

## 5. ANIMAL HUSBANDRY, FISHERIES AND FORESTRY

### Overall Performance:

The allied sectors comprising of Animal Husbandry, Fisheries and Forestry play a vital role in providing subsidiary employment to rural folk and to guarantee household income to small and marginal farmers besides assisting crop production in the State. These sectors help hand in hand in the creation of value addition and earning foreign exchange. Livestock sector provides livelihood and food security to the people and contributes 3.1 per cent to GSDP and around 26.6 per cent of primary sector GSDP for the rapid growth of the economy. The annual average growth of Agriculture and Allied Activities worked out to 4.37 per cent as against the projected Tenth plan growth of 4 per cent. The sub sectoral annual average growth of fishing sector hovered around 2.98 per cent of the projected growth of 1.50 per cent and that of Forestry and Logging accounts for 1.04 per cent towards the projected Tenth plan growth of 3 per cent.

### Animal Husbandry:

The State's total livestock population as per the 17th Livestock Census conducted in 2004 stood at 249.42 lakhs. As compared to the previous census it was short by 3.85 per cent. The decline was mainly contributed by the fall in number of buffaloe population. In almost all Censuses since 1989, there was a steady decline in buffaloe population in the State. Of the total livestock population in the State, the relative share of bovine, small ruminants and others had changed from 52:41:7 in 1982 to 43: 55: 2 in 2004. Tamil Nadu accounted for 4.94 percent of the country's cattle population, 1.69 per cent of buffaloes, piggery 2.37 percent, sheep 9.10 per cent and 6.58 per cent of goat population. The relative share of the total livestock population of the State at All-India level worked out to 5.1 per cent. Poultry population had accelerated steadily from 182.84 lakhs (1982 Census) to 365.11 lakhs (1997 Census) and further a quantum jump to 865.9 lakhs (2004 Census). The share of poultry in the State at the all- India was 17.7 per cent.

**Table-1: Livestock Census: Tamil Nadu**

Year	(lakhs)						
	Cattle	Buffaloe	Sheep	Goat	Others	Total	Poultry
1982	103.66 (-4.03)	32.12 (4.35)	55.37 (4.69)	52.46 (24.85)	18.26 (135.31)	261.87 (8.45)	182.84 (27.44)
1989	93.53 (-9.77)	31.28 (-2.62)	58.81 (6.21)	59.20 (12.85)	20.85 (14.18)	263.66 (0.68)	215.70 (17.97)
1994	90.96 (-2.75)	29.31 (-6.30)	56.12 (-4.57)	58.65 (-0.93)	21.75 (4.32)	256.79 (-2.61)	238.54 (10.59)
1997	90.47 (-0.54)	27.41 (-6.48)	52.59 (-6.29)	64.16 (9.39)	24.76 (13.84)	259.39 (1.01)	365.11 (53.06)
2004	91.41 (1.03)	16.58 (-39.51)	55.93 (6.35)	81.77 (27.45)	3.73 --	249.42 (-3.85)	865.9 (137.16)

*(Figures in brackets indicate percentage change over the previous census)*

*Source: Commissioner and Director of Animal Husbandry and Veterinary Services, Chennai – 6.*

The State has brought out all breeding activities under a single umbrella. Artificial insemination programme was carried out effectively. The cattle population was high in the districts of Villupuram, Thiruvannamalai, Vellore, Thanjavur, Pudukottai, Coimbatore, Cuddalore, Dindigul and Kancheepuram whereas the buffaloes were

predominant in the districts of Namakkal, Villupuram, Kancheepuram, Erode, Salem and Tiruvallore. These districts are called milk bowls of the State. A decline of 8.4 per cent in the total bovine population was felt during 2004 census when compared to the 1997 census. However, the Exotic Cross bred and graded bovine population had improved from 27.83 lakhs in 1997 to 56.77 lakhs in 2004 (+104.1%), the fall in the indigenous varieties from 90.05 lakhs to 51.14 lakhs (-43.2%) which was the main causative factor behind the fall in the overall bovine population. The exotic and crossbred bovine population had more or less maintained the same trend whereas the buffalo bovine population had witnessed a declining trend.

**Table-2: Bovine Population Trend 1989 to 2004\***

(lakhs)				
Item	1989	1994	1997	2004
<b>1. Cattle</b>				
a) Exotic Cross bred	11.44	18.76	21.79	51.40
b) Native pure & Indigenous	82.09	72.20	68.68	40.01
<b>Total</b>	<b>93.53</b>	<b>90.96</b>	<b>90.47</b>	<b>91.41</b>
<b>2. Buffalo</b>				
a) Murrah & Graded	5.37	5.02	6.04	5.37
b) Indigenous	25.91	24.29	21.37	11.13
<b>Total</b>	<b>31.28</b>	<b>29.31</b>	<b>27.41</b>	<b>16.50</b>

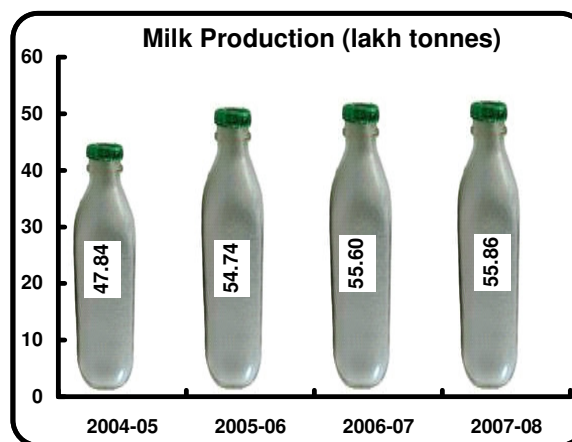
\*- Bovine Population trend 1989 to 2004 given as against Breedable Population.

Source: Directorate of Animal Husbandry and Veterinary Services, Chennai-6.

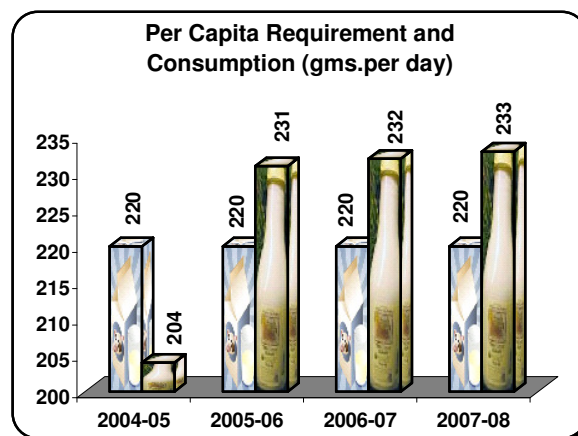
The non-descript animals have a higher age at first calving, low lactation period, low milk yield, lengthy dry and inter-calving periods. But they are highly disease resistant and heat tolerant. Exotic breeds have early maturity, lengthy lactation period, high milk yield, short dry and inter-calving periods but they are less disease resistant and heat tolerant. To improve the economic traits of the local animals and also to preserve the desirable traits like disease resistance and heat tolerance of indigenous animals in a short time at an affordable cost, cross breeding is an effective solution. The Department introduced artificial insemination with liquid semen of exotic and graded breeds since 1948. Further, with the introduction of frozen semen during 1975, liquid semen was gradually replaced and all the artificial insemination centers started using frozen semen from 1993. Artificial insemination work is being carried out at 3258 Centres functioning in the State. During 2007-08, totally 34.79 lakhs of artificial inseminations were done in the State.

### Milk Production and Per Capita Availability:

For the growing urbanization, increasing per capita income and changing consumption pattern, there is a need to improve milk production and per capita availability of milk in the State. The milk production during Tenth plan was encouraging. It had steadily improved from 49.88 lakh tonnes in the base year (2001-02) to 55.60 lakh tonnes in the terminal year of the Tenth Plan viz., 2006-07, which



accounted for 93 percent of the target. The overall annual average milk production during Tenth Plan in the State stood at 50.39 lakh tonnes and shared 5.4 per cent of that of the country (927.8 lakh tonnes). The annual average increase in milk production in the State was 2.44 per cent which was lower than that of All India level of 3.46 per cent. Tamil Nadu ranked eighth in milk production at the all-India level. The total milk production in the State had



further gone up from 55.60 lakh tonnes in 2006-07 to 55.86 lakh tonnes in 2007-08'. The State's per capita availability of milk was around 233 grams per day during the last three years. However, the availability has been continuously lagging behind the per capita per day requirement of 250 grams.

**Table – 3: Milk Production and Per Capita Availability**

Year	Production (lakh tonnes)		Percentage Share of Tamil Nadu	Per capita availability (gms.per day)	
	Tamil Nadu	All-India		Tamil Nadu	All-India
2002-03	46.22 (-7.3)	862 (2.1)	5.4	198 (-9.6)	230 (2.2)
2003-04	47.53 (2.8)	881 (2.2)	5.4	198 (0.0)	231 (0.4)
2004-05	47.84 (0.7)	925 (5.0)	5.2	204 (3.0)	233 (0.9)
2005-06	54.74 (14.4)	971 (5.0)	5.6	231(13.2)	241 (3.4)
2006-07	55.60(1.6)	1000 (3.0)	5.6	232(0.4)	245 (1.7)
2007-08	55.86(0.5)	-	-	233(0.4)	-

Source: 1. Various issues of Statistical Hand Book of Economics and Statistics, Chennai –6  
2. Economic Survey, GOI 2006-07.

### **Milk Yield per Animal:**

With a view to improve the milk yield, scientific breeding practices are propagated. The State's concerted efforts resulted in an increase in the number of crossbred breedable bovine population and further resulted in the milk production and yield rate. The milk yield rate of exotic and crossbred cattle rise from 6.150 kgs in 2002-03 to 6.272 kgs in 2005-06 (by 2.0%) and further to 6.312 kgs (by 0.6%) in 2006-07. However, it had marginally come down to 6.254 kgs in 2007-08. The milk yield rate of indigenous cows increased from 2.554 kgs to 2.734 kgs (by 7.0%) and to 2.762 kgs (by 1.0%) and marginally declined to 2.757 kg in 2007-08. The average milk yield per buffalo had also gone up from 4.112 kg in 2002-03 to 4.161 kg in 2005-06 (by 1.2%) and 4.223 kg in 2006-07 (by 1.5%) and it slightly come down to 4.149 kg in 2007-08.

### **Dairy Development:**

Dairy development programmes are being implemented in the State through a well designed net work of milk cooperatives formed on the 'Anand Model' of Gujarat State. The milk and milk products are marketed by the Tamil Nadu Cooperative Milk Producers' Federation Limited with a brand name 'Aavin', which is the Apex Body of the

17 District Cooperative Milk Producers Unions, covering all the 30 districts with an installed capacity of 17.42 lakh litres per day (LLPD). Currently, the Federation is procuring milk through 7662 Primary Co-operative Societies in the State. The milk production by the societies had improved from 25.09 LLPD in 2005-06 to 26.10 LLPD (4.0%) in 2006-07. The procurement of milk by these societies accounted for about 46.0 percent of total milk production in the State. With effect from 7<sup>th</sup> March 2007, the milk procurement price has been enhanced from Rs.10.50 to Rs.12.00 per litre in the case of cow milk and from Rs.12.50 to Rs.14.00 per litre in respect of buffalo milk. Of the total milk production in the State, the quantity handled by the Federation had improved from 21.59 LLPD in 2005-06 to 26.10 LLPD (20.9%) in 2006-07. The Federation has also implemented the Milch Animal Breeding Programme with a view to improve the quality of the stock. Under this programme, artificial insemination and veterinary care facilities have been provided at the door step of the milk producers. Totally, 8 lakh milch animals from 4696 societies were covered and 12.78 lakh artificial insemination were performed during 2006-07. The total number of cross bred calves born during the year was 4.15 lakhs. The calving rate worked out to 32.5 per cent. About 5.19 lakh cases were treated this year. The Federation has also taken up sale of milk and milk products throughout the State. The total value of milk and milk products sold by the Federation had fallen from Rs.41.67 crores in 2006-07 to Rs.40.72 crores in 2007-08 which was mainly due to the decline in the sales of milk products.

#### **Veterinary Care Infrastructure:**

Health care infrastructure to animals is inevitable to promote scientific breeding and also for taking up preventive and curative measures to the animals. For providing proper veterinary care every year, new Veterinary Dispensaries are opened. Based on the need, during the Tenth Plan, 324 Sub-Centres were upgraded as Veterinary Dispensaries, apart from adding 307 new Dispensaries. During 2006-07, 30 new Sub-Centres were opened. In order to provide easy accessibility of veterinary services to the livestock rearers, at present, 55 Mobile Veterinary Units are functioning in the State.

**Table-4: Animal Care Institutions**

Item	(Numbers)					
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
<b>I. Veterinary Health Services</b>						
Polyclinics	3	6	6	6	6	6
Clinician Centres	25	22	22	22	22	22
Mobile Veterinary Units	54	55	55	55	55	55
Veterinary Hospitals	139	139	139	139	139	139
Veterinary Dispensaries	849	922	1156	1156	1167	1207
<b>Sub-Centres</b>	<b>2123</b>	<b>2032</b>	<b>1799</b>	<b>1799</b>	<b>1829</b>	<b>1829</b>
II. Animal Disease Intelligence Units	15	15	15	15	19	20
III. Cattle Breeding & Fodder Development	20	20	20	20	20	20
IV. Veterinary Preventive Medicine	1	1	1	1	1	1
V. Poultry Disease Diagnostic Lab	2	2	2	2	2	2
VI. A.I Centres	3572	3569	3177	3177	3218	3258
VII. Frozen Semen Productio stations	4	4	3	3	3	3
VIII. Frozen Semen Banks	12	12	12	12	12	12

*Source: Directorate of Animal Husbandry and Veterinary Services, Chennai-6.*

## Animal Health Care:

Health care to livestock is a vital one and the State had taken special initiatives in this regard. The immense importance of animal health care like vaccination, deworming and artificial insemination etc has been done. The number of vaccination had come down from 512.85 lakhs in 2006-07 to 496.39 lakhs (-3.2%) in 2007-08 and the deworming done rose from 203.37 lakhs to 220.04 lakhs (8.2%). Artificial insemination also gone up from 33.59 to 34.79 lakh (3.6%) and the number of calves born had come down from 13.04 lakhs to 12.01 lakhs (-7.9%). However, there was a slight fall in the calving rate from 38.8 to 37.2 per cent between the two years.

**Table-5: Performance of Animal Care of Activities** (lakh Nos.)

Item	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1. Animals Treated	167.21	164.69	186.15	202.41	189.73	196.28
2. Vaccination done	225.78	238.22	344.22	449.91	512.85	496.39
3. Deworming done	154.44	168.64	82.38	186.01	203.37	220.04
4. Castration done	6.23	5.88	6.58	6.44	6.72	6.62
5. A.I Performed	32.28	31.02	29.23	32.87	33.59	34.79
6. Calves born	11.48	11.57	11.09	11.40	13.04	12.01

Source: Directorate of Animal Husbandry and Veterinary Services, Chennai-6.

## Meat Production:

In order to supply good quality and hygienic meat to consumers, registered slaughter houses are set up in the State. The number of registered slaughter houses functioning in the State had come down from 182 in 2002-03 to 110 in 2006-07 and remained the same during 2007-08. The total number of animals slaughtered in registered slaughter houses in the State rose from 23.57 lakhs in 2002-03 to 38.61 lakhs in 2006-07 and came down to 37.15 lakhs in 2007-08. The meat production had improved from 401.20 lakh kgs in 2002-03 to 499.11 lakh kgs in 2005-06 and further to 584.64 lakh kgs (11.6%) in 2006-07 and to 638.23 lakh kgs in 2007-08. The department had conducted surprise inspection to the registered slaughter houses with a view to get rid of the meat borne diseases like taeniasis, trichinosis and hydatidosis in the State.

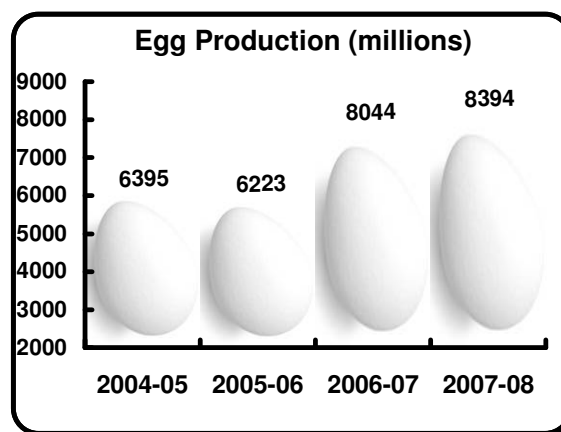
**Table-6: Meat Production** (lakh kgs)

Item	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1. Regd. Slaughter Houses (Nos.)	182	182	128	109	110	110
2. Animals Slaughtered (lakhs)						
a. Sheep	11.53	11.41	11.29	15.71	15.82	13.43
b. Goat	10.13	10.85	13.67	13.94	20.97	21.69
c. Cattle	0.86	0.95	0.71	1.03	1.08	1.14
d. Buffaloes	0.72	0.71	0.50	0.55	0.62	0.64
e. Pig	0.33	0.13	0.13	0.16	0.12	0.25
<b>Total</b>	<b>23.57</b>	<b>24.05</b>	<b>26.30</b>	<b>31.40</b>	<b>38.61</b>	<b>37.15</b>
3. Meat Production (lakh tonnes)						
a. Mutton	121.01	137.62	123.50	171.74	173.31	164.32
b. Chevon	111.65	127.71	166.34	171.80	231.04	262.06
c. Beef	77.21	104.69	72.14	86.09	107.36	135.50
d. Cara Beef	71.88	89.95	58.70	63.33	67.95	66.29
e. Pork	19.45	6.73	4.76	6.15	4.98	10.06
<b>Total</b>	<b>401.20</b>	<b>466.70</b>	<b>425.45</b>	<b>499.11</b>	<b>584.64</b>	<b>638.23</b>

Source: Directorate of Animal Husbandry and Veterinary Services, Chennai-6.

## Poultry:

Poultry sector provides direct and indirect employment to the rural people in the State. To improve supplementary income of the people in rural areas, the additional avocation like cattle and poultry rearing are being encouraged. In the State, 23 Poultry Extension Centers are acting as Demonstration Farms and imparting training to poultry rearers. At present, there are 5123 Broiler Farms, 1148 Layer Farms and 41 Hatcheries functioning in the State. Poultry rearing became an industry functioning in the poultry and egg production hub of Namakkal and Salem, Erode and Coimbatore. The Government had organized widespread immunization campaign against the diseases like Ranikhet. Totally, 248.75 lakh birds (28.7%) of the total poultry in the State had been vaccinated against this disease. Further, to render technical advice to farmers for prevention, diagnosis and control of various infectious and parasitic diseases, two Poultry Disease Diagnostic Laboratories are functioning in the districts of Namakkal and Erode. Totally 7294 samples were examined from 1317 poultry farms spread over 1116 villages during 2006-07. The total poultry population in the State was 865.9 lakhs (2004 Census) and it accounted for 18 per cent of that at the National level. The egg production had improved from 3622 millions in 2002-03 to 6223 millions in 2005-06 and further jumped to 8044 millions. (29.3%) in 2006-07. The X Plan target of producing 5200 millions had easily been achieved by the State. In 2007-08, it reached an all time high accomplishment at 8394 millions. Of the total eggs produced, the contribution of desi and improved poultry varieties is in the ratio of 6:94. The per capita availability of number of eggs as against the norms by ICMR (180 no) rose steadily from 100 in 2005-06 to 128 in 2007-08, which was higher than that of all- India (42).



**Table -7: Egg Production and Per Capita Availability**

Year	Production (millions)	Per Capita Availability (Nos.)
2002-03	3622	58
2003-04	3784	61
2004-05	6395	99
2005-06	6223	100
2006-07	8044	123
2007-08	8394	128

*Source: Various issues of Statistical Hand Book, Government of Tamil Nadu.*

## Feed and Fodder Development:

Feed and fodder are the major factors in enhancing farm animal productivity. Balanced feeding alone can bring about an increase of 30 percent in milk production. For producing cattle feed the Tamil Nadu Co-operative Milk Producers Federation (TCMPF) has set up three cattle feed centres - Madhavaram, Kappalur and Erode. The production of fodder seed was carried through the seven units in the State. The total area cultivated under fodder in the above seven units had perceived a dip from 961 acres in 2006-07 to 881 acres in 2007-08. The production of slips had witnessed an overall

improvement from 23.64 lakhs in 2006-07 to 74.41 lakhs in 2007-08. The State was in comfortable position with regard to availability of dry fodder. As against the total requirement of 166.80 lakh tonnes of dry fodder, the total availability in the State was estimated at 171.63 lakh tonnes in 2007-08. However, the estimated total availability of green fodder stood at 385.82 lakh tonnes and the shortfall was 114.70 lakh tonnes. The availability of green fodder is restricted to selected areas and seasons, further, due to rapid urbanization which has resulted in shrinking of grazing lands. Besides, with the increase in the pressure of land for growing food grains, oilseeds and pulses, the gap between the demand and supply of green fodder is increased. To promote fodder development, the Government has ordered not to transfer the grazing lands for other purposes unless alternate land of the same extent is developed for grazing in the same district. An outlay of Rs.10 crores would be provided for fodder development during XI Plan in the State.

**Table-8: Fodder Production**

Particulars	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1. Total Area Under Cultivation	3472	632	3450	1193	961	881
2. Fodder Seed Production Units (Nos.)	7	7	7	7	7	7
3. Production of						
- Slips (lakhs)	117.20	118.00	20.54	20.54	23.64	74.41
- Seed (MTs)	13.5	57.20	38.60	0.722	4.06	3.94
- Seedlings (lakh)	1.10	1.60	0.27	-	0.16	0.05
4. Minikit Distributed (Nos.)	7675	10000	10900	6812	20015	19046

*Source: Directorate of Animal Husbandry and Veterinary Services, Chennai-6.*

### **Kalnadai Padukappu Thittam:**

Kalnadai Padukappu Thittam was inaugurated in the State during the year 2000. Under the scheme, total health cover for both preventive and curative was provided to livestock and poultry rearers in remote villages. Special camps (such as medical, surgical gynaecological and infertility treatments, artificial insemination, pregnancy verification, castration, deworming and preventive vaccination etc) were conducted at the rate of one camp per month in all the 385 Panchayat Unions. Each camp was conducted at a cost of Rs.3700/- during 2005-06. During 2006-07, it was enhanced to Rs.4200/-. Totally, 2695 camps were conducted benefiting 37.44 lakh animals during the year 2006-07. Totally, 5500 camps were conducted during the year 2007-08 covering 67 lakh animals in 2007-08 and benefiting 16.98 lakh farmers. This scheme is being a very popular one among the farming community since it provides health care facilities at the doorstep of the livestock and poultry rearers at free of cost. During the Eleventh Plan period from 2007-2012 it is proposed to conduct 5500 special camps each year with a total cost of Rs.11.55 crores.

### **Livestock Insurance:**

Livestock Insurance Scheme as a pilot project is being implemented by the Tamil Nadu Cooperative Milk Producers' Federation Limited with the assistance from the Government of India through Tamil Nadu Livestock Development Agency in the State. This scheme aimed at protecting the farmers against losses due to un-timely death of animals. A total of one lakh high yielding cattle/buffaloes were targeted to be insured in five districts viz. Salem, Coimbatore, Erode, Namakkal and Vellore during the year 2006-07. Under the scheme, 50 per cent of the cost of premium was given as grant and paid to the Insurance Firm by the Government and 50 per cent to be borne by the farmers. A sum

of Rs.6.88 crores was released by the GOI and 90,072 animals were insured under the scheme in the State during 2006-07. In 2007-08, however, the number of animals insured had increased to 119032.

### **Financial Expenditure:**

As against the total outlay of Rs.92.34 crores allotted during the Tenth Plan (under State Schemes) for animal husbandry, the total expenditure incurred was Rs.63.23 crores. The expenditure under the various schemes for veterinary services and animal health had exceeded the respective allocation. As high as 72 percent of the total plan expenditure was incurred towards the promotion of 'Veterinary Services and Animal Health'. The component wise expenditure incurred during the tenth plan is presented below:

**Table-9: Tenth Plan Financial Achievements - (State Schemes)**

Sub-sector	(Rs. Crores)	
	Tenth Plan outlay	Tenth Plan expenditure
1. Veterinary Services and Animal Health	24.61	45.72
2. Cattle and Buffalo Development	57.03	5.56
3. Poultry Development	2.35	0.58
4. Sheep and Wool Development	0.40	0.17
5. Direction and Administration	0.30	1.04
6. Other Expenditure	0.15	2.82
7. Special Component Plan	-	2.45
8. Hill Area Development Programme	5.00	1.84
9. Western Ghats Development Programme	2.50	3.05
Total	<b>92.34</b>	<b>63.23</b>

*Source: Eleventh Plan document 2007-2012 SPC, Chennai -5.*

### **Eleventh Five Year Plan: Focus and Outlay:**

#### **Objectives:**

- To increase crossbred cattle population and milk production.
- To increase the coverage of cattle under artificial insemination and also to introduce artificial insemination in goats at the farm.
- To provide veterinary services and breeding support at the farmer's doorsteps.
- To increase the availability of green fodder by rejuvenation of pasture lands and by bringing additional private lands under fodder cultivation.
- To strengthen disease diagnostics, surveillance and monitoring activities.
- To improve the quality of vaccines to livestock by improving the cold chain network and upgrading all vaccine production laboratories.
- To strengthen Management Information System (MIS) and extension services.

**Table-10: Monitorable Targets for the Eleventh Plan Period**

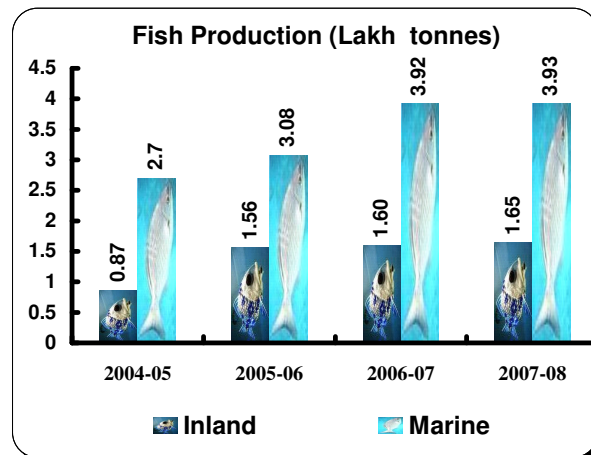
Year	Milk (000 Mt)	Egg (Million Nos.)	Wool (000 Kg)	Meat (000 Tonnes)	Artificial Insemination (in lakhs)	
					Cattle	Buffaloe
2007-08	5590	8366	768	229	48.37	6.38
2008-09	5619	8700	772	238	54.22	8.10
2009-10	5649	9048	780	247	59.79	9.75
2010-11	5678	9410	788	257	65.10	11.32
2011-12	5708	9787	794	268	70.17	12.82

Source: Eleventh Plan Document, SPC, Chennai-5.

### Fisheries:

Fisheries play a vital role in generating employment, augmenting protein rich food and earning substantial foreign exchange. It contributes around 1.1 per cent to the GDP around 4.7 per cent to the GDP from the Primary Sector. The State ranks fourth in the total fish production in the country.

The total fish production in the State rose from 5.46 lakh tonnes in 2005-06 to 5.52 lakh tonnes in 2006-07 and to 5.58 (1.1%) lakh tonnes in 2007-08. Barring 2005-06, the target set for the fish production remains to be unattained. The gap was mainly caused by the shortfall in the inland fish catches as against the target set for. In the total fish production, the relative mix of inland and marine fisheries remained to be unchanged at 30:70. The per capita consumption of fish had slightly improved from 13.52 kgs in 2005-06 to 13.70 kgs in 2006-07.

**Table -11: Total Fish Production**

(Lakh tonnes)

Year	Inland		Marine		Total	
	Target	Achievement	Target	Achievement	Target	Achievement
2002-03	1.25	1.0 (-)10.5	3.72	3.79 (1.3)	4.97	4.79 (-)1.8
2003-04	1.38	0.77 (-)24.5	3.73	3.81 (0.5)	5.11	4.58 (-)4.4
2004-05	1.52	0.87 (13.0)	3.74	3.08 (-)19.2	5.26	3.95 (-)13.7
2005-06	1.67	1.56 (79.3)	3.77	3.90 (26.6)	5.43	5.46 (38.2)
2006-07	1.84	1.60 (2.56)	3.77	3.92 (0.51)	5.61	5.52 (1.10)
2007-08	NA	1.65(5.77)	NA	3.93(0.26)	NA	5.58(1.10)

Note: Figures in brackets indicate percentage change over the previous year.

Source: Commissioner of Fisheries, Chennai-6.

## Marine Fish Production:

Tamil Nadu has a coastal line of 1076 kms accounting for 13.2 per cent of the country. The coast line covers 591 fishing villages spread over 13 districts. It has a continental shelf of 41412 sq.kms and an Exclusive Economic Zone (EEZ) spread over 0.19 million sq. kms. As per marine fisheries census of 2006-07, total fishermen population in Tamil Nadu was 817832, of which more than 51 percent of them are concentrated in three districts viz., Kanniyakumari, Ramanathapuram and Thiruvavur. The number of persons actively engaged in this activity was 104509 (13.2%). There are three major fishing harbors at Chennai, Tuticorin and Chinnamuttom and four minor harbours at Pazhayar, Valinokkam, Colachel and Nagapattinam. Apart from the harbours, other infrastructure facilities like fish landing centres, cold storages, ice plants and link roads also were created.

Marine Fisheries has been recognized as a powerful sector in providing employment and stimulates income. Marine fish production through mechanized and non-mechanized boats had accelerated from 3.79 lakh tonnes in 2002-03 to 3.81 lakh tonnes in 2003-04 and plummeted to 3.18 lakh tonnes in 2004-05 and it improved to 3.90 lakh tonnes in 2005-06 and however it came down to 3.92 lakh tonnes in 2006-07. It hovered around that level in both the years 2006-07 and 2007-08. About three-fourths of the total marine fish production had come from 5 districts viz., composite Thanjavur, Pudukkottai, Ramanathapuram, Thoothukudi and Kanniyakumari. Of the total marine fish production, the relative share of demersal and pelagic varieties stood at 60:40.

The total number of boats in operation in the State had gone up from 68036 in 2002-03 to 69731 in 2006-07. This was mainly due to the increase of non-mechanized boats in operation. The relative share of mechanized and non-mechanized fishing crafts had changed from the ratio of 17:83 in 2002-03 to 14:86 in 2006-07. About two third of the fishing crafts were in operation in the four districts of Thanjavur (composite), Pudukkottai, Ramanathapuram and Thoothukudi.

The boats-wise catches revealed that fish production by the mechanized crafts continued to be in larger proportion of the total marine fish production. The mix of fish catches by the mechanized and non-mechanized crafts in the total marine fish production had changed from 52: 48 in 2002-03 to 77: 23 in 2006-07. On an average, fish catches per mechanized boat during the current year worked out to 23.9 tonnes whereas it was the lowest at 1.2 tonnes per non-mechanized craft.

**Table-12: Marine Fish Production**

Year	Boats in Operation (Number)			Fish Catches through (Tonnes)		
	Mech-anised	Non-Mechanised	Total	Mech-anised	Non-Mechanised	Total
2002-03	11889	56147	68036	200468	178746	379214
2003-04	11969	54715	66684	204432	176716	381148
2004-05	11969	54715	66684	181158	126535	307693
2005-06	13164	62594	75758	244638	145076	389714
2006-07	9990	59741	69731	238423	71874	310297

Source: Commissioner of Fisheries, Chennai-6.

## Inland Fish Production:

The State has 3.70 lakh hectares of inland water spread resources comprising of 52,000 hectares of reservoirs, 97,000 hectares of major irrigation and long seasonal tanks, 158000 hectares of minor irrigation and short seasonal tanks and 63000 hectares of estuaries, backwaters and swamps offering good scope for inland fisheries development. The total inland fish potential in the State has been estimated at 4.50 lakh tonnes. Inland fish production had improved from 155943 tonnes in 2005-06 to 160171 tonnes in 2006-07 and further to 164504 tonnes in 2007-08. Total catches by sources revealed that seasonal tanks and major irrigation tanks alone accounted for 83 per cent of the total inland fish production. Inland fish production from almost all sources had registered increases between these two years. More than 52 percent of inland fish catches in the State were from the six districts of Thiruvallur, Kancheepuram, Vellore, Theni, Virudhunagar and Sivagangai.

**Table -13: Inland Fish Production : By Sources**

(in tonnes)

Sl. No	Source	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1	Major Reservoirs	1095	870	958	968	1676	1740
2	Major Irrigation Tanks (both perennial and long seasonal)	34465	19500	30152	61958	63197	64437
3	Seasonal Tanks	39283	64822	39526	75099	76600	78102
4	Estuaries and backwaters	7500	2800	8400	8547	8718	8916
5	Fish Farmers Development Agencies	1686	2213	287	546	557	568
6	Rivers, Streams, Canals and other Water sources	8500	-	-	-	-	-
7	Miscellaneous	9688	6404	7528	8825	-	10741
	<b>Total</b>	<b>102217</b>	<b>77304</b>	<b>86851</b>	<b>155943</b>	<b>160171</b>	<b>164504</b>

Source : Commissioner of Fisheries, Chennai-6.

## Welfare Measures:

Fisher folk welfare as one of the important schemes is being implemented in the State as noted below.

**Table-14: Welfare Measures**

Category	Total (Nos)	Total members (lakhs)
Marine Fishermen Co-operative Societies	539	3.46
Marine Fisher Women Co-operative Societies	389	1.45
Inland Fishermen Co-operative Societies	281	0.69
Inland Fisher Women Co-operative Societies	72	0.08
Other types of Co-operative Societies	23	0.06
District Fishermen Co-operative Federations	11	0.01
State Apex Federation	1	0.01

Source: Policy Note on Fisheries(GOTN).

There are 539 Marine Fishermen Cooperative Societies with 3.46 lakh members, 389 Marine Fisherwomen Cooperative Societies with 1.45 lakh members, 281 Inland Fishermen Cooperative Societies with 0.69 lakh members, 72 Inland Fisherwomen Cooperative Societies with 0.08 lakh members, 23 other type of Cooperative Societies

with 0.06 lakh members, 11 District Fishermen Cooperative Federations with 0.01 lakh members and one State Apex Federation with 0.01 lakh members working for the upliftment of fisher folk in the State.

To mitigate the sufferings of fisher folk, the State has constructed free houses to the fishermen since 1975-76. So far 51926 houses have been constructed.

Under the National Savings-cum-Relief Scheme for Marine Fishermen which was started in 2006-07, compensation to the tune of Rs.1200 is disbursed to each beneficiary during the four lean months. Totally 1.80 lakh fishermen were benefited during 2006-07 and it was 1.14 lakh members in 2007-08. Totally, 1.03 fisherwomen were benefited during the year 2006-07.

Under the Group Accident Insurance Scheme, the fishermen are given Rs.50000 in the case of death / permanent disability and Rs.25000 for partial disability. For the year 2007-08, around 1.80 lakh fishermen benefited under the scheme at a total cost of Rs.21.58 crores.

Sometimes, the Indian fishermen crossing the International Maritime Boundary Line (IMBL) are subject to the attacks by the Sri Lankan Navy resulting in loss of life. In order to provide the assistance to the families of deceased fishermen, the Collectors of the coastal districts are empowered to release an ex-gratia payment of Rs.1.00 lakh from the Chief Minister's Public Relief Fund.

With a view to promote Sea Safety Measures, life jackets were provided to the fishermen. About 1.68 lakh jackets were distributed under Tsunami Additional Relief package during the year 2007.

### **Fish Export:**

The State has rich potential for fish culture and is one of the major fish exporting States in India. After processing, fish is exported through Chennai and Thoothukudi ports and amass good export earnings to the State. The quantity of fish and fishery products exported was 72418 tonnes in 2005-06 and increased to 72883 tonnes in 2006-07. However, it came down to 72644 tonnes in 2007-08. Correspondingly, the value of fish export had gone up from Rs.1995.72 crores in 2005-06 to Rs.2068.05 crores in 2006-07 and decelerated to Rs.1813.14 crores in 2007-08. The State's share in the total exports of the country accounts for 11.90 per cent and in the total value of exports, accounts for around 25 per cent.

**Table-15: Export of Fish and Fishery Products**

Year	Tamil Nadu		All-India	
	Quantity (Tonnes)	Value (Rs.Lakhs)	Quantity (Tonnes)	Value (Rs.Lakhs)
2002-03	70147	250787	467297	688131
2003-04	68462	207116	412017	609195
2004-05	70809	206804	461329	664669
2005-06	72418	199572	512164	724500
2006-07	72883	206805	612641	836353
2007-08	72644	181314	NA	NA

NA – Not Available, Source: Commissioner of Fisheries, Chennai-6.

## Financial Expenditure:

As against the total outlay provided under the State Plan Schemes at Rs 203.99 crores during the Tenth Plan, the total expenditure incurred at Rs.244.22 crores was excess by 19.72 per cent. The two components 'marine fisheries' and 'other expenditure' (construction of houses to fishermen, food subsidy to fishermen, Tsunami reconstruction) together had claimed 96 per cent of the total expenditure.

**Table-16: Plan Financial Achievements (State Schemes)**

(Rs. Crores)

Sub-sector	Tenth Plan Outlay	Tenth Plan Expenditure
1. Inland Fisheries	5.91	4.66
2. Marine Fisheries	136.09	56.39
3. Extension and Training	2.70	0.08
4. Fisheries Co-operatives	0.53	0.09
5. Other Expenditure	56.76	179.65
6. Research	2.00	0.02
7. Anti-sea Erosion	-	2.49
8. Western Ghats Development	-	0.84
Total	<b>203.99</b>	<b>244.22</b>

Source: Eleventh Plan document 2007-2012 SPC, Chennai -5.

## Eleventh Five Year Plan: Objectives and Outlay:

### Objectives:

- To exploit under utilised marine fishery resources with a view to reduce fishing pressure in inshore areas.
- To augment aquatic resource production in inshore areas through conservation measures, stock enhancement, establishment of artificial reefs, etc., along the coast.
- To improve the knowledge and understanding of fisheries resources, conservation, management and development and to promote sustainable eco-friendly coastal aquaculture.
- To improve and strengthen infrastructure facilities for fish landing and marketing.
- To augment inland fish production in reservoirs, panchayat tanks and ponds.
- To uplift the socio-economic conditions of fisher folk through welfare measures and generating employment opportunities and ensuring their safety net of fisher folk.
- To provide hygienic and safe fish and fish products to consumers.

The total outlay earmarked for fisheries development during the XI Five Year Plan at Rs.557.70 crores, more than doubled the X Plan outlay of Rs.204.00 crores. The relative share of fisheries sector in the total outlay earmarked for agriculture and allied activities had improved from 5.2 per cent in the X Plan to 7.1 per cent in the XI Plan. However, its share in the overall total Plan outlay for the State remained at 0.01 per cent. Of the outlay earmarked for the Fisheries sector in the XI Plan, the composition of ongoing and new schemes was in the ratio of 33: 67.

**Forestry:**

Forest plays a significant role in providing food and ecological security to the people of the State. Tamil Nadu has an area of 22877 sq. kms under forests and constitutes 17.6 per cent of the geographical area. Tenth plan focused on increasing the forest and tree cover and it was aimed to achieve 25 per cent by 2007 and 33 per cent by 2012. The recorded forests comprises of 19388 sq.kms. of Reserve Forests, 2183 sq.kms of Reserve Land and 1306 sq. kms of Unclassified Forests. In terms of per capita measure of forest land, the figure for Tamil Nadu is 0.04 hectare as against 0.08 hectare at the national average. This clearly indicates the scarcity of forest resource in the State. Tamil Nadu ranks first among all the States with 5640 plant species. The State's Forest Report had brought to the fore the fact that the tree cover outside the forests had decreased from 3.05 per cent to 2.79 per cent in the country, whereas there was a marked increase in the tree cover of the State from 3.66 per cent to 4.26 per cent. The biological upgradation and ecological restoration of the degraded forests was carried out through Joint Forest Management (JFM) in Tamil Nadu. The State's Forest Policy is based on the National Forest Policy and conservation of forest area has been carried out in Western Ghats, Eastern Ghats and Coastal areas in the State.

**Select Promotional Measures:**

A new scheme which is the first effort of its kind in the country viz., Tree Cultivation in Patta Lands was launched in the State during 2007-08. The programme involves planting of tree seedlings in wastelands and in the holdings of small and marginal farmers as inter crops and on bunds with the objective of ensuring an additional income to farmers and pulpwood to the industries. In all, 15000 farmers were benefited under the scheme during 2007-08 by planting one crore seedlings.

Urban Afforestation Scheme was launched during 2007-08 with the objective of controlling the adverse effects of air, water and noise pollution. The seedlings like *Azadirachta indica* (neem), *Derris indica* (pungan), *Mimusops elengi* (magizham), *Cassia siamea* (Manja Konnai), *Cassia fistula* (Sara konnai) and *Delonix regia*, totalling 85386 were planted on the road side of the colonies in six Corporations viz., Chennai, Trichirappalli, Madurai, Tirunelveli, Salem and Coimbatore and its suburbs

To meet the timber needs of the State and to consolidate the canal banks in the districts of Thanjavur, Tiruchirappalli, Madurai, Erode, Salem and Villupuram, under 'Raising Teak Plantations on Padugai Lands Scheme', teak plants were planted in canal banks covering an area of 3160 hectares at Rs.5.38 crores during 2007-08. An important feature of the scheme is that it fetches annually about Rs.10 crores as revenue by the sale of teak.

Under 'Free Distribution of Seedlings to Local Bodies and Government Departments Programme', 1.08 tall seedlings were distributed to educational and health institutions for planting at a total cost of Rs.32.50 lakhs during 2007-08.

**Revenue from Forestry:**

The revenue comprised of sale of timber and other forest produce, receipts from social and farm forestry and other receipts. The total revenue from forestry had decelerated from Rs.144.48 crores in 2005-06 to Rs.82.34 crores in 2006-07. The revenue

receipts from forests were further reduced to Rs.46.85 crores during 2007-08. The reasons for reduction in the revenue receipts are less demand for sandal wood in the market, staggered sale of the sandal wood to meet the market demands for a longer period of time and practicing of conservation oriented forestry which has reduced supply of raw materials to industries from the forest area.

**Table -17: Revenue From Forestry** (Rs in Crores)

Item	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
1. Sale of Timber & Other Forest Produce	125.91	46.19	91.76	80.31	27.45	24.61
2. Receipts from Social and Farm Forestry	13.31	17.68	31.30	39.00	28.18	9.12
3. Other Receipts	18.71	27.52	32.18	25.17	26.71	13.12
<b>Total</b>	<b>157.93</b>	<b>91.39</b>	<b>155.24</b>	<b>144.48</b>	<b>82.34</b>	<b>46.85</b>

Source: Office of the Principal Chief Conservator of Forests, Chennai -15.

### Plan Expenditure:

The total expenditure of forestry sector on State Plan Schemes during the Tenth Plan period was Rs.661.36 crores. As against the total outlay of Rs.691.56, it was short by Rs.30.20 crores. Among the components, promotion of 'Social and Farm Forestry' alone accounted for a sizeable share of 70 percent in total.

**Table-18: Tenth Plan Financial Achievements (State Schemes)** (Rs. Crores)

Activity	2002-03	2003-04	2004-05	2005-06	2006-07	Total
1. Tribal Development	1.40	1.04	1.47	1.49	1.68	<b>7.08</b>
2. Soil & Water Conservation	0.74	0.72	0.77	0.84	0.94	<b>4.01</b>
3. Communication & Building	0.35	2.30	6.61	4.94	17.49	<b>31.69</b>
4. Social Security & Welfare	0.03	0.15	0.03	0.02	0.03	<b>0.26</b>
5. Forest Conservation, Development & Regeneration	0.00	0.00	0.00	0.00	13.25	<b>13.25</b>
6. Social & Farm Forestry	96.83	94.45	76.13	93.94	104.70	<b>466.05</b>
7. Forest Produce	1.01	2.68	5.17	6.23	6.85	<b>21.94</b>
8. Extension and Training	0.64	0.80	1.05	1.15	1.35	<b>4.99</b>
9. Publicity, Forest Protection and Labour and Staff Amenities	5.53	7.67	7.80	19.65	11.64	<b>52.29</b>
10. Wildlife	2.03	2.23	2.41	4.14	6.21	<b>17.02</b>
11. Forestry and Wild Life other Expenditure	0.00	0.32	0.38	0.16	0.37	<b>1.23</b>
12. Cashew Plantation	0.01	0.01	0.01	0.01	0.02	<b>0.06</b>
13. Research	0.00	1.60	1.91	1.84	2.02	<b>7.37</b>
14. Hill Area Development Programme including WGDP	7.32	6.96	7.63	7.25	4.96	<b>34.12</b>
<b>Total</b>	<b>115.89</b>	<b>120.93</b>	<b>111.37</b>	<b>141.66</b>	<b>171.51</b>	<b>661.36</b>

Source: Office of the Principal Chief Conservator of Forests, Chennai -15.

### Tamil Nadu Afforestation Project (TAP):

The TAP is being implemented in Tamil Nadu with the financial assistance from Japan International Cooperation Agency (JICA) formerly known as Japan Bank of International Cooperation (JBIC) which aims at treating degraded forest, providing minimum basic infrastructure facilities to improve the quality of life of the people who live in the fringe areas of reserve forests, afforestation for ecological restoration,

providing employment to the rural folk, augmenting water harvesting works and taking up soil and moisture conservation works are some of the allied activities of the project. The Phase- I of the project (1997-98 to 2004-05) treated a total area of 4.80 lakh hectares spread over in 1367 watersheds at a total cost of Rs.687.84 crores comprising Rs.482.79 crores as JBIC soft loan and the State's share of Rs.205.05 crores and 1.76 lakh persons were benefited .

To keep up the enthusiasm and continuity, Phase-II was launched in 2005-06 for another eight years ending 2012-13 to treat a total area of 1.77 lakh hectares spread over 800 villages at a total cost of Rs.567.42 crores consisting of loan from JICA of Rs.409.08 crores and the State's share of Rs.158.34 crores. During the first three years viz., 2005-06 and 2007-08, an amount of Rs.282.63 crores was spent to treat an extent of 1.26 lakh hectares spread over 570 villages. In the fourth year of the project, (2008-09) it has been programmed to spend Rs.119.16 crores to treat 51,500 hectares spread over 230 villages. Other activities like research, forest extension, human resource development and GIS are also progressing at targeted pace.

### **Eleventh Five Year Plan: Objectives and outlay:**

#### **Objectives:**

- To enhance tree cover outside forests for livelihood security.
- To ensure environmental and ecological stability of the State.
- Conservation of biodiversity, wildlife and genetic resource.
- Conservation and management of coastal ecosystem.
- Resource management and augmentation of forest protection.
- Water augmentation through forest conservation and catchment area management.
- To ensure ecological stability and economic prosperity through tribal development.
- Technology support, research, remote sensing, GIS and extensions for scientific forest management.
- To empower women for sustainable forest management
- Human resource management for scientific forestry management.
- To monitor efficiently the delivery mechanism through Infrastructure development.

The total outlay earmarked under State and Centrally Sponsored Schemes for the promotion of the Forestry during the XI Plan was 1729.03 crores. The relative composition of State and Centrally Sponsored Schemes in the total outlay of the XI Plan was in the ratio of 74:26. Among the components, the four components of Increasing Tree Cover Inside the Forest (31.4%), Increasing the Tree Cover Outside the Forest (21.6%), Bio-diversity Conservation (13.9%) and Forest Protection (10.7%) together attracted a sizeable share in the earmarked outlay. They put together accounted for 77.6 percent.

Among the outlay earmarked under the State Schemes during the XI Plan, the Forestry accounted for 16.4 per cent of the total outlay under 'Agriculture and Allied Activities' and it accounted for 1.5 per cent of the total outlay.