

## CHAPTER 4

### AGRICULTURE AND ALLIED SECTORS

The prices of agricultural commodities rebounded in 2009 after the collapse in demand for and prices of commodities in the second half of 2008 as a result of global financial and economic crisis. The close linkage between the prices of primary commodities and the financial markets including the exchange rates of the United States dollar will make these prices highly volatile leading to instability in commodity markets. The second source of instability relates to climate change. Increased intensity and frequency of droughts and floods, altered hydrological cycles and precipitation variance caused due to climate change have negative implications and instability in the perennial crop based agrarian economy of the state. Instability in farm production is causing serious shocks to supply and farm income and there is a growing concern about increased volatility in farm production, prices and farm income.

#### Agriculture income

4.2 The provisional estimate of agricultural income of the state recorded a slight increase of 2.75 per cent during 2008-09. The trends in agricultural income in Kerala during the last six years is shown in Table 4.1. The provisional estimate for 2009-10 indicated an increase of 0.25 per cent in growth over 2008-09. The share of agriculture and allied sectors in GSDP indicated a continuous decline in the state. The share was only 11.54 per cent during 2009-10.

**Table 4.1**  
**Trends in Agricultural Income in Kerala**  
(Base 2004-05)

Sl. No.	Year	Agricultural Income (' in crores)	Rate of change over previous year	Agriculture and Allied Sectors (' in crores)	Share of Agriculture and Allied Sectors in GSDP
1	2004-05	16980.51		20843.21	17.48
2	2005-06	18041.97	6.25	21882.16	16.67
3	2006-07	16567.85	-8.17	20507.67	14.48
4	2007-08	16196.60	-2.24	20255.14	13.15
5	2008-09**	16641.70	2.75	20779.74	12.58
6	2009-10*	16683.91	0.25	20927.91	11.54

\* Provisional \*\* Quick

Source: Directorate of Economics and Statistics

#### Monsoon 2010

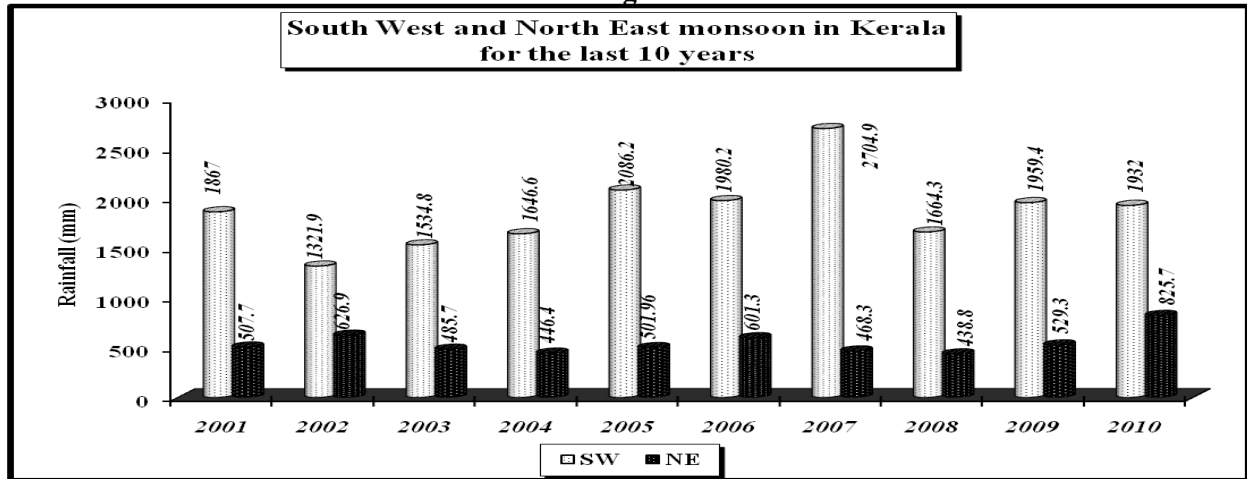
4.3 The South west monsoon set in over Kerala on 31<sup>st</sup> May 2010, one day earlier than its normal date of 1st June and covered the entire country by 6<sup>th</sup> July, 9 days earlier than its normal date of 15<sup>th</sup> July. Out of 597 meteorological districts for which data are available, 173 districts (29%) received excess, 240 districts (40%) received normal, 173 districts (29%) received deficient and the remaining 11 districts (2%) received scanty rainfall during the season. The actual rainfall received in Kerala during the season (1<sup>st</sup> June 2010 to 30<sup>th</sup> September 2010) was 1932 mm as against the normal rainfall of 2142.9 mm which was normal. All the 12 districts in

the state received normal rainfall while two districts Thiruvananthapuram and Wayanad received deficient rainfall of -27% and -52% respectively.

4.4 During the North East Monsoon season 2010, the state received 825.7 mm of rainfall as against 498.5 mm of normal rainfall which was excess with a percentage departure of 66 % from the normal. All the 12 districts in Kerala received excess rainfall during this season. Percentage departure from the normal was highest in Kannur district( 111 %) followed by the Thrissur district ( 107%). The Idukki and Wayanad districts however received normal rainfall.

4.5 Kerala received 359.6 mm pre monsoon rainfall (from 1<sup>st</sup> March to 31<sup>st</sup> May 2010) which was normal. Eight districts in the state ( Alappuzha, Ernakulam, Kollam, Kottayam, Kozhikkode, Pathanamthitta, Thiruvananthapuram and Wayanad) received normal rainfall while five districts (Kannur, Idukki, Malappuram, Palakkad and Thrissur) received deficient rainfall. The Kasaragod district received scanty rainfall during the season with a % departure of -62 % from the normal. District wise rainfall distribution in the state during 2010 is given as Appendix-4.4.

**Fig. 4.1**



**Box 4.1**

#### **Weather Aberrations in Kerala**

A spatial variability study of the rainfall pattern of Kerala using data from 1950-1990 by the CUSAT indicated that rainfall is highest in June south of 10° N while north Kerala experiences the highest rainfall in July. With each surge in the monsoon current, rainfall is more in north Kerala than in the south and the frequency of surges is higher in July than in June. The active spells of monsoon are also more in July and August. Further, under weak monsoon conditions there is divergence over south Kerala causing little or no rain, while there is convergence resulting in rain over north Kerala on many occasions(Source : Proc. Indian Acad. Sci. (Earth Planet. Sci.), 113, No. 2, 2004)

Although, quantum wise the rainfall received in the state is fairly high, its distribution shows wide temporal and spatial variations. There are large intra-regional differences in the trends in

different seasons in Kerala. Local changes were found different from the large spatial scale averages in Kerala. Analysis of rainfall data of the state from 1951-2003 indicated that winter and autumn extreme rainfall were found having an increasing tendency with statistically significant changes in some regions indicating more occurrences of winter and autumn floods. On the other hand the spring seasonal extreme rainfall showed decreasing trends, which together with increasing frequency of the dry days is mainly affecting the total seasonal precipitation, which mainly point towards the vulnerability of Kerala to increasing probability of water scarcity in the pre-monsoon time and a delaying monsoon onset (Source : Journal of Hydrology 367, 2009) The recent incidence of floods during the North –East monsoon period in the state further augment this finding.

#### Rainfall during 1<sup>st</sup> October to 30<sup>th</sup> November 2010

District	Actual (mm)	Normal (mm)	Excess %
Alappuzha	865	529	63 %
Kottayam	1015	569	78 %
Pathanamthitta	981	523	87 %
Thrissur	894	402	122 %
Kerala (Average)	778	455	71 %

Excess rainfall occurred in 4 districts of the state during a short span of two months. Thrissur district had 122 % excess rainfall followed by Pathanamthitta (87 %). The Kuttanad area received 63 % excess rainfall during this period and severe floods damaged the paddy crop of the region. The state on an average received 71 % excess rainfall during this period. About 2335 ha of paddy in nursery and 12475.1 ha in mainfield was damaged. 122.3 ha of vegetables and 101.5 ha of tapioca was also perished in these floods.

#### Land Use

4.6 Data on land use pattern of Kerala for the year 2009-10 is given in Table 4.2. Out of a total geographical area of 38.86 lakh ha. net sown area is about 56 per cent. Forest occupies around 28 per cent. Agriculture and forest sectors together account for over 84 per cent of the land area. The net sown area has increased by 4.39 percent while the total cropped area has declined by 0.97 per cent. Land under non-agricultural uses was 9 percent in 1999-00 and has increased to 9.68 per cent in 2008-09 and it slightly declined to 9.31 percent in 2009-10. There was an increase in the area under current fallow (9186 ha) and a decrease in the area under fallow other than current fallow (581 ha) during 2009-10 over 2008-09. The area under cultivable waste increased by 1821 ha. and barren and uncultivated land declined by 7019 ha. The land use pattern in Kerala during 2009-10 are shown in Fig 4.2.

**Table 4.2**  
**Land use Pattern in Kerala**

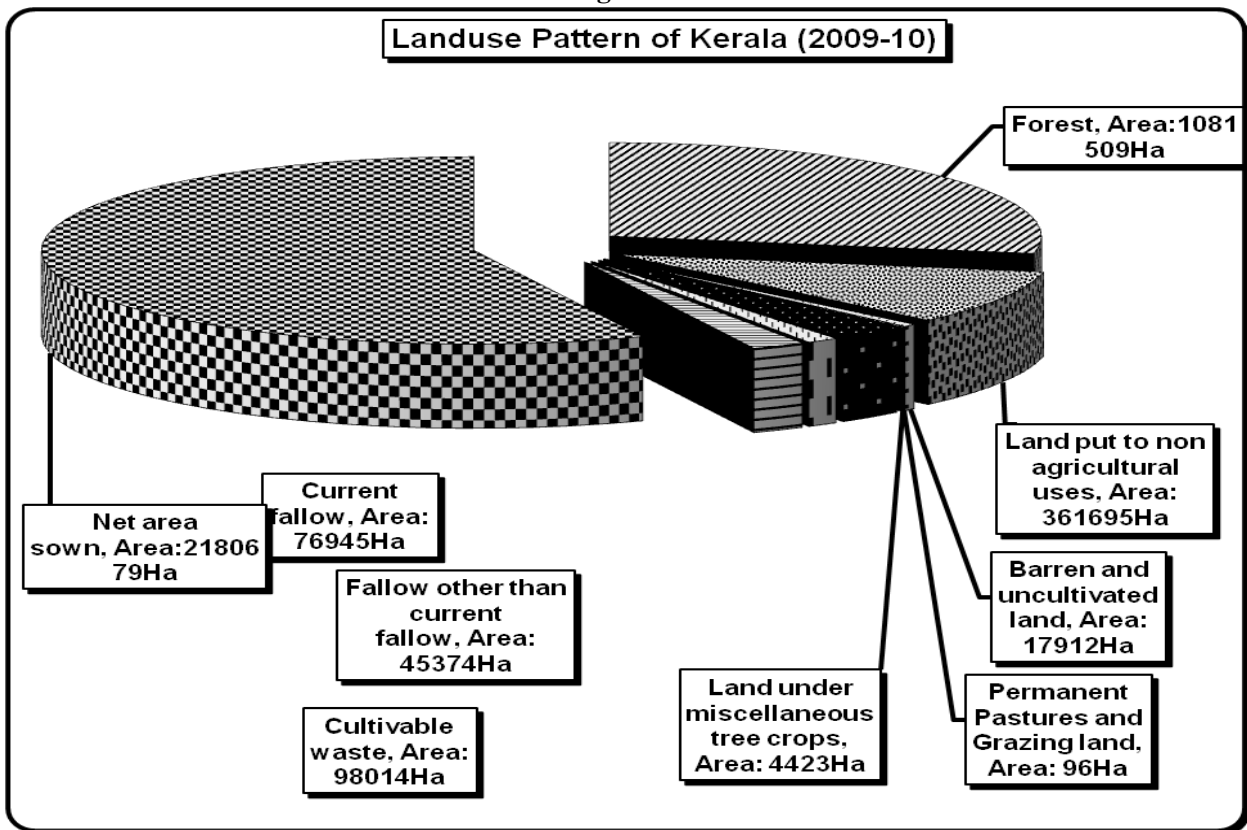
Sl. No.	Classification of Land	2008-09	2009-10*	Percent of Geographical Area	Change in Area between 2008-09 and 2009-10	
					Actual	Percentage
1	Total Geographical Area	3886287	3886287	100	0	0
2	Forest	1081509	1081509	28	0	0

3	Land put to non agricultural uses	376155	361695	9	-14460	-3.84
4	Barren and uncultivated land	24931	17912	0.5	-7019	-28.15
5	Permanent Pastures and Grazing land	229	96	0	-133	-58.08
6	Land under miscellaneous tree crops	6602	4423	0.1	-2179	-33.01
7	Cultivable waste	96193	98014	3	1821	1.89
8	Fallow other than current fallow	45955	45374	1	-581	-1.26
9	Current fallow	67759	76945	2	9186	13.56
10	Net area sown	2088955	2180679	56	91724	4.39
11	Area sown more than once	605988	488026	13	-117962	-19.47
12	Total Cropped area	2694943	2668705	69	-26238	-0.97
13	Cropping intensity	123	122		-1	-0.81

\* Provisional

Source : Directorate of Economics and Statistics

Fig. 4.2



### Trend in Area, Production and Productivity of Crops

4.7 Data regarding the area, production and productivity of important crops grown in Kerala are shown in Table 4.3 and Appendix 4.5. Out of a gross cropped area of 26.69 lakh ha. in 2009-10, food crops comprising rice, pulses, minor millets and tapioca occupy only 11.86 per cent. Kerala state which had a low base in food production is facing serious challenges in retaining even this meager area. Kerala agricultural economy is undergoing structural transformation from the mid seventies by switching over a large proportion of its traditional crop area which was devoted to subsistence crops like rice and tapioca to more remunerative crops like coconut and rubber.

**Table 4.3**  
**Area, Production and Productivity of Principal crops**

Sl. No	Crops	Area (ha)		Production (MT)		Productivity (kg./Ha.)	
		2008-09	2009-10	2008-09	2009-10	2008-09	2009-10
1	Rice	234265	234013	590241	598339	2520	2557
2	Pulses	3943	4449	2982	3390	756	762
3	Pepper	175808	171489	40641	37899	231	221
4	Ginger	5578	5408	23380	28605	4191	5289
5	Turmeric	2754	2438	6292	6065	2285	2488
6	Cardamom	41588	41593	8550	7800	206	188
7	Areca nut	96745	99219	124623	127893	1288	1289
8	Banana	53516	51275	427604	408405	7990	7965
9	Other Plantains	49499	47800	393617	381109	7952	7973
10	Cashew nut	52875	48972	42274	36450	800	744
11	Tapioca	87278	74856	2710934	2525383	31061	33737
12	Coconut **	780500	778619	5763	5667	7384	7278
13	Coffee	84696	84796	57200	59250	675	699
14	Tea	36557	36840	51726	57809	1415	1569
15	Rubber	517475	525408	783485	745510	1514	1419

\*\* Production in million nuts and Productivity in nuts/ha.

\* 2009-10 figures are provisional

Source: Directorate of Economics and Statistics

4.8 The area under rice has been declining consistently over the last several years. But the pattern appears to have reversed in the recent year. After a long period of continuous decline, area under paddy increased from 2.29 lakh ha in 2007-08 to 2.34 lakh ha in 2008-09 and slightly declined by 252 ha only in 2009-10. In the case of tapioca, the area declined from 0.87 lakh ha to 0.75 lakh ha in 2009-10 over 2008-09. The area under commercial crops in general and rubber in particular has increased considerably during the last two decades. During Ninth plan average annual increase in area under rubber was 1951 ha while during 2009-10 area increased by 7933 ha compared to previous year and the increase was mainly due to upsurge in prices. The index of area, production, productivity of crops in Kerala for the year 2007-08 to 2009-10 with the base of triennium ending 1993-94 is shown in Appendix-4.6.

4.9 In the case of coconut, area was at its peak during 2000-01. During the year 2009-10 area declined by 1881 ha. over 2008-09. Major commercial crops which had recorded expansion of area during 2009-10 are rubber(7933 ha),tea(283 ha), coffee(100 ha),cardamom(5 ha) and areca nut (2474 ha). The major crops with considerable loss in area include pepper (4319 ha), ginger (170 ha), banana(2241 ha), cashew(3903 ha) and coconut(1881 ha). The crops which have failed to sustain the production level in 2009-10 are banana (19199 MT) and cashew (5824 MT). In 2009-10 most of the crops indicated increase in production over 2007-08. These crops are paddy (8098 MT), ginger (5225 MT), areca nut (3270 MT), coffee (2050 MT), and tea (6083 MT). Decline in production in 2009-10 was recorded for some of the major

crops like banana (19199 MT), cashew nut (5824 MT), tapioca (185551 MT), coconut (96 million nuts) and rubber (37975 MT).

## Crop wise analysis

### Rice

4.10 In order to increase food production in the state, a major food security project was launched in 2008-09 covering rice, milk and egg. As part of the project, regional subprojects were launched with additional incentives, interest free loans, project based support for fallow land cultivation and a package of support measures. The procurement price was also enhanced to `13 per Kg. A perceptible improvement in the area and production are visible in rice cultivation in the state. A modernization programme for lift irrigation was also initiated as part of the food security project and Malabar Package. A rehabilitation project on ponds was also initiated recently, as part of state food security project.

4.11 The average annual decline in area under rice during the Eighth Five Year Plan was around 22000 ha, whereas it has come down to an average of 13000 ha. during the Ninth Plan period. The average annual reduction in area during Tenth Plan was 9398 ha. During 2007-08, decline in area was to the tune of 34591 ha. from 2.64 lakh ha. in 2006-07 to 2.29 lakh ha and rice production declined from 6.42 lakh MT to 5.28 lakh MT, and then increased to 5.90 lakh MT in 2008-09, indicating a 11.74 percent increase over the previous year. The area under rice increased to 2.34 lakh ha in 2008-09. During 2009-10, there was a slight reduction in area by 252 ha only over 2008-09, while production increased by 8098 MT.

**Table – 4.4**

**Area, Production and Productivity of Rice in Kerala and India**

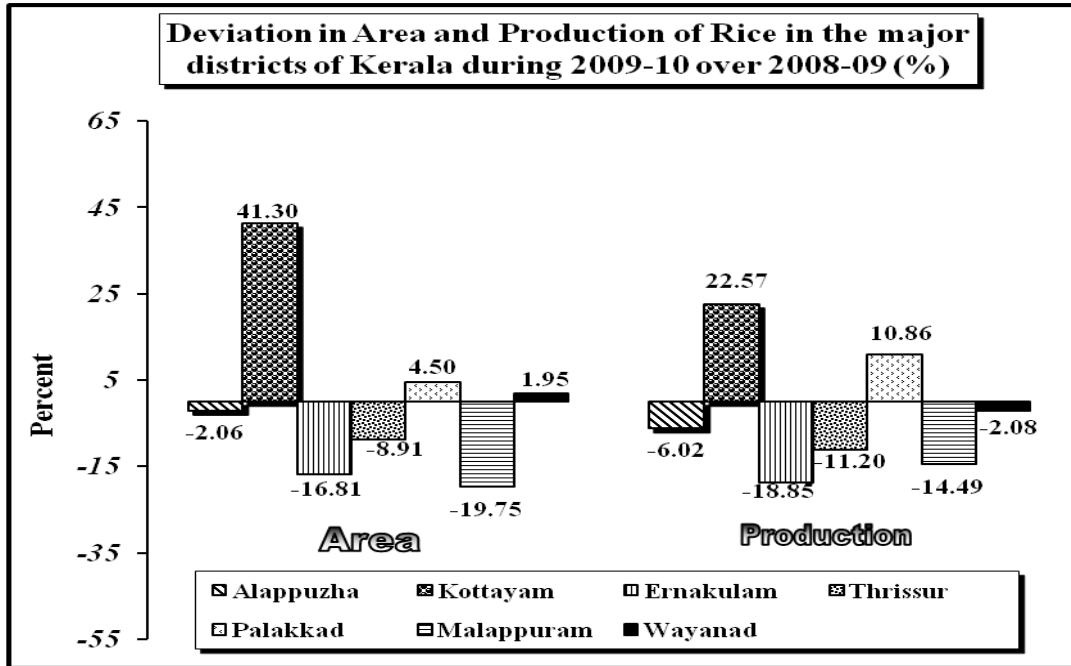
	Year	Area (000' ha.)		Production (000'MT)		Productivity (kg./ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	2002-03	311	40410	689	75720	2218	1874
2	2003-04	287	42496	570	88280	1984	2077
3	2004-05	290	41665	667	85310	2301	2047
4	2005-06	276	44258	630	91790	2285	2074
5	2006-07	264	43810	642	93360	2435	2131
6	2007-08	229	43900	528	96700	2308	2202
7	2008-09	234	45600	590	99400	2520	2177
8	2009-10	234	-	598	-	2557	-

Source : Directorate of Economics and Statistics, CMIE

4.12 The average productivity which was stagnant at around 2.2 MT/ha for four years till 2005-06 has improved to 2.4 t/ha in 2006-07 and slightly declined to 2.31 t in 2007-08 and further improved to 2.56t in 2009-10. (Table 4.4). Increase in area under paddy has been recorded in Kottayam (4523 ha), Palakkad (4332ha) and Wayanad (249 ha) while the corresponding increase in production are 7258 mT, 26087 mT and 1782 mT respectively during 2009-10. Rice productivity at current level is sub optimal. Instead of providing area based

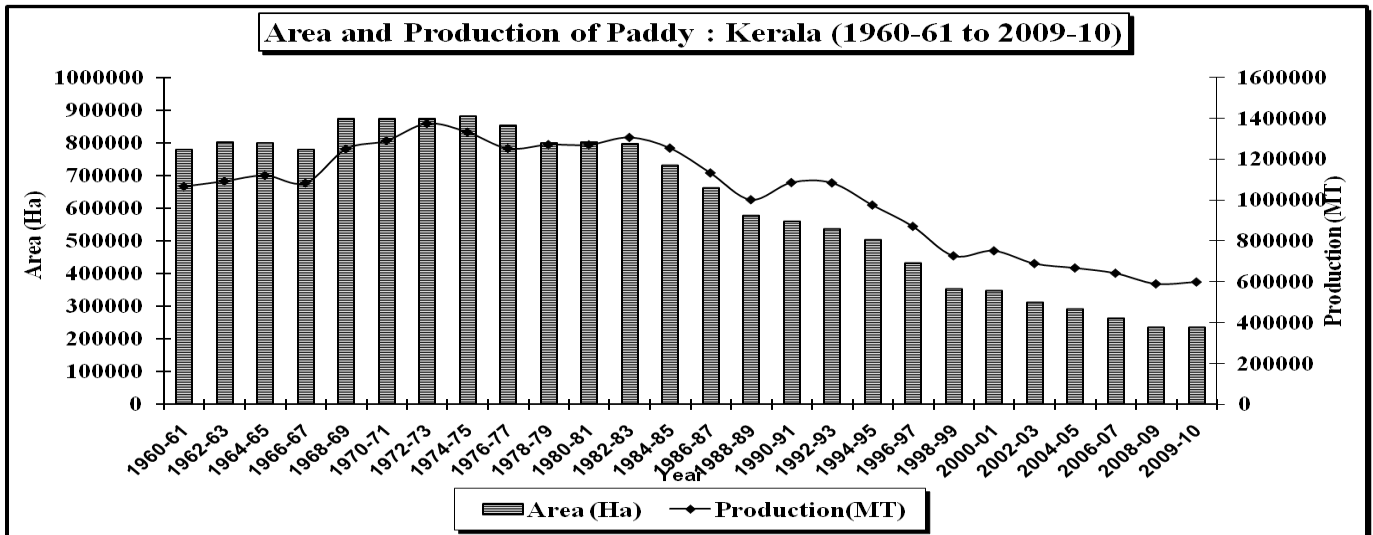
subsidies, suitably designed incentive system is essential to promote productivity by exploiting the potential of agro ecological zones.

Fig. 4.3



4.13 The area and production of paddy in the state since the last 50 years is given in Fig 4.4. Though there were notable area enhancement till the beginning of 1980's the area is under constant decline since then. A slight area enhancement was noticed during 2008-09 compared to 2007-08 wherein the lowest area under rice was recorded since past 50 years. A slight reduction in area is recorded in 2009-10. The maximum area under rice of 8.81 lakh ha was in 1974-75 with a production of 13.34 lakh tonnes. In the production scenario, early periods indicated production enhancement. However production showed declining trends since 1983 and the lowest production was recorded during 2007-08. The year 2008-09 and 2009-10 present a solace by showing a slight production enhancement of rice in the state.

Fig. 4.4



4.14 The production in 2010-11 is expected to increase further. Additional support was also provided for upland rice cultivation in potential areas for the first time in 2009-10. A special scheme as part of food security project for `36 crores was also launched in 2009-10 and consolidated in 2010-11 for the development of rice in the state. The conversion of paddy lands for other purposes was also stopped from 2009-10 as a result of the Kerala Paddy Land – Wet Land Conservation Act, 2008 passed by the state.

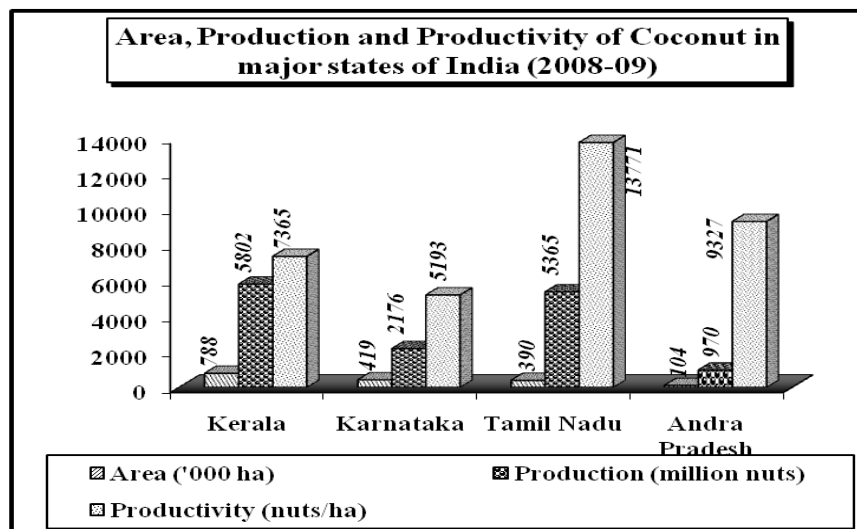
4.15 A State level project has to be prepared for the promotion of rice production by linking the schemes of Department of Agriculture, local governments and Kudumbashree. Padasekharam based action plans have to be prepared linking with credit, input support, water management, insurance, procurement and supplementary income sources. Panchayat wise targets could be fixed in potential areas for convergence, with the plan of the local governments. The project should also cover total crop insurance and total procurement. Development of local water resources and lift irrigation schemes also could be integrated in the project. Separate targets could be fixed for different potential areas like kole lands, Kuttanad, Palakkad etc. A package also could be considered for promoting upland rice including development of suitable rice varieties.

### Season wise performance

4.16 Season wise data on the performance of rice during the last three years is shown in Appendix 4.7 Data shows increase in area in Punched and Virippu seasons with decline in Mundakan season. There was 2.69 per cent decline in Virippu and 2.30 percent increase in Mundakan seasons in 2009-10 compared to previous year and 0.97 per cent reduction in Punched season. Mundakan season accounts for highest share in production with 45.51 per cent followed by 32.10 per cent in Virippu and 22.40 per cent in Punched season. The productivity recorded in Punched is the highest with 2719 kg. per ha. during 2009-10 which is 8.82 per cent lower than that in 2008-09 and 13.10 percent higher than that in 2007-08.

### Coconut

4.17 In India, coconut is grown in an area of 1.90 million ha. producing 15730 million nuts with a per hectare productivity of 8303 nuts in 2008-09. (Table 4.5) Kerala's share in area as well as production of coconut in the country is declining over time. The share of area declined from 57 per cent in 1991-92 to 42 per cent in 2008-09, while share of area in Karnataka and Tamil Nadu together increased from 29 per cent in 1992-93 to 42.68 per cent in 2008-09 (Fig. 4.5).



4.18 With a coverage of 7.79 lakh ha, coconut occupies 36 per cent of the net cropped area. The production improved by 2.17 percent in 2008-09 over the previous year in the state after a decline for three years consecutively. The productivity levels in Kerala are also lower than other major producing states. The productivity in Kerala is 11.07 percent lower than the national average in 2008-09. The productivity in 2008-09 in Maharashtra was 8338 nuts and 13771 nuts in Tamil Nadu.

**Table 4.5**  
**Area, Production and Productivity of Coconut in Kerala and India**

Sl. No	Year	Area (000'Ha.)		Production (Million Nuts)		Productivity (Nuts/ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	2002-03	899	1922	5709	12535	6349	6523
2	2003-04	898	1934	5876	12178	6540	6298
3	2004-05	899	1935	6001	12830	6673	6632
4	2005-06	898	1950	6326	14811	7046	7608
5	2006-07	873	1940	6054	15840	6935	8165
6	2007-08	819	1903	5641	14744	6889	7747
7	2008-09	788	1895	5802	15730	7384	8303
8	2009-10	779	-	5667	-	7278	-

Source: DES, CMIE and CDB

4.19 The implementation of massive replanting of root wilt affected palms with seedlings of elite palms could be improved immediately as approved by Government of India on a campaign mode. However the effective utilization of wood has to be ensured by the Coconut Development Board. The present level of adoption suggests the need for further intervention to enhance technology adoption. Generation of technologies for different agro ecological situations may improve the level of adoption. Integrated farming system with due emphasis on multi-tier cropping systems needs to be promoted in different agro ecological situations for improving income of the farmers. A major plan support for integrated farming has been provided during 2010-11. Effective harvesting machines also need to be developed for promotion. Restructuring of the cluster development programme is also essential for more effectiveness.

## Pepper

4.20 According to International Pepper Community (IPC) world pepper production in 2010 has declined by 0.71 percent to 316380 mT. For 2011, IPC has projected a lower production level of 309952mT.

4.21 The productivity of pepper achieved its peak level of 376 kg. per ha during 1998-99. The productivity of pepper recorded during 2009-10 was only 221 kg. per ha. The production declined from 41952 MT during 2007-08 to 40641 MT in 2008-09 and 37899 MT in 2009-10. Pepper produced in Kerala fetches a premium price in international market in view of its intrinsic quality. The revival of pepper cultivation in the state has to be given priority considering the declining trend in production, disease incidence as well as the damages caused

to the Erythrina Standards. A major pepper rehabilitation package has been initiated in Wayanad. Spices Board also started supporting pepper production programmes in Wayanad and Idukki districts.

4.22 However consequent to the liberalisation of imports, there are reports of low quality pepper imported from other producing countries. The import of pepper has increased from 5839 MT in 2000 to 13120 MT in 2008 affecting the interests of pepper farmers of the State. The new Indo Asean FTA is expected to further deleteriously affect pepper farmers in the state.

4.23 Government of India should build in adequate safety mechanism and monitoring system to see that the issue of certification of origin and the condition relating to origin of the goods are not violated.

4.24 India could export 42806 MT of pepper in 1999-00, which declined to 25250 MT in 2008-09 which further declined to 19750 MT in 2009-10. The value realization was at ` 313.92 crores in 2009-10 which declined from ` 413.74 crores in 2008-09 and unit value realization has also declined to ` 158.94 per Kg from ` 163.86 per kg. respectively in the corresponding period.

4.25 Price of pepper moved consistently upwards from early nineties and reached a peak level in 1999-00 with ` 215 per kg. Since then declined to ` 174 per kg. in 2000-01, further down to ` 80 per kg. in 2001-02 and increased slightly to ` 114.76/kg. in 2008-09 and further increased to ` 134.82/ kg in 2009-10. The recent upsurge in prices indicate the revival of pepper prices to the 1999-00 levels.

## Cashew

4.26 Area under the crop in Kerala, has been declining steadily from 1.25 lakh ha. in 1988-89 to 0.49 lakh ha. in 2009-10 and the production declined from 1.08 lakh MT to 0.36 lakh MT during the period (Table 4.6). The share of Kerala in the area under cashew in the country has come down from 23 per cent in 1987-88 to 5.30 percent in 2009-10 and the corresponding decline in share of production from 31 per cent to 5.95 per cent. Area and production are increasing steadily in other producing states in the country. Maharashtra is the leading producer with 32.30 percent share in production during 2008-09, whose share was only 10 per cent in 1990-91.

**Table 4.6**  
**Area, Production and Productivity of Cashew in Kerala and India**

Sl. No	Year	Area (000'Ha.)		Production (000'MT)		Productivity (kg./ha.)	
		Kerala	India	Kerala	India	Kerala	India
1	2003-04	88.4	730	65.2	535	737	800
2	2004-05	81.5	820	60.6	544	743	810
3	2005-06	80.7	855	57.6	573	714	815
4	2006-07	70.46	854	61.7	620	875	820
5	2007-08	58.38	868	52.40	665	898	860
6	2008-09	53.01	893	42.33	695	799	778
7	2009-10	48.97	923	36.45	613	744	695

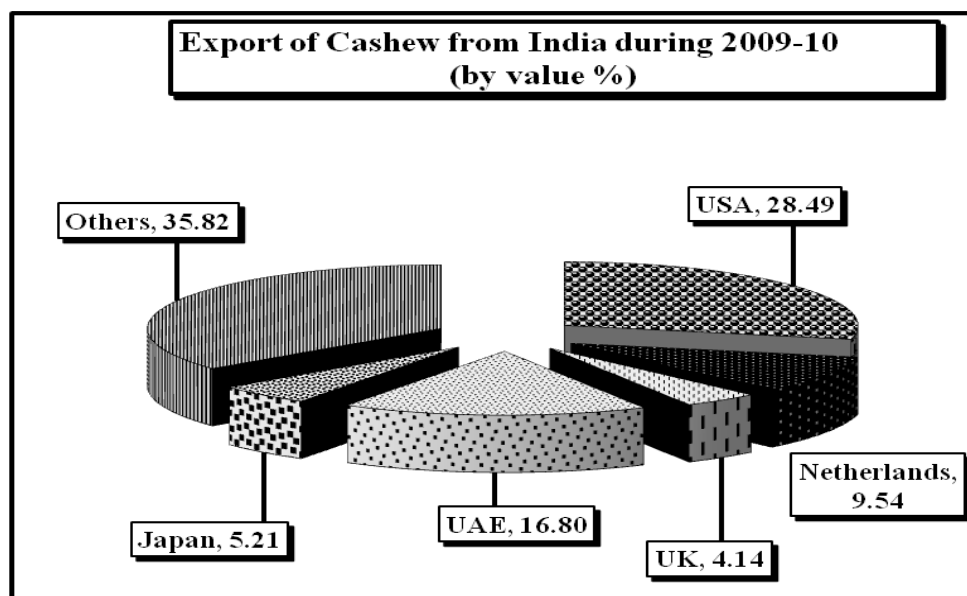
Source :DES, Cashew Export Promotion Council of India

4.27 In spite of operating special schemes for expansion of area under cashew, the coverage has been steadily declining during the last two decades. The decline in area from 1980-81 to 2008-09 was to the tune of 88395 ha. During 2009-10, there was a further decline of 3903 ha

under cashew in the state. Productivity of the crop, which was around 900 kg. per ha. during late eighties has also started declining from 1995-96 onwards, reaching 562 kg. per ha. during 1998-99 and thereafter hovering around 800 kg. In 2009-10, it has declined to 744 Kg/ha.

4.28 India exported cashew kernels worth ` 2905.82 crore during 2009-10 and imported raw nuts worth ` 3037.35 crore resulting in a net foreign exchange loss of ` 131.53 crore. During 2009-10, there was a decline of 1.28 percent in quantity exported while 24.27 percent increase in quantity of raw nuts imported compared to previous year. U.S.A. is the major export market with 28 per cent export share followed by UAE (16.8 per cent). The total raw nuts imported into India during 2009-10 was 7.53 lakh MT. Around 35 per cent of total raw nuts imported is from Ivory Cost followed by Guinea Bissau (15 per cent). Tanzania has emerged as another supplier of raw cashew nuts with a share of 10 per cent of total imports. The unit import price for raw cashew nut was ` 43.45/kg during 2008-09 as against ` 28.83/Kg during the previous year. Out of imported nuts 57 per cent of imported raw nuts is bought to Kerala during 2008-09 which was 46 per cent in 1998-99. Cashew processing industry is finding it extremely difficult even to maintain the present level of capacity utilization because of the lower availability of local raw cashew nuts. Concerted efforts are needed to nurture this crop in the state with programmes to promote high density planting with high yielding cashew grafts. The initiatives of the Horticulture Mission to promote cashew cultivation needs to be upscaled with the involvement of the department of agriculture to promote cashew in potential areas.

Fig. 4.6



### Plantation crops

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

4.30 Kerala has a substantial share in the four plantation crops of rubber, tea, coffee and cardamom. These four crops together occupy 6.89 lakh ha, accounting for 31.58 per cent of the net cropped area in the state and 43 per cent of the area under these crops in the country. Kerala's share in the national production of rubber is 91 per cent, cardamom 75 per cent, coffee 22 per cent during the year 2008-09. Kerala's share in the production of tea is 5 percent during 2008-09.

### **Rubber**

4.31 India is the fourth largest producer of natural rubber with a share of eight per cent in the world after Thailand, Indonesia and Malaysia. The production of natural rubber in the country was 8.31 lakh MT in 2009-10, registering a 3.8 per cent decline compared to the previous year. India is at the same time the second largest consumer of natural rubber after China. A 34 percent decline in the consumption of USA was recorded in 2009 over 2008 while consumption in China and India increased by 17.70 percent and 2.70 percent respectively.

4.32 Kerala accounts for 78 percent of the area under rubber in the country. The coverage under the crop in 2009-10 was 5.25 lakh ha, higher by 7933 ha. over the previous year. The production of natural rubber in Kerala during the year was 7.45 lakh tonnes indicating a 4.85 per cent decline over the previous year. The increasing trend in productivity continued during 2008-09. It was 1190 kg. per ha in 1998-99, which rose to 1514 kg. during 2008-09. However it declined slightly to 1419 Kg/ha in 2009-10. In terms of tapping area, productivity recorded was 1867 kg. per ha during the year 2008-09 which declined to 1784 Kg/ha in 2009-10.

4.33 Even though the domestic prices of natural rubber were more or less comparable to international prices during 2007-08, (Appendx-4.17) the industrial sector still resorts to imports in bulk quantities. The total quantity imported was 86394 MT which slightly declined to 77616 MT in 2008-09. The import increased to 176756 MT in 2009-10.

4.34 The higher prices in the international market is reflected in the domestic market also. The average price of RSS4 in the domestic market at Kottayam was `114.98 per kg. in 2009-10. The international price of RSS3, equivalent of RSS4 of India, was `111.13 in the corresponding period. The price of RSS 4 in Kottayam reached `137.82 during August 2008 and then declined to `64.88 in October 2008 and further increased to `108.98 in October 2009 and `149.48 in March 2010.

### **Coffee**

4.35 The area under coffee in Kerala was 0.85 lakh ha out of 3.99 lakh ha in the country during 2009-10, which works out to 21 per cent. The share of Kerala in production is 20.5 per cent during 2009-10. Major variety grown in Kerala is Robusta with a share of 95 per cent in planted area. Production of coffee during the year was only 0.59 lakh MT against 2.90 lakh MT for the country. Productivity of the crop in terms of bearing area in Kerala (705 kg/ha) is lower than the national level of 826 kg/ha. Area under coffee registered substantial increase during the last two decades with an annual growth rate of over 2 per cent. The increase in production recorded during the period was much higher and registered an annual average growth rate of nearly nine per cent. Coffee provides opportunities for livelihood to nearly one lakh families including agricultural labourers. In Kerala, coffee is also one of the small holder plantation crops with nearly 76,000 holdings coming under the category with an average size of 1.1 ha. Consumption of coffee has remained more or less static at around 55,000 tonnes for the

past one and half decades till 1999 and then slightly improved to 70,000 tonnes in 2003, and further to 1 lakh tonnes in 2009.

4.36 Coffee is a highly export dependent crop and more than 80 per cent of domestic production is exported. The unit value realization has declined drastically from ` 95.37 per kg. in 1997-98 to ` 106.08 per kg in 2009-10. The quantity of coffee exported from India declined in 2009-10 to 2.04 lakh tonnes from 2.18 lakh tonnes in 2007-08 and slightly improved in 2008-09.

4.37 To mitigate the problems of coffee growers arising from the low prices of coffee, a series of steps have been taken including the restructuring of loans and interest relief to coffee growers (a subsidy of 5 percent for small growers and 3 percent for large growers is available for working capital). Rainfall insurance as a risk management support for coffee growers in collaboration with AIC is also implemented. Government of India has approved in June 2010 the coffee debt relief package 2010 for the debt ridden small coffee growers with a total financial implication of Rs. 241.33 crores. It is in the early stage of implementation.

## Tea

4.38 Against the total area of 5.11 lakh ha under tea in the country Kerala accounts for only 0.37 lakh ha. In respect of production the share of Kerala is 6.6 per cent in 2007. Tea plantations owned by big companies employ a labour force of over 84,000 in the organised sector. There is fluctuation in production and it ranged from 64.8 M. kgs. in 1995-96, reaching to 69.1 M.kgs. in 2000-01 which declined to 56 M Kgs. in 2007 and improved to 57.81 M Kg in 2009.

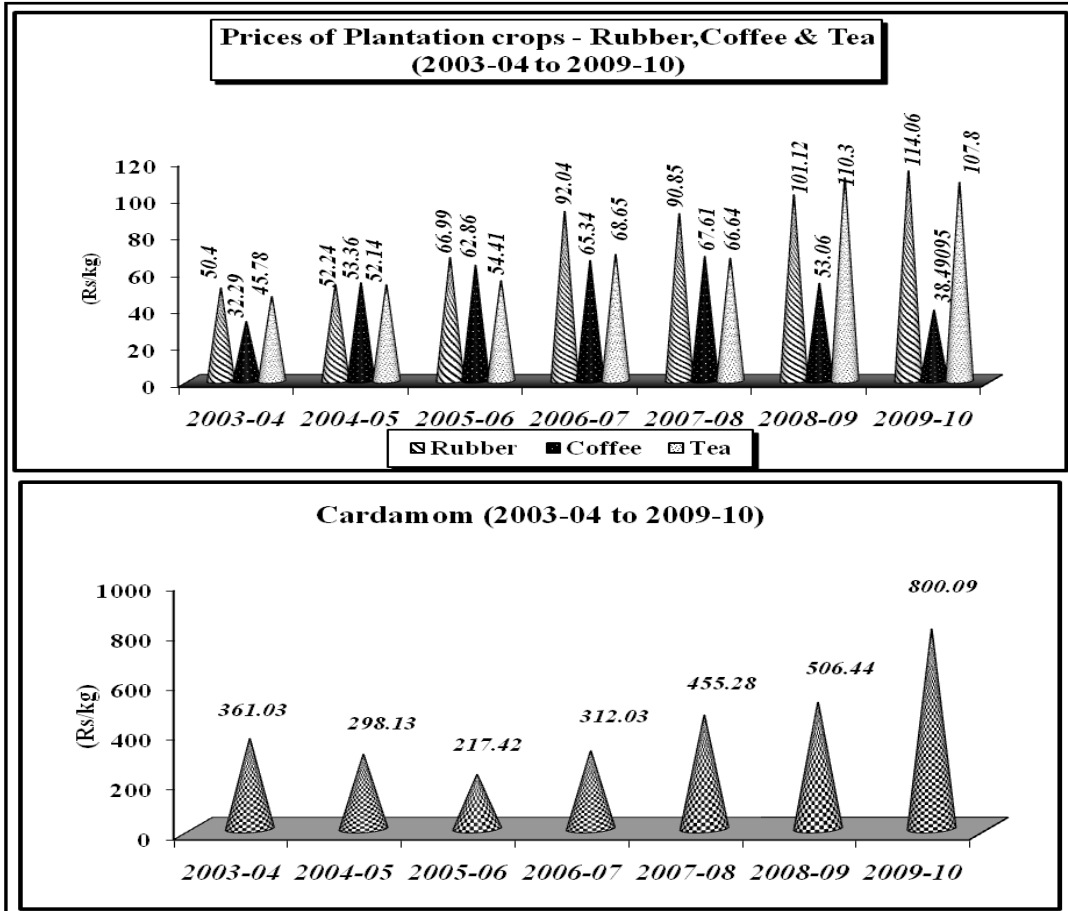
4.39 Imports increased from 13.4 M. kg. in 2000 to 20.28 M kg. in 2009. However during 2003 the import declined substantially to 9.8 M. kgs. The maximum quantity of tea was imported from Nepal (31 per cent), followed by Vietnam (25 per cent) and Indonesia (11 per cent). The unit value of imported tea was the lowest from Vietnam (` 53/kg) while the average being ` 62/kg. The disturbing fact is that most of the countries are exporting to India at low prices.

4.40 The average price of tea in 2007-08 was ` 67.3 per Kg which increased to ` 110.30 in 2008-09 and declined slightly to ` 107.81 in 2009-10.

4.41 Productivity of Tea in India is much lower than that in Vietnam. The organic tea production is a major shift in this sector. (eg. Darjeeling tea). In Kerala coverage under organic tea could be increased .

4.42 Government of India has set up a special purpose Tea Fund for funding replantation and rejuvenation aimed at improving the age profile of tea plantation with an estimated outlay of ` 567.10 crores during Eleventh Five Year Plan. The estimated area to be taken up for replantation/ rejuvenation during the period would be 85044 ha in the country.

Fig. 4.7



### Cardamom

4.43 Productivity which was more or less stagnant around 50 kg./ha. in the 1980s has improved to the level of around 203 kg. per ha by 2001 and increased slightly to 206 kg/ha in 2008-09 and declined to 188 Kg/ha in 2009-10. The share of Kerala in production at the All India level increased from 28 per cent in 1992-93 to 56 per cent in 2008-09. While area under cardamom in the country has declined from 0.97 lakh ha to 0.73 lakh ha. in the period, in Kerala it has come down from 65,000 ha to 41593 ha. On the export front cardamom has been facing competition from Guatemala although the quality of Guatemala cardamom is inferior. The country could tide over the challenge by expanding domestic market through market promotion. The average price during 2000-01 was ` 570 per kg. which is declined to ` 463.14 in 2007-08 and improved to ` 506.44 in 2008-09 and ` 800.08 in 2009-10. The Indian export of cardamom has increased from early nineties and reached a peak level of 1545 MT in 2000-01 and then increased by 27.8 percent in 2009-10 to reach 1975 MT. The unit price of exported Cardamom increased steadily to ` 838 per kg. in 2009-10 from ` 630 per kg. in 2008-09.

However the market for cardamom is largely domestic as could be seen from the declining share of exports and the share of exports is only 5 per cent of the production.

## **Organic Agriculture**

4.44 About 35 million hectares of agricultural land are managed organically in the world by almost 1.4 million producers. The regions with the largest areas of organically managed agricultural land are Oceania (12.1 million hectares), Europe (8.2 million hectares) and Latin America (8.1 million hectares). The countries with the most organic agricultural land are Australia, Argentina and China.

4.45 The highest shares of organically managed agricultural land are in the Falkland Islands (36.9 percent), Liechtenstein (29.8 percent) and Austria (15.9 percent). The countries with the highest numbers of producers are India (340'000 producers), Uganda (180'000) and Mexico (130'000). More than one third of organic producers are in Africa. On a global level, the organic agricultural land area increased in all regions, in total by almost three million hectares, or nine percent, compared to the data from 2007. Twenty-six percent (or 1.65 million hectares) more agricultural land under organic management was reported for Latin America, mainly due to strong growth in Argentina. In Europe the organic agricultural land increased by more than half a million hectares, in Asia by 0.4 million.

4.46 About one-third of the world's organically managed agricultural land – 12 million hectares – is located in developing countries. Most of this land is in Latin America, with Asia and Africa in second and third place. The countries with the largest area under organic agricultural management are Argentina, China and Brazil. 31 million hectares are organic wild collection areas and land for bee keeping. The majority of this land is in developing countries – in stark contrast to agricultural land, of which two-thirds is in developed countries. Further organic areas include aquaculture areas (0.43 million hectares), forest (0.01 million hectares) and grazed non-agricultural land (0.32 million hectares). Almost two-thirds of the agricultural land under organic management is grassland (22 million hectares). The cropped area (arable land and permanent crops) constitutes 8.2 million hectares, which represents a quarter of the organic agricultural land.

4.47 In 2008, the global market for certified organic products of food and drink was estimated to be 51 billion US dollars or 34.8 billion Euros. More than ninety percent of the organic product revenues is made in the Northern hemisphere. Europe accounts for 51 percent of the global organic food sales; North America for 46 percent. In 2008, by far largest market was the United States with 15.9 billion Euros of organic food sales followed by Germany with 5.9 billion and France with 2.6 billion Euros. The volume of turnover with organic products has trebled since 1999 when it was estimated to be 15 billion US \$ ( in 2008 51 billion US \$). In 2008, countries with highest market shares for organic foods were Denmark followed by Austria and Switzerland. The most popular organic product groups are fresh fruits and vegetables, dairy products and bakery wares. In Switzerland 17 % of the eggs, 13 % of the bread, 11 % of the vegetables sold in retail trade are organic. In USA, 10% of the fruits and vegetables sold are organic (Source : The World of Organic Agriculture 2010, IFOAM).

## **Organic farming in Kerala**

4.48 The certified organic agriculture in 2006-07 in India was 4.14 lakh ha with a major share in Madhya Pradesh (1.12 lakh ha) Maharashtra (96879.06 ha), Orissa (67503.39 ha) and Kerala (11141.54 ha). Production of organic tea, rice, vegetables, pepper etc is done in Kerala in small areas. Department of Agriculture, State Horticulture Mission(SHM), and VFPCCK are the major agencies supporting the organic farming directly in the state apart from NGOs.

4.49 The area covered under organic farming during 2005-06 to 2008-09 by SHM is 14279 Ha out of which 950 Ha area is under certification. A number of 61695 farmers are also covered by the mission during the period. The crop wise area under organic farming is given in Table 4.7

**Table 4.7**  
**Crop wise area under Organic Farming through SHM**

Sl.No	Crop	Area in Ha
1	Pine apple	218
2	Ginger	534
3	Banana	4505
4	Vegetables	1112
5	Cashew	132
6	Pepper	7778

4.50 The state Department of Agriculture is creating and promoting awareness on organic agriculture among farmers to a limited extent. During 2003-04, Dept. of Agriculture has set up a cell for promotion of Sustainable Agriculture and Organic Farming in Wayanad. In the year 2010-11 a programme to promote organic farming in selected 20 blocks was initiated. In the current year the programme is under progress focusing on food crops. Area based approach is required for promoting organic agriculture in selected crops.

VFPCCK is promoting Organic Farming in Nendran banana, leafy vegetables, bhindi, brinjal, bitter gourd and chilly. It is targeted to promote organic farming in 5500 ha in 2010-11 in all 14 districts.

4.51 The State has a number of non certified organic farmers who produce rice, vegetables and fruits. Some of them are under PGS certification ( Participatory Guarantee System under PGS Council of India –a council formed by a group of organisations promoting organic farming among small and marginal farmers in the country and which is accredited by NCOF). Kerala State Jaiva Karshaka Samithy has a number of registered organic farmers in the state who are not certified. Similarly Kudumbashree Mission, Mahila Samakhya Society and many other organisations have promoted organic farming among women and most of them can be treated as farmers under conversion.

4.52 Promotion of organic agriculture in Kerala could be done effectively after strengthening the organic input supply system and marketing network. The support for certification cost also to be provided. Isolated attempts were made for the last 5-6 years for promoting organic agriculture and major projects were not implemented through Government support.

### **Collective farming through Kudumbashree**

4.53 'Harithashree', the lease land farming promoted by the State Poverty Eradication Mission, Kerala, through 'Kudumbasree', has helped women farmers to stay on in agriculture for their livelihood. The major crop cultivated by the Kudumbashree group is Paddy (27% of area) followed by Plantain and vegetables during 2009-10 under the lease land farming.

4.54 During the financial year 2009-10, various crops including paddy, vegetables and others (banana, tapioca, pineapple, ginger, medicinal plants, betel vine) were cultivated in a total area of 25162.12 ha. Area brought under cultivation of paddy was 6790.93 ha, Vegetables contributed to 2987.96 ha and 15383.23 ha of area was covered by other crops. Details of area covered are depicted in Table 4.8. Correspondingly area incentive of `10.68 crore has been distributed by Kudumbashree. In addition to this, a production incentive of Rs. 9.43 crore was also given. Thus a total expenditure of `20.11 crore was incurred by Kudumbashree for collective farming.

**Table 4.8**  
**Area covered under collective farming during 2009-10**

SI No	District	Area cultivated (in ha)			Total Area (ha)	NHGs
		Paddy	Vegetables	Others		
1	Trivandrum	66.93	160.15	2433.77	2660.85	1773
2	Kollam	159.92	38.97	238.47	437.36	1204
3	Pathanamthitta	122.00	16.00	109.00	247.00	2872
4	Alappuzha	388.56	26.47	33.38	448.41	2504
5	Kottayam	566.10	39.12	470.30	1075.52	1773
6	Idukki	245.60	1269.20	6610.40	8125.20	9805
7	Ernakulam	400.00	323.00	1383.00	2106.00	3988
8	Thrissur	626.54	306.37	43.17	976.08	4979
9	Palakkad	624.13	52.38	625.47	1301.98	3812
10	Malappuram	648.34	180.35	651.92	1480.61	5004
11	Kozhikode	135.30	48.50	987.70	1171.50	2090
12	Wayanad	863.08	249.90	734.72	1847.70	1316
13	Kannur	1523.00	215.00	878.00	2616.00	2308
14	Kasargode	421.43	62.55	183.93	667.91	3016
<b>Total</b>		<b>6790.93</b>	<b>2987.96</b>	<b>15383.23</b>	<b>25162.12</b>	<b>46444</b>

Source: Annual Report, Kudumbasree 2009-10

### Fertilizer Subsidy

4.55 The Indian fertilizer industry has come a long way since its early days of post independence era. India today is one of the largest producer and consumer of fertilizers in the world. Similarly, consumption of fertilizers in terms of nutrients (NPK) has also grown from 65.6 thousand tonnes in 1951-52 to nearly 24.909 million tones in 2008-09. Fertiliser use remained sluggish during the oil crisis around mid 1970s but again recovered to robust growth path which continued till 1990-91. After this, growth in fertiliser use in the country has not been smooth.

4.56 Subsidy given by Central government on various fertilisers was only Rs. 891 crore during early 1980s and during 2010-11 an amount of Rs. 49,981 crores has been set apart under fertilizer subsidy. Subsidies have also grown faster than growth of crop sector.

4.57 Our food grain production is growing at a very slow rate compare to growth rate in demand and there are serious concerns to accelerate growth in food grain production. In this kind of situation any drastic action on fertiliser subsidy seems to be highly undesirable. On the other hand ballooning subsidy bill is a matter of concern and, slow growth in fertiliser production is another matter of serious concern.

### **Nutrient Based Fertilizer Subsidy**

4.58 It has been decided by the Government of India to fix the subsidy on the fertilizer nutrients 'N' – Nitrogen, 'P' – Phosphorous, 'K' – Potash and 'S' Sulphur contents. The NBS regime will be applicable to Di Ammonium Phosphate, Mono Ammonium Phosphate, Triple Super Phosphate and 12 grades of complex fertilizers and Ammonium Sulphate which are already covered under the on going concession schemes for phosphatic and potassic fertilizers and Single Super Phosphate. Any variant of the fertilizers mentioned above with secondary and micro nutrients (except sulphur) as provided for under FCO will also be eligible for subsidy. During the first phase NBS will be released through the industry. The secondary and micro nutrients in such fertilizers will attract a separate per ton subsidy. Since the subsidy on the nutrients shall remain fixed, the selling price of fertilizers at farm gate level will be decontrolled and will be determined by market forces and the retail price of the subsidized fertilizer will be decided by the companies. NBS is the first step in reforms process in Indian Fertilizer Sector and this has been introduced on phosphatic and potassic fertilizers w.e.f. 1st April, 2010. The rate of subsidy per kg of nutrient is Rs. 23.227 for N, Rs. 26.276 for P and Rs. 24.487 for K (Source: Fertilizer Association of India, 2010). NBS is expected to promote balanced and integrated use of plant nutrients. It is expected to encourage the development of new and innovative fertilizer products by the industry. Efficient use of fertilizers through NBS is expected to reduce the demand and increase agricultural production.

### **Probable Constraints of NBS**

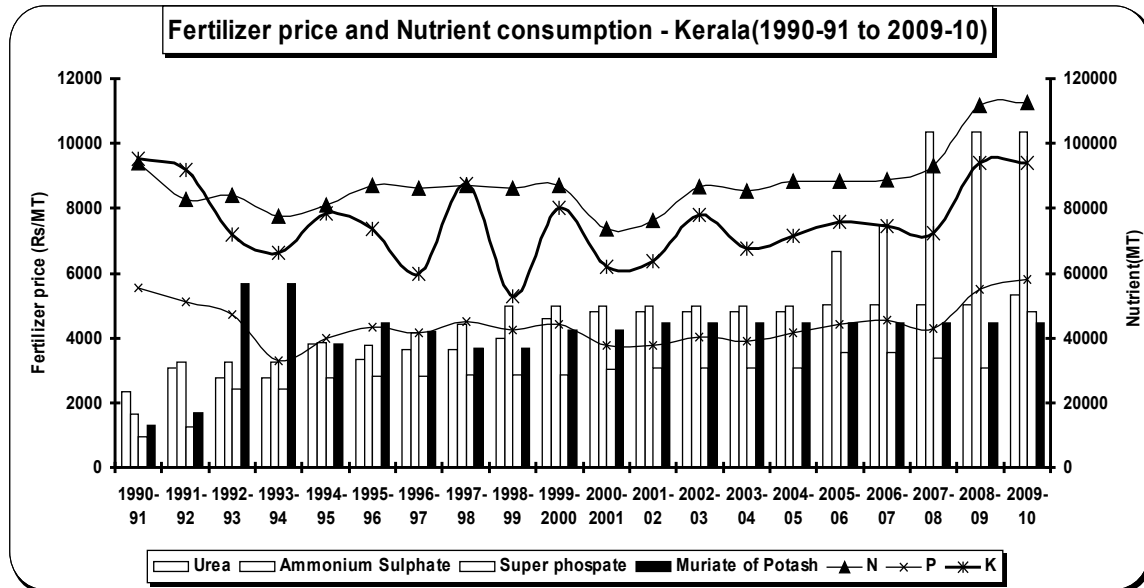
4.59 As a result of this policy decision of the Government, prices of fertilizers may likely spiral upwards. Any product allowed to be imported freely and allowed to be marketed freely will attain market price around the Import Parity Price (IPP) plus the import duties and cost of transportation from place of import to the distribution centre minus nutrient subsidy within a short period. That is to say the fertilizer market may deepen and will settle around the IPP. Thus the present level of MRP will show a sharp increase. Due already to higher cost of agricultural inputs and non-remunerative support price the agriculture community specially the small and marginal farmers have lost interest on agriculture. This could have created consequences that affect the food security of the country to a larger extent.

### **Implications of NBS for Kerala**

4.60 Nutrient consumption pattern in the state and fertilizer prices are depicted in Fig. There is wide variation in the nutrient consumption pattern of N, P and K over a period from 1990-91 to 2009-10. In case of nutrient N consumption pattern showed decline in the last decade and increased sharply over the last two years. In case of P consumption was lower in the succeeding years when compared to year 1990 though it was improved in last two years. In case of K, there was a steep decline in consumption during 1993-94, 1996-97 and 1998-99 while peak consumption was noticed in 1997-98, 1999-2000. In case of K also consumption improved during the last two years. The price of MOP influenced the K consumption during 1992—93 and 1993-94. However noticeable price hikes in case of Ammonium sulphate could not

influence the N consumption as the price of urea which is the major source of N was kept under special control.

Fig. 4.8



4.61 As the agriculture sector in the state is dominated by the plantation crops, the possible hike in price coupled with release of better diverse products with fortified nutrients may not affect the nutrient consumption pattern adversely since the farmers may be realising more returns from the remunerative plantation crops and willing to pay more for the better products. However in case of the major food crop rice which is becoming less remunerative in the state, this may not be viable. So is the case with the small and marginal farmers in the state.

4.62 The special feature of Agriculture in the state is the uniqueness of its cropping systems. Unlike other states, mixed cropping and homestead farming are the main features of the state. Mono cropping in the state is often restricted to rice and plantation crops and majority of other crops are grown in mixed stands. Coconut is the predominant base crop in majority of the homestead systems and other crops are cultivated in the interspaces. In such situation assessment of nutrient requirement for the individual crop in a mixed system is not an easy task. However the implementation of NBS requires an assessment of the individual nutrient requirement of the crop. Assessment of nutrient requirement with a system approach for the cropping systems of the state is the need of the hour and extensive research on this need to be initiated to back up the successful implementation of NBS.

4.63 The Government of India has taken a number of measures to improve fertilizer application in the country. A new scheme, the National Project on Management of Soil Health & Fertility (NPMSE), has been introduced in 2008-09 with a view to setting up of 500 new Soil Testing Laboratories (STLs) and 250 Mobile Soil Testing Laboratories (MSTLs) and strengthening of the existing State STLs for micronutrient analysis. At state level during 2010-11 a multi institutional project was initiated by the Department of Agriculture with the participation of various research institutions and laboratories under ICAR institutes, Kerala

Agricultural University, Commodity boards and Dept.of Agriculture to analyse about 2.30 lakhs soil samples covering macro, micro and secondary nutrients in the entire state. The expected outcomes of the project include Agro Ecological Zone wise soil nutrient status and panchayat wise, District wise and state wise nutrient management plan. It is expected to issue soil health cards to all the 2.30 lakh farmers. The outcomes of this project is expected to assist the implementation of NBS in the state.

### **Crop Development Programme - Review of Annual Plan 2009-10**

4.64 During the Annual plan 2009-10 an amount of ` 278.08 lakhs was provided to crop husbandry which include partially aided schemes and 100 per cent Centrally sponsored including Macro management schemes. (Table 4.9). The State sector schemes incurred an expenditure of ` 8125.17 lakh which constitutes 133.19 % of the outlay.

**Table 4.9**  
**Financial Performance of Crop Husbandry and other agricultural Programmes during 2009-10**

( ` crore)				
Sl. No.	Item	Outlay	Expenditure	per cent of Expdr. to outlay
1.	State Sector Schemes	249.68	239.93	96.10
2.	Partially Aided schemes	16.61	12.65	76.16
3.	100% CSS including MOU	11.79	11.53	97.79
	<b>Total</b>	<b>278.08</b>	<b>264.11</b>	<b>94.98</b>

4.65 Major crop wise financial achievements made during the period is furnished below (Table 4.10). An amount of ` 20 crore was utilised for the development of rice in the State from the State and Central Plan schemes. For Horticulture crops, apart from the amount shown in Table above, State Horticulture Mission and RKVY also provided separate funds.

**Table 4.10**  
**Major Scheme wise Expenditure during 2009-10**

( ` Lakh)		
Sl.No.	Schemes	Expenditure
1.	Rice Development	2299.45
2.	Macro Management programme -	1285.52
3.	National Bio gas Development Programme	110.07
4.	Coconut based farming system	1518.30
5.	Integrated farming in Coconut holdings	430.45
6.	Food security	3584.78

### **Rice**

4.66 Rice development activities in the State were carried through State schemes and Centrally sponsored schemes. The ultimate objective of rice development programme during the Eleventh Plan period is to sustain rice cultivation in 4.4 lakh ha and to augment the average productivity to more than 2.8 tonnes per ha. Revitalisation of group farming samithies in predominant rice growing areas like Palakkad, Thrissur, Ernakulam and Alappuzha, assistance to paddy development agencies and assistance to seed development agencies were continued

under State plan for attaining the targeted level of rice production and productivity. An area of 1.43 lakh ha has been covered under group farming in 2009-10. Apart from this, 3799 ha of fallow land has been brought under cultivation. An amount of `60.18 crore was utilized for the development of rice from state sector schemes including food security and macro management.

### Coconut Development

4.67 Coconut based farming system is the main stay of more than 35 lakh farmers of the state. State contribution in area and production has rapidly declined over the years. Department is implementing coconut development schemes with the intention of increasing productivity of coconut and generate more income from coconut gardens. As per the Centrally sponsored scheme the Coconut Development Board provides assistance for production and distribution of quality hybrid coconut seedlings. During the year 2009-10, 4.29 lakh number of quality Coconut seedlings were distributed.

### Programmes under State Horticulture Mission

#### State Horticulture Mission

4.68 The National Horticulture Mission was launched in 2005-06 in order to give new momentum to the development of horticulture to generate employment and enhance farm income. The mission aims at addressing problems related to generation of technology, production, post harvest management, processing and marketing under one umbrella in the horticulture sector. The expenditure under the scheme in the state is shown in Table 4.11.

**Table 4.11**  
**Expenditure under SHM in Kerala**

( ` lakh)

Year	Sanctioned amount	Released amount	Expenditure
2005-06	7590	3533.98	400
2006-07	20230.05	7559.525	2472
2007-08	19212.758	6147.731	10428.89
2008-09	17420.15	7517.29	5533.77
<b>Total</b>	<b>64452.958</b>	<b>24758.526</b>	<b>18834.66</b>

4.69 Government of India has approved an amount of `47.41 crores during 2009-10 and `71.30 crores during 2010-11 for the implementation of annual action plans. The pace of implementation of SHM scheme needs to be stepped up. The unspent balance to the tune of `8.60 crore is lying unutilized with the SHM as on 31.10.2010.

4.70 The implementation of the scheme was quite unsatisfactory during the initial phase of the project and recently it improved and an amount of `188.00 crores was utilised for four years in the state, out of a total sanctioned amount of `645 crore till 2008-09. An amount of `1100 crores was earmarked for the scheme during 2008-09 in the country. A project oriented monitoring system has to be evolved for realizing the envisaged outputs. A number of NGOs as well as private sector are also part of the project which needs further monitoring. Establishment of new gardens, planting material production, rejuvenation of pepper, cashew,

cocoa, creation of water resources, promotion of IPM and post harvest management are part of the project activities.

### **Vegetable and Fruit Promotion Council's Programme**

4.71 Vegetable and Fruit Production Council, Keralam, was involved in the implementation of vegetable and Fruit Promotion Programme. The programme covers production, formation of SHGs, credit management and marketing.

4.72 During the year 2009-10, 8018 farmers were inducted and 429 new SHG's were formed. 20 farmers markets were established. 21372 farmers were covered under the 'Karshaka Raksha' medical insurance scheme. The farmers received `85 lakh as claim amount during the year. During 2009-10 an area of 20300 ha was covered under vegetable and 21170 ha of banana cultivation. During the year an amount of `39.85 crore was issued to 9903 farmers as KCC loans and 24.4 lakh banana plants of VFPCCK farmers were insured.

### **Rashtriya Krishi Vikas Yojana (RKVY)**

4.73 RKVY was launched in 2007-08 in pursuance of the decision taken in the 53<sup>rd</sup> meeting of the NDC held on 29<sup>th</sup> May 2007 to incentivize the states to enhance public investment to achieve the envisaged 4 percent growth rate in agriculture and allied sectors during 11<sup>th</sup> plan with an outlay of `25000 crores. The scheme aims to assist states to achieve a quantifiable increase in production, productivity and farm income and to reduce the yield gaps in the agriculture and allied sectors. The allocation for Kerala during 2007-08 to 2010-11 are shown in Table 4.12.

**Table 4.12**  
**Allocation under RKVY**

<b>Year</b>	<b>Kerala</b>	<b>India</b>	<b>% for Kerala</b>
2007-08	61.41	1500.00	4.09
2008-09	60.11	3165.67	1.90
2009-10	110.92	4067.07	2.73
2010-11	192.35	6055.04	3.18

4.74 During 2007-08, an amount of `55.01 crore was sanctioned for Kerala and an amount of `51.67 crore was utilised during the year. During 2008-09, an amount of `57.73 crores was released and the total expenditure was `29.60 crores. During 2009-10, an amount of `110.92 crores was sanctioned, out of which `30 crore was meant for the implementation of projects sanctioned during 2008-09. The expenditure was only Rs. 47 crores and the unspent balance is `63.92 crores. The share of allocation for Kerala is very low compared to the bud get provision for the country. A slight improvement in allocation has been made in 2010-11. A number of very small schemes are included for assistance under RKVY in the state. More focused areas with larger projects have to be identified for support under RKVY. The preparation of district and state agriculture plans are a prerequisite for getting assistance for which concrete steps are required. Most of the documents prepared are a compilation of proposals for assistance under RKVY. Even after four years of implementation, no district agricultural plans have been

prepared as per the guidelines. The state Agricultural plan also has to be prepared for availing assistance under RKVY.

### **Support to State Extension Programme**

4.75 A new CSS on support to State Extension Programme for extension reforms was launched in March 2005 with the objective of making extension system farmer driven by way of promoting new institutional arrangements, viz, ATMA for technology dissemination, at district level and below. During 2009-10, an amount of `243.27 lakh was provided by Government of India and the expenditure was `862.53 lakh including unspent balance and state share series of training programmes were initiated through SAMETI. Even though a convergence approach is envisaged in the scheme, more needs to be done to realize the objectives. Along with ATMA, a field visit oriented extension system also has to be implemented to develop the agriculture sector of the state. The extension system needs a thorough restructuring. ATMA could be utilised as an institution to channelise funding from various sources. The newly introduced lead farmer centred extension advisory and delivery service (LEADS) to be implemented under the ATMA frame work, with field visit on a regular basis in more districts.

### **Food Security Project**

4.76 A state food security project has been launched in the state during 2008-09 through a convergence approach and various ongoing schemes were dovetailed to realize the targets. Rice, milk, egg and vegetables were included in the project. An amount of `31.39 crore was utilized during 2009-10 under various components of food security for focusing on rice alone.

4.77 The National Food Security Mission (NFSM) was also launched in 2007-08 to enhance the production of rice, wheat and pulses. It will target those districts which have lower productivity than state average, but have the potential to augment the production of the three crops. From Kerala, Palakkad district alone is included in the project. The total expenditure under this scheme during 2009-10 was `390.53 lakhs.

### **Supplies and Services**

4.78 The State has a strong network for supplies and services. This include Krishi Bhavans in all the Grama panchayats for transfer of technology and organising agricultural services. Planting material delivery system has been developed which includes 33 state seed farms, 10 district farms, 10 special farms and 8 coconut nurseries. The paddy seed farms and the District Agricultural Farms are under the control of the District Panchayats for facilitating appropriate seed planning at the grass root level. In spite of such elaborate progeny support, supply of quality seeds of paddy and other seasonal crops remain as a weak link in the production front.

### **National Agriculture Insurance Scheme – A performance assessment**

4.79 National Agricultural Insurance Scheme (NAIS) was introduced to replace Comprehensive Crop Insurance Scheme from Rabi 1900-2000. Initially, only 9 states/union territories opted for the scheme. This number increased to 17 in Kharif 2000. Over time the number of states and union territories opted for the scheme increased to 24 and two respectively. The scheme was in operation for last 21 seasons. A performance assessment of

NAIS was done by Indian Institute of Management, Ahmedabad . Salient findings of the study are given in Box.

4.80 During 2009-10, 32810 farmers were insured under the NAIS covering an area of 30645 ha and the sum insured was ` 7396 lakhs. Premium amount collected was ` 158.25 lakhs and the number of farmers benefited was 1930 with a claim of ` 50.21 lakhs.

#### **Box 4.2**

##### **Performance of NAIS**

The number of farmers covered over the 19 seasons added up to 1347 lakhs and insured area to 2109 lakh hectares under different crops in different seasons i.e. on an average 1.6 hectares per farmer in any season. The total sum insured grossed to `148278 crores at aggregated premium of `4427 crores. The sum insured averaged to `7000 per cropped acre covered under NAIS. The premium collected was about 3 per cent of the sum insured. The subsidy to small farmers amounted to `424 crores i.e. 9.6 per cent of the premium collected. The claims reported added to `15230 crores or 10.3 per cent of the sum insured and were paid to nearly 27 per cent of the farmers who had opted for the scheme. The claims averaged to `4245 per farmer or `3000 per acre of cropped area covered. However the claims made were nearly four times the premium collected.

The performance indicators of NAIS in Kerala shows that area covered under NAIS per farmer averaged to 0.85 ha while at national level the area was 1.57 ha.. Sum assured per ha was higher for Kerala ie. `16160 as high value crops are also covered under the scheme. The sum assured at national level was `7030. Premium as % of sum insured was 2.11 as against the national value of 2.99. Claim as % of sum assured was lower in the state ( 4.97 %) while at national level the figure was 9.96. Claims per premium was 2.35 ( at national level – 2.85 ). In Kerala about 20 % of the farmers were benefited while at national level 26 % of the farmers were benefited. Claim per farmer in the state was `3441 which was slightly lower than the national average (Rs. 3552).

Cumulative business statistics of 19 seasons from 1999-2000 to 2008-2009 indicated that in Kerala 318000 farmers were covered which was only 0.24 % of the total farmers covered in the country. Area so far covered under the scheme was 270000 ha which was only 0.13 % of the total area covered at national level. Total sum insured was 43632 lakhs which was only 0.29 % of the total sum insured at the national level. The premium amount was `922 lakhs, while at national level the amount was `442648 lakhs. Subsidy amount in the state was `165 lakhs while at national level it was `42302 lakhs. Claims have been made for `2168 lakhs in the state while at national level the claim amount was `1477280 lakhs. The entire amount for which the claims are made has been paid. Number of farmers so far benefited under the scheme was `63000 while at national level 35578000 farmers were benefited.

*Source : Performance of NAIS, Working Paper, IIM, Ahmedabad, June 2010*

4.81 The Agriculture Insurance Company of India Ltd. has initiated a Weather Based Crop Insurance Scheme (WBCIS) in the state during 2008-09. The scheme is being implemented on pilot basis in Palakkad district for paddy and mango, Idukki district for pepper and Kasaragod district for cashew. The weather data generated from the Automatic Weather Stations installed by ISRO in collaboration with State Planning Board or by IMD at block level (or sub block level if AWS is available) is taken for consideration of claims. During Kharif 2009 season in Palakkad district alone 3564 farmers were insured under the WBCIS covering an area of

3254.04 ha of paddy. The sum insured for the district was ` 711 lakhs and the total claims paid was ` 75.98 lakhs. In Idukki district, 2621 pepper farmers were insured during the Kharif season 2009 under the WBCIS covering an area of 1178 ha. Total claims amount to ` 9.57 lakhs during the season. Total premium amount was ` 35.35 lakhs out of which the farmers share was 17.68 lakhs. During the Rabi season 2009-10, 1434 farmers in Palakkad were insured under WBCIS for summer paddy, covering an area of 1334 ha. Sum insured was 267 lakhs and premium collected from the farmers was 5.34 lakhs. There was no claim for mango from the district during the season. During Rabi 2009-10, 511 cashew farmers in Kozhikkode, Kannur and Kasaragod district were insured covering an area of 1162 ha. The no. of beneficiaries was 182, and total claims was ` 82 lakhs.

### Agricultural Research and Education

4.82 The research support for sustainable development of agriculture sector in the state is rendered by Kerala Agricultural University in a participatory mode in close association with research institutions managed by Indian Council of Agricultural Research, Commodity Boards and Departments of the State and Central Governments. Over 500 research projects are currently in operation including 67 All India Coordinated Projects/Network Projects, 3 NAIPs, 110 other externally aided projects and 174 projects funded by Govt. of Kerala (Source : Annual Report, KAU 2009-10).

### Farm Commodity Price

4.83 Data on average farm price of principal crops grown in Kerala are shown in Table 4.13. The table shows increase in 2009-10 compared to previous year in respect of most of the commodities, namely tapioca (5.74 per cent), rubber (40.08%), Pepper (17.49%), banana (24.73 per cent). Paddy (8.18 per cent), Cardamom (57.98 per cent) and cashew (5.65%). Decline was reported to Arecanut (5.62 per cent) Coffee (27.46 per cent) Tea (2.26 Per cent) and coconut (14.89%). Data on month-wise prices of the commodities during 2009-10 are shown in Appendix 4.18.

**Table 4.13**  
**Average Farm Price of Important Agricultural Commodities**

Year	Paddy (qtl.)	Coconut with husk (in 00' nos.)	Arecanut (00' nos.)	Cashewnut (qtl.)	Banana (qtl.)	Tapioca (qtl.)	Pepper (qtl.)	Rubber (qtl.)	Tea (kg.)	Coffee (kg)	Cardamom (kg)
2002-03	649.76	475.63	32.11	2730.30	971.34	394.01	7692.17	3919	47.21	28.12	561.13
2003-04	694.69	582.73	34.62	2831.75	1167.00	389.36	6802.46	5040	45.78	32.29	361.02
2004-05	651.00	635.00	40.00	3533.00	1112	404	6032	5224	52.14	53.36	330.44
2005-06	610.78	494.89	43.73	2899.54	1247.81	432.63	5979.84	6699	54.41	62.86	217.44
2006-07	681.72	473.36	52.17	2463.90	1333.58	469.54	10730.62	8325.16	68.65	65.34	312.03
2007-08	788.14	485.72	52.10	3000.42	1467.95	520.33	12901.42	9390.77	67.28	67.73	463.14
2008-09	915.87	544.25	48.90	3665.09	1565.33	555.86	11475.64	8915.85	110.30	53.06	506.44
2009-10	990.77	463.20	46.15	3871.99	1952.40	587.77	13482.25	12489.48	107.81	38.49	800.08
<b>% Change in 2009-10 over 2008-09</b>	<b>8.18</b>	<b>-14.89</b>	<b>-5.62</b>	<b>5.65</b>	<b>24.73</b>	<b>5.74</b>	<b>17.49</b>	<b>40.08</b>	<b>-2.26</b>	<b>-27.46</b>	<b>57.98</b>

Source: Directorate of Economics and Statistics

4.84 Agricultural commodity prices started to rebound in early 2009 partly on account of global recovery and partly due to speculation. Increased demand from China, significant production cuts of oils and weather related factors contributed to higher prices apart from revival of global economy. World trade which had plunged by more than 13 percent in volume and by as much as 23 percent in value in the first half of 2009 started to recover in mid 2009

onwards. The global GDP is projected to expand by about 3.5 percent in 2010 (UNCTAD, 2010)

## Livestock Development

4.85 Livestock sector in Kerala is livelihood intensive and also a major contributor to Gross State Domestic Product (GSDP), it could be as high as 40 percent of the agricultural GSDP in Kerala. Contribution of livestock sector to the GSDP, is not made visible because it is always clubbed with Agriculture and allied sectors.

4.86 Livestock production has been traditionally practiced in the State mainly as an extensive, low input subsistence system integrated with crop production. The subtle changes emerging in the sector calls for reorientation in the approach for future development and growth.

## Trend in Livestock Population

4.87 Cattle population in Kerala which was 33.96 lakh in 1996 declined to 21.22 lakh in 2003 and further to 17.40 lakh by 2007. The crossbred cattle population which stood at 22.87 lakhs (67%) as per 1996 Census decreased to 17.35 lakh numbers and in percentage terms increased to 82% by 2003. It further declined to 16.21 lakh numbers and in percentage terms increased to 93% in 2007. This increase in proportion of crossbred population was made possible by expanded health care facilities and artificial insemination services available in the State.

Fig. 4.9

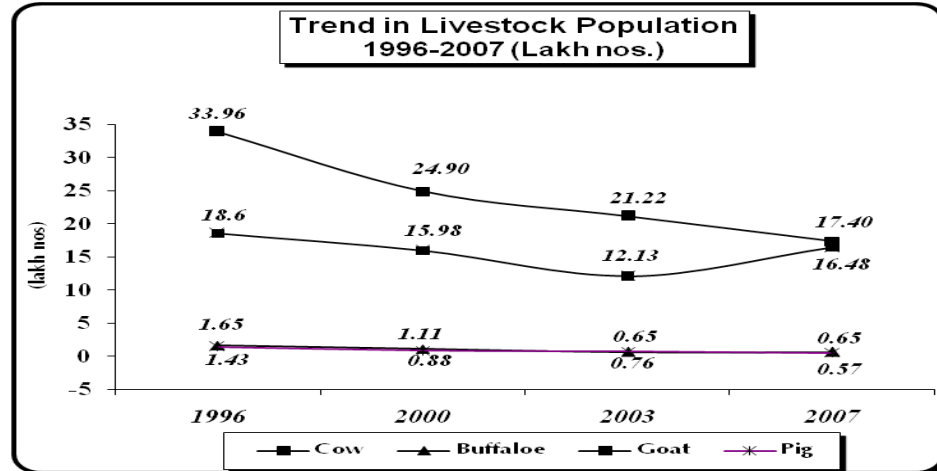
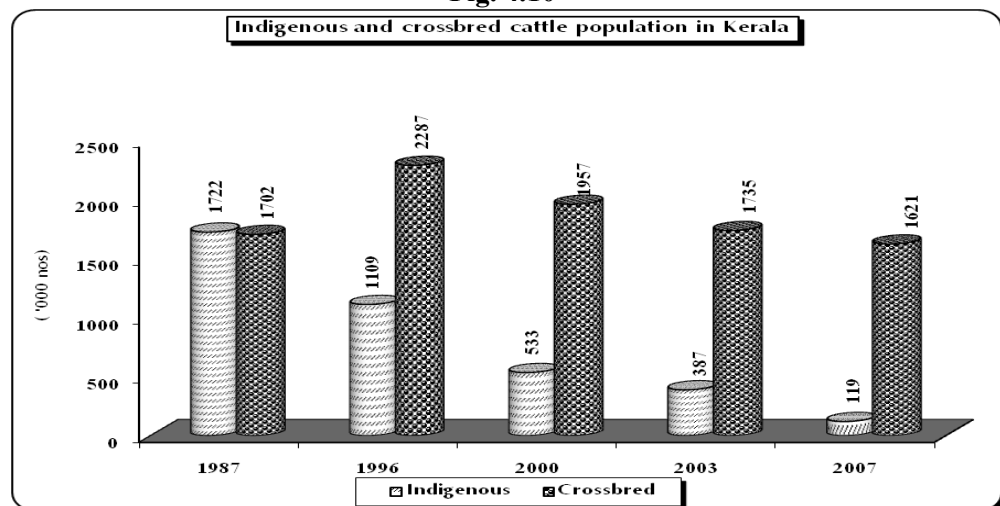


Fig. 4.10



### Trend in Production of Major Livestock Products

4.88 The value of output from livestock sector to Indian economy during 2001-02 at current price was about `147097 crore. It increased to `240601 crore during 2007-08, i.e., an increase of 43.27 percent over five years.

4.89 Total milk production in the State which was 24.20 lakh tonnes in 2003 declined to 21.11 lakh tonnes in 2004 and then began to increase in the subsequent years. It increased to reach 24.51 lakh tones in 2008 and to 25.37 lakh tonnes in 2009. Even then the gap between requirement and production continues to remain unfavourable. At the same time, over the period, at national level the milk production has been continuously increasing. Contribution of Kerala to national milk production which was 2.4 percent during 2003-04 showed a declining trend and reached 2.10 percent by 2006 and then increased to 2.38 percent during 2008-09 but decreased slightly to 2.26 per cent in 2009-10. The gap between the production and requirement of egg is also increasing at an alarming rate. Concerted efforts of the State to increase the egg production has began to show signs of improvement. Egg production which was 1379 Million .Nos in 2007 increased to 1510 M.Nos in 2008 and to 1633 M.Nos. in 2009; an increase of 8 percent over 2008. Though meat production is increasing over the years, it cannot cater to the demand fully. The average annual growth rates of milk and egg production in Kerala and India for the period from 1950-51 to 2009-10 are given in Table 4.14.

**Table 4.14**  
**Average Annual Growth Rate of Milk and Egg Production**

Sl.No.	Year	Milk		Egg	
		Kerala	India	Kerala	India
1	1950-51 to 1960-61	2.50	1.64	NA	4.63
2	1960-61 to 1970-71	2.52	1.15	NA	7.91
3	1970-71 to 1980-81	12.52	4.51	NA	3.79
4	1980-81 to 1990-91	6.41	5.50	4.89	7.70
5	1990-91 to 2000-01	4.24	4.16	2.75	4.59
6	1997-98 to 2001-02(IX Plan period)	3.78	4.32	(-) 0.22	7.09
7	2001-02 to 2006-07(X Plan period)	- 4.86	3.64	-9.75	5.52
8	2006-07 to 2009-10	6.18	3.69	10.85	5.71

*Source: Based on Sample Survey reports of Animal Husbandry Department*

4.90 The dairy sector in Kerala could maintain a higher growth rate of 4.24 per cent in the 1990s, compared to the national level of 4.16 per cent, in spite of a weak fodder base. In the Ninth Plan period the growth rate of milk in Kerala declined to 3.78 per cent but that of India increased to 4.32 per cent. During the period 2001-02 to 2006-07, a negative growth rate was recorded in the milk production of Kerala (- 4.86%) and at India level the growth rate declined

to 3.64 per cent. For the period 2006-07 to end of 2009-10 a recovery has been marked in milk production of Kerala with a compound growth rate of 6.18 percent, a highest rate in recent years. This is also reasonably high rate compared to 3.69 at all India level.

4.91 Egg production in Kerala, which recorded a growth rate of 4.89 per cent during 1980 – 81 to 1990-91, declined gradually and by the period 1997-98 to 2001-02 (IX Plan Period) it reached a negative growth rate of 0.22 % and further declined to -9.75% during 10<sup>th</sup> plan period. Contrary to this adverse trend, our state achieved a compound growth rate of 10.85 per cent in egg production during 2006-07 - 2009-10 period. At all India level, though the growth rate during 9<sup>th</sup> plan was 7.09 per cent, it declined to 5.52 per cent in 10<sup>th</sup> plan period and recorded a slight increase to 5.71 percent during 2006-07 – 2009-10 period.

4.92 Compared to 2007-08, the egg production in 2009-10, recorded an annual growth rate of 8.20 percent and the production recorded is the highest during the last 6 years.(See Table 4.21).

### Dairy development

4.93 Dairy industry in India has made significant progress from 8<sup>th</sup> plan onwards. India continues to be largest producer of milk in the world with a total production of 105million tones (provisional) in 2008-09 and the per capita availability of milk stood at 258 gm/day.

4.94 Though the per capita availability of milk is low compared to world average and substantial increase in this regard was attained over a period of 10years, from 213gm/day to 258 gm/day. This increase together with attainment of near self sufficiency in milk and milk products has been achieved mainly on account of the tremendous amount of marketing support and technical inputs provided and the infrastructure developed in the country through the network of cooperatives. More than 50 per cent of the milk in the country is produced by small and marginal farmers and landless labourers, producing about one to three litres of milk per day.

4.95 In spite of India's position as highest producer of milk, productivity per animal is very poor. At the national level it is only 987 Kg/lactation as compared to the world average of 2038 Kg/lactation. This is mainly due to poor level of nutrition as well as low genetic potential for milk production and health care. Among the major states in India, there are significant interstate differences in the productivity of cows and buffaloes. As per the available estimates milk yield/day of exotic cows were highest in Punjab(8.431 Kg), followed by Gujarat (8.057kg) Kerala(7.508 kg) and Andhra Pradesh (7.385kg). At the same time the yield/day of exotic breeds in Karnataka is 6.312kg and Tamil Nadu is only 5.890kg. Among these states highest yield of non descript cow is of Gujarat (3.401kg) followed by Tamil Nadu(2.762kg), Kerala (2.629 kg), Punjab (2.505kg), Karnataka (2.240kg) and Andhrapradesh (1.813kg). The average yield/day of buffaloes is highest in Punjab (7.425 kg) followed by Kerala (6.242 kg), Tamil Nadu (4.222 kg) and Karnataka (2.481 kg). In general the milk yield of both cows and buffaloes were lowest in Assam. The year wise estimate of production is shown in Table 4.15.

**Table 4.15**  
**Year-wise Estimate of Milk production**

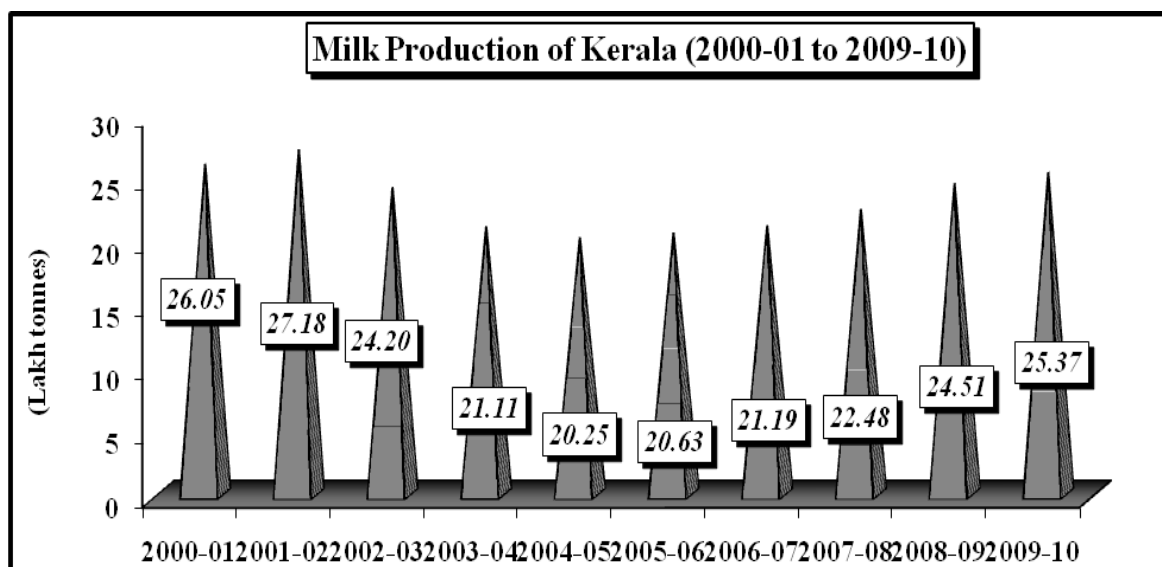
Sl. No.	Year	Milk Production ( lakh tonnes )				% contribution of Kerala
		India	% change over previous year	Kerala	% change over previous year	

1	2003-04	881	1.6	21.11	-12.8	2.4
2	2004-05	925	4.9	20.25	-4.1	2.2
3	2005-06	971	5.0	20.63	1.9	2.1
4	2006-07	1009	3.91	21.19	2.7	2.1
5	2007-08	1048	3.86	22.47	6.04	2.2
6	2008-09	1031*	-1.6	24.51	9.08	2.38
7	2009-10	1125**	3.59	25.37	3.57	2.26

Source: Economic Survey and Department of Animal Husbandry \*provisional \*\*anticipated

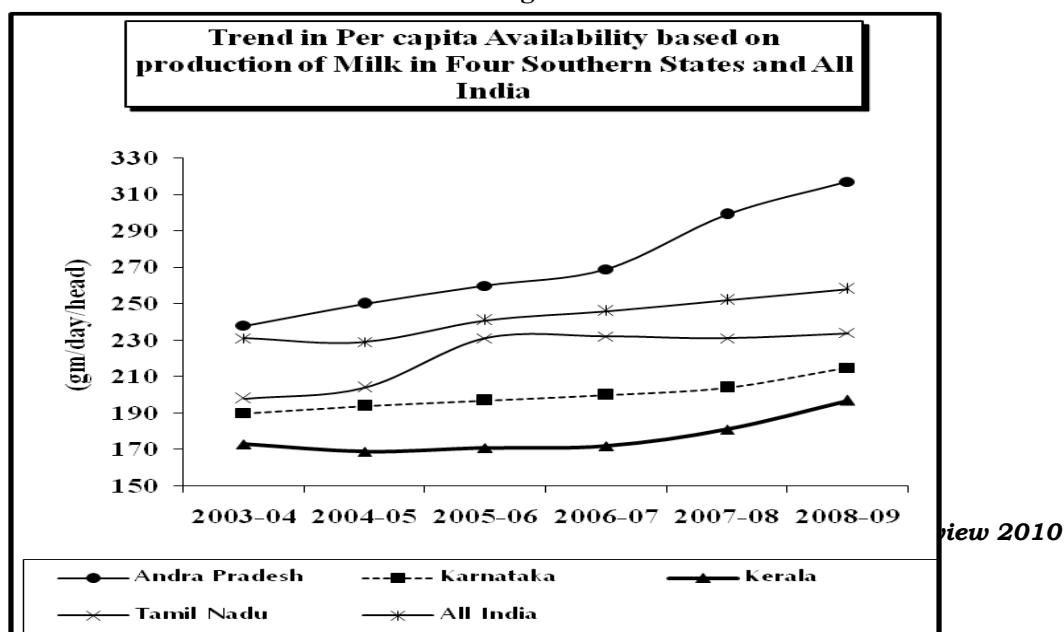
4.96 Trend in Year-wise milk production for the period from 2000-01 to 2009-10 is given in Fig.4.11

Fig. 4.11



4.97 Regarding the per capita availability of milk based on 2008-09 figures for the southern states viz., Andhra Pradesh, Karnataka, Tamil Nadu and Kerala, Andhra Pradesh ranks first with an availability of 317g/day and Tamil Nadu ranks second with 234g/day. (Trend from 2003-04 to 2009-10 is shown in Fig.4.16). Among the four states, Kerala has the lowest figure of 197g/day (See Appendix-4.31). Among the major states at all India level Punjab ranks first with 957g/day and the lowest in the case of Assam with 70g/day. (Figure 4.12)

Fig. 4.12



## Better Management of Young Calves

4.98 The calf rearing programme by subsidising cattle feed for rearing cattle up to 32 months along with health cover and insurance has been under implementation from Eighth Plan onwards. During 2006-07 the scheme was extended to buffalo calves also as a measure to curtail the drastic reduction in the buffalo population. During 2008-09, 23690 calves were enrolled of which 2000 are buffalo calves. Against this during 2009-10, 23000 calves were enrolled which include 21000 cow and 2000 buffalo calves. Year wise details are furnished in Table 4.16.

**Table 4.16**  
**Year-wise Details of Calves Enrolled under Special Livestock**  
**Breeding Programme (2003-04 to 2009-10)**

Sl. No	Year	No. of calves enrolled		
		Total	Cow	Buffalo
1	2003-04	23683	23683	
2	2004-05	17941	17941	
3	2005-06	21819	21819	
4	2006-07	21350	21000	350
5	2007-08	23604	21604	2000
6	2008-09	23690	21690	2000
7	2009-10	23000	21000	2000

*Source: Animal Husbandry Department*

## Milk Marketing

4.99 In Kerala there are 3445 dairy co-operatives including 2646 Anand pattern societies functioning under KCMMF. Including non functional APCOS the total number of APCOS registered upto August 2010 is 3001. The number of newly registered Societies during 2009-10 was 31.

4.100 Of the 22 dairies functioning in the State 12 are in the Co-operative Sector(Milma) and the remaining 10 are run by private/charitable societies which handle 64000MT milk per annum. There are also about 25 small dairies which are not registered and they handle 10000 litres of milk/day. The important societies functioning under the Co-operative Sector are viz., Malanadu, Nirmalgram, PDDP, Perambra and PDDP, Kalady are working under Charitable Institutions.

4.101 MILMA represents more than 8.11 lakh dairy farmers who have organised 2646 Anand Pattern Cooperative Societies. It has helped in ensuring better returns to the dairy farmers. The dairies under Milma is handling 9.90lakh litres of milk/day, 14 chilling plants, two cattle feed plants, a milk powder plant, an established training centre and 5000 distribution outlets. Of the total 3001 APCOs registered, only 2708 are functional. The average milk procured per day by

APCOS during the year 2010 was 8.25 lakh litres against the previous year average of 9.05 lakh litres.

4.102 The procurement /day/society during 2009 is 340 litres/day and during 2010 it is only 305 litres /day. Over a period of last 7 years the highest average procurement /day is during 2007.

4.103 In Kerala, where the production of milk is concentrated in the small farm sector and ultimate supply is dependent on seasonal factors, maintaining uninterrupted supply particularly during lean period is very difficult. The Federation is thus forced to import milk from the neighbouring states during lean periods when the internal supplies used to shrink. The procurement of milk by KCMMF stood at 2718 litres against the sale of 3640 lakh litres during 2009 showing a wide gap between procurement and supply. Data on procurement and sale of milk by different dairies of KCMMF during 2005 to 2010 is presented in Appendix 4.41.

4.104 The veterinary services rendered by KCMMF are noteworthy. They have a well established Veterinary Wing at Thiruvananthapuram and Ernakulam Regional Milk Unions. But during the last two years their number declined by 50% to 6 Nos and 0.41 lakh animals were treated. KCMMF has sold 1.13 lakh MT of cattle feed till August 2010. It also produced 3149 MT and sold 3437 MT of ghee during the year 2010 (till August). Year wise details for the period from 2003 to 2010 are furnished in Appendix 4.40.

4.105 Besides milk, a variety of milk products are manufactured by KCMMF. Details of products and a comparison of sales by KCMMF from 2006-07 to 2009-10 is given in Appendix 4.45 The products viz., peda and curd increased in sale during 2009-10 compared to previous period, but sale of butter cream decreased. The sale of milk increased by 9.52% during the year.

### **Kerala Dairy Farmers Welfare Fund Board**

4.106 The dream pension to dairy farmers was realised through promulgation of an ordinance to form Dairy Farmers Welfare Board on August 24<sup>th</sup>, 2005 this being the first one in India itself.

4.107 At present 1.6 lakh members (75% of total pouring members) have already enrolled in the fund. Now 23535 eligible dairy farmers are receiving regular pension @ of `250/month. Also 831 nominees of deceased pensioners are receiving family pension at the rate of `125/month. As per the KDFWF Act 2007, the Board has formulated a comprehensive social welfare scheme for the members called 'Ksheera Deepam'.

### **Weak Feed and Fodder Base**

4.108 With the shift in cropping pattern of Kerala, the area under rice has come down by more than 50 per cent over the last two decades leading to drastic reduction in the availability of straw for feeding cattle. It is estimated that the state produces only 60 per cent of the roughage requirement for cattle in Kerala. Special focus has been given to fodder and feed production in Kerala to overcome the situation during Eleventh plan period. Popularisation of high yielding fodder varieties like CO3 and large scale intercropping in coconut holdings are to be taken up with the support of local governments. The preparation of block level fodder plans have to be initiated for augmenting supply.

4.109 Perennial fodder varieties like Hybrid Napier and Guinea are widely acceptable to farmers, and the department is supplying the planting material free of cost to the farmers. Fodder and feed development is of prime importance in reducing cost of production and optimising economic return from the dairy activity and KLD Board and dairy development department have taken up fodder development as an important activity right from the beginning. They produced 52.40 MT of fodder seeds during 2008-09 against 46.80 MT of seeds in 2007-08. The quantity of seeds supplied by KLD Board during the period was 45.43 MT against 44.41 MT during 2007-08. Also they had produced and supplied 48.66 lakh fodder stem cuttings/root slips during 2008-09 against 40.41 lakh slips during 2007-08 (See Table 4.17).

**Table 4.17**  
**Production and Sale of fodder seeds by KLD Board**

Sl.No.	Year	Quantity of Seeds Produced (MT)	Quantity of Seeds Supplied* (MT)
1	2004-05	13.89	10.88
2	2005-06	6.53	24.36
3	2006-07	14.80	15.52
4	2007-08	46.80	44.41
5	2008-09	52.40	45.43
6	2009-10	-	94.13
<b>Stem cutting/ root slips produced and sold(Lakh Nos)</b>			
1	2007-08	40.41	40.41
2	2008-09	48.66	48.66

Source: KLD Board Annual Reports

4.110 During 2009-10, under department programmes 2.71 lakh MT fodder is produced using fodder slips/stem cuttings and the area covered is 2650 ha. The total area covered is 2883 ha. An increasing trend is prevailing over the last three years in the total area brought under fodder cultivation through department programmes (see Table 4.18). Also the preference of slips over seed is increasing. The area cultivated with maize is 190 ha. Also 1.40 lakh fodder tree seedlings, 42 fodder slip multiplication units and 5000 azola kits were supplied during the period.

**Table 4.18**  
**Procurement & Supply of Fodder seeds / Root Slips and Area Covered under Fodder Cultivation**

Sl. No.	Year	Procurement of seeds	Total quantity of seeds supplied to farmers	Area covered	Fodder root slips/stem cuttings supplied (No)	Area covered	Total area covered under fodder cultivation
		(in MT)	(in MT)	(in Ha)	(in lakh)	(in Ha)	(in Ha)
1	2003-04	4.80	4.48	1798	282.5	1412.5	3210.5
2	2004-05	Nil	Nil	Nil	375	1840	2230
3	2005-06	Nil	Nil	Nil	240	1600	1600
4	2006-07	22.5	22.5	250	246	1640	1890
5	2007-08	NA	NA	621	NA	1770	2391
6	2008-09	15.24	15.24	381	270.75	2235	2625
7	2009-10	N.A	9.32 (Short duration crops)	233	318	2650	2883

Source: Dairy Development Department

4.111 Kerala farmers have adjusted to the situation by restricting the number of cattle and that too by preferring to maintain high yielding cross breeds. This is evident from the steady increase in the proportion of crossbred animals, which Kerala achieved during the last three decades. (see Appendix 4.23).

### Breeding Support

4.112 Regarding breeding infrastructure, India is among the countries having the largest breeding infrastructure in the world with 159 bull semen stations, 152 frozen semen banks and more than 50000 AI Centres. Due to poor quality semen produced by most of the semen stations in the country, the conception rate ranges from 20 per cent to 45 per cent only where as in the developed countries the rate is more than 50 per cent.

4.113 As per the data available during 2009-10 (as on 31/3/2010) of the 38833 AI Centres under Animal Husbandry department in the Country only 2577 are in Kerala.

4.114 Kerala Livestock Development Board (KLDB) is involved in the production and distribution of frozen semen. Compared to 2008-09, semen production increased by 18.02% to 24.08 lakh doses during 2009-10. The distribution inside and outside the State increased sharply from 16.47 lakh doses to 17.12 lakh doses and from 1.86 doses to 2.65 doses respectively during this period. Details are furnished in Appendix 4. 35.

4.115 The number of AI centres under Animal Husbandry Department during 2009-10 is 2577.

4.116 The number of inseminations done during 2009-10 was 12.99 lakh and calving recorded was 3.27 lakh. This is against 12.17 lakh calvings recorded out of 4.06 lakh AI during 2008-09. The average number of inseminations needed for producing one calf is around 3 over the last 6 years ( Table 4.19). The quality of AI is improving slowly over the last 6 years. But during the current year this again reached almost 4 inseminations and so measures to improve the quality of semen supplied or to find out reasons for this phenomenon is to be initiated in future.

**Table 4.19**  
**Number of Artificial Inseminations Conducted and recorded Calving**

Sl. No.	Year	No. of artificial Insemination Centres	No. of Artificial Inseminations done	No of AI Done Per centre	Recorded Calving	No of inseminations per calving
1	2	3	4	5	6	7
1	2003-04	2538	1231407	485	353764	3
2	2004-05	2445	1176318	481	357718	3
3	2005-06	2445	1179801	483	355011	3
4	2006-07	2541	1204000	474	383000	3
5	2007-08	2550	1075000	443	358457	3
6	2008-09	2562	1216932	475	405644	3
7	2009-10	2577	1298550	504	326700	4

Source: Animal Husbandry Department

4.117 Apart from the frozen semen technology, KLD Board is also engaged in research and development activities like progeny testing, embryo transfer, production of liquid nitrogen, fodder seed and training programmes. During the year, the Board has produced 198 Malabari kids, 28 boer goats, collected 165 embryos and trained 1630 personnel. During the year under review, they distributed 2010 piglets and sold 25.75MT of green grass. Other activities of the Board are given in Appendix 4.37.

4.118 Herd Book Scheme is operated complementary to the Progeny Testing Programme. This would help to assess the improvements happening in the field with respect to traits to support the field progeny testing programme. So far against the target of 80000 animals, 127748 animals have been identified and registered under the programme. During 2008-09 against the target of registering 5000 calves, 5064 calves were registered under the programme. The Scheme covers a breedable population of about 60000 cross bred females spread around 83 AI Centres. Under the programme farmers are provided with deworming medicines and advice on scientific aspects of calf rearing.

### Cattle Feed

4.119 At present the State has three cattle feed plants functioning at Pattanakkad and Malampuzha with a combined production capacity of 600 MT/day and Kerala Feeds Ltd., Kallettumkara with a production capacity of 650 MT/day. The third one is operating under a separate management. Also there is a custom packing arrangement at Erode under KCMMF. The per day production capacity of Kerala Feeds Ltd., increased from 500 MT to 650 MT during 2005-06. The per day food production during 2009-10 was 593.43 MT. The production of the three plants is insufficient to meet the demand of cattle feed in the state.

4.120 During 2009-10, the two plants under KCMMF produced and sold 1.13 lakh MT of cattle feed. The major customer is APCOS (62%). The price of feed supplied to APCOS is kept lower than the open market price.

4.121 The production of cattle feed by Kerala Feeds Ltd., increased to 2.14 lakh MT in 2009-10 from 1.89 lakh MT in 2008-09. The Company has a good marketing network which includes 400 dealers and 450 Co-operatives. During the review period the production of mineral mixture stood at 295.065 MT against 258.085 MT during 2008-09. The company has evolved a growth plan to enhance the production capacity to 1500 MT per day during this year. Production details of the above cattle feed plants are given in Table 4.20.

4.122 During the year under review, the raw material price recorded unprecedented price increase and shortage and KCMMF have to depend on outside source for nearly 100% of the raw material requirement.

**Table 4.20**  
**Production of Cattle Feed**

(in lakh MT)

Factory	Production					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Pattanacaud (KCMMF)	0.58	0.60	0.66	0.58	0.53	0.56
Malampuzha ( KCMMF)	0.34	0.18	0.52	0.56	0.47	0.57
Erode CPA	0.18	0.30	-	-	-	-
Kerala Feeds Ltd.	1.26	1.39	1.41	1.81*	1.89*	2.14

<b>Total</b>	<b>2.37</b>	<b>2.47</b>	<b>2.59</b>	<b>2.95</b>	<b>2.89</b>	<b>3.27</b>
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\*including production at Erode

Source :Annual Reports of KCMMF/ Kerala Feeds Ltd.

## Egg and Meat

4.123 As per estimates available, the per capita availability of egg is very low at 47 eggs/year and poultry meat is 0.9 kg/year against the world average of 147 eggs and 11 kg poultry meat /year in the country. Government of India has set a target for achieving production of over 52 billion eggs by 2011-12, at a growth rate of 4.3 per cent.

4.124 Poultry farming for egg production relaying on purchased feed are uneconomic in Kerala. Poultry rearing on commercial lines is therefore largely confined to broiler production. The egg production which reached 2054 million in 1999-2000 continuously declined till 2005-06, but began to increase in 2006-07 and that trend maintained in succeeding years.

4.125 A factor to be noted in this regard is that over the previous years domestic production of egg is declining to a lower level than that of 1984 - 85 (See Appendix 4.33). The decline in poultry population and hike in cost of feed were the major reason for the decline in production. During 2006-07, egg production increased by 0.25% to 1199 million nos, in 2007-08, by 15% to 1379 million nos and in 2008-09 increased by 9.5% to 1510 million nos (See Table 4.21). It again increased by 8% to 1633 million nos in 2009-10 recording an all time hike over the period from 2002-03 reflecting the fruits of development support extended to the poultry sector during the eleventh Five Year plan period. Trend in Egg production during the period from 2000-2001 to 2009-10 is given in Fig. 4.13

Fig. 4.13

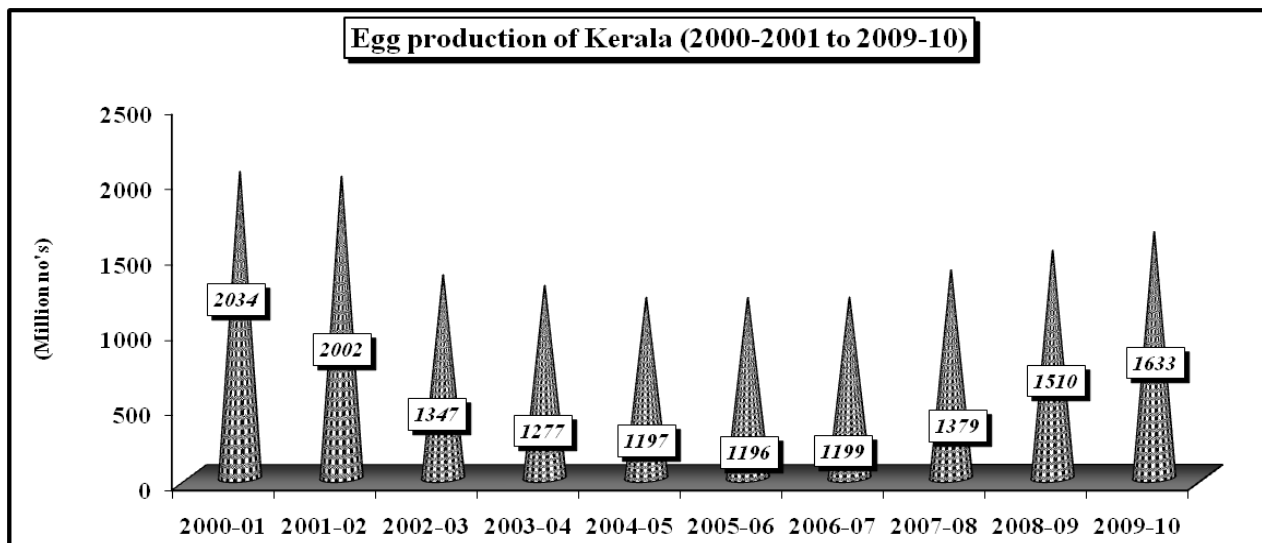


Table 4.21  
Year-wise Estimate of Egg production

Sl. No.	Year	Egg Production (million numbers)				% contribution of Kerala
		India	% change over previous year	Kerala	% change over previous year	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2003-04	40403	1.46	1277	- 5.20	3.2
2	2004-05	45201	1.87	1197	- 6.26	2.9
3	2005-06	46166	2.13	1196	- 0.08	2.6
4	2006-07	50663	9.74	1199	0.25	2.4
5	2007-08	53532	5.66	1379	15.01	2.58
6	2008-09	55395	3.48	1510	9.50	2.73
7	2009-10	59844	8.03	1633	8.15	2.73

Source: Economic Survey and Department of Animal Husbandry

## Backyard poultry

4.126 Backyard poultry system has good potential in the state. Around 8-10 lakh chicks are being introduced every year in the state. Apart from Animal Husbandry department and KSPDC, a few NGOs and private farms are also involved. But the system is yet to develop to the required extent.

## Poultry Rearing and Kerala State Poultry Development Corporation

4.127 Kerala State Poultry Development Corporation was established in 1989 to give special attention for the revival of poultry farming. The Corporation had built up a broiler breeding farm and hatchery at Kudappanakunnu in Thiruvananthapuram District with a total investment of `5.95 crore. Now the Corporation is producing and supplying 45000 day old chicks per week for distributing to the farmers. During 2005 a modern meat processing plant was commissioned in Pettah with a capacity to process 1200 birds/day. They also had a feed mill with a capacity of 20 T/day and now they are producing on an average 6-10 T/day and are supplying feed for all the farms of Animal Husbandry Dept.

4.128 During 2008-09 11 broiler integration farms and 11 layer integration farms were started under KSPDC

## Broiler Production

4.129 Nearly 10-15 Private hatcheries, working as satellite hatcheries also contribute to this local production of chicks and chicken meat. Approximately 40000-50000 direct employment is generated through broiler production. Apart from this, around 30000-40000 MT of chicken meat, which includes broilers, layer chicks, broiler and layer parent culls etc. is being imported from neighbouring states.

## Meat production

4.130 India is endowed with more than 11 per cent of worlds' livestock population comprising a variety of meat animals such as buffaloes, goat, sheep, pigs, cattle and poultry. The per capita animal protein availability is about 10g against world average of 25g. The minimum requirement targeted is 20g per capita/day of animal protein of which 4g will come from meat. The estimated demand for meat would be 7.7 million tonnes against the present production of 5.7 million tonnes. Meat production in Kerala comprises of beef, mutton, pork and broiler chicken. Out of this, beef is almost entirely from the culled animals brought from the neighbouring states. The rearing of goat and pig is concentrated in selected pockets. As in the case of poultry, meat production under stall-fed condition in general is not economical in

Kerala. However, there is scope for fostering this activity in selected areas largely by utilising the bio wastes available. The annual production of meat is shown in Table 4.22.

**Table 4.22**  
**Year-wise Estimate of Meat production (2004-05 to 2009-10)**

Kerala					
Sl. No.	Year	Poultry Meat		Meat other than Poultry Meat	
		Production ( tonnes )	%age increase over previous year	Production ( tonnes) @@	%age increase over previous year
1	2004-05	32704	-25.25	162567	
2	2005-06	27609	-16.84	167763	13.69
3	2006-07	16184	-41.38	180342	3.20
4	2007-08	17390	7.45	180579	7.50
5	2008-09	19268	10.80	181103	0.13
6	2009-10	22000	14.18	102000	0.29
					-43.68

Source: Economic Survey and Department of Animal Husbandry  
 @. from 2003-04 onwards spent chicken production data is not available  
 @@ including unauthorised sector

4.131 In the meat sector altogether, the year 2009-10 recorded lowest production in the last 10 years. Total quantity of meat and poultry meat produced during the period 2004-05 to 2009-10 are furnished in Table 4.22. From 2003-04 onwards quantity of meat from chicken is not included. The poultry meat production which was declining till 2003-04 began to show an increasing trend in 2007-08 by showing a hike in production by 7.45%. During 2008-09, the poultry meat production has increased by 10.80% and it increased by 14.18 percent during 2009-10. Production figures for meat other than poultry meat is on the increase and the increase during 2007-08 is 0.13% compared to previous year and the rate of increase during 2008-09 is 0.29%. Contrary to this during 2009-10, meat production(excluding poultry meat) decreased to 1.02 lakh tonnes recording a steep decrease of 43.68 percent.

4.132 In Kerala beef is the cheapest meat costing only 50 per cent of the prices elsewhere till 2004-05. This is because of the migration of large number of cattle and buffalo from the neighbouring states for slaughter. But the price trend has changed and now the price of beef is showing a steady increase and by 2008-09 reached ` 103/kg.

4.133 There is no authentic data regarding the number of cattle and poultry slaughtered in the State and hence the total value and quantity of meat produced in the state not accessible. As per survey conducted by dept. of Economics and Statistics in 2006, there are 4904 slaughter houses in Kerala of which the authorised slaughter houses were only 1490(30.38%). Also of the total 6489 poultry stalls registered were only 2124 (32%). About 93% of the slaughter houses in Ernakulam district are unauthorised.

4.134 A wide gap is existing between the requirement and production of animal products. A comprehensive strategy needs to be put in place to augment production of major livestock

products in the state. Aiming at enhancing of milk production by 70% and doubling of egg production from 2005-06 level a major state food security project was launched during 2008-09. It is under implementation with additional funding support.

### **Animal Health Care**

4.135 In order to reduce morbidity and mortality, efforts are being made by the State/UT Governments to provide better health care. For it, a network of 9009 polyclinics/hospitals and 19162 dispensaries and 26443 veterinary aid centres (including stockmen centres/mobile dispensaries), supported by about 250 disease diagnostic laboratories are functioning in the country. For the production of vaccines, there are 26 veterinary vaccine production units. The primary emphasis is on clinical services and as a result, endemic diseases such as Foot and Mouth Diseases (FMD) are still prevalent in India.

4.136 There is a strong network for veterinary health care now in the State comprising 210 Veterinary hospitals, 883 veterinary dispensaries, 47 veterinary poly clinics, 14 District Veterinary Centres, 9 mobile hospitals/dispensaries at district level, 13 district level clinical labs, four diagnostic labs and other related health care institutions.

4.137 The state is implementing a programme for Foot and Mouth disease control with the assistance of Government of India. Also Brucellosis has now emerged as a new threat to the livestock wealth of the State. Helminthiasis control also needs attention. Worms and other internal parasites cause considerable economic loss to the farmers. Data regarding outbreaks, attacks and deaths of major contagious diseases of animals in Kerala for the period from 2001 to 2008-09 are given in Appendix. 4.46 .

4.138 Even though vaccinations were carried out, frequent outbreaks were reported which lead to production loss to farmers. Compared to last 3 years FM outbreaks are more in 2007-08, but attack and death are very low. A project for the creation of disease free zone with assistance from NDDDB, FMD CP with 100 per cent Central assistance and ASCAD has been under implementing in the State and now the diseases are under control.

4.139 During the period of last six years from 2001 onwards the attack of black quarter ranges between 1 and zero and no death is reported. But during 2006, 160 attacks were reported and the disease is showing a sign of creeping back. During 2007-08 one attack and 10 deaths are reported. In 2008-09 no outbreaks, attacks or death are reported. The reports of minor attacks of major diseases like Anthrax, and Hemorrhagic Septicemia are also reported. The State has already eradicated the dreadful disease of rinderpest and no outbreak was reported after 1994.

### **Production of Vaccine in Veterinary Biological Institute, Palode**

4.140 The Veterinary Biologicals, Palode is the sole agency engaged in the production and distribution of animal vaccine in the State. The production details of vaccines manufactured here are shown in Table 4.23. Apart from the production of vaccines, the institute is engaged in the manufacture of diagnostic reagents and other animal health products.

**Table 4.23**  
**Production of Vaccine by Veterinary Biological Institute (2005-06 to 2009-10)**  
 (lakh doses)

Sl. No.	Name of Vaccine	2005-06	2006-07	2007-08	2008-09	2009-10
1	RDVK	69.46	159.50	80.86	118.23	117.22
2	RDVF	10.01	16.98	3.18	11.60	21.26
3	FPV	1.97	5.87	0	0	2.47
4	DPV	27.84	23.36	20.33	42.54	39.34
5	HS Oil adjuvant	0.77	2.04	3.80	1.95	0.35
6	HS Broth	0.27	1.34	1.26	0.62	0.65
7	BQ	0	0.28	0-	0.31	0.31
8	Anthrax	0.79	1.02	1.72	2.04	1.01
9	Duck Pasteurella oil adjuvant Vaccine		3.21	6.66	20.47	18.84

Source: Animal Husbandry Department

4.141 Compared to previous year poultry vaccine production during 2009-10 was 199.15 lakh doses increased by 3.27% from 192.85 lakh during 2007-08 but livestock vaccine decreased by 54% from 4.94 lakh doses during 2008-09. Number of vaccinations done during 2009-10 was 1992 for livestock and 74.78 for poultry. Compared to previous year, vaccination to cattle increased by 45 per cent and vaccination to poultry by 30 per cent. Details are given in Appendix 4.34

4.142 Compared to 2008-09 production of RDVF and FPV recorded an increase and others decreased during 2009-10.

### Prices

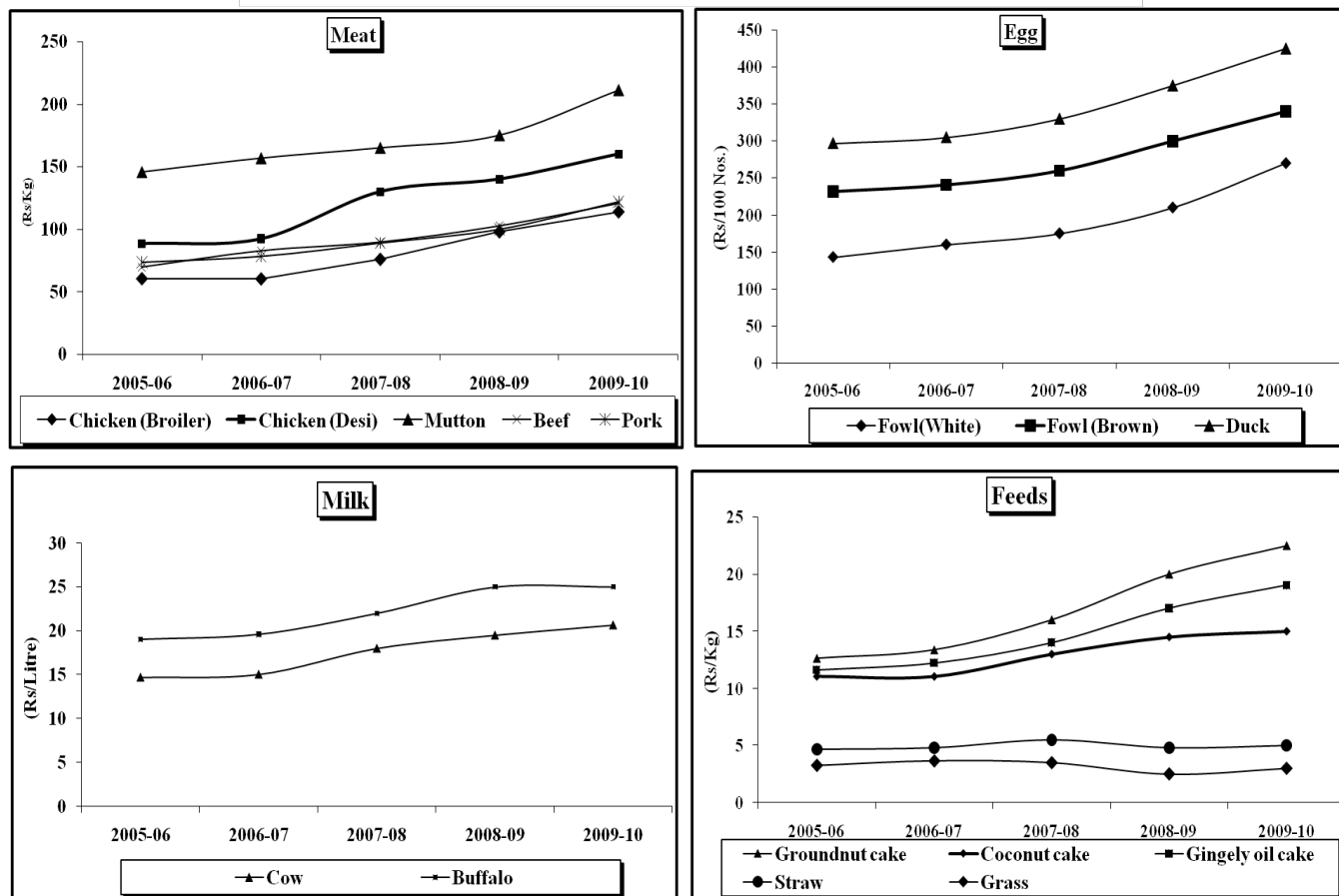
4.143 Average price of important inputs and products of livestock sector for the last five years is presented in Appendix 4.38 and all the products are recording increase in prices during the last two years. Compared to 2006-07 there was increase in the price of all categories of meat during 2008-09 and 2009-10. During 2009-10, the highest increase is in the case of Pork(22%), followed by Mutton(21%). Compared to 2008-09, the price of fowl-white egg increased by 29 per cent, brown egg by 13 per cent and duck egg by 13 per cent during 2009-10. Corresponding increase during the previous year is 9.37%, 8.33% and 8.20% respectively.

4.144 During 2009-10, the price of milk (cow) increased by 6% and no increase for buffalo milk in the State.

4.145 On the input side, the price of grass recorded 20% increase during 2009-10. Compared to previous year, the price of gingili oil cake increased by 12%, coconut oil cake by 3% and ground nut cake by 12.5% during 2009-10 and the increase in the price of inputs is a serious threat to dairy farming. The trend in average prices of livestock products from 2005-06 to 2009-10 are shown in Fig. 4.14.

Fig. 4.14

Average price of livestock products and feeds in the state(2005-06 to 2009-10)



### Food Security Scheme

4.146 For the food Security Scheme an amount of `1900 lakh was set apart for the animal husbandry sector and an out lay of `600 lakh was provided for the dairy sector during 2009-10. During 2010-11 also the food security scheme will be continued with a provision of `3300 lakh for the animal husbandry sector. Following are the achievements of the scheme during 2009-10:

1. Introduction of 5000 pregnant heifers in the State
2. To boost internal egg production in the State `10 crore utilized for providing two layer Pullets at free of cost to benefit 4.16 lakh BPL families.
3. `140 lakh sanctioned for three Districts of Palakkad, Thrissur and Pathananthitta where in 1500 mulch animals could be inducted.

## Livestock Insurance

4.147 A Centrally Sponsored Scheme on Livestock Insurance was introduced in 2008-09 in 100 selected districts in the country and from 2009-10, the scheme has been extended to 300 districts. The objectives of the scheme are to provide protection to the farmers and cattle rearers against any eventual loss of their animals due to death. 50 percent of the premium is paid by the beneficiary and the remaining 50 percent by the Govt. of India. The scheme is implemented through KLDB. In Kerala 11 districts were included under the scheme and in the remaining three districts viz., Pathanamthitta, Malappuram and Kasaragode, Govt. of Kerala has supported the scheme.

4.148 Death and permanent total disability due to disease is covered by the insurance as per the standard cattle insurance policy. The scheme also covers loss due to FMD and Mastitis. Following are the achievements of the scheme during 2006-07 to 2010-11.

**Table 4.24**

Year	No. of Animals insured	Subsidy on Premium ( Lakh)	Claim Paid ( lakh)
2006-07	67206	103.96	61.93
2007-08	29804	53.55	30.10
2008-09	11929	20.00	19.02
2009-10	27742	51.00	14.86
2010-11*	106686	359.00	85.07
<b>Total</b>	<b>243367</b>	<b>587.51</b>	<b>210.98</b>

\*Upto August 2010

## Annual Plan 2009-10: A Review

### Financial Performance of Annual Plan 2009-10

4.149 The budgeted outlay for the livestock sector during 2009-10 is `84.65crore. This includes `74.15 crore provided for Animal Husbandry and `10.50crore for Dairy Development, against this the total expenditure is `61.17 crore, ie., 72.26% of the budgeted outlay of which `52.18 Cr. is the expenditure in Animal Husbandry Sector and `8.99 Cr. in Dairy Development Sector.

4.150 Substantial outlays have been earmarked by them for livestock development. The activities, by and large, are centered around health care, breeding support, assistance to dairy co-operative societies for infrastructure development and purchase of equipment, fodder cultivation and development of farms transferred to them. Outlay and expenditure of some of the major schemes are given in Table 4.25.

**Table 4.25**  
**Outlays and Expenditure for Major Schemes under Annual Plan 2009-10**  
(` lakh)

Sl. No.	Name of Scheme	Approved outlay	Actual expenditure	Expd. as % to Total
1	Strengthening of Veterinary Services	1700.00	1103.53	64.9
2	Expansion of Cross Breeding facilities	576.50	467.75	81.14
3	Special Livestock Breeding Programme	850.00	844.74	99.40
4	Commercial Fodder Production Programme	200.00	200.00	100.00
5	Poultry Farms and Expansion of Poultry Production Incl. Farms under KSPDC and Poultry Development through KSPDC	255.00	110.37	43.30
6	Commercial Dairy and Milk Shed Development	600.00	597.90	99.7

4.151 The project on State Food Security launched in 2007-08 continued in 2009-10 also. As a part of the project, under Animal Husbandry Sector, three schemes viz., expansion of cross breeding facilities, SLBP, scheme for the promotion of fodder were provided with additional support. A new scheme on Poultry production is included and had launched a major project for the development of poultry as apart of the State Food Security Project. The objective of the scheme is to increase milk production by 70 percent from the base level and doubling of egg production in the Plan period with the support of local governments. The total amount earmarked for food security project is ` 2300 lakhs during 2009-10. Another scheme included under State Food Security Project is for the promotion of Commercial dairy under Dairy Development sector. Through the programme, a transition from subsistence dairy farming to viable commercial dairy farming, with technology support which is imperative for enhancing production and productivity is expected. During 2010-11, a new scheme on food security has been initiated with a provision of ` 33 crores and the scheme on cattle feed subsidy has been introduced through dairy co-operatives.

#### **FISHERIES DEVELOPMENT**

4.152 India endowed with a long coast line of 8129 Kms, 2.02 million sq.km of exclusive economic zone and 1.2 million hectares of brackish water bodies, offers vast potential for development of fisheries. The demand for fish and fishery products are increasing both in domestic and export fronts. About 3.9 million tons fishery potential are estimated from marine sector only 2.6 million tonnes are tapped. 93% of the fish production contributed by Artisanal, mechanised and motorised sector, remaining 7% is contributed by deep sea fishing. India has been a major contributor to the world marine fish production and second largest producer of inland fish. The west coast was the highest contributor among regions and Kerala among states (21%) followed by Gujarat (19%). The anticipated natural growth rate of the XI plan period is 8.5% against the current growth rate of 7%. Presently, fisheries and aquaculture contribute 1.07% to the national GDP and 5.3% to agriculture and allied activities.

4.153 In Kerala, fishing Industry occupies an important position in its economy. Kerala's share in the national marine fish production is about 20-25%. The water resources of this state comprise of a coastline of 590 km length having a continental shelf area of the sea adjoining the Kerala state is 39139 sq.kms. Fisheries sector contribute 3% of the economy of the State.

4.154 The Inland water bodies of Kerala have a prominent role in the socio economic development of the state. The state is endowed with a significant wealth of Inland fishery

resources. The major inland water resources of the state having much fishery importance are the 44 rivers (85000 ha) 53 reservoirs (44289 ha) and 53 back waters and other brakish water bodies (65213 ha). The polders of Kuttanadu having a water spread of 35000 ha and 17000 ha of kole lands of Thrissur are also very ideal for various aquaculture development activities.

4.155 The estimated fisher folk population of Kerala during 2009-10 is about 11.43 lakhs. The total no. of fisher folk dwelling in the coastal area is estimated at 8.8 lakhs. The estimated no. of fisher folk in active fishing in the inland sector is about 2.63 lakhs. It is also estimated that about 63000 people are engaged in fishery – allied activities. This fishermen of the state contribute about 8% of the GSDP from the Agriculture sector which gives the significance of the sector to the state economy. The total fishermen population in Alappuzha District is 1.91 lakh which is the highest fishermen populated District, followed by Thiruvananthapuram (1.88 lakhs) and Ernakulam (1.52 lakh). In the case of marine sector only, the highest populated district is Thiruvananthapuram followed by Alappuzha and Kozhikkode. In Inland sector, the highest populated district is Ernakulam followed by Alappuzha district. The district wise details of fisherfolk population are given in Appendix 4.47.

#### **Income from fisheries subsector**

4.156 The Gross State Domestic Product of the State has increased about 93% during the period from 2004-05 to 2009-10 and the share of fisheries sector in the State Domestic Product has declined from 1.52 to 1.17 percent in the same period. The share of Primary Sector in GSDP has also declined from 17.86 to 15.36 percent. The contribution of Fisheries sector in GSDP is given in table 4.26.

**Table 4.26**

#### **Contribution of Fisheries sector to Gross State Domestic Product (2004-05 Prices)**

Current Price	Period					
	2004-05	2005-06	2006-07	2007-08	2008-09 (Provisional)	2009-10 (Quick)
Gross State Domestic Product ( ` lakh)	119264	136841.76	153784.88	175141.08	201019.75	230315.55
Fishing ( ` lakh)	1814.22	2481.96	2644.09	2634.31	2684.13	2704.55
Share of fisheries sector in GSDP	1.52	1.81	1.72	1.50	1.34	1.17
Share of Primary sector in GSDP	17.86	18.05	17.15	16.46	15.79	15.36

*Source: Directorate of Economics and Statistics*

#### **Species wise composition of fish landing**

4.157 Kerala is a coastal state and is bordered on the West by the marine flora and fauna rich Arabian sea. The Kerala Marine Fisheries Regulation Act was enacted with a view to enforce strict regulatory measures following the induction of more number of crafts and consequent increase in the level of unrestricted fishing. According to this Act, the inshore area coming within the depth range of 50 meters has been demarcated for fishing by the traditional fishermen using country crafts and the area beyond the limit in the economic zones can be utilised by motorized boats and large vessels. As this restriction is not being strictly followed,

monsoon trawling has been banned as a preventive measure. The ban on monsoon trawling has been in force from 1980 onwards.

4.158 Marine fish landings of India in 2009 have estimated as 3.16 million tonnes, which showed a decline of 43891 tonnes when compared to that of the previous year. Among the states, Kerala was the highest contributor of marine fish. During 2009-10 5.7 lakh tonnes of marine fish were landed showing a decrease of 7.2% over the previous year. The maximum sustainable yield was estimated about 6.99 lakh tonnes. The fish catches from the Kerala coast include more than 300 different species, the commercially important number is about 40 only. The high value species among the fish catches are still few, prominent among them are Seer fish, Prawn, Ribbon fish and Mackerel. During 2009-10 the catch of Ribbon fish was 15487 metric tonnes valued Rs.35.62 crore and penaeid prawn was 48401 metric tonnes, valued 973 crore.. The quality of these high value species in the total catch ultimately decides the income of the fishermen. Oil sardine accounted for the major share of landings (27%), heavy landing of juvenile oil sardine in ring seine was also recorded. The catch of Oil sardine was 154136 metric tonnes during 2009-10, shows a decreasing trend over the previous years, which is the most important variety consumed mainly by the poorer sections of the society. The species wise marine fish landings in Kerala during 2008-09 and 2009-10 are shown in Appendix 4.48.

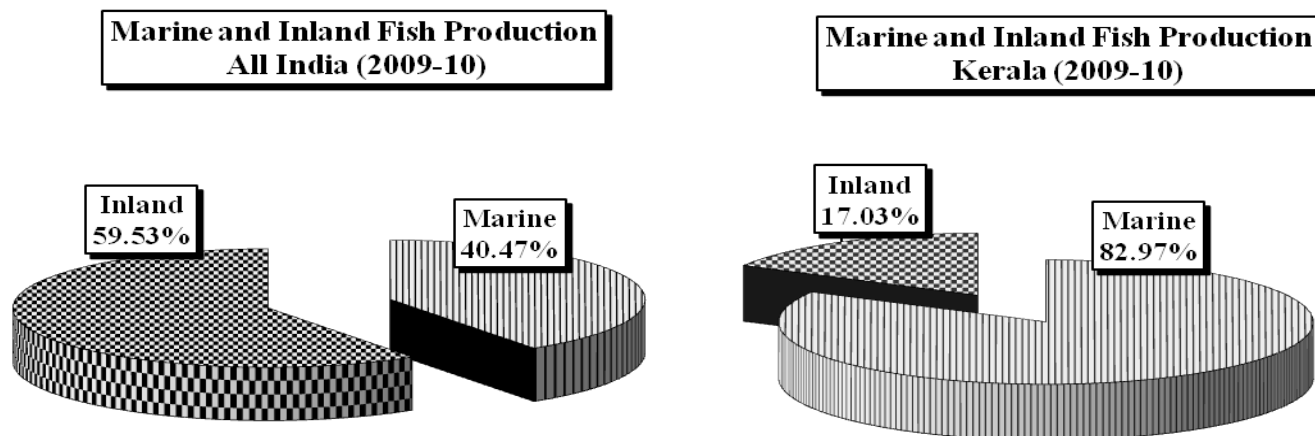
### **Trend in Production**

4.159 Marine fisheries throughout the world are passing through a critical phase due to the present rate of biodiversity loss and fishing practices. Indian marine fisheries is also passing through a crisis due to its over capacity and open access nature. Marine fish production in India has showed a declining trend over the previous year. Estimates of the fishery resources assessment shows that among the maritime states in India, Kerala occupies the foremost position in marine fish production. The fish production in Kerala during 2009-10 was 6.87 lakh tonnes. The marine fishery resources of the state has almost attained the optimum level of production. During 2000-01 the inland fish production reached peak share of 13% of the total fish production of the state and thereafter declined slightly. At national level more than 50% of the total fish production is contributed by the inland sector. Government have approved a master plan for increasing the inland fish production of the state from the current level of 75000 tonnes to 2 lakh tonnes over a period of 10 years. It also aims at enhancing and developing the aquaculture for the economic and development of the state and ensuring food and livelihood security of the people in Kerala. The current level of Inland fish production is to the quantum of about 1.17 lakh tonnes/year.

4.160 The National Agriculture Policy, which aims to attain a growth rate in excess of four per cent annum in the agriculture sector, stresses the importance of food and nutritional security issues and the importance of animal husbandry and fisheries sectors in generating wealth and employment.

4.161 India is one of the major fish producing countries in the world with third position in fisheries, and second in inland fish production. During 2009-10, India's total fish production was 7.81 million tonnes of which 3.16 million tonnes was from marine sector and 4.65 million tonnes was from Inland sector (Fig 4.19). The fisheries sector has contributed 1.1% of the national GDP and 4.7% of the GDP from Agriculture sector.(Fig.4.16)

Fig.4.15



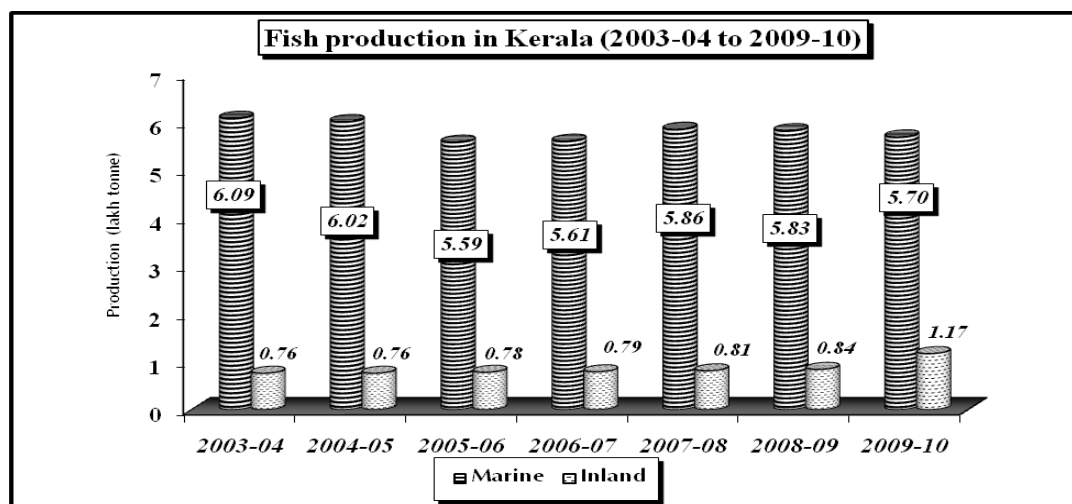
4.162 While marine fish production in Kerala tended to fluctuate the inland fish production showed a sign of improvement from 1999-2000. During 2009-10, the marine fish production has decreased to 5.7 lakh tonnes from 5.83 lakh tonnes of 2008-09. Inland production sustained on increasing trend. District wise marine fish production showed that Ernakulam contributed the highest (20.5%) followed by Kozhikkode (15.6%) and Kollam (12.3%). During 2009-10 the share of inland fish production to the total fish production of the state was 17%. The details of fish production for the last 5 years are given in table 4.27 and Fig 4.17.

**Table 4.27**  
**Fish Production in Kerala during the last Five years**

Year	Marine	Inland	Total
2005-06	5.59	0.78	6.37
2006-07	5.98	0.80	6.78
2007-08	5.86	0.81	6.67
2008-09	5.83	0.84	6.67
2009-10	5.70	1.17	6.87

Source: Fisheries department

Fig.4.16



## Export

4.163 The marine fisheries sector in the country contributes about 81% of the total fish production and is one of the major contributors to foreign exchange earnings through sea food export. It constitute about 16% of the total agriculture products export. Over 55 varieties of marine products are exported to different countries in South east Asia, Europe and USA.

4.164 The total value of marine products export from the country was 10048.53 crore in 2009-10 which accounts for approximately 1.1% of the total export from India. The quantity of marine exports from India during 2009-10 was 6.78 lakh tonnes. When compared to the previous year, it recorded a growth of 16.74% in rupee terms, 12.54% in volume and 11.75% growth in US\$. During 2009-10, the export earnings have crossed 2 billion US dollars and ` 10,000 crore mark. Frozen shrimp is continued to be the single largest item of export in terms of value. It accounts 41.4% of the total export earnings. The other major items of export are frozen cuttle fish, squid etc.

4.165 During 2002-03 and 2003-04 USA emerged as the single largest market for India's marine products and during 2004-05, the European union has collectively became the largest importer of Indian marine products and retained its position since 2005-06. During 2009-10, European union continued as the largest market with a share of 29.89% in value followed by China (17.8%), Japan (13.06%) and USA (10.01%). The major ports of India to handle the export cargo during the year in the order of value were Pipavav (16.94%), Kochi (15.61%), JNP (15.54%) and Chennai (13.03%). Export from Kochi port showed an increase in quantity as well as in rupee realization where as there was a decline in US\$ terms by 0.69%.

4.166 The marine products export from the State during 2009-10 was 1.07 lakh tonnes, an increase of 6.12% over previous year. It valued at ` 1668.49 crore constituting 15.79% in terms of volume and 16.6% in terms of value to Indian marine product export. The major export item is frozen shrimp during 2009-10.

4.167 The state's share in all India exports has been declining in recent years. The share declined from 20% in quantity terms in 2000-01 to 15.79% in 2009-10 and the share in value increased to 16.6% from 16%. Export of marine products from Kerala and India during 2009-10 are given in table 4.28.

**Table 4.28**  
**Export of Marine Products from India and Kerala**

(Q: Quantity in Metric Tonnes V: Value in ` Crore)

Year		India	Kerala	Share of Kerala (%)
2004-05	Q	461329	87378	19
	V	6647	1158	17
2005-06	Q	512164	97311	19
	V	7245	1258	17
2006-07	Q	612643	108616	18
	V	8364	1524	18
2007-08	Q	541701	100318	19
	V	7621	1431	19
2008-09	Q	602835	101000	17
	V	8608	1569.82	18
2009-10	Q	678436	107183	15.79
	V	10048.53	1668.49	16.6

Source : MPEDA

### **Debt Relief to Fishermen**

4.168 Fishing community is one of the most vulnerable sections of our society. A vast majority of them who make out their living by fishing in inland sector or in the sea have been in a debt trap. As a substantial effort to relieve them from their sufferings Government have constituted The Kerala State Fishermen Debt Relief Commission” with 5 members.

4.169 The Kerala Debt Relief Commission Act, 2008 is expedient to provide for urgent relief to the fishermen who are in distress due to indebtedness by constituting a commission for recommending approximate relief measures to such fishermen and for solving their problems. For exercising the power and discharging the duties under this act, “The Kerala State Fishermen Debt Relief Commission” with 5 members. The scheme envisaged to introduce debt relief measures for the entire eligible fisherfolk in the state in a phased manner. It has been estimated that fisherman have a debt liability of `524 crore. During the period 2008-10 an amount of `20 crore was provided with budget for debt relief measures to fisherman. Government have waived of the debt outstanding with 9891 fisherman with an amount of `1182.6 lakhs.

### **Major Developmental Programmes**

4.170 The major developmental programmes implemented during the Plan period in the state include, inland fisheries development, development of fishing harbours and landing centres and programmes ensuring social and livelihood security of fishermen. The developmental programmes undertaken in the marine sector include modernisation of country crafts, popularisation of new generation crafts and distribution of suitable components of fishing gear, development of fishing markets, development of deep sea fishing etc.

### **Matsyakeralam**

4.171 Aqua culture is currently one of the fastest growing food production enterprises in this country. In view of increasing the inland fish production on a sustainable basis by scientifically using the Vast Inland spread available in the state, Government have initiated the new programme Matsyakeralam during 2008-09.

4.172 The backwaters of Kerala is most prominent with more than 70 edible species which include shrimp, mullets, pearl spots, crabs, scampi etc. Matsyakeralam project envisages to diversify Aquaculture for enhancing fish production from Inland freshwater/brackwater. The main objective of the project is to increase the fish production from 75000 MT to 2 lakh metric tone over a period of three years. The total project cost estimated as Rs. 71.16 crore. Through this project it is also aimed to create new employment opportunities in rural areas to increase the export of fish and fish products and to develop a well designed marketing system for aquaculture products.

4.173 The achievement of the project during the first phase shows an amazing result especially in shrimp and mussel farming. About 2200 tonnes of Shrimp, 2395 tones of mussels and 8 tonnes of Karimeen were produced having an average earnings of 45 crore and 4608 beneficiaries are participated in this phase.

4.174 In the second phase both freshwater and brackish water fish culture taken place. In the fresh water culture 10512 tone fish/scampi were produced. 22284 beneficiaries are participated in this culture. In the brackish water 2662 tones shrimp were produced. Now 728 local bodies

are actively participated in this project along the State and 627 fish farmer clubs are formulated. At the second phase of the project about 2795.6 tonnes of shrimp, 3067.36 tonnes mussel and 9.5 tonnes of Karimeen were harvested having an average of earning of `60.08 crore with the support of LSGDs and matsya karshaka clubs. The harvest details are shown in table 4.29.

**Table 4.29**  
**Harvest details of Matsyakeralam Project**

Sl.No.	Item	Quantity obtained in tonnes
1	Shrimp	2795.6
2	Mussel	3067.36
3	Karimeen	9.5
	<b>Total</b>	<b>5872.46</b>

Source: Fisheries Department

### Outlay and Expenditure for 2009-10

4.175 The outlay and expenditure for various schemes implemented in the fisheries sub sector are given in table 4.30. The total expenditure under state plan schemes upto March 10 is `7550.14 lakhs which accounts 151% of the total state plan outlay. The expenditure exceeds the Budget estimate due to providing additional amount through SDG. There are 10 partially aided central sector schemes having an outlay of `1881 lakh and the expenditure upto March 10 is `1909.73 lakh. Additional allocation was provided for fishing Harbours, and share capital contribution to NCDC assisted schemes and thus the expenditure exceeds the outlay provided under Central Sector Schemes.

**Table 4.30**  
**Outlay and Expenditure during 2008-09 and 2009-10**

(` lakh)

Name of Sector/Scheme	2008-09		2009-10	
	Budget Estimate	Expenditure	Budget Estimate	Expenditure
State Plan schemes	9069.00	7001.12	5000	7550.14
Centrally Sponsored schemes	1367.59	1702.12	1881	1909.73
NCDC assisted Integrated Fisheries Development Project (NCDC loan)	1449.00	1361.00	1925	1023
Integrated Coastal area Development Project under special area Development Programme (State Plan)	1000.00	0.00	1009	1009
<b>Total</b>	<b>12885.59</b>	<b>10064.24</b>	<b>9815</b>	<b>11491.87</b>

4.176 Under Special area Development Programme a new project viz., Integrated Coastal Area Development project was started during 2007-08. During the period 2007-10 the project was implemented in Kannur, Kasargode and Thrissur Districts. The project include water supply, fish landing centres, public health center and Dispensaries, Biogas plant, Anganawadies etc. Another agency namely coastal area development agency was constituted in 2004, with the aim to accelerate the pace of development of the coastal areas and to improve the socio-economic condition of the fisherfolk in the state. During 2008-09 the Coastal Area Development Corporation Ltd. was reconstituted. An amount of `9 lakh was allotted as share capital contribution for the corporation. The corporation aims to function as an apex body in the preparation of projects, monitoring, evaluating and financing infrastructure development in the coastal sector.

## 1. Integrated Development of Aquaculture

4.177 Kerala is endowed with immense potential of 25000ha of fresh water and 10,000 ha of brackish water suitable for aquaculture. Germplasm resources of Kerala is rich, suitable for aquaculture. The scheme integrated development of scampi/fish culture in rotation with paddy in Kuttanadu and kole lands was started in 2003-04 with the target area of 3500 ha. During 2009-10 an amount of `40 lakh were expended for the implementation of one paddy one fish in Kuttanad and kole lands. The scheme covered an area of 341.62 ha in Kuttanadu and kole lands. About 85.46 tons of scampi and 92.48 tons of fish were produced during 2009-10 and a revenue collection of `142 lakh was achieved. The details of achievement in oru nellum oru meenum in Kuttanad and kole lands from 2002-03 to 2009-10 are given in table 4.31.

**Table 4.31**  
**Oru Nellum Oru Meenum in Kuttanad & Kole lands**  
**(Achievement)**

Year	Area covered (ha)	Production	Revenue ( ` lakh)
2003-04	43.7	Scampi - 206.36 ton Fish - 123.92 ton	37.42
2004-05	359.79	Scampi - 67.78 ton Fish - 41.37 ton	185.99
2005-06	480.65	Scampi - 140.46 ton Fish - 132.61 ton	404.19
2006-07	505.93	Scampi - 136.19 ton Fish - 181.39 ton	413.05
2007-08	149.33	Scampi - 28.49 ton Fish - 28.53 ton	60.33
2008-09	178.68	Scampi - 51.41 ton Fish - 77.78 ton	103

## 2. Integrated Development of Pokkali fields

4.178 The project sustainable development of shrimp aquaculture aims at the development of 2500 ha of Pokkali fields of Ernakulam, Thrissur and Alappuzha Districts during the Xth plan period. The Shrimp production anticipated was 3000 tons. During 2009-10 an area of 132.88 Ha was brought under culture and an amount of `20 lakh was provided for the scheme. 149 tons of Shrimp worth `4.15 crores was produced during the period. The details of shrimp aquaculture production in Pokkali lands from 2004-05 to 2009-10 is given in table 4.32.

**Table 4.32**  
**Sustainable Shrimp aquaculture development in Pokkali fields**  
**(Achievements)**

Year	Area covered	No. of beneficiaries	Production (ton)	Revenue ( ` lakh)
2004-05	579.46	214	220	425.4
2005-06	1488.985	458	444.65	911.45
2006-07	1631.46	425	836.93	1756.07
2007-08	2000	125	198.48	489.66
2008-09	357.17	94	210.9	446
2009-10	132.88	49	149	415

### 3. RKVY Projects

4.179 The following six projects were sanctioned under RKVY and amount of `262.25 lakh was sanctioned during 2009-10.

- i) Revamping of model shrimp farms and training centre, Poyya
- ii) Strengthening of seed production centre, Odayam
- iii) Eco friendly aquaculture development in Kuttanad and
- iv) Revamping of Erarihohli fish farm for eco-friendly aquaculture
- v) Upgradation of traditional filtration fields for increasing shrimp production
- vi) Rice fish farming in kole lands of Thrissur district

### 4. Fishing Harbour and Fish landing Centres

4.180 The Government of Kerala has so far implemented 9 fishing harbour and the works of other 8 harbours are progressing. These are 50% Centrally Sponsored Schemes. The completed fishing harbours are Thangassery, Neendakara, Kayamkulam, Munambam, Beypore, Puthiyappa, Chombal, Moplabay, Azheekal. The progress of work in respect of the ongoing Harbours and fish landing centres are given in Appendix 4.52 and Table 4.32.

4.181 The works of Ponnani, Thottappally and Thalai fishing harbours were completed soon. First phase of mini fishing harbour at Chethi in Alappuzha and fishing harbour at Kasargod are started. During 2009-10, 693 lakh were allotted for the construction of fishing harbours for which `796.08 lakh was expended. A Budget allocation of `1450.92 lakh were provided for NABARD assisted schemes and an amount of `1443.17 lakh was expended during the year. Modernisation of Neendakara harbor and construction of Koyilandi and Thalai harbours with NABARD assistance is in progressing.

**Table 4.33**  
**Ongoing Fishing Harbours in Kerala**

Sl. No.	Name of Fishing Harbour	Total Estimated Cost ( ` In Lakhs)		Year of Starting	Year of Completion / target	Cumulative Expenditure up to March 2010 (including RIDF)
		Original	Revised			
1	2	3	4	5	6	7
1	Vizhinjam	704.00	1831.88	1987	2004 stage II	1637.03
2	Muthalapozhi	1366.00	..	2000	2005	1301.50
3	Ponnani	2759.40	..	2001	2011	2389.92
4	Thalai	1370.00	1925.74	2007	2011	1228.25
5	Thottappally	1458.30	..	2004	2009	1407.28
6	Koyilandi	3545.00	..	2006	2009	2494.8
7	Chethi (2 <sup>nd</sup> phase)	500.00	..	2008	..	23.18
8	Kasaragod	2975.00	..	2009	..	134.00 (RKYY Scheme as 100% CSS)

Source : Harbour Engineering Department

4.182 Total revenue collected during 2008-09 and 2009-10 were 311.50 lakhs and 340.15 lakh respectively. Revenue collection from Puthiyappa fishing harbour during 2008-09 and 2009-10 were 119.42 lakh and 124.79 lakhs, which accounts 4.5% increase over the previous year. During 2009-10 the highest revenue collection was from Puthiyappa harbour which

accounts 36.7% of the total revenue collection. Neendakara fishing harbour contributed 29% of the total revenue collection during 2009-10 which accounts 13.9% decrease in the revenue collection for the previous year. Revenue collection from Thankassery fishery harbour is also decreased over the previous year and the revenue from Vizhinjam harbour is increased from 28.11 lakh in 2008-09 to 70.7 lakh in 2009-10. The details are given in Appendix 4.52.

4.183 Under RIDF XI, NABARD has approved two projects viz Balance work of Kayamkulam fishing Harbour and modernisation of Neendakara fishing harbour and sanctioned a loan amount of `1062.54 lakh and `895 lakh respectively. In Kayamkulam fishing harbour construction of major components were completed and an amount of `1126.06 lakh has been spent. An amount of `866.33 lakh was expended for modernization of Neendakara harbor. Under RIDF XII, NABARD has sanctioned a loan of `1772.50 lakh for the construction of Koyilandi fishing harbour. The construction of Break water is progressing. The upto date expenditure is `1772.48 lakh. Under RIDF XIII, NABARD has sanctioned a loan of `1026.43 lakh for the construction of fishing harbour at Thalai. The major components of the project is progressing. The expenditure upto March 10 is `634.72 lakhs. Details of NABARD Assisted scheme through Harbour Engineering Department is given in table 4.34.

**Table 4.34**  
**NABARD Assisted Schemes**

SI No.	Scheme	AS amount	NABARD share	State share	Expenditure upto March 10
1	2	3	4	5	6
1	Kayamkulam fishing harbour – RIDF XI	1062.54	312.00		1126.06
2	Neendakara – RIDF XI	895	-		866.33
3	Koyilandi fishing harbour – RIDF XII	4146.72	1772.50	601.72	1772.48
4	Thalai – RIDF XIII	2116	1026.43		634.72
5	Chellanam Fishing harbor – RIDF XV	2990	2769.07	220.93	0

*Source : Harbour Engineering Department*

4.184 There are 38 fish landing centres were operated in the coastal zone of Kerala. Out of this 15 landing centres are for traditional fisheries. The work of fish landing centre at Kadapra is almost completed. Construction of inland fish landing centres at Sanbrahikodi, Muhamma and Bekkal are completed. The investigation studies for the construction of fisheries harbours are going on, and an amount of 11.59 lakh was expended for studies during 2009-10.

4.185 The completion of fishing harbour and fish landing centre has to be done in a time bound manner. Prioritised action plan has to be prepared for the completion of all ongoing and pending infrastructure projects. Expansion of more harbours to be based on need and technical studies.

### **Social Security and livelihood support to fishermen Community**

4.186 In order to provide social security and livelihood support to the fishermen community the programmes like Saving cum relief scheme, NFWF housing, Group insurance to fishermen, insurance coverage for fishing implements etc were under implementation. The major highlights are given in Appendix 4.54.

NFWF assisted housing scheme is meant for providing housing to the fishermen under the model village development programme during X<sup>th</sup> five year plan 6445 houses were constructed

spending `2577.87 lakhs. During 2009-10, 1500 nos of houses were allotted of which 446 houses were completed and 1054 nos are under stage I & stage II. An amount of `223 lakh were spend for this programme during the period. All active fishermen are covered under group accident insurance scheme. About 2.36 lakh fishermen were insured under the scheme. Assistance is provided to accidental death/missing of fishermen while fishing, permanent total disability, permanent partial disability, Heart attack while fishing. During 2009-10, 54 claim were received and 15 cases were settled

4.187 The Kerala Fishermen Welfare Fund Board is the implementing agency for welfare and relief schemes to the fishermen in the state. The Board has 235660 members registered as fishermen at 65907 members allied workers. There are 30333 old age pensioners and 5460 widow pensioners. Under allied workers welfare schemes, there are 2871 old age pensioners. Details are given in Appendix 4.55.

4.188 The saving cum relief schemes is for providing assistance to fishermen during lean season by mobilizing their savings during the peak season. This is a 50% CSS scheme and during 2009-10, about 1,38,000 beneficiaries were assisted through these schemes.

## 5. Society for assistance to Fisher women

4.189 Societies for assistance to Fisher women is a registered society for encouraging and strengthening the locally organised social organisation among fisherwomen in coastal areas. More than 5000 women SHGs were organised in the coastal districts of Kerala with SAF. Under the micro enterprises scheme upto March 2010, training on capacity building were given for 252 units through SAF. Interest free financial credits were given to fisherwomen in the form of revolving fund for fish vending. About 40000 fisherwomen were given assistance in the form of revolving fund for fisher vending In TEAP/TRP schemes 400 units of micro enterprises were established in each scheme under SAF. Major achievements of projects implemented through SAF are given in table 4.35.

**Table 4.35**  
**Projects implementing through Society for Assistance to Fisherwomen (SAF)**

Sl No	Name of Project	No. of Units completed	No. of Beneficiaries
1	Economic empowerment of fisherwomen	819	7414
2	Construction & modernization of fish market	31 (progressing)	
4	Development of micro enterprises	1282	6628
5	Dressed/dry fish unit	57	285
6	Hand made toiletry	26	130
7	Rural marketing executive	55	220
8	Sustainability of Micro enterprises	1800 (progressing)	12000
9	Establishment of value added fish products unit	90(progressing)	450

## 6. Matsyafed

4.190 Matsyafed is an apex federation of 666 primary level fishermen Development Welfare Co-operative Societies of which 34 nos are in marine sector, 192 nos are in inland sector and 133 women co-operative societies. The total membership in these societies is more than 3 lakhs. The marine societies are conducting beach level fish auction. During 2009-10, 42457 members participated in the beach level auction and 5907 tonne fish were auctioned. Matsyafed have organised more than 13075 SHG groups with 156210 members. The groups have mobilized ` `2550.76 lakh as thrift. Through TEAP/TRP schemes the Federation has assisted 37388 nos of fishermen. The achievement of various programmes implemented by Matsyafed is given in table 4.36.

**Table 4.36**  
**Major Programmes of Matsyafed**

Sl No	Name of Programe	Cumulative Physical achievement upto March 2010	Cumulative financial achievement upto March 2010 (` lakh)
1	Fish Auction	42457 no. Fishermen	81.85
2	Integrated Fisheries Development Project	61736 no. of beneficiaries 500 societies	22154.77
3	TEAP / TRP scheme	37388 no. of beneficiaries	1816.33
4	Motorisation of country crafts	7240 No. of fishermen	607.75
5	Bankable Scheme	1050 No. of fishermen	199.30
6	Deep sea fishing	1000 No. of fishermen	488
7	Value addition phase I & phase II	11 societies	phase I – 99.94 phase II- 99.95
8	Matsyafed input security scheme	215 beneficiaries	45.22
9	Subsidy for suitable complements of fishing gear	2088 No. of fishermen	129.25
10	Scheme with financial assistance of NBCFDC and NMDFC	12817 beneficiaries 5028 beneficiaries	3008.274 2164.06
11	SGSY project	990 nos	1127.50
12	SHG's	13075 no. of SHG with 156210 members	2550.76

### Co- operation

4.191 The Co-operative sector has been playing a distinct and significant role in the process of socio-economic development of the state with special focus on rural population and livelihood. Through sustained efforts, co-operatives have made impressive progress in various segments of Indian economy particularly in agriculture credit disbursement, fertilizer distribution, procurement and distribution of agricultural commodities, promotion of consumer activities, health, dairy, fisheries, handloom, coir etc. Attempts were made to develop the movement as a self reliant one by augmenting the resources through mobilization of savings in urban and rural areas.

4.192 The co-operative movement in Kerala has a solid foundation and impressive track record in terms of financial stability and sound infrastructure to generate adequate funds. The spread and growth of co-operatives in different sectors were nurtured under development plans with government initiative and government finance. Kerala has a wide network of co-operatives engaged in various promotional activities particularly in agricultural credit, public

distribution system, distribution of agricultural commodities, marketing, agro processing, consumer activities, public health, education, housing, insurance and infrastructure development, SC/ST sector, Women development etc. and have made an impressive progress and serve the people in various economic activities. There are 13351 co-operatives under the control of Registrar of Co-operative Societies; of which 10230 are functional in the various promotional activities in the sector. During 2008-09 there were only 10204 functional co-operative societies. The number of Credit Co-operatives increased from 3230 to 3257 during 2009-10. Similarly an increase was also noticed in the number of Women Co-operatives from 972 to 975. The number of miscellaneous co-operatives is also increased from 2444 to 2459 during 2009-10. The total number of co-operatives is classified into nine categories as shown in Table 4.37.

**Table 4.37**  
**Co-operatives under the control of Registrar of Co-operative Societies as on 31.3.2010**

Sl. No.	Type of Societies	No.	Functional No.
1	Credit Co-operatives	3257	2976
2	Marketing Co-operatives	544	244
3	Consumer Co-operatives	4709	4086
4	Processing Co-operatives	41	13
5	Housing Co-operatives	375	278
6	SC/ST Co-operatives	809	431
7	Health Co-operatives	182	96
8	Women Co-operatives	975	719
9	Other Co-operatives (miscellaneous)	2459	1387
	<b>Total</b>	<b>13351</b>	<b>10230</b>

Source: Registrar of Co-operative Societies

### Support by NCDC

4.193 NCDC has emerged as a developmental and promotional financing institution for the Co-operative sector in the country. The strategy of the Corporation is to strengthen and develop co-operative institutions to enable them to serve their members and to maintain a sustained growth in their income.

4.194 As on 31.3.2010, the cumulative disbursement of the Corporation was ` 2410.85 crores. During 2009-10 the flow of fund from NCDC to Kerala was ` 519.54 crore against ` 308.70 crore during 2008-09. NCDC assistance increased to the tune of 68.30% compared to the previous year. In all India standings, Kerala stood 2<sup>nd</sup> (14.19%) in terms of NCDC's total sanctions and also 2<sup>nd</sup> (13.72%) in terms of fund disbursement. Under NCDC's Direct Funding Scheme, an amount of ` 500 crores was released to the Kerala State Co-operative Agricultural & Rural Development Bank, Thrissur, Kannur, Idukki Kasargod and Wayanad District Co-operative Banks as working capital for meeting their short term credit requirements in Agriculture and Allied sectors. An integrated Fisheries Development project (2010-11) was sanctioned during 2009-10 at a block cost of ` 35.50 crores involving NCDC funding of ` 32.34 crores, for implementation through MATSYAFED, for replacement/renewal of fishing inputs, working capital for fish marketing and input security. An amount of Rs. 8.34 crores was also released during 2009-10 for implementation of the ongoing fisheries projects. NCDC has also sanctioned ` 15 crore to Kerala State Co-operative Consumer Federation (CONSUMERFED) for distribution of consumer articles. Activity wise and year wise sanction and release of assistance from NCDC are shown in Appendix 4.55.

4.195 The Year-Wise amount released by NCDC from 1962-63 to 2009-10 with rate of interest is given in Table 4.38.

**Table 4.38**  
**Year wise release of NCDC loans with interest rates.**

( ` Crore)		
Year	Release of fund	Interest rate(%)
1962-63 to 92-93	122.08	--
1993-94 to 98-99	195.47	--
1999-00	56.07	13.75
2000-01	69.04	13.75
2001-02	51.64	13-12.25
2002-03	50.18	11.50-10.5
2003-04	96.58	7-9
2004-05	109.24	8-8.5
2005-06	190.99	8.5
2006-07	310.59	10.25
2007-08	330.73	9.75
2008-09	308.70	9-10.25
2009-10	519.54	7.5-9.75
<b>Total</b>	<b>2410.85</b>	

4.196 Agency wise release of funds for Kerala by NCDC is shown in Appendix 4.57.

### **Primary Agricultural Credit Societies (PACS)**

4.197 The Co-operative Credit structure in Kerala comprise of 1603 Primary Agricultural Credit Societies (PACS) and 49 affiliated Primary Co-operative Agricultural and Rural Development Banks supported by the Central and Apex Co-operative banks. As on 31.3.2010, there were 1603 PACS out of which 696 were running on profit and 893 in loss and the remaining societies were dormant. The PACS are functioning with a paid up share capital of ` 816.44 crores and reserves of ` 6127.89 crores.

4.198 The performance of the co-operatives during the year under report was encouraging. The total loan disbursed during 2009-10 was ` 26307.35 crores against that of ` 21080.74 crores in 2008-09. Compared to the previous year, there was increase in the disbursement of short term and medium term loans. During 2009-10 the long term loan was only ` 810.49 crore as against ` 820.54 crores in the previous year. Out of the total loan disbursement, major share (71.21%) was for short term, followed by medium term (24.01%) and long term (4.78%). In the case of loan disbursement, for agricultural purposes alone, the disbursement was higher than that in the previous year. 97% increase was made in the long term (Agriculture) credit disbursement. Credit for non-agricultural purposes in all types has comparatively increased. Though the co-operatives are disbursing loan for non agricultural purposes for making good margin for their business, 778 societies were working on loss during 2009-10.

4.199 The Selected indicators of the credit operations of the Primary Agricultural Credit Societies show that, during 2009-10, deposits of the societies increased to ` 27312.04 crores as against ` 20432.31 crores during 2008-09. The average deposit per member is increased to ` 5936.11 from last year's level of ` 5255.85. Similarly the average working capital position of the societies increased to ` 2108.34 lakh against ` 1691.35 lakh during 2008-09. Selected indicators and credit operations of PACS are given in Appendix 4.57 and Appendix 4.58.

### Self Help Groups linkages and PACS

4.200 In Kerala under Co-operative sector the Self Help Groups scheme was implemented through PACs. The district wise cumulative progress is given in Table 4.39.

**Table 4.39**  
**Progress of Self Help Groups Scheme as on 31.3.2010**

(` Lakh)

Sl. No	Districts	No. of Societies Participated	No. of groups	Deposit collected	Total loan issued to groups	Groups working in profit	Groups working in loss
1	2	3	4	5	6	7	8
1	Trivandrum	51	3339	986.94	1147.48	1082	2257
2	Kollam	60	4401	416.70	3587.57	3747	654
3	Pathanamthitta	28	613	164.10	1032.04	546	67
4	Alappuzha	96	8685	1487.37	5950.45	7430	1255
5	Kottayam	46	658	38.70	630.37	207	451
6	Idukki	66	9427	1051.51	2426.46	8264	1163
7	Ernakulam	34	370	27.22	90.05	171	199
8	Thrissur	106	8042	5322.14	3059.76	6400	1534
9	Palakkad	24	829	23.01	880.31	314	515
10	Malappuram	30	316	23.78	102.02	148	168
11	Kozhikode	31	1209	379.96	297.97	669	540
12	Wayanad	29	7080	1407.10	1024.48	6194	886
13	Kannur	38	2112	421.70	803.45	1735	485
14	Kasaragod	19	467	35.09	93.47	106	361
	<b>Total</b>	<b>658</b>	<b>47548</b>	<b>11785.32</b>	<b>21125.88</b>	<b>37013</b>	<b>10535</b>

Source : Registrar of Co operative Societies .

4.201 Under the scheme, 47548 Groups were involved in the implementation of SHGs under 658 PACs upto 31.3.2010. During 2009-10 4991 new SHGs functioning under the scheme Idukki district formed maximum number of Groups (9427), followed by Alappuzha and Thrissur district. In the State 47548 Groups with a deposit collection of `11785.32 lakhs were formed and issued loan of `21125.88. Out of 47548 SHGs, 37013 were functioning on profit and 10535 on loss.

### Deposit Mobilisation Campaign by Co-operative Societies

4.202 Deposit Mobilisation campaigns by co-operative credit institutions continued during the year under report also. The deposit mobilisation by the Co-peratives have shown an increasing trend over the years. During the period under review, the co-operatives could mobilize `2415.07 crore as against the target of `1733.54 crores. Year wise target and achievement is given in Table 4.40.

**Table 4.40**  
**Targets and Achievements of Deposit Mobilisation Programme of Co-operatives in Kerala**

(` Crore)

Year	Target	Achievement	Achievement (%)
2005	400.00	1305.00	326.00

2006	400.00	1539.55	384.88
2007	600.00	1719.93	286.66
2008	1706.05	2192.17	128.49
2009	1810.98	2664.29	147.11
2010	1733.54	2415.07	139.31

Source : Registrar of Co operative Societies .

### Eleventh Plan

4.203 The outlay envisaged for the sector during 11<sup>th</sup> Plan was ` 113 crores. The budget outlay for the first three years (2007-2010) was 50.10 crores and the expenditure was ` 53.52 crores ie, 106.83% of the budgeted outlay and 47.36% of the Eleventh plan outlay. The sub-sector wise financial achievement during the first three years is given in Table 4.41.

**Table 4.41**  
**Sub sector wise financial achievement during the first 3 years of Eleventh Plan**  
(` Lakh)

Sl. No	Sub sector	Financial outlay (2007-10)	Achievement (2007-10)	% of Expenditure to outlay.
1	Credit co-operatives	1355	847.55	62.54
2	Processing co-operatives	750	182.86	24.38
3	Consumer co-operatives	300	306.98	95.18
4	Housing co-operatives	150	150	100
5	Research, Education & Training	195	210.73	114.26
6	Administrative Reforms	15	9.29	62
7	Modernisation and publicity	45	39	86.66
8.	Other co-operatives	700	3605.99	515.14
9	Other schemes- i).Infrastructure	1500	0	0
	<b>Total</b>	<b>5010</b>	<b>5352.40</b>	<b>106.83</b>

4.204 An analysis of the expenditure shows that the major share (83%) was incurred for the implementation of the two schemes 'credit co operatives' and 'other co operatives'. About 3.41% of the expenditure was for assisting processing co-operatives, 5.73% for providing assistance to consumer co-operatives and 2.8% for assistance to Housing co-operatives etc. Besides the plan outlay, NCDC has released ` 1158.97 crores during the first three years of the Eleventh Plan for the development of marketing, credit, consumer and industrial co-operatives in the State.

4.205 The proactive involvement of co-operatives could be considered in procurement of farm produce and establishment of more agro-processing units in the state. A major project for setting up rural godown with the support of RIDF could be considered.

### Physical Performance

4.206 The major physical targets and achievements in the sector during the first 3 years of the Eleventh plan, are shown in Table 4.42.

**Table 4.42**  
**Major physical achievements under co-operation during 2007-10**  
 (₹ Crore)

Item	2007-10 Achievement
Short Term (Agriculture)	14037.09
Medium Term (Agriculture)	2031.35
Long Term(Agriculture)	312.74
Retail sale of fertilizers	2873.62
Retail sale of Consumer goods	630.12
Agricultural produce marketed	2278.81
Storage in Co-operatives (NMT)	262018.80

### Miscellaneous types of Co-operatives

4.207 Miscellaneous types of co-operatives has been organised in the state mainly for the purpose of generating employment opportunities to the unemployed youth and the weaker sections. Co-operative Hospital and Dispensaries, Education Co-operatives, Vanitha Co-operative Societies, Motor Transport, Autorikshaw and Taxi Drivers Co-operative Societies, Tailors Co-operative Societies, Washermen Co-operative Societies, Chethuthozhilali Co-operative Societies etc. are some of the co-operative societies which are organised for the purpose of employment generation. There are also Social Welfare Co-operative Societies, Cultural Co-operative Societies, Farming Co-operative Societies, Leprosy Patient Co-operative Societies, Matsya Thozhilali Co-operative Societies, Photographers Co-operative Societies etc. Government extend financial assistance to these societies by way of share capital contribution, grant, loan and subsidy.

4.208 A programme for the overall development of the co-operative movement in the state namely "Sahakarana Navarathnam Keraleeyam" was launched during 2007. The achievements of the programme during 2009-10 are shown in table 4.43

**Table 4.43**  
**Achievement under Sahakarana Navarathnam Keraleeyam during 2009-10**

Sl No.	Name of Component	Achievement 2009-10 (₹ crore)
1	Deposit mobilization	2578.67
2	Arrear collection	1548.20
3	Distribution of commodities at reduced prices	513.76
4	Loans with reduced interest rates distributed to paddy and vegetable cultivators	367.78

Source:RCS

### Integrated Co-operative Development Project (ICDP)

4.209 Integrated Co-operative Development Project (ICDP) focuses on over all development of selected districts through co-operative efforts in the area of agriculture and allied sectors with the financial assistance of NCDC. Moreover, Human Resource Development (HRD) initiative to restore the principles of co-operative movement is another objective of the scheme. ICDP covers all the districts in the state by providing financial assistance to PACS, PAMS, SC/ST co-operatives for infrastructural facilities such as godown, retail outlet, cash counters, iron safe, strong room, furniture etc.

4.210 The Project was successfully implemented in Wayanad, Palakkad, Kottayam, Idukki, Thrissur, Pathanamthitta, Malappuram, Kasargod and Kannur districts. Scheme is under implementation in Kollam, Kozhikode and Thiruvananthapuram districts. Sanction was accorded for launching of the second phase of ICDP in Wayanad district. During 2009-10, an amount of `3.14 crore was expended for various activities under ICDP scheme in Kerala.

### Agricultural Finance

4.211 The flow of credit to the agricultural sector exceeded the target for the sixth consecutive year during 2009-10. As against a target of `3,25,000 crore during 2009-10 the banking system has disbursed `3,66,919 crore (provisional) as on 31/3/2010 indicating a 27.78 percent increase over the previous year. The share of ground level credit flow from Commercial Banks, Co-operative Banks and RRBs accounted for 75, 16 and 9 percent respectively to total credit flow in the country (Table 4.44). . During the period 2005-10, the ground level credit flow for agriculture and allied activities registered a Compound Annual Growth Rate (CAGR) of 18.5 percent. During 2009-10, the Government of India provided : (i) interest subvention of 2 per cent per annum to public sector banks in respect of short –term production related credit up to ` 3 lakh provided to farmers. This subvention was made available condition/precedent that short-term credit at ground level was extended at 7 percent per annum; and (ii) Additional interest subvention of 1 percent per annum to public sector banks in respect of those farmers who repaid their short-term production credit within one year of disbursement of such loans, so that the effective rate of interest for such farmers was 6 per cent per annum. In the Union Budget for 2010-11, the additional subvention for farmers who repaid loans promptly was enhanced to 2 per cent per annum, thereby, reducing the effective rate of interest payable to 5 per cent per annum. The Raghuram Rajan Committee on Financial Sector Reforms had, recommended introduction of “priority sector lending certificates (PSLCs)” to be purchased by the commercial banks which failed to achieve the priority sector lending target/sub-targets.

**Table 4.44**  
**Agency-wise Ground Level Credit Flow in India**

Agency	2005-06	2006-07	2007-08	2008-09	2009-10
Co-operative Banks	39404	42480	48258	36762	57500
Regional Rural Banks	15223	20435	25312	26724	34456
Commercial Banks	125477	166486	181088	223663	274963
Others	382	-	-	-	-
<b>Total</b>	<b>180486</b>	<b>229400</b>	<b>254658</b>	<b>287149</b>	<b>366919</b>

Source: Annual Report, 2009-10 – NABARD

4.212 Banks have been consistently meeting the targets set for Agriculture credit flow in the past few years. The Government of India budget has set the total agricultural credit target for 2010-11 at ` 375000 crores as against ` 325000 in the previous year.

4.213 Agency-wise disbursement of the annual credit flow in the state is given in Table 4.45. In the disbursal of total advances, commercial banks stood at the first place disbursing `29753 crore (57.78%) in 2009-10, followed by Co-operative Banks (33.21%), RRBs(8.36%) and KFC(0.01%). In the lending for agriculture also commercial banks dominated by disbursing `14741 crore (61%) followed by Co-operative Banks (26%) and RRBs(13%).

**Table 4.45**  
**Agency-wise Annual Credit flow to Agriculture and total priority sector in Kerala**  
(` crore)

Agency	Priority Sector			Agriculture		
	2007-08	2008-09	2009-10	2007-08	2008-09	2009-10
Commercial Banks	20294	23691	29753	9924	11796	14741
RRBs	2544	3083	4303	1931	2081	3090
Co-operatives including KSCARDB	9681	12748	17103	4105	4941	6292
Kerala Financial Corporation	138	199	333	-	18	1
<b>Grand total</b>	<b>32657</b>	<b>39721</b>	<b>51492</b>	<b>15960</b>	<b>18836</b>	<b>24124</b>

Source: State Level Banker's Committee

4.214 Under Annual Credit Plan 2009-10, the total advance to the priority sector was to the tune of `51492 crore, of which the share of agriculture was `24124 crore (46.85%). The details are given in Table 4.46. The achievement in agricultural credit was 36 percent higher than the target of the 17789 crore set for the year. There is an increase of 28% in the agricultural credit disbursements during 2009-10 over that achieved during the previous financial year. District wise analysis of total advance to priority sector reveals that out of total disbursement, Thrissur advanced `6366.23 crores (12.36%) followed by Ernakulam `5996.74 crores (11.64%). In the case of disbursement of agricultural credit also Thrissur district stands first with an achievement of 12.04% of the total disbursement (`2905.98 crore), followed by Malappuram 10.07% (2429.20 crore). Details are given in Appendix 4.59.

**Table 4.46**  
**Flow of Credit to Priority Sector and Agriculture (in percent)**

Year	All Commercial Banks			
	Priority Sector Lending		Agriculture Credit	
	As a % of Total Credit	As a % of total Deposits	As a % of Total Credit	As a % of total Deposits
2005	51.11	25.60	14.70	9.60
2006	53.47	35.74	15.91	10.63
2007	55.52	38.91	17.70	12.36
2008	58.53	41.78	21.23	15.16
2009	58.42	37.12	19.27	12.24
2010	60.01	40.59	22.46	15.19

Source: State Level Banker's Committee

4.215 The proportion of total credit to priority sector lending was 60.01% indicating a marginal increase (1.59%) over the previous year. The achievements of the Commercial banking sector of the State under total priority sector advances and weaker section advances are above the National goal of 40% and 10% respectively. In the case of agricultural lending, a higher achievement of 22.46 per cent is reported by the SLBC in the state (Table 4.47) during 2009-10.

**Table 4.47**  
**Targets and achievements under advances of commercial banks in Kerala**  
(Figures in percentage)

Sl. No.	Parameter	Target	March 2007	March 2008	March 2009	March 2010
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1.	Priority sector Advances to Total Credit	40	55.52	58.53	58.42	60.01
2.	Agriculture Advances to Total credit	18	17.70	21.23	19.27	22.46
3.	Weaker Section Advance to Total credit	10	13.01	12.91	14.78	16.16
4.	DRI Advance to Total Credit	1	0.02	0.02	0.26	0.02
5.	C.D. Ratio	60	70.09	71.39	63.54	67.63

Source: SLBC

### Credit flow to Agriculture in Kerala

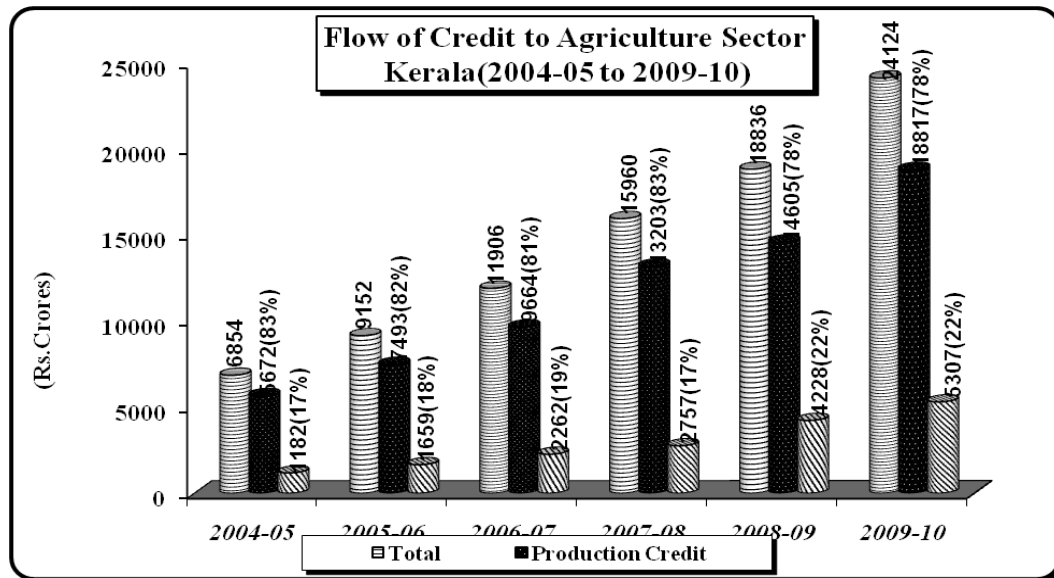
4.216 The credit flow to agriculture sector during the last six years is given in Table 4.48. The share of investment credit to agricultural credit disbursement was stagnant at (22%) during 2009-10. Out of the total credit flow, the share of production credit also stood at 78% during 2009-10.

**Table 4.48**  
**Flow of Credit to Agriculture Sector**

Year	Production Credit	Investment Credit	Total
2004-05	5672 (83%)	1182 (17%)	6854
2005-06	7493 (81.87)	1659 (18.13)	9152
2006-07	9664 (81%)	2262 (19)	11906
2007-08	13203 (83%)	2757 (17%)	15960
2008-09	14605 (78%)	4228 (22%)	18836
2009-10	18817 (78%)	5307 (22%)	24124

Source: SLBC

**Fig. 4.17**



4.217 In the agency-wise analysis, it is seen that the major portion of short term and medium term credit requirements in the state are met by the Co-operative banking sector consisting of the State Co operative Banks, District Co-operative banks and Primary Agriculture Credit Societies which covers 1/5<sup>th</sup> of the activities. The share of co-operatives in the disbursement was 89 per cent in production credit and 11 per cent in investment credit (Table 4.49). The share of RRBs in production credit and investment credit was 99 per cent and 1 per cent respectively.

**Table 4.49**  
**Agency wise flow of credit during 2008-09**

Agency	Produc	Investment	Total	% Production	% Investment

(` Crore)

	tion Credit	Credit	Agricul ture Credit	Credit to total Agri: Credit	Credit to Total Credit
Commercial banks	8134	3659	11793	69	31
Co-operative Banks	4395	546	4941	89	11
RRBs	2058	23	2081	99	1
Other Agencies	18	0	18	100	-
<b>Total</b>	<b>14605</b>	<b>4228</b>	<b>18833</b>	<b>83</b>	<b>17</b>

Source: SLBC

### Kissan Credit Card

4.218 The Kissan Credit Cards (KCCs) scheme was introduced in the year 1998-99 to enable the farmers to purchase agricultural inputs and draw cash for their production needs. Since the inception of scheme, the number of KCCs issued to public sector banks stood at 42.4 million with sanctioned limits aggregating to `233190 crore as on March 31, 2010. The total number of KCCs issued in the country upto February 2010 was 90.64 million. During 2009-10, 59.70 lakh KCCs were issued by banks with sanction of credit limit of `34982 crores (NABARD). As per the Annual Report NABARD the statewise analysis of KCC issued as at the end of February 2010, revealed that Uttar Pradesh accounted for 18 per cent of the total cards issued followed by Andhra Pradesh (17%), Maharashtra (9%), TamilNadu (7%), Karnataka, Madhya Pradesh, Orissa and Rajasthan (6%).

4.219 The status of KCCs issued in Kerala are shown in Table 4.50. In the state 30.75 lakh KCCs have been issued by the banks and co-operatives. It is targeted to extend KCC to 35 lakhs farmers in 2010-11 and a subcommittee of SLBC has submitted a series of recommendation in 2010 to extend the coverage.

4.220 The sub committee has suggested the extension of period of KCC to five years, presentation of uniform guideline to be followed by banks; preparation of list of farmers by Krishi Bhavans, and simplification of procedures.

**Table 4.50**  
**KCCs issued in Kerala as on March 2010 ( ` Lakhs)**

Bank	During the year		Since inception		Outstanding	
	No	Amount	No	Amount	No	Amount
Private Sector Banks	9616	32493.91	87252	158962.37	45605	122855.83
Commercial Banks	114952	82129.47	1392324	529826.35	425695	180055.12
Co-operatives	177717	97449.83	1595738	463264.68	1191591	173207.31
<b>Total</b>	<b>302285</b>	<b>212073.21</b>	<b>3075314</b>	<b>1152053.40</b>	<b>1662891</b>	<b>476118.26</b>

4.221 The coverage of KCCs have to be increased after addressing the hurdles in the implementation of the scheme. The practice of issuing a card to KCC holders have also been discontinued in recent years. The possibility of combining KCC with ATM card also to be examined. The salient findings of a study conducted in 14 States covering 1876 KCC holders are shown in box.

**BOX.4.3**  
**Salient findings of a study on KCC**

A study was conducted in Kissan Credit Cards by NABARD. The salient findings of the study are shown in this box.

- The study revealed that as on March 2009, farmers of 76.85% of operational holdings in 14 states were issued KCC. But the MIS of KCC was found to have short comings like issuing multiple KCC to a single holding to different family members, the same person to get multiple KCCs from different Banks, KCC issued after the laps of 3 years again counted as valid KCC, and renewed KCCs again share as fresh KCC. The nature of genuine KCC restricted at 50.63% of operational holdings of the states.
- Most of the KCC holders were not aware of the modalities, usefulness/benefits of KCC schemes. Farmers had to undergo cumbersome procedures for getting a loan above Rs.50,000/-. 48% of the sample farmers expressed that the credit limits sanctioned under KCC are not adequate.
- No agency including Co-operatives have not followed strictly the scale of finance. Limit sanctioned as compared to scale of finance was less by 19-29%.
- 68% of the farmers had used KCC as for withdrawing the credit at one time.
- 17% of the average loan under KCC was used for consumption purpose and the remaining for agriculture purposes.
- The study suggested that add on features on KCC could have further improved in terms of extending other loans such as consumption loans and term loans in the ratio of 4:2:1 and evolve KCC as a multipurpose card.
- The total time taken to sanction loan after submitting application is 22.5 days.

*Source: NABARD, 2010*

**Agricultural Debt Waiver and Debt Relief Scheme (ADWDRS)**

4.222 The Kerala State Farmers Debt Relief Commission has been functioning in the state since 9.4.07. The commission conducted suo moto enquires and made recommendations regarding Wayanad, Idukki, Alappuzha, Kasargod and Palakkad districts. As on 31.5.2009, the commission has received 4.30 lakh applications. Out of this, as on 31.12.2009, the commission has disposed 96000 applications and awarded debt relief to the tune of ` 34.54 crores through co-operative banks and an amount of ` 30.64 crore was settled.

4.223 The scheme on Agricultural Debt waiver and Debt Relief Scheme for farmers was announced in the Union budget for 2008-09 for the implementation by all scheduled commercial banks, RRBs and co-operative credit institutions. The total value of the overdue loans being waived was estimated at ` 50,000 crores and a one time settlement relief on the overdue loans at ` 10,000 crores. The revised estimate of the scheme is ` 71680 crores. The scheme covers direct agricultural loans extended to small and marginal farmers and other farmers. The

entire eligible amount in the case of small and marginal farmers and 25 per cent of eligible amount in the case of other farmers will be waived. The loan disbursed prior to March 31, 1997 except those which are restructured and rescheduled under special package of 2004 and 2006 was not covered under the scheme. The guidelines were issued in May 2008. The last date for OTS has been extended upto December 31, 2009. It is expected to benefit about 40 million small and marginal farmers and about 10 million other farmers. During 2008-09, a task force has been set up under the chairmanship of Chairman, NABARD to look into the issue of a large number of farmers who had taken loans from private money lenders not being covered under the loan waiver scheme.

4.224 The cumulative position of the scheme and the eligible amount for assistance in the state are shown in Table 4.51. The scheme will benefit 12.28 lakh accounts and the amount expected is `2520 crores. The share of commercial banks is 41 percent and the remaining amount is through RRBs and co-operatives. In terms of accounts the co-operative banks account for only 48.87 percent.

**Table 4.51**  
**Cumulative position of Debt Waiver and Debt Relief by RRBs, Cooperative Banks and Commercial Banks**

(` lakh)

Bank	No. of Accounts			Amount crystallised for DW/DR		
	SF/MF	OF	Total	SF/MF	OF	Total
SMGB	53523	226	53749	15888.32	77.50	15965.82
NMGB	73162	909	74071	20256.61	212.68	20469.29
KSCB	597577	2580	600157	91909.13	682.52	92591.65
KSCARDB	126723	3642	130365	18294.49	664.26	18958.75
Commercial Banks	352563	17158	369721	95217.01	7324.44	102541.45
Total RRBs, Co-operative & Commercial bank	1203548	24515	1228063	241565.56	8961.4	250526.96

Source: NABARD & SLBC

4.225 NABARD is the nodal agency in respect of Regional Rural Banks and co-operative credit institutions. As against the claim of `1479.85 crore, eligible amount of `1471 has been released to the banks towards settlement of claims, under the ADWDR scheme 2008. As at the end of October 2010, 99.4% of the claims have been settled as indicated in the table below.

**Table No.52**  
**NABARD – Agency wise details of releases made under ADWDR scheme**

(` lakh)

Agency	Claim	Disbursement	% of settlement of claims
SMGB	15965.82	15960.99	99.97
NMGB	20469.29	20455.6	99.93
KSCB	92591.65	91786.81	99.13
KSCARDB	18958.75	18899.74	99.69
<b>Total</b>	<b>147985.51</b>	<b>147103.14</b>	<b>99.40</b>

#### Major findings of the report of the task force on credit related issues of farmers

4.226 The ministry of Agriculture has constituted a task force in October 2009 under the chairmanship of Sri.Umesh Chandra Sarangi, Chairman, NABARD to look in to the issue of large number of farmers who had taken loans from private money lenders, not being covered under the loan waiver scheme, and effectiveness of KCC scheme.

The major recommendations of the task force are shown in Box-4.4

**BOX.4.4**

- Interest subvention be made available when long term loans are also rescheduled.
- Farmers be assisted to form JLGs to access collateral free loans from the banking system.
- increase awareness of KCC and restructure the scheme.
- Modification of money lending laws to increase punishment, widening of definition of money lenders, constitution of grievances redressal committee at the district or lower levels, upper limit of interest rates which can be benchmarked to the bank lending rates and loan recovery mechanism for registered money lenders.

*Source: Task force Report 2010*

4.227 State Co-operative Bank as the apex bank of short term credit structure in Kerala, it provides strong and sound guidance, supervises, coordinates, monitors and controls all the 14 District Co-operative Banks and Primary Agricultural Credit Societies. It also provides ST, MT, LT loans to various activities as per their requirements and also acts as a central balancing centre to absorb surplus funds from DCBs and PACs and other Co-operative institutions.

4.228 State Co-operative banks and District Co-operative banks channelise their own fund and fund of NABARD for disbursement. The total deposit of State Co-operative Bank in 2009-10 was `6649.20 crore against `4593.25 crore in 2008-09. The total loans and advances stood at `2056.5 crore, 15% decrease during 2009-10. The operational expenses has reduced slightly to `29.74 crore during 2009-10 against previous year level of `35.40 crore.

4.229 The operations of the SCB are shown in Appendix 4.60. During the year under report, the deposit position of the Bank had increased considerably compared to the last year. The borrowings from other institutions had declined to `107.51.00 crore from `237 crore, in 2008-09.

4.230 The purpose wise disbursement during 2009-10 was `2056.15 crore against that of `2410.78 crore in 2008-09 showing a decrease of 15%. The credit disbursement was mainly for agriculture, marketing, cottage & small scale industries, consumer business, consumption purposes, housing etc. Disbursement on agriculture, consumption purpose, housing etc. had increased by the bank considerably.

4.231 The working results of SCB shows a steep decline in borrowings, from `237.00 crore in 2008-09 to `107.51 crore in 2009-10.

4.232 During 2009-10 the total deposit of District Co-operative Banks had gone to `17627.13 crore against that of `13686.76 crore in the previous year with an increase of 28.78%. The amount disbursed as loans and advances was `11611.42 crore, which was 65.87 per cent of the total deposits. During 2009-10 Ernakulam, Kollam and Kozhikode districts had earned a considerable progressive net profit. Ernakulam district ranks a higher rate of NPA (`235.25 crore) followed by Malappuram (`153.32 crore). The operational indicators of DCBS show that

total Deposits and working capital are much higher in Ernakulam District, followed by Thiruvananthapuram. The indicators are given in Appendix 4.61.

### **Long term credit:**

4.233 A net work consisting of the Kerala State Co-operative Agricultural and Rural Development Bank (KSCARDB) at the Apex and 49 Primary Co-operative Agricultural and Rural Development Banks at Taluk Level is responsible for long term credit disbursement for rural development in the state. Various activities covered by KSCARDB's lending in scheme loan include Minor Irrigation, Plantation and Horticulture Agricultural machinery, Land Development, poultry, fisheries etc., where as under ordinary loan include construction of Wells/Tanks, construction of Godowns/cattle, Barbed wire or stone fencing, Construction of drainage channels etc. The Bank raises funds through floating of debentures issued on government guarantee; NHB, LIC, SBI and SBT etc., are the financial institutions which invest in the debentures floated by the KSCARDB. The total long term loan disbursed during 2009-10 by KSCARDB was `689.42 crore against that of `563.34 crore in 2008-09 registering an increase of 23.38%. In the purpose-wise disbursal, the major share of total disbursement is availed by Rural Housing (41.04%) and the share for non farm sector is 13.17%. The share of disbursement of rural housing has increased during 2009-10 also. The details of loan disbursement is given in Appendix 4.62. Purpose wise classification of long term loans issued by Primary Co-operative Agricultural and Rural Development Banks is shown in Appendix 4.63.

4.234 The Non farm sector lending scheme intends to provide financial assistance to meet the credit needs of individual artisans, craftsmen, handicraftsmen and small entrepreneurs who undertake manufacturing and processing activities as approved by the Development commissions of SSI, Government of India. Small Road and Water Transport operators scheme for public goods carriage and passenger vehicles/boats, Integrated Loan Scheme for new industrial ventures/modernization of existing SSI, Educational Loan for higher education in India and abroad as recognized by Central and State Government are also introduced under the long term loan disbursement scheme. The Bank has also financing tourism related activities with the assistance of NABARD to promote farm tourism / home stay which enables the farmers to generate additional income. A new scheme in the name of Card Bank Jewel Scheme was introduced by the Bank to the member borrowers to acquire asset in the form of gold coin or ornaments to meet the future requirements as marriage of their daughter / son.

### **Refinance Support by NABARD**

4.235 Investment credit facilitates necessitate capital formation in agriculture, which considered to be a pre-requisite for upgrading the technology and improving resource use efficiency in agriculture. NABARD provides refinance for investment credit at concessional rates of interest, facilitates augmenting the flow of investment credit at the ground level through various policy initiatives/programmes.

4.236 At the national level, the total refinance disbursement during 2009-10 stood at `12009.08 crore as compared to the disbursement of `10535 crore during previous year. During the same period in Kerala the total disbursement of refinance from NABARD was `913.64 crores. The total refinance disbursement during 2009-10 has increased in the country by 14%. Commercial Banks accounted for the highest share of 66.24% in the total refinance disbursed in the state. This was followed by Kerala State Co-operative Agricultural Rural Development Bank `252.78 crore (27.66%) and RRBs `55.71 crore. The disbursement of

RRBs registered a lowest of 6.10%. Agency wise and purpose wise disbursement of refinance assistance by NABARD in Kerala is given in Appendix 4.64.

4.237 Under purpose wise disbursement refinance, non-farm sector received higher share (71.43%) followed by Self Help Groups (7.25%), Land Development (2.58%) and Plantation and Horticulture (2.03%). Details are given in Appendix 4.65.

4.238 The purpose-wise analysis of the refinance by NABARD reveals that as in the previous years, the major share of assistance was availed by the non-farm sector (71.43%), and under farm sector, the refinance disbursement has shown a declining trend. In the disbursement, the major share was for Self Help Groups (7.25%), land development (2.58%), Plantation and Horticulture (2.03%). The amount of refinance for the sectors like fisheries and poultry which are very important in the rural economy of Kerala remained to below 1% as in the previous year.

### **Rural Infrastructure Development Fund (RIDF)**

4.239 The RIDF was set up in NABARD with contribution from the Commercial banks which were not able to fulfill the commitment of channelising at least 18 per cent of their total lending to agriculture. RIDF has been instrumental in strengthening the rural infrastructure in the State. The RID Fund started in 1995-96 with a corpus of `2000 crores has emerged as a popular and effective mechanism for financing rural infrastructure projects and its corpus from RIDF I to XV stands at `1,03,718 crore and `68439.74 crore disbursed as on 31.3.2010.

### **Assistance to Kerala**

4.240 Kerala has been receiving assistance under RIDF for the last fourteen years. The major projects for which refinance has been disbursed include watershed development projects, rural bridges, rural roads, reclamation of waterlogged area, inland navigation, tourism oriented roads and rural market yards.

4.241 The cumulative sanction amount as on 31.3.10 was `2890.59 crore and the disbursement was `1910.69 crore (66.09%) for the implementation of 3226 projects. The tranche wise sanction and disbursement under RIDF are shown in the Table 4.53. Out of 3226 projects 2146 have been completed. Under RIDF XV, an amount of `352.48 crore was sanctioned to Kerala for 2009-10 and disbursement for the period was `75.81 crores. The purpose wise cumulative sanction and disbursement on projects as on 31.3.2010 is given in Table 4.54. The amount sanctioned for PWD roads and bridges accounted for 45.07 percent and Rural drinking water accounted for 17.24 percent of the total amount sanctioned under RIDF in the state.

**Table 4.53**  
**Tranche wise Sanction & Disbursement under RIDF**

(` Crore)

RIDF	Kerala as on 31.3.2010		India as on 31/3/2010	
	Sanction	Disbursement	Sanction	Disbursement
I	95.93	86.26	1906.21	1760.87
II	86.91	73.13	2636.08	2397.95
III	89.29	73.88	2732.69	2453.50

IV	64.00	56.73	2902.55	2482.00
V	126.77	117.23	3434.52	3054.96
VI	172.51	159.02	4488.51	4070.85
VII	181.87	158.59	4582.32	4052.59
VIII	193.97	167.62	5950.19	5148.50
IX	89.94	74.37	5638.26	4916.48
X	216.71	171.86	7671.71	6489.35
XI	174.88	125.07	8320.33	6604.80
XII	247.63	166.68	10411.15	7280.43
XIII	296.99	171.20	12705.64	7600.60
XIV	500.71	233.22	14708.02	6652.51
XV	352.48	75.81	15629.82	3474.35
<b>Total</b>	<b>2890.59</b>	<b>1910.67</b>	<b>103718.00</b>	<b>68439.74</b>

Source : Annual Report 2009-10, NABARD

**Table 4.54**  
**Purpose wise loan sanctioned and disbursements under RIDF as on 31.3.2010**  
**(I to XV)**

(` Crore)

Sl. No.	Purpose	No. of Projects	Sanctioned Amount	Disbursed Amount
1.	Irrigation	1178	437.17	302.39
2.	Soil and Water Conservation	292	133.77	90.76
3.	Drainage and Flood Protection	79	155.47	80.85
4.	Rural Roads (PWD, LSGD etc.)	863	657.78	466.43
5.	Rural Bridges	342	645.11	528.92
6.	Rural Market Yards	109	11.54	7.77
7.	Boat Jetties	4	0.27	0.02
8.	Inland Navigation	1	10.00	7.87
9.	Rural Drinking Water Supply	45	498.38	255.96
10.	Health	6	38.27	27.88
11.	Education	114	64.42	25.73
12.	Fish Harbour/ Fish landing center	12	78.96	42.11
13.	Animal Husbandry	2	12.82	5.91
14.	Hydel Power	1	7.79	1.56
15.	Information Technology	3	113.71	61.04
16.	Rural godowns incl. Cashew	72	3.05	1.05
17.	Forest development	6	4.91	0.98
18.	Anganwadies	94	4.15	0.83
19.	Modern Abattoir	3	13.03	2.61
	<b>Total</b>	<b>3226</b>	<b>2890.60</b>	<b>1910.67</b>

Source: NABARD, 2010