827	539		2586	63442	40	1	1104	89091
11	Kozhikode	1188	636	138	262	16013	783		2356	66703	11	1	869	88960
12	Wayanad	350	172	17	48	2807	202		776	11169	13	6	231	15791
13	Kannur	1288	428	190	283	14582	983		1782	40838	13		931	61318
14	Kasaragode	432	96	24	106	8415	427		1030	18607	11	2	484	29634
	<b>Total</b>	<b>14361</b>	<b>4949</b>	<b>1859</b>	<b>4128</b>	<b>184925</b>	<b>10767</b>	<b>0</b>	<b>23364</b>	<b>606669</b>	<b>306</b>	<b>16</b>	<b>9979</b>	<b>861323</b>

Source: Motor Vehicle Department

## Infrastructure Statistics 2015-16

**Table 1.8**

**Category wise number of newly registered motor vehicles from 2011-12 to 2015-16**

SI No.	Vehicles		2011-12	2012-13	2013-14	2014-15	2015-16
1	Goods vehicles	Four Wheelers & above	23463	27508	21099	14141	14361
		Three wheelers including tempos	10132	9485	7818	5787	4949
2	Buses	Stage Carriages	886	1227	933	935	1859
		Contract carriages/ Omni buses	4231	4573	4582	3653	4128
3	Four Wheelers	Cars	175032	174301	189394	175519	184925
		Taxis	8351	12344	17356	11128	10767
4	Three Wheelers	Auto rickshaws	68772	64998	37018	27951	23364
5	Two Wheelers	Scooter/Motor cycles	529338	654194	637546	634221	606669
6	Tractors / Trailers	Tractors	556	590	471	280	306
		Tillers	1		1		
		Trailers	52	68	28	16	16
7	Others		20063	16481	12472	8588	9979
<b>Total</b>			<b>840877</b>	<b>965769</b>	<b>928718</b>	<b>882219</b>	<b>861323</b>

*Source: Motor Vehicle Department*

**Table 1.9**

**DETAILS OF ROAD ACCIDENTS IN KERALA OVER THE PREVIOUS YEARS 2001 to 2016**

<b>Sl. No.</b>	<b>Year</b>	<b>Total Number of Accidents</b>	<b>Persons Killed</b>	<b>Persons Injured</b>
1	2001	38361	2674	49675
2	2002	38762	2792	49460
3	2003	39496	2905	48640
4	2004	41219	3059	51228
5	2005	42363	3203	51124
6	2006	41647	3589	49881
7	2007	39917	3778	48246
8	2008	37263	3901	43857
9	2009	35433	3831	41401
10	2010	35082	3950	41473
11	2011	35216	4145	41379
12	2012	36174	4286	41915
13	2013	35215	4258	40346
14	2014	36282	4049	41096
15	2015	39014	4196	43735
16	2016	39420	4287	44108
	<b>Total</b>	<b>610864</b>	<b>58903</b>	<b>727564</b>

*Source: Kerala Police, website*

## Infrastructure Statistics 2015-16

**Table 1.10**  
**KERALA STATE ROAD TRANSPORT CORPORATION**  
**District wise operational statistics of KSRTC 2015-16**

Sl. No.	Unit	No. of buses held	No. of schedules	No. of routes	Route Distance (Kms)	Gross Kms. Operated (in Lakhs)	Effective Operated ( in Kms)	Passengers carried (in Lakh)
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1	Thiruvananthapuram	1383	1540	2212	93440	1248.2	1175.31	2982.17
2	Kollam	595	646	969	58905	614.63	568.63	1293.52
3	Pathanamthitta	311	370	477	33042	322.25	311.77	554.23
4	Alapuzha	453	402	491	33434	436.51	147.57	564.81
5	Kottayam	496	430	531	43567	509.95	485.45	693.49
6	Idukki	246	226	344	27901	259.67	236.05	294.41
7	Ernakulam	555	579	962	53006	554.8	522.26	977.95
8	Thrissur	343	354	398	27881	390.11	362.83	554.48
9	Palakkad	201	194	185	13960	267.59	253.29	335.39
10	Malappuram	198	210	184	12611	248.54	321.56	300.35
11	Kozhikode	235	224	221	15024	266.34	242.72	332.61
12	Wayanad	147	145	153	13440	295.76	266.56	449.14
13	Kannur	246	243	322	25272	295.22	269.71	510.22
14	Kasaragode	268	246	109	7132	160.54	146.18	294.99
<b>Total</b>		<b>5677</b>	<b>5809</b>	<b>7558</b>	<b>458615</b>	<b>5870.11</b>	<b>5309.89</b>	<b>10137.76</b>

Source: Economic Review 2016

## Infrastructure Statistics 2015-16

**Table 1.11**

**Major indicators showing operational efficiency of KSRTC/KURTC 2015-16**

SI No.	Items	KSRTC		Increase/Decrease during last year	KURTC		Increase/Decrease during last year
		2014-15	2015-16		2014-15	2015-16	
1	2	3	4	5	6	7	8
1	Fleet strength (as on 31 <sup>st</sup> march)	5629	6304	(+) 53	320	603	(+) 283
2	Gross revenue earnings (in cores)	1923.82	2165.16	(+) 241.39	105.23	132.27	(+) 26.99
3	Gross revenue expenditure (in cores)	2541.1	2778.3	(+) 237.2	109.23	136.54	(+) 27.33
4	Gross operating loss (in cores)	617.33	613.14	(-) 4.19	3.95	4.27	(+) 0.32
5	No. of schedules operated as on March 31 <sup>st</sup>	4602	6399	(-) 80	320	603	(+) 283
6	Average earning per vehicle on road per day (Rs.)	10928	9918	(+) 263	10456	12060	(+) 1604
7	Average earning per km of buses operated (paisa)	3268	2967	(+) 41	4000	4082	(+) 82
8	Average earning per passenger (paisa)	1636	1741	(+) 105	1663	2311	(+) 648
9	Average route length (km)	63.78	60.76	(-) 3.02			
10	Average km run per bus per day	329.16	332.54	(+) 3.38	261.42	295.41	(+) 33.99
11	Average no. of buses held daily (Nos)	5691	5636	(-) 55	320	522	(+) 202
12	Passengers carried (lakhs)	11059.43	10137.76	(-) 921.67	498.73	653.9	(+) 155.17

Source: KSRTC

## Infrastructure Statistics 2015-16

**Table 1.12**

**District wise & Category wise Vehicle density during 2015-16**

SI No.	District	Vehicle Density		
		2 Wheelers	Cars	Total Vehicles
1	Thiruvananthapuram	381.06	127.21	589.58
2	Kollam	203.44	62.40	312.65
3	Pathanamthitta	95.50	39.97	159.98
4	Alappuzha	346.31	81.56	492.72
5	Kottayam	160.03	77.68	289.68
6	Idukki	23.46	10.70	45.78
7	Ernakulam	327.86	109.84	509.07
8	Thrissur	232.03	64.92	349.40
9	Palakkad	104.03	22.18	150.89
10	Malappuram	153.01	50.03	254.27
11	Kozhikode	272.68	66.36	395.47
12	Wayanad	36.22	13.20	65.33
13	Kannur	116.50	45.60	203.24
14	Kasaragode	77.94	34.45	139.64
15	<b>TOTAL</b>	166.57	53.29	261.78

**Table 1.13**

**Details of Buses owned by KSRTC**

Year	Total No. of Buses	No. of New Buses
2010	5402	630
2011	5741	714
2012	5803	209
2013	5812	485
2014	5860	332
2015	5629	173
2016	6304	609

*Source: KSRTC*



## Infrastructure Statistics 2015-16

**Table 1.14**

**District wise & Category wise cumulative number of registered vehicles as on 31.03.2016**

SI No.	District	Goods Vehicles	Buses	Cars & Taxi	2 Wheelers	Others	Total	% of Vehicles	% of cars & taxies	% of 2 wheelers
1	Thiruvananthapuram	48664	23498	287495	834151	96784	1290592	13	13	13
2	Kollam	37789	5867	161009	505136	66513	776314	8	7	8
3	Pathanamthitta	20874	3066	111409	253265	35663	424277	4	5	4
4	Alappuzha	34481	5839	124761	490034	42088	697203	7	6	8
5	Kottayam	38222	7552	179779	353356	60707	639616	6	8	5
6	Idukki	14752	2863	50117	102198	29503	199433	2	2	2
7	Ernakulam	86767	14019	353721	1004232	100531	1559270	15	16	16
8	Thrissur	52790	11952	208193	703506	82929	1059370	10	10	11
9	Palakkad	37164	6146	106020	466043	60618	675991	7	5	7
10	Malappuram	67945	7810	183992	543813	100110	903670	9	8	8
11	Kozhikode	48280	7432	165334	639437	66905	927388	9	8	10
12	Wayanad	11110	1344	31095	77139	18463	139151	1	1	1
13	Kannur	44261	7408	143565	344968	61588	601790	6	7	5
14	Kasaragode	13696	1962	71712	155024	35354	277748	3	3	2
	<b>TOTAL</b>	<b>556795</b>	<b>106758</b>	<b>2178202</b>	<b>6472302</b>	<b>857756</b>	<b>10171813</b>	<b>100</b>	<b>100</b>	<b>100</b>

**Table 1.15**  
**VEHICLE PENETRATION PER 1000 POPULATION**

Sl No.	District	Vehicle density per 1000 population		
		Two Wheelers	Cars	Total Vehicles
1	Thiruvananthapuram	252.66	84.35	390.92
2	Kollam	191.68	58.79	294.57
3	Pathanamthitta	211.51	88.53	354.33
4	Alappuzha	230.30	54.24	327.67
5	Kottayam	178.96	86.86	323.93
6	Idukki	92.16	42.01	179.84
7	Ernakulam	305.95	102.50	475.04
8	Thrissur	225.40	63.07	339.41
9	Palakkad	165.86	35.37	240.57
10	Malappuram	132.22	43.23	219.71
11	Kozhikode	207.19	50.42	300.49
12	Wayanad	94.37	34.39	170.23
13	Kannur	136.73	53.52	238.52
14	Kasaragode	118.58	52.41	212.45
	<b>TOTAL</b>	<b>193.75</b>	<b>61.98</b>	<b>304.49</b>

**Table 1.16**  
**State & National comparison of Vehicle density and Vehicle penetration**  
**from 2011-12 to 2015-16**

Year	Total Vehicles	Kerala		National	
		Vehicle Density (Per sq.km of road)	Vehicle per 1000 Population	Vehicle Density (Per sq.km of road)	Vehicle per 1000 Population
2011-12	6893314	177.40	206.35	49	131.72
2012-13	7857822	202.22	235.22	55	150.67
2013-14	8775041	225.83	262.68	58	157.49
2014-15	9648320	248.30	288.82	64	173.45
2015-16	10171813	261.78	304.49	70	189.97

## Infrastructure Statistics 2015-16

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**Table 1.17**  
**Navigable water ways 2015-16**  
**Canals/Lake**

SI No.	Name	Total Length (Km)	Navigable length (Km)
1	2	3	4
1	Irrigation Division, Kollam	68.38	68.34
2	Inland Navigation Division, Kollam	146.52	128.15
3	Irrigation Division, Kottayam	103.50	103.50
4	Irrigation Division, Ernakulam	294.00	294.00
5	K S I N C, Kochi	42.50	42.50
6	Irrigation Division, Thrissur	68.00	31.00
7	Irrigation Division, Malappuram	31.30	14.34
8	Irrigation Division, Kozhikode	21.70	14.93
9	Inland Navigation Division, Kannur	21.46	3.85
<b>TOTAL</b>		<b>797.36</b>	<b>700.61</b>

Source : Irrigation Department

**Table 1.18**  
**Inland water vessels 2015-16**

SI No.	Name of Division	State		Private	
		Type of Vessels	Number of Vessels	Type of Vessels	Number of Vessels
1	2	3	4	5	6
1	Kottayam	Boat	123	Jangar	4
2	K S I N C ,Kochi			Cargo	7
3	Thrissur	self propelled	463		
<b>Total</b>			<b>586</b>		<b>11</b>

Source: Irrigation Department

## Infrastructure Statistics 2015-16

**Table 1.19**  
**No. and Tonnage of Steamers and sailing vessels in Minor ports during 2015-16**

SI No.	Name of Port	Coastal / Foreign	Steamers				Sailing Vessels				Total No. of Vessels		Total Tonnage	
			Number		Tonnage		No.		Tonnage		2009-15	2015-16	2009-15	2015-16
			2009-15	2015-16	2009-15	2015-16	2009-15	2015-16	2009-15	2015-16				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Azhikkal	Coastal	9	3	6804	393	21	1	4411	179	30	4	11215	572
		Foreign	0	0	0	0	8	0	6581	0	0	0	6581	0
2	Kozhikode	Coastal	1291	155	999644	108943	2356	289	989784	68115	2356	289	199420	177058
		Foreign	0	0	0	0	0	0	0	0		0	0	0
3	Kollam	Coastal	85	18	93992.98	36172	0	0	0	0	85	18	93992.98	36172
		Foreign	5	3	22066	16035	0	0	5680	0	5	3	22066	16035
4	Vizhinjam	Coastal	22	3	21363		28		13498		51	3	27043	
		Foreign	210	39	155882	7580.98	28			0	236	39	176960.983	7580.983
<b>Total</b>			<b>1622</b>	<b>221</b>	<b>1299752</b>	<b>169124</b>	<b>2441</b>	<b>290</b>	<b>1019954</b>	<b>68294</b>	<b>2763</b>	<b>356</b>	<b>537278.963</b>	<b>237417.98</b>

**Table 1.20**  
**INLAND WATER TRANSPORT**

Length of Water ways (Kms)				
SI No.	Name of Division	Year	Total	Navigable
1	2	3	4	5
1	I N D , Kollam	2015-16	69.460	50.090
2	Kottayam		538.500	490.000
3	Ernakulam		793.000	793.000
4	Thrissur		68.000	31.000
5	Malappuram		11.378	11.378

Source: Irrigation Department

**Table 1.21**  
**Navigable water ways 2015-16**

Other Waterways			
SI No.	Name of Division	Total Length(KM)	Navigable Length(KM)
1	2	3	4
1	Inland Navigation Division, Kollam	19.10	4.00
2	Irrigation Division, Kottayam	88.00	77.00
3	Irrigation Division, Ernakulam	215.00	215.00
4	Irrigation Division, Thrissur	18.18	7.10
5	Inland Navigation Division, Kannur	20.63	20.63
<b>TOTAL</b>		<b>360.91</b>	<b>323.73</b>

Source: Irrigation Department

**Table 1.22**  
**Navigable water ways**

<b>Rivers</b>			
<b>Sl No.</b>	<b>Name of Division</b>	<b>Total Length(KM)</b>	<b>Navigable Length(KM)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Irrigation Division, Kollam	175.00	10.00
2	Irrigation Division, Kottayam	327.00	307.00
3	Irrigation Division, Ernakulam	246.50	246.50
4	Irrigation Division, Thrissur	111.00	5.00
5	Irrigation Division, Malappuram	572.48	119.60
6	Irrigation Division, Kozhikode	45.21	39.81
7	Inland Navigation Division, Kannur	898.00	215.00
	<b>TOTAL</b>	<b>2375.19</b>	<b>942.91</b>

*Source: Irrigation Department*

**Table 1.23**  
**Operational statistics of Inland water transport agencies**

SI No.	Particulars	State Water Transport Department		Kerala Shipping and Inland Navigation Corporation Ltd.	
		2014-15	2015-16	2014-15	2015-16
1	2	3	4	5	6
1	No. of Jhankars	Nil	Nil	2	2
2	No. of Jhankars in operation	Nil	Nil	1	1
3	No. of Boats	95	98	Nil	Nil
4	No. of Boats in operation	51	51	Nil	Nil
5	No. of Trips on Schedule	275940	297812	Nil	Nil
6	No. of Passengers Carried (In lakhs)-	130.54	138.48	Nil	Nil
7	No. of Barges	Nil	Nil	8	8
8	No. of Tourist Boats	4	3	2	2
9	Total Distance Cargo(in KM approximate)	NA	NA	29114	32754
10	Volume of Cargo carried (Tonnes)	Nil	Nil	179585	278926
11	Total Revenue Receipts on Inland Transports(in lakhs(Collection from Tourists Boats+ Barges+Jhankars)	36.66	69.87	536.32	811.14
12	Total Revenue Receipts on Inland Transport(in lakh)	761.1	765.81	810.45	1227.84
13	Total Revenue Receipts on other business (in lakh)	42.3	29	396.93	416.71
14	Total Revenue Expenditure on other business(in lakh)	Nil	Nil	563.85	228.65
15	No. of employees (TOTAL)	890	873	132	121

Source: Economic Review 2016

**Table 1.24**  
**Railway route in Kerala (in Km)**

Sl No.	Division	Broad Gauge	Meter Gauge	Total
1	2	3	4	5
1	Thiruvananthapuram	624.31	NIL	624.31
2	Palakkad	468.87		468.87
<b>Total</b>		<b>1093.18</b>		<b>1093.18</b>

Source: Railway TVPM, PKD Dvn

**Table 1.25**  
**Railway route (in Km)**

Sl No.	Division	Electrified	Non Electrified	Total
1	2	3	4	5
1	Thiruvananthapuram	615.58	8.73	624.31
2	Palakkad	371.24	97.63	468.87
<b>Total</b>		<b>986.82</b>	<b>106.36</b>	<b>1093.18</b>

Source: Railway TVPM, PKD dvn

**Table 1.26**

Quality			
Sl No.	Division	Average No. of Passenger Trains Running per day (in No.)	Average No. of Passenger carried per day (in lakhs)
1	2	4	5
1	Thiruvananthapuram	165	3.13
2	Palakkad	159	2.13
<b>Total</b>		<b>324</b>	

Source: Railway TVPM, PKD dvn



**Table 1.27**

<b>Division wise Category wise Staff 2015-16</b>				
<b>Sl No.</b>	<b>Category</b>	<b>TVM Dvn</b>	<b>PKD Dvn</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Administration	220	262	
2	Accounts	82	68	
3	Engineering	2668	2140	
4	Signal and telecom communication	403	293	
5	Transportation	1425	1176	
6	Commercial	1230	849	
7	Mechanical	2060	1285	Mechanical
8	Stores		20	
9	Electrical		609	
10	Medical	169	238	
11	Railway Protection Force	426	319	
12	Railway Board and other Railway offices	17		Railway claims Tribunal, Ernakulam

Source: Railway TVPM, PKD dvn

**Table 1.28**

<b>Number of Gauge wise Stations 2015-16</b>			
<b>Sl. No.</b>	<b>Station</b>	<b>TVM Dvn</b>	<b>PKD Dvn</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Broad Gauge	104	94
2	Meter Gauge	NIL	NIL
<b>Total</b>		<b>104</b>	<b>94</b>

Source: Railway TVPM, PKD dvn

**Table 1.29**

<b>Details of Electrification</b>			
<b>Sl No.</b>	<b>Electrification</b>	<b>TVM Dvn</b>	<b>PKD Dvn</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Signaling System and telecom Installation (number)	69	
2	Route Kilometer (% Electrified)	98.60	79.18
3	Track Kilometer (% Electrified)	100%	

Source: Railway TVPM, PKD dvn

**Table 1.30**

**List of Airports**

<b>Sl No.</b>	<b>City served</b>	<b>ICAO</b>	<b>IATA</b>	<b>Airport name</b>	<b>Category</b>	<b>Ownership</b>	<b>Status</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
1	Thiruvananthapuram	VOTV	TRV	Trivandrum International Airport	International	AAI	Operational
2	Kochi	VOCI	COK	Cochin International Airport	International	PPP	Operational
		VOC		INS Garuda	Defense	Indian Navy	Operational
3	Kozhikode	VOC	CCJ	Calicut International Airport	International	AAI	Operational

**ICAO**- International Civil Aviation Organization

**IATA**- International Air Transport Association

**Table 1.31**

**Details of flights operated by various agencies from International Airports 2015-16**

SI No.	Airlines	Thiruvananthapuram			
		2015-16			
		No of flights		No. of Passengers	
		Domestic	International	Domestic	International
1	2	3	4	5	6
1	Air India (NB)	2930	1322	118269	111937
2	Jet Airways	1451	2042	206735	235675
3	Air Pegasus	1221	0	86118	0
4	Indigo	4032	730	785117	109037
5	Air India Express	0	2539	0	353676
6	Air India	0	206	0	39777
7	SriLankan	0	748	0	99604
8	Kuwait Airways	0	456	0	67073
9	Oman Airways	0	732	0	171512
10	Qatar Airways	0	732	0	122396
11	Silk Air	0	462	0	45618
12	Emirates	0	1432	0	336121
13	Air Arabia	0	1464	0	241498
14	Etihad Airways	0	1258	0	106853
15	Maldivian	0	974	0	76384
16	Gulf Air	0	732	0	103099
17	Fly Dubai	0	314	0	47245
18	Malindo Air	0	228	0	23367
19	Emirates Cargo	0	2	0	0
20	Non scheduled	313	56	864	129
<b>Total</b>		<b>9947</b>	<b>16429</b>	<b>1197103</b>	<b>2291001</b>

*Source: Thiruvananthapuram International Airport*

Table 1.32

## Details of flights operated by various agencies from International Airports 2015-16

SI No.	Airlines	Cochin 2015-16			
		No. of flights		No. of Passengers	
		Domestic	International	Domestic	International
1	2	3	4	5	6
1	Indigo	8128	734	1181567	117221
2	Jet Airways	5408	4340	482032	609044
3	Air India	2368	3302	234898	458269
4	Air Asia	0	1184	0	163315
5	Emirates	0	1997	0	542895
6	Ethihad Airways	0	2110	0	310669
7	Flydubai	0	422	0	64151
8	Air Arabia	0	1468	0	239960
9	Gulf Air	0	734	0	108504
10	Air India Express	0	3805	0	493713
11	Kuwait Airways	0	1148	0	154873
12	Malaysia Airlines	0	124	0	17118
13	Silk Air	0	802	0	106866
14	Malindo Air	0	804	0	99407
15	Qatar Airways	0	1152	0	305978
16	Spice Jet	5870	1461	756226	154236
17	Saudi Arabian Airlines	0	1360	0	337099
18	Tiger Airways	0	412	0	54735
19	SriLankan Airlines	0	1463	0	173004
20	Oman Air	0	976	0	129651
21	Allianz Air	1430	0	38113	0
22	Go Air	1303	0	190170	0
23	Air Asia India	1446	0	205582	0
<b>Total</b>		<b>25953</b>	<b>29798</b>	<b>3088588</b>	<b>4640708</b>

Source: Cochin International Airport

**Table 1.33****Details of flights operated by various agencies from International Airports 2015-16**

SI No	Airlines	Kozhikode 2015-16			
		No of flights		No. of Passengers	
		Domestic	International	Domestic	International
1	2	3	4	5	6
1	Air India	0	67	0	23128
2	Air India Express	873	4761	21096	706696
3	Indian Airlines	617	1461	53764	227354
4	Saudia Airways	0	64	0	21178
5	Jet Lite	74	0	9419	0
6	Ethihad Airways	0	2020	0	132869
7	Emirates	0	94	0	28578
8	Spice Jet	1274	276	23099	46100
9	Jet Airways	661	0	1338	86491
10	Oman Air	0	734	0	101065
11	Qatar Airways	0	734	0	120764
12	Air Arabia	0	732	0	1210512
13	Indigo	731	731	112286	110762
<b>Total</b>		<b>4230</b>	<b>11674</b>	<b>221002</b>	<b>2815497</b>

*Source: Calicut International Airport*

**Table 1.34**

**Passenger traffic, Aircraft Movement & Cargo Movement in Thiruvananthapuram, Cochin and Kozhikode International Airports**

Sl No.	Year	Airport	Passenger Movement		Aircraft Movement		Cargo Movement ( in MT )	
			International	Domestic	International	Domestic	International	Domestic
1	2	3	4	5	6	7	8	9
1	2015-16	Thiruvananthapuram	2291001	1197103	16429	9947	28.85	0.942
2		Cochin	4640708	3088588	29798	25953	67.73	11.359
3		Kozhikode	2815497	221002	11674	4230	13.22	0.799
<b>Total</b>			<b>9747206</b>	<b>4506693</b>	<b>57901</b>	<b>40130</b>	<b>109.8</b>	<b>13.1</b>

*Source: Thiruvananthapuram, Cochin, Kozhikode International Airport*

**Appendix -Chapter 2**  
**ENERGY**

**Table 2.1**  
**Energy Source 2011-12 to 2015-16**

Sl.No.	Source of Energy	Installed Capacity (MW)				
		2011-12	2012-13	2013-14	2014-15	2015-16
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1	Hydel: KSEBL	2008.80	2007.40	2008.60	2024.15	2046.15
2	Thermal : KSEBL	234.60	234.60	234.60	159.96	159.96
3	Wind : KSEBL	2.03	2.03	2.03	2.03	2.025
4	Solar : KSEBL	-	-	-	-	1.156
5	Solar other than KSEBL (Solar connected to Grid other than KSEBL)	-	-	-	-	13.00
6	NTPC	359.60	359.60	359.60	359.60	359.60
7	Thermal IPP	198.93	198.93	198.93	198.93	198.90
8	Hydel Captive	33.00	33.00	33.00	33.00	33.00
9	Hydel IPP	10.00	10.00	22.11	25.16	25.16
10	Wind IPP	32.85	32.85	32.85	32.85	41.25
<b>Total</b>		<b>2879.81</b>	<b>2878.41</b>	<b>2891.72</b>	<b>2835.68</b>	<b>2880.20</b>

Source : Economic Review 2016

**Table 2.2**  
**TOTAL INSTALLED CAPACITY 2011-12 to 2015-16**

Sl.No.	Sector	Installed Capacity (MW)				
		2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7
1	State Sector	2245.43	2244.03	2245.23	2186.14	2222.29
2	Central Sector	359.60	359.60	359.60	359.60	359.60
3	Private Sector	274.78	274.78	286.89	289.94	298.31
<b>Total</b>		<b>2879.81</b>	<b>2878.41</b>	<b>2891.72</b>	<b>2835.68</b>	<b>2880.20</b>

Source: Economic Review 2016

<b>Table 2.3</b>						
<b>DETAILS OF POWER AVAILABILITY 2011-12 to 2015-16</b>						
Sl.No	Particulars	Internal Generation(MU)				
		2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7
1	Hydel Generation	8058.01	4848.8	7995.43	7134.00	6639
2	KSEBL-Thermal Generation	290.70	532.7	220.87	207.70	150.63
3	Wind	2.03	1.763	1.8	1.06	1.38
4	Solar	0	0	0	0	0.81
5	Solar other than KSEBL	0	0	0	0	5.92
6	Total Internal Generation	8350.75	5389.6	8218.10	7342.88	6791.9
7	Less: Auxiliary Consumption	60.84	55.35	55.07	55.97	52.6
8	Net Generation	8289.91	5334.3	8163.03	7286.91	6739.3
9	Power Purchase ( CGSs, IPPs, Traders )	11263.21	14909	14070.4	14996.4	16448
10	External PGCIL line losses	413.21	364.96	293.69	357.98	550.6
11	Energy Available for sale within the State	19139.90	19878	21939.8	21925.8	22944
12	Energy Requirement	18938.81	19877	20525.2	21914.2	22584
13	Surplus /Deficit	201.09	0.97	1414.6	11.64	360.92

Source : Economic Review 2016



<b>Table 2.4</b>					
<b>TRANSMISSION INFRASTRUCTURE 2015 - 2016</b>					
Sl.No.	Item	Target	Achievement	Unit	Percentage of Achievement
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1	220KV Substations	1	0	Nos.	0%
2	110KV Substations	12	8	Nos.	67%
3	66KV Substations	4	3	Nos.	75%
4	33KV substations	13	3	Nos.	23.08%
<i>Source : Economic Review 2016</i>					

**Table 2.5**  
**TRANSMISSION INFRASTRUCTURE OWNED BY**  
**KSEB - 2015-16**

Sl.No.	Capacity	Substations No.	Lines in Km
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	400KV	1	571.96
2	220KV	20	2801.89
3	110KV	142	4345.52
4	66KV	81	2220.56
5	33Kv	134	1826.66
<b>Total</b>		<b>378</b>	<b>11064.00</b>

*Source : Economic Review 2016*

**TABLE 2.6**  
**POWER CONSUMPTION (IN MU) AND REVENUE COLLECTED IN KERALA 2015-16(Rs. in Lakhs)**

Sl. No.	Category	No. of Consumers	% of total Consumers	Consumption (MU)	% of total Consumption	Revenue (Rs.)	% Total Revenue
1	2	3	4	5	6	7	8
1.	Domestic						
a.	Paying group	9124747	78.20	9943.5	51.45	374410.00	35.84
b.	Non Paying Group						
2.	Commercial including general	1923402	16.48	2735.36	14.15	244850.00	23.44
3.	Industrial LT	136693	1.17	1103.23	5.71	74663.00	7.15
4.	HT and EHT	5005	0.04	4106.00	21.25	281690.00	26.97
5.	Public Lighting	4281	0.04	366.62	1.9	15636.00	1.50
6.	Railway Traction	9	0	212.83	1.1	12086.00	1.16
7.	Agricultural pumping	473882	4.06	279.48	1.45	6562.00	0.63
8.	Licensees (Bulk supply )	12	0	578.08	2.99	34704.00	3.32
9.	Others	0	0	0	0	0	0
10.	Outside supply	0	0	0	0	0	0
	<b>TOTAL</b>	<b>11668031</b>	<b>99.99</b>	<b>19325.10</b>	<b>100.00</b>	<b>1044601.00</b>	<b>100.00</b>

**Source : Economic Review 2016**

**Table 2.7**

**TARGETS AND ACHIEVEMENTS OF DISTRIBUTION INFRASTRUCTURE 2015-16**

Sl. No	Item	Target	Unit	Achievement	Unit	% of Achievement
1	2	3	4	5	6	7
1	11KV line	2377	km	2022	km	85.07
2	Distribution transformer	3574	Numbers	2389	Numbers	66.84
3	LT lines	4826	km	3312	km	68.63
4	Service connections	459020	Numbers	381247	Numbers	83.06

Source : Economic Review 2016

**Table 2.8**

**TRANSMISSION AND DISTRIBUTION LINE 2011-12 to 2015-16**

Sl.No	Year	Particulars in Kilometers						
		220KV	110KV	66KV	33KV	22KV	11KV	LT
1	2011-12	2734.70	4151.00	2161.91	1534.80	160.59	51328	260554
2	2012-13	2761.57	4178.55	2166.51	1599.70	160.59	52907	263620
3	2013-14	2765.00	4260.27	2202.81	1719.28	160.59	53579	264117
4	2014-15	2801.20	4299.67	2202.81	1761.57	160.59	55386	268753
5	2015-16	2801.89	4345.52	2220.56	1826.66	160.59	57489	285970

Source: Economic Review 2016

<b>Table 2.9</b>				
<b>PUMPSETS, STREET LIGHTS AND DISTRIBUTION TRANSFORMERS 2011-12 to 2015-16</b>				
<b>Sl.No.</b>	<b>Year</b>	<b>No of Irrigation pump sets energised</b>	<b>No. of Street lights installed</b>	<b>No. of Distribution Transformers</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	2011-12	455078	1218610	62329
2	2012-13	466289	1257285	64972
3	2013-14	478449	1297480	67546
4	2014-15	490056	1349101	71198
5	2015-16	500082	1407024	73460

Source : Power System Statistics 2015-16, KSEB

<b>Table 2.10</b>			
<b>CONSUMERS AND CONNECTED LOADS</b>			
<b>2011-12 to 2015-16</b>			
<b>Sl.No.</b>	<b>Year</b>	<b>No. of consumers at the end of the year</b>	<b>Connected load at the end of the year (MW)</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	2011-12	10457637	17518.42
2	2012-13	10806890	18523.51
3	2013-14	11192890	19684.15
4	2014-15	11430895	20391.53
5	2015-16	11668031	20980.82

Source : Power System Statistics 2015-16, KSEB

**TABLE 2.11**  
**GENERATING CAPACITY, MAXIMUM DEMAND AND LOAD FACTOR**  
**2011-12 to 2015-16**

Sl. No.	Year	Installed Capacity (MV)	Energy Input to System excl. aux. cons. & ext. losses ( Gen+ Purchase - Export ) (MU)	Maximum Demand	Load Factor
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1	2011-12	2878.4	18938.81	3348	64.57
2	2012-13	2881.2	19877.16	3268	69.43
3	2013-14	2891.7	20525.16	3588	65.36
4	2014-15	2835.6	21572.95	3602	68.37
5	2015-16	2280.2	22727.34	3860	67.21

Source : Power System Statistics 2015-16, KSEB

**Table 2.12**  
**KERALA STATE ELECTRICITY BOARD**

No.	ACCESS	2015-16
(1)	(2)	(3)
1)	Installed Generating Capacity (GWh)	8677.1
i	Utilities	
a	Hydro	6780.27
b	Thermal (including steam, gas, diesel)	1502
c	Nuclear	0
d	RES(Total)	394.83
	Small Hydro	389.01
	Wind	4
	Solar	1.82
ii	Non-Utilities	
a	Hydro(SHP)	212.57
b	Steam/Diesel/Naphtha/LSHS	3534.7
d	Gas	0
e	Wind	86.12
f	Solar	20.49
2)	Non Conventional Energy Sources(MW)	
i	Total	
ii	Wind power	43.275
iii	Small Hydro Power	170.06
vi	Solar Power	14.156
3)	Power Plants (Number)	

<b>Table 2.12</b>		
<b>KERALA STATE ELECTRICITY BOARD</b>		
<b>No.</b>	<b>ACCESS</b>	<b>2015-16</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
i	Hydro	15
ii	Small Hydro	20
iii	Thermal	7
iv	Nuclear	0
4)	<b>Power Plant Capacity (Mega Watt)</b>	
i	Hydro	2046.15
ii	Thermal	720.47
iii	Nuclear	0
5)	<b>Sales of electricity to ultimate consumers by Utilities &amp; Non Utilities (Giga Watt hour)</b>	
	<b>Electricity sales</b>	
i	Domestic	9953.04
ii	Commercial	1923.14
iii	Industrial	2955.36
iv	Traction	212.825
v	Agriculture	286.3
vi	Others	3994.41
6)	<b>Sales of electricity to ultimate consumers by utilities only (Giga Watt hour)</b>	
	<b>Total</b>	
i	Domestic	9953.04
ii	Sectors Commercial	1923.14
iii	Industry	2955.36
iv	Traction and Railways	212.825
v	Agriculture	286.3
vi	Public lighting	366.62
vii	Others	3049.71
7)	Per capita consumption (Kilo Watt hour)	569
8)	Length of transmission lines (Circuit Kilometer)	11194.6
9)	<b>Transformers (Number)</b>	
	<b>Total</b>	
i	Step up	112
ii	Step down	1012
10)	Percentage of villages electrified	100
	<b>QUALITY</b>	
1)	<b>Percentage share in total electricity generation</b>	
i	Hydro	95.43
ii	Thermal(including steam, gas and diesel)	2.22
iii	Nuclear	0
iv	RES	2.35
	Peak Demand (Mega Watt)	3860
	Peak Met (Mega Watt)	3985

<b>Table 2.12</b>		
<b>KERALA STATE ELECTRICITY BOARD</b>		
<b>No.</b>	<b>ACCESS</b>	<b>2015-16</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
	Surplus/Deficit (Mega Watt)	125
	<b>UTILISATION</b>	
1)	<b>Actual generation of electricity (Giga Watt hours)</b>	
i	<b>Utilities</b>	
a	Hydro	6481.41
b	Thermal (diesel / naphtha / LSHS )	150.63
c	Nuclear	0
d	RES	
	Small Hydro	157.61
	Wind	1.38
	Solar	0.81
ii	<b>Non Utilities</b>	
a	Hydro	80.16
b	Steam	0
c	Diesel / Naphtha	140.72
d	Gas	0
e	Wind	57.4
f	Solar	5.86
2)	<b>Plant Load Factor (Percentage)</b>	
i	<b>Thermal</b>	
a	Central sector	4.12
b	State sector	10.74
c	Private sector	0.69
ii	<b>Nuclear</b>	
a	Central sector	

*Appendix - Chapter 3*

**COMMUNICATION**

<b>Table 3.1</b>						
<b>DIVISION-WISE AND CATEGORY WISE POST OFFICES 2015-16</b>						
<b>Sl.No.</b>	<b>Name of Division</b>	<b>Head Offices</b>	<b>Sub Offices</b>			
			<b>SO</b>	<b>EDSO</b>	<b>EDBO</b>	<b>Total</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
1	TVPM(N)	2	68	0	148	218
2	TVPM(S)	2	75	0	119	196
3	Kollam	3	91	0	151	245
4	Pathanamthitta	3	77	0	233	313
5	Thiruvalla	2	64	0	93	159
6	Alappuzha	2	48	0	74	124
7	Mavelikkara	2	52	0	73	127
8	Changanacherry	2	46	0	117	165
9	Idukki	2	52	0	239	293
10	Kottayam	3	79	0	176	258
11	Ernakulam	2	71	0	62	135
12	Aluva	3	71	0	181	255
13	Thrissur	3	105	0	185	293
14	Irinjalakuda	2	63	0	127	192
15	Palakkad	3	83	0	150	236
16	Ottappalam	1	55	0	163	219
17	Manjeri	2	46	0	211	259
18	Tirur	2	52	0	119	173
19	Kozhikkode	3	71	0	230	304
20	Vadakara	2	40	0	183	225
21	Thalassery	1	44	0	163	208
22	Kannur	2	66	0	163	231
23	Kasargod	2	29	0	196	227
Total		51	1448	0	3556	5055

Source : Economic Review 2016



Table 3.2

DISTRICT WISE DETAILS OF TELEPHONE NET WORK DURING 2015-16

Sl.No.	Name of District	Population Census 2011	No. of Exchanges	Equipped Capacity	Working connections	Area(Sq.Kms.)	No.of telephone(Sq.Kms.)	No.of telephone Per 1000 population
1	2	3	4	5	6	7	8	9
1	Allappuzha	2127789	82	246031	156724	1414	110.83	73.65
2	Kozhikkode	3086293	90	282749	164492	2206	74.57	53.29
3	Kannur	2523003	131	299227	202262	2961	68.31	80.17
4	Ernakulam	3282388	117	421654	277802	3063	90.7	84.63
5	Idukki	1108974	79	110823	54159	5105.22	10.61	48.84
6	Kasargod	1307375	72	123163	75980	1989	38.2	58.12
7	Kottayam	1974551	115	285885	151788	2206	68.81	76.87
8	Malappuram	4112920	93	294419	171774	3550	48.39	41.76
9	Palakkad	2809934	123	163322	111461	4480	24.88	39.67
10	Pathanamthitta	1197412	74	206584	111520	2642	42.21	93.13
11	Kollam	2635375	90	314104	171038	2491	68.66	64.9
12	Thrissur	3121200	97	395850	272687	3032	89.94	87.37
13	Thiruvananthapuram	3301427	114	377665	209459	2192	95.56	63.44
14	Wayanad	817420	34	51640	29781	2132	13.97	36.43
Total		33406061	1311	3573116	2160927	39463.2	54.76	64.69

Source: Economic Review 2016,

Table 3.3			
DETAILS OF AKSHAYA CENTRES IN KERALA			
Sl. No	Name of District	No. of Akshaya Centres	No. of persons employed
1	2	3	4
1	Thiruvananthapuram	262	786
2	Kollam	156	400
3	Pathanamthitta	113	263
4	Alappuzha	213	426
5	Kottayam	185	410
6	Idukki	121	204
7	Ernakulam	247	852
8	Thrissur	220	680
9	Palakkad	238	432
10	Kozhikkode	174	609
11	Malappuram	291	960
12	Wayanad	65	203
13	Kannur	219	876
14	Kasargod	124	375
Total		2628	7476
Source: Economic Review 2016			

**Annexure - Chapter 4**

**IRRIGATION**

Table 4.1

NET AREA IRRIGATED - DISTRICT WISE & SOURCE WISE 2015-16 (area in Ha)

Sl No	District	Small stream ( Canal / Thode )		Pond		Well		Bore well/ Tube well	Lift & Minor Irrigation	From River & Lake				Other Sources	Grand Total
		Govt.	Private	Govt.	Private	Govt.	Private			Pump	Wheel	Other Methods	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Thiruvananthapuram	3833	0	588	21	1	3254	111	0	0	0	0	0	439	8247
2	Kollam	1368	27	15	49	31	2853	33	0	0	0	4	4	1674	6054
3	Pathanamthitta	2751	0	34	0	0	2343	4	113	0	0	7	7	1	5253
4	Alappuzha	6237	1	0	462	0	819	7728	0	5567	0	19255	24822	335	40404
5	Kottayam	15	13	0	276	0	1952	18	107	0	0	12204	12204	10	14595
6	Idukki	1214	11	54	16605	0	8341	4150	0	68	0	1982	2050	9096	41521
7	Ernakulam	7340	6	309	1693	5	6965	465	3130	568	0	1027	1595	357	21865
8	Thrissur	19023	5	224	3567	70	37937	1716	991	561	0	4709	5270	2530	71333
9	Palakkad	42443	25	140	5729	7	13063	8741	514	7801	0	548	8349	8242	87253
10	Malappuram	2443	378	157	4332	69	16019	1362	1290	1072	0	1726	2798	1356	30204
11	Kozhikode	989	8	0	513	1	2363	56	0	216	0	3	219	522	4671
12	Wayanad	0	0	18	52	0	73	0	103	136	0	0	136	12123	12505
13	Kannur	631	281	22	1415	17	9223	438	34	221	0	652	873	2281	15215
14	Kasargode	530	19	43	12141	15	28108	10269	15	3021	0	102	3123	450	54713
Total		88817	774	1604	46855	216	133313	35091	6297	19231	0	42219	61450	39416	413833

Source : EARAS, DES

<b>Table 4.2</b>			
<b>NET AREA IRRIGATED (SOURCE WISE) (in Ha.)</b>			
<b>Sl.No.</b>	<b>Source</b>	<b>2014-15</b>	<b>2015-16</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Government Canal	85654	88817
2	Private Canal	1249	774
3	Tanks / Ponds	47095	48459
4	Wells	133421	133529
5	Other Sources	146863	142254
6	Total	414282	413833
7	Irrigated Area	469647	483648
8	Net Area Irrigated to Net area sown (%)	20.27	20.46
9	Gross Irrigated area to gross cropped area (%)	17.80	18.4
10	Irrigated Area under paddy to total irrigated area	32.08	31.12
Source : EARAS, DES			

<b>Table 4.3</b>				
<b>LIVE STORAGE POSITION IN THE RESERVOIRS (Mm3)</b>				
<b>Sl. No.</b>	<b>Item</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Storage at the beginning of the Monsoon	415.19	527.83	488.35
2	Storage at the end of the monsoon	1316.46	901.15	690
3	Increase due to Monsoon	901.26	373.32	201.65
Source : Economic Review 2016				

<b>Table 4.4</b>		
<b>AVERAGE FOR 10 YEARS STORAGE POSITION IN RESERVOIRS 2015-16</b>		
<b>Sl.No</b>	<b>Item</b>	<b>Storage (Mm<sup>3</sup>)</b>
1	Storage at the beginning of the Monsoon	442.05
2	Storage at the end of the monsoon	1094.95
3	Increase due to Monsoon	652.9
Source : Economic Review 2016		

**Appendix - Chapter 5**  
**DRINKING WATER SUPPLY & SANITATION**

**Table 5.1**  
**DISTRICT WISE POPULATION COVERED BY WATER SUPPLY SCHEMES OF KWA 2015-16**

Sl.No	District	Rural		Urban		Total	
		Rural population covered	% of total population	Urban population covered	% of Urban population	Total population covered	% of total population
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>8</b>
1	Thiruvananthapuram	1017000	66.48	1360000	76.77	2377000	72.00
2	Kollam	1089231	75.21	459269	38.69	1548500	58.76
3	Pathanamthitta	510597	47.91	74427	56.55	585024	48.86
4	Alappuzha	590530	60.28	780440	67.97	1370970	64.43
5	Kottayam	1079301	76.59	278740	49.3	1358041	68.78
6	Idukki	304653	28.82	33010	63.43	337663	30.45
7	Ernakulam	743512	70.94	1931808	86.46	2675320	81.51
8	Thrissur	655538	63.97	1508400	71.95	2163938	69.33
9	Palakkad	953800	44.71	543800	80.35	1497600	53.29
10	Malappuram	718155	31.28	312945	17.22	1031100	25.07
11	Kozhikkode	396786	39.14	615487	29.7	1012273	32.80
12	Wayanad	440816	56.09	16585	52.52	457401	55.96
13	Kannur	217000	24.6	630400	38.42	847400	33.59
14	Kasargode	200822	25.16	51000	10.02	251822	19.26
<b>Total</b>		<b>8917741</b>	<b>51.04</b>	<b>8596311</b>	<b>53.95</b>	<b>17514052</b>	<b>52.43</b>
<i>Source : Economic Review 2016</i>							

<b>Table 5.2</b>									
<b>DISTRICT WISE NUMBER OF WATER SUPPLY CONNECTIONS AND STREET TAPS 2015-16</b>									
Sl. No	Name of District	Water supply Connections				Street Taps			
		Domestic	Non domestic	Industrial	Total	Panchayath	Corporation	Municipalities	Total
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
1	Thiruvananthapuram	230654	25799	143	256596	13987	4027	1809	19823
2	Kollam	150572	6699	212	157483	15132	3248	1522	19902
3	Pathanamthitta	65915	3943	38	69896	11189		1543	12732
4	Alappuzha	23970	2192	6	26168	3480		380	3860
5	Kottayam	165342	4471	273	170086	23523		4593	28116
6	Idukki	90967	5244	44	96255	7880		2111	9991
7	Ernakulam	440106	33661	405	474172	28560	5917	3438	37915
8	Thrissur	164424	5606	55	170085	21774	2301	3081	27156
9	Palakkad	123762	8033	91	131886	12569		3180	15749
10	Malappuram	76153	4191	19	80363	7117		2350	9467
11	Kozhikkode	72467	6703	62	79232	4547	2638	817	8002
12	Wayanad	15333	1512	6	16851	3686		222	3908
13	Kannur	57617	5221	91	62929	5823		1638	7461
14	Kasargode	19412	1104	10	20526	3301		651	3952
<b>Total</b>		<b>1696694</b>	<b>114379</b>	<b>1455</b>	<b>1812528</b>	<b>162568</b>	<b>18131</b>	<b>27335</b>	<b>208034</b>

*Source : Economic Review 2016*

**Table 5.3**  
**DISTRICT WISE AND CATEGORY WISE NUMBER OF WATER SUPPLY SCHEMES 2015-16**

Sl.No.	Name of District	No. of urban water supply schemes	Rural Water Supply schemes		Total
			Multi Pachayat	Single Panchayat	
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1	Thiruvananthapuram	6	12	86	104
2	Kollam	3	6	83	92
3	Pathanamthitta	2	8	61	71
4	Alappuzha	4	1	49	54
5	Kottayam	5	21	43	69
6	Idukki	1	12	64	77
7	Ernakulam	8	17	73	98
8	Thrissur	4	8	95	107
9	Palakkad	4	8	49	61
10	Malappuram	6	10	38	54
11	Kozhikkode	2	13	70	85
12	Wayanad	0	5	23	28
13	Kannur	3	6	91	100
14	Kasargode	1	5	72	78
	<b>Total</b>	<b>49</b>	<b>132</b>	<b>897</b>	<b>1078</b>

Source : Economic Review 2016

**Table 5.4**  
**DISTRICT WISE AND CATEGORY WISE NUMBER OF ONGOING WATER SUPPLY SCHEMES DURING 2015-16**

Sl.No.	District	Number of ongoing water supply schemes																
		Rural water supply scheme										Urban water supply schemes						
		NRDWP	Technology Mission	TRP schemes funded by GOI	State Plan	SAARK (2010-11)	NABARD	Externally Assisted (JICA)	Ear marked quality	KWA (for schemes of local bodies/other agencies)	SAARK2009-10New capital schemes	Completion of ongoing UWSS special package	Externally assisted (JICA)	JNNURM	SAARK2009-10 replacement of old pipes	UDSSMT	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	Thiruvananthapuram	13		Completed	2		6	1		56	1	2	1	1	Now taken under new Head Replacement of old and obsolete pipe		83	
2	Kollam	6			1		1	1		57								66
3	Pathanamthitta	13					3			51								67
4	Alappuzha	11	1				1			59								73
5	Kottayam	32			2		3			57	1							95
6	Idukki	22					1			30								53
7	Ernakulam	8			1		2			203		1		1				216
8	Thrissur	6			2	1	3			224		5						242
9	Palakkad	17					2			31		1						53
10	Malappuram	30			1	3	3			89								126
11	Kozhikkode	11					2	1		8			1					23
12	Wayanad	4					3		2	73								82
13	Kannur	6			2	1	1			22		3						36
14	Kasargode	8					8			18								36
	<b>Total</b>	<b>187</b>	<b>1</b>		<b>11</b>	<b>5</b>	<b>39</b>	<b>3</b>	<b>2</b>	<b>978</b>	<b>2</b>	<b>12</b>	<b>2</b>	<b>2</b>		<b>1251</b>		

Source : Economic Review 2016



<b>HOUSEHOLDS BY LOCATION OF SOURCE OF DRINKING WATER IN KERALA</b>										
<b>Sl. No.</b>	<b>District</b>	Within the premise			Near the premise			Away		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
1	Thiruvananthapuram	320847	377209	698056	45633	37762	83395	24127	23196	47323
2	Kollam	317765	250790	568555	35664	28821	64485	20248	9988	30236
3	Pathanamthitta	225249	29771	255020	34705	2938	37643	25435	1870	27305
4	Alappuzha	172093	212146	384239	44000	40378	84378	29756	29902	59658
5	Kottayam	239193	111242	350435	55033	16823	71856	48481	9681	58162
6	Idukki	104461	10317	114778	85634	1272	86906	74554	738	75292
7	Ernakulam	200111	435559	635670	38060	79904	117964	18139	19964	38103
8	Thrissur	198211	424764	622975	34127	52205	86332	14590	19933	34523
9	Palakkad	330012	120426	450438	100466	23942	124408	45840	7601	53441
10	Malappuram	343421	285384	628805	60518	34553	95071	33572	17147	50719
11	Kozhikkode	171803	370464	542267	32733	53275	86008	27692	27858	55550
12	Wayanad	106673	4975	111648	42613	1260	43873	29400	482	29882
13	Kannur	145344	295266	440610	29808	33703	63511	23694	15394	39088
14	Kasaragod	109370	86223	195593	30204	10111	40315	26395	5459	31854
<b>Total</b>		<b>2984553</b>	<b>3014536</b>	<b>5999089</b>	<b>669198</b>	<b>416947</b>	<b>1086145</b>	<b>441923</b>	<b>189213</b>	<b>631136</b>
<i>Source : Economic Review 2016</i>										

<b>Table 5.6</b>			
<b>DISTRICT WISE DETAILS OF OPEN DEFECACTION FREE (ODF) DECLARED GRAMA PANCHAYATS IN KERALA</b>			
Sl. No.	District	Total Numbers	
		Grama Panchayats	Toilets Construction Completed
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1	Thiruvananthapuram	73	14211
2	Kollam	68	12777
3	Pathanamthitta	53	10182
4	Alappuzha	72	14985
5	Kottayam	71	9141
6	Idukki	52	21081
7	Ernakulam	82	7808
8	Thrissur	86	3002
9	Palakkad	88	23075
10	Malappuram	94	12011
11	Kozhikkode	70	12799
12	Wayanad	23	13777
13	Kannur	71	7182
14	Kasargode	38	12689
<b>Total</b>		<b>941</b>	<b>174720</b>
<i>Source : Economic Review 2016</i>			

*Appendix - Chapter 6*

**STORAGE FACILITIES**

TABLE 6.1								
PUBLIC DISTRIBUTION SYSTEM IN KERALA- 2010-11 - 2015-16								
Sl.No.	Item	Unit	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7	8	9
1	No. of Ration cards and permits							
	a) Ration Cards for families as on 1 <sup>st</sup> April	No	7340488	7863698	8100536	8273778	8313107	8359573
	b) Ration Permitted for institution as on 1 <sup>st</sup> April	No	7603	6311	6311	6311	4751	2077
2	No. of FCI Sub Depots as on 1st April	No	22	22	22	22	25	24
3	No. of Wholesale shop as on 1st April							
	a) Co-operatives	No	36	35	36	28	30	30
	b) Others	No	288	288	287	291	288	299
	c) Total Wholesale shops	No	334	333	333	333	330	329
4	No. Of Retail shops as on 1st April							
	a) Co-operatives	No	419	413	411	412	396	392
	b) Others	No	13833	13854	13890	13912	13935	13288
	c) Total Retail shops	No	14252	14267	14301	14324	14331	13680
5	Sugar (Allotted)	MT	49362	62855	58076	55931	57422	56538.5
6	Kerosene (Allotted)	KL	225096	197124	125196	120192	120132	111024

Source : Civil Supplies Dept. Adm. Report 2015-16

## Infrastructure Statistics 2015-16

**Table 6.2**

**OUTLETS OPENED BY THE CIVIL SUPPLIES CORPORATION IN KERALA 2010-11 - 2015-16**

Sl. No.	Outlets	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
1	2	3	4	5	6	7	8
1	Maveli stores	58	18	27	929	946	955
2	Super Markets	17	15	8	375	381	396
3	Maveli Super Stores	0	0	0	21	24	26
4	People's Bazar	1	3	1	93	98	102
5	Medical Stores	1	0	2	14	15	14
6	Petrol Bunks	0	0	1	22	23	23
7	Mobile Maveli Stores	9	0	1	3	3	3
8	Hyper Market	2	0	1	56	56	56
9	Sub Depot				9	10	10
10	N.F.C.A.Godown				0	0	0
11	Apna Bazar/Hyper Market				7	7	7
Total		88	36	41	1529	1563	1592
Source : Economic Review 2016 , Civil Supplies Dept. Adm. Report 2015-16							

Infrastructure Statistics 2015-16

<b>Table 6.3</b>								
<b>No. of FCI Depots</b>								
Sl. No.	District	FCI Owned	Private Party	SWC	CWC	State Government(Market Fed)	Others	Total
1	2	3	4	5	6	7	8	9
1	Thiruvananthapuram	2						2
2	Kollam	4						4
3	Alappuzha	2						2
4	Kottayam	2			1			3
5	Kochi	2						2
6	Thrissur	2						2
7	Palakkad	2						2
8	Kozhikode	4						4
9	Kannur	3						3
	Total	23	0	0	1	0	0	24
Source: Food Corporation of India								

Infrastructure Statistics 2015-16

Table 6.4					
District wise details of State warehouses, Central warehouses, Cold storages, and Container depots					
Sl. No	District	Numbers			
		State warehouses	Central warehouses	Cold storage	Container Depots
		(SWC)	(CWC)		
1	2	3	4	5	6
1	Thiruvananthapuram	5	1	5	
2	Kollam	5		20	
3	Pathanamthitta	2			
4	Alappuzha	6		45	
5	Kottayam	5		1	
6	Idukki	3		1	
7	Ernakulam	4	4	94	1
8	Thrissur	4	1	4	
9	Palakkad	4	1	3	
10	Malappuram	3	1		
11	Kozhikode	2	1	3	
12	Wayanad	3			
13	Kannur	5	1	1	
14	Kasargod	4			
	Total	55	10	177	1
Source: Agmark net					

<b>Table 6.5</b>					
<b>Details of Storage capacity</b>					
Sl.No.	FCI Districts	Godowns	Total Capacity (In M.T.) 2015-16 Covered	Cover and Plinth (CAP)	Total
1	2	3	4	5	6
1	Thiruvananthapuram	Valiathura	33440	2250	35690
		Kazhakuttom	36136	0	36136
2	Kollam	Kollam Main Depot	11900	0	11900
		Karunagapally	30000	0	30000
		Avaneeswaram	9200	0	9200
		Kilikollur	5000	1200	6200
3	Alappuzha	Allappuzha Main Depot	10000	0	10000
		Mavelikkara	20000	5000	25000
4	Kottayam	Chingavanam	15320	0	15320
		Arakulam	10000	0	10000
		CWC Kunnamthanam	5000	0	5000
5	Ernakulam	Kochi Main Depot	18700	0	18700
		Angamali	40000	0	40000
6	Thrissur	Mulankunnathukavu	48960	5750	54710
		Chalakudy	10000	1670	11670

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<b>Table 6.5</b>					
<b>Details of Storage capacity</b>					
Sl.No.	FCI Districts	Godowns	Total Capacity (In M.T.) 2015-16	Cover and Plinth (CAP)	Total
			Covered		
1	2	3	4	5	6
7	Palakkad	Main Depot, Palakkad	70740	5000	75740
		Angadippuram	10000	0	10000
8	Kozhikode	West Hill	24160	0	24160
		Meenangadi	10000	0	10000
		Thikkodi	45000	0	45000
		Kuttiapuram	5000	0	5000
9	Kannur	Muzhappilangad	10640	0	10640
		Payyannur	29000	0	29000
		Nileswaram	9500	0	9500
	Total		517696	20870	538566
Source: Food Corporation of India					



## Infrastructure Statistics 2015-16

**Table 6.6**  
**DISTRIBUTION OF RICE & WHEAT, KEROSENE AND SUGAR THROUGH THE PDS IN KERALA**

Year	Rice (MT)	Wheat (MT)	Kerosene(KL)	Sugar (MT)
2010-11	1159597	186545	196923	86776
2011-12	1276636	153955	166424	60316
2012-13	1265618	180268	125196	58076
2013-14	1302739	200564	120192	54264
2014-15	1328835	178976	94077	55255
2015-16	1322896	252746	114422	53664

Source : Economic Review 2016

**Table 6.7**  
**Details of Cargo Storage**

<b>COVERED AREA (Transit Sheds and Overflow sheds)</b>		
Location	Total Sheds	Area (Sq.m)
Mattanchery Wharf	6	19160
Ernakulam Wharf	4	13200
Container Freight Station	1	10000
Grand Total	11	42360
<b>COVERED AREA (Warehouses)</b>		
Location	Total Sheds	Area (Sq.m)
Mattanchery Wharf	4	11800
Ernakulam Wharf	1	2980
Cement Godown	1	1000
BTP	1	6000
Grand Total	7	21780

Source; Cochin Port Trust







**DEPARTMENT OF ECONOMICS & STATISTICS  
VIKAS BHAVAN, THIRUVANANTHAPURAM.**