

CHAPTER 7

FISHERIES AND ANIMAL RESOURCES

FISHERIES

7.01 Fishery, an allied sector of agriculture is gradually drawing attention as an important area for employment and income generation. Orissa being abundant with water resources has enough scope and potentialities for development of fisheries sector. Fishery resources and potentialities have become more and more obvious with introduction of improved technology and rising interest of the public in the fishing activities.

7.02 Orissa is one of the important maritime states of India, having excellent scope and potentialities for development of fisheries sector. It has a coastline of 480 kms with continental shelf area of 24,000 sq kms along the Bay of Bengal. It is also endowed with brackish water area of 4.18 lakh hectare and fresh water area of 6.66 lakh hectare. Chilika lake which is the largest natural brackish water lagoon of Asia, covers major water spread area of 0.79 lakh hectare. Fishery resources and potentialities have opened opportunities for foreign exchange earnings keeping ecological balance intact.

7.03 The State Government have formulated the Policy for Fishery Development as a part of the Agriculture Policy 1996. The Policy aims at :

- i. Increasing fish production by adopting scientific methods of culture,
- ii. Assisting fishermen in more efficient fishing,
- iii. Boosting fishing operations in deep sea,
- iv. Transmitting technology both for culture and capture to fishermen and fish farmers,
- v. Establishing fish feed mills for culture of fish and prawn.

7.04 Efforts are being made to step-up fish seeds production as well as fish production to create self employment opportunities and to increase per capita income by utilising un-exploited water resources through application of new technologies and expansion of infrastructural facilities during the 10th plan period. It is proposed to give priority to the following activities.

- i. Increase in production of fish seeds in private sector by 1.25 crore.
- ii. Increase of water area by 2,500 hect. under aqua-culture sector.
- iii. Cultured based capture fisheries in 11 reservoirs of KBK districts under RLTA programme.
- iv. Development of reservoir fisheries in non-KBK districts through a suitable Reservoir Fishery Policy.
- v. Development of fresh water prawn culture.
- vi. To provide training and extension support to fish farmers to raise their income and employment opportunities.
- vii. To provide incentives for production of fish seed and fish on commercial basis.
- viii. Enforcement of Orissa Marine Regulation Act / Rules with due care for endangered species like Olive Ridley Turtles for sustainable fisheries to improve living condition of marine fishermen with special emphasis on health hygiene and sanitation.
- ix. Strengthening of infrastructure in inland fish marketing.
- x. Provision of infrastructural facilities for pisciculture.

7.05 The Table 7.1 indicates the total production of fish and crab in the State since 1999-00.

Table 7.1
Production of Fish and Crab in Orissa

(In thousand MT)

Sl.	Year	Inland fish production	Marine fish	Total	Per capita	Crab
<i>ECONOMIC SURVEY</i>						
						7/2

No.		Fresh water	Brackish water	Total			consumption of fish (kg.)	production
1	2	3	4	5	6	7	8	9
1	1999-00	124.86	10.44	135.30	125.94	261.24	7.33	0.54
2	2000-01	125.11	13.44	138.55	121.09	259.64	7.71	1.35
3	2001-02	147.40	20.66	168.06	113.89	281.95	8.14	1.15
4	2002-03	154.42	19.96	174.38	115.01	289.39	8.28	2.23
5	2003-04 (P)	165.59 (7.23)	24.48 (22.65)	190.07 (9.00)	116.88 (1.63)	306.95 (6.07)	8.28	2.20

P : Provisional

*Figures in brackets indicate % change over previous year.
Source : Directorate of Fisheries, Orissa, Cuttack*

7.06 The fish production in the State by the end of Eighth Plan (1996-97) was 276.95 TMT which increased to 281.95 TMT by the end of Ninth Plan (2001-02) showing an increase of 1.8% only. It is observed from the Table 7.1 that, total fish production in the State has declined to 261.24 TMT and 259.64 TMT during 1999-00 and 2000-01 due to the effect of super cyclone. But fish production has again increased from 289.39 TMT in 2002-03 to 306.95 TMT in 2003-04 showing an increase of 6.07% over the previous year.

7.07 The total value of fish produced in the State has increased from Rs.1,264.10 crore during 2002-03 to Rs.1,374.61 crore during 2003-04 as per quick estimates of SDP from Fishery Sector.

7.08 The per capita annual consumption of fish from domestic production in the State has increased from 7.71 kg in 2000-01 to 8.28 kg in 2003-04. In order to raise the per-capita annual consumption of fish in Orissa to 11kg which is the W.H.O. recommended annual per capita fish consumption level, it is targeted to increase the production of fish to 1,602 TMT by the end of Tenth Plan.

7.09 During 1999-2000, the crab production in the State was to the tune of 0.54 TMT which increased to 2.20 TMT by the end of 2003-04 showing an increase of about 307%. Out of 2.20 TMT of crab produced during 2003-04, 0.16 TMT (7.3%) was produced from Chilika lake and the balance 2.04 TMT (92.7%) was from marine sources. While the production of crab from Chilika lake increased by 3.8% over 2002-03, the crab production from marine sources has decreased by 1.9%.

7.10 The year-wise disposition of fish is given in Table 7.2. Out of the total production of 306.95 TMT during 2003-04, about 263.47 TMT (85.8%) was marketed in raw form, 18.03 TMT (5.9%) kept for sun drying, 16.79 TMT (5.5%) for deep freezing and 8.66 TMT (2.8%) for salting. The quantum of disposition of fish in raw form, drying and freezing has increased by 6.9%, 2.4% and 1.4% respectively over the previous year while salting of fish has remained unchanged.

Table 7.2
Disposition of Fish Produced in Orissa

(In thousand MT)

Sl. No.	Year	Marketed in raw form	Freezing	Drying	Salting	Canning	Total
1	2	3	4	5	6	7	8
1	1999-00	208.4	14.6	32.9	5.3	-	261.2
2	2000-01	206.7	15.7	27.8	9.3	0.1	259.6
3	2001-02	229.02	16.03	26.80	10.07	0.03	281.95
4	2002-03	246.57	16.56	17.60	8.66	-	289.39
5	2003-04 (P)	263.47 (85.8)	16.79 (5.5)	18.03 (5.9)	8.66 (2.8)	-	306.95 (100.00)

P : Provisional

Figures in brackets shows the percentage to total fish disposed
Source : Directorate of Fisheries, Orissa, Cuttack

INLAND FISHERIES

7.11 The inland fisheries can be classified broadly into two categories i.e. (i) fresh water fisheries, and (ii) brackish water fisheries. The fresh water fishery sources comprise of 1,17,913 hectares of small and big tanks and ponds, 1,97,472 hectares of small (area above 10 ha), medium and large reservoirs, 1,80,000 hectares of fresh water lakes, swamps, jheels and 1,71,186 hectares water area of rivers and canals. Similarly, the brackish water area comprises of 79,000 hectares of Chilika lake, 2,97,850 hectares of estuaries, 32,587 hectares of brackish water tanks and 8,100 hectares of back-water.

7.12 For development of inland fisheries in the State, it has been proposed to continue different on-going schemes like production of quality spawn, development of reservoir fisheries, development of inland fisheries through FFDA's etc. during 2003-04 for which an amount of Rs.198.01 lakh has been spent under programme component like training & subsidy by the Government. An out lay of Rs.351.35 lakh under State plan and CSP has been proposed in the annual plan 2004-05 for this purpose.

(I) FRESH WATER FISHERIES

7.13 The fresh water fish production in the State by the end of Eighth Plan (1996-97) was about 127.3 TMT which increased to 147.4 TMT by the end of Ninth Plan i.e. 2001-02 showing an increase of 15.8%. The production of fresh water fish from different sources is given in Table 7.3. Tanks and ponds are the major source of fresh water fish followed by rivers and canals, reservoirs and lakes, swamps and jheels. Out of the total production of 165.59 TMT fresh water fish in 2003-04, production from tanks/ponds was 133.62 TMT (80.69%) and the balance quantity of 31.97 TMT (19.31%) was produced from reservoirs / lakes / swamps / jheels and rivers / canals etc.

Table 7.3***Fresh Water Fish Production from different Sources in Orissa***

(In thousand MT)

Sl. No.	Year	Tanks/ Ponds	Reservoirs	Lakes/ Swamps/ Jheels	Rivers/ Canals	Total
1	2	3	4	5	6	7
1	1997-98	99.98	14.63	4.36	16.67	135.64
2	1998-99	98.39	16.20	4.10	26.32	145.01
3	1999-00	88.11	13.81	2.07	20.87	124.86
4	2000-01	92.44	8.01	2.73	21.93	125.11
5	2001-02	112.85	7.09	4.00	23.46	147.40
6	2002-03	119.80	8.50	2.67	23.27	154.24
7.	2003-04(P)	133.62 (80.7)	10.14 (6.1)	2.76 (1.7)	19.08 (11.5)	165.59 (100.00)

P : Provisional

*Figures in brackets shows the percentage to total fresh water fish production
Source : Directorate of Fisheries, Cuttack*

7.14 A Centrally Sponsored Scheme, "Fish Farmers' Development Agencies (FFDAs)" is being implemented in the State to develop pond areas and to impart training to fish farmers in modern pisciculture techniques. A total of 30 FFDAs are functioning, one in each district. By the end of 2003-04, 54054.31 hectares of tank areas have been developed and 48,627 fish farmers have been trained through these Agencies to boost up production of fish. During 2003-04, 644.16 hectares of tank areas have been developed and 1016 fish farmers have been trained with an expenditure of Rs.180.55 lakh under State share and Rs152.96 lakh from Central share. It has been decided to develop 12,500 hectares of water area and to train 1,500 fish farmers during 10th Plan period.

7.15 Fresh water Prawn Culture Programme which has been launched since 1991-92 is widely accepted by the fish farmers of the State. Demand for prawn from both within and outside the State is high and the activity generates good profits for the farmers. About 94.77 lakh of Fresh Water prawn seeds were collected and distributed among the fish farmers during the year 2003-04 against the target of 104.90 lakh.

7.16 In order to meet the growing demand for quality fish seed in the State, emphasis has been given for production of quality fish seed in 19 departmental hatcheries, 5 hatcheries of Orissa Pisciculture Development Corporation & 22 hatcheries in private sector. During 2003-04, about 49.74 lakh quality fries have been produced and sold to pisciculturists for stocking in their tanks.

STATE RESERVOIR FISHERY POLICY, ORISSA

7.17 The State Reservoir Fishery Policy, Orissa has been formulated with a view to introduce scientific pisciculture in reservoirs and thereby to create employment opportunities. The objectives of this policy are –

- (i) to augment fish production from the vast untapped / under-tapped reservoir resources through scientific management.
- (ii) to generate gainful rural employment with special reference to fishing communities and economic rehabilitation of displaced persons.
- (iii) to introduce systematic management strategies both for conservation and sustained fish production.
- (iv) to attract increasing investments from the private sector.
- (v) to stimulate entrepreneurship for Fishery Sector with special reference to reservoir fishery.
- (vi) to substitute traditional methods by introduction of advanced technology in operation of reservoir fishery.
- (vii) to generate substantial revenue for the State.

7.18 This policy permits transfer of reservoirs with the area of 100 acres and above to the Fisheries & Animal Resource Department, Government of Orissa. The F & A.R.D. Department, Government of Orissa has been empowered to lease out these reservoirs to the Primary Fishermen Cooperative Societies, registered under the Orissa Self-help Cooperative Act, 2001. This Policy would give preference to displaced persons / project affected persons.

(II) BRACKISH WATER FISHERIES

7.19 For ensuring development of fisheries programme in the State, a project was launched under World Bank Assistance during 1992-93 at an estimated cost of Rs.70.13 crore. The project aimed at development of brackish water area for shrimp culture and reservoirs for exploiting fishing resources under this programme. The brackish water shrimp culture unit has already been setup at Jagatjore and Banapada in Kendrapara district at an estimated cost of Rs.25.273 crore where 405 nos. of ponds each with 0.5 hectares area and 76 ponds with one hectare area have been excavated and put into culture through private entrepreneurs / farmers.

7.20 Brackish Water Fisheries Development Agencies (BWFDA) have been set up in seven coastal districts of the State which work for development of brackish water fish farming with special emphasis on prawn culture. The total brackish water area of the State is around 4,17, 537 hectares including shrimp culture areas, estuaries, brackish water lake and backwater of which Brackish Water Fisheries Development Agencies have identified 32,587 hectares as suitable for prawn culture. These agencies have developed about 13,310 hectares for prawn culture by the end of 2003-04 since their inception, out of which 907 hectares have been leased out on long-term basis. During 2003-04, brackish water prawn culture was undertaken in an area of 7790 hectares and 8111.86 MT brackish water prawn was produced. About 9,779 fish farmers were benefited and 4,778 farmers were trained in modern shrimp culture techniques. Loans amounting to Rs.11.86 crore was released by different financing banks to these beneficiaries and an amount of Rs.2.40 crore was released as subsidy up to the end of March, 2004, since the inception of the programme. It has been targeted to develop 1,000 hectares of brackish water area and to train 1,050 fish farmers during Tenth Plan period and an amount of Rs.2.87 crore has been proposed as State share for the purpose. During 2004-05, it has been programmed to develop 200 hectares of brackish water area and to train 350 beneficiaries. Further, a target for production of culture shrimp has been fixed at 8,000 MT during 2004-05.

7.21 During 2003-04, about 4,650 lakh brackish water prawn seeds were supplied to the prawn farmers of the State. There are 12 brackish water prawn hatcheries in the State of which the only departmental hatchery at Chandrabhaga produced 22.45 lakh shrimp seeds during 2003-04, which were sold to the farmers. For 2004-05, there is a target for production of 50 lakh shrimp seeds in Chandrabhaga hatchery.

7.22 Brackish water aquaculture till date has been limited to shrimp culture. The development of area has been restricted after the direction of Hon'ble Supreme Court during Aug'1995. Accordingly, all the existing brackish water as well as new units have to be approved by Aquaculture Authority of India. By end of 2002-03 1,611 such units have been sponsored to the Aquaculture Authority out of which 530 have been approved.

7.23 Chilika lake is the main source of brackish water fish with average water spread area of 906 sq. kms in summer and 1,165 sq. kms in monsoon and island area of 223 sq. kms. There are 132 fishermen villages with 22,032 families and 1,22,339 population of which 30,936 fishermen entirely depend on Chilika lake for their livelihood. There are 92 Primary Co-operative Societies comprising 26,025 members. There are 18 landing centres in which about 13897.71 MT of fish/shrimps and 155.51 MT of crab were landed in 2003-04. The brackish water fish/shrimp production from different sources in the State is given in Table 7.4.

Table 7.4

Brackish Water Fish/Shrimp Production from different Sources in Orissa

(in MT)

Sl. No.	Year	Chilika lake	Brackish water shrimp	Estuaries	Total production
1	2	3	4	5	6
1	1998-99	1,702	6,256	6,940	14,898
2	1999-00	1,745	3,081	5,616	10,442
3	2000-01	4,983	6,430	2,029	13,442
4	2001-02	11,989	7,204	1,467	20,660
5	2002-03	10,894	7,172	1,898	19,964
6	2003-04(P)	14,053	8,112	2,312	24,477

P : Provisional

Source : Directorate of Fisheries, Orissa.

MARINE FISHERIES

7.24 The State has a coastline of 480 kms with a continental shelf area of about 24,000 sq. km, which comprises about 6% of the coastline and 4.7% of the continental shelf area of the country. Among the six coastal districts, Puri has the longest coastline of 155 kms and Bhadrak the shortest i.e. 50 kms. About 116.88 TMT of fish was caught from marine sector during 2003-04 out of which Prawn, Clupids, Sciaenids, Catfishes and Pomfrets are some of the important species.

7.25 The Orissa Maritime Fishing Regulation Act is being implemented in the State to safeguard the coastal water areas of the State. Registration of trawlers, renewal of licenses and conservation of the endangered species of fish and turtles are being taken up. Fishing jetties to provide fish landing facilities at Talasari Kirtania, Penthakata, Gopalpur in sea await completion. Fishing jetty at Nairi has been completed and handed over to Managing Director, Fish Fed for operation. Under this scheme, two petrol boats were sanctioned by Government of India. The construction of the boats has been completed in all respect for launching to sea. Government of India have released Rs.148.00 lakh out of the approved cost of Rs.180.00 lakh.

7.26 In view of the importance of the fisheries sector in the State's economy, the Plan investment for development of fisheries increased from Rs.0.29 crore during the First Plan to Rs.51.03 crore during the Eighth Plan period. Agreed outlay for this sector during the Ninth Plan period was kept at Rs.54.18 crore. The annual outlay / expenditure status during 2003-04 is given below.

Table 7.5
Outlay / expenditure during 2003-04

(Rs. in crore)				
Sl. No.	Share	Outlay	Amount Sanctioned	Expenditure
1	2	3	4	5
1	State Plan	7.28	6.95	6.95
2	Centrally Sponsored Plan	4.71	2.50	2.50
3	Central Plan	3.43	0.22	0.22

7.27 Both fresh water and brackish water prawn culture have assumed considerable importance on account of their profitability as well as their foreign exchange earning capabilities. In the mean time, private entrepreneurs have set up prawn seed hatcheries in Puri and Ganjam districts to cater to the needs of prawn farmers. There is a Government shrimp hatchery at Chandrabhaga in Puri district and another at Gopalpur in Ganjam district under the Marine Products Export Development Agency (MPEDA). Besides, 7 other private shrimp hatcheries were established at different suitable areas of Gopalpur, Konark and Puri. The Fisheries Department also has a freshwater prawn hatchery at Paradeep.

DEVELOPMENT OF PISCICULTURE UNDER REVISED LONG TERM ACTION PLAN FOR KBK DISTRICTS

7.28 Development of pisciculture under RLTAAP, aims at promoting fisheries sector to raise income of the people of KBK districts. During 2004-05, it is proposed to develop 34 reservoirs with water spread area of 1,558 hectares under culture based capture fisheries in reservoirs of KBK districts under RLTAAP programme, an amount of Rs.1.71 crore has been proposed under RLTAAP for KBK districts in the Annual Plan, 2004-05 for promotion of inland fisheries.

EXPORT AND IMPORT OF FISH

7.29 The position of the export and import of fish from the State of Orissa is shown in Table 7.6. About 85.65 TMT fish has been exported from Orissa during 2003-04 out of which 61.95 TMT were exported from Marine Sector, 8.28 TMT from fresh water sector and 15.42 TMT from Brackish water sector. The marine products from Orissa are being exported to foreign countries like Japan, China, U.S.A., UK, UAE, Indonesia, Hong Kong etc., over the years. Marine products like frozen shrimps, frozen H.L. scampi, frozen pomfret, frozen ribbon fish, frozen seer fish, frozen cuttle fish, frozen crab, dry fish etc. are generally exported to these countries. But the export of frozen shrimps constitutes the major portion of the amount of marine products exported over years.

7.30 During 2003-04, about 35.71 TMT of fresh water fish was imported through private trade channels from the neighboring State of Andhra Pradesh.

Table 7.6
Export and Import of Fish

(Quantity-in 000 MT,
Value – Rs. in crore)

Sl. No.	Year	Fish export to other states and countries				Import of fresh Water fish	Export of marine Product to foreign countries	
		Marine fish	Fresh Water fish	Brackish Water fish	Total Exported		Quantity	Value
1	2	3	4	5	6	7	8	9
1	1998-99	68.38	10.88	6.70	85.96	43.53	9.41	275.33
2	1999-00	69.91	9.98	4.44	84.33	42.20	9.57	332.95
3	2000-01	61.75	6.26	7.07	75.08	41.99	10.64	379.10
4	2001-02	60.52	7.57	8.72	76.81	34.03	11.32	371.38
5	2002-03	61.29	7.69	12.58	81.56	35.71	11.69	365.16
6	2003-04 (P)	61.95	8.28	15.42	85.65	35.71	11.89	334.43

P : Provisional

Source : Directorate of Fisheries, Orissa, Cuttack

FISHERMEN WELFARE SCHEMES

7.31 The Accident Insurance Scheme was introduced in 1983-84 in the State. Under this scheme a fisherman's life is insured and an amount of Rs.50,000/- is provided in the event of his accidental death or permanent disability and up to Rs.25,000/- in the event of partial disability. The premium of Rs.14.00 for insurance coverage for each fisherman is shared by the State Government and Government of India on 50 : 50 basis. During 2003-04, 1.20 lakh fishermen were covered under this scheme and a sum of Rs.31.15 lakh was disbursed covering 65 death cases. It has been proposed to cover 1.20 lakh fishermen under "Group Accident Insurance Scheme" and 6,000 fishermen under "Saving-cum-Relief Scheme" during 2004-05. An outlay of Rs.23.41 lakh has been proposed in the Annual Plan 2004-05 including Rs.0.01 lakh for low cost houses towards State share for implementation of the scheme.

7.32 There are 960 Primary Fishermen Co-operative Societies registered by the end of 2003-04 in the State with 1,05,850 members. Out of these, 649 Primary Fishermen Cooperative Societies were actively operating by the end of 2003-04 with total membership of 1,05,429. There is further need to organise fish farmers in all the three sectors of marine, brackish and inland fisheries so that more group schemes can be launched and marketing support organised.

FISH PRODUCTION AT NATIONAL AND INTERNATIONAL LEVEL

7.33 The total fish production in different States of India is presented in Annexure 7.1. It is observed that during 2003-04, West Bengal tops the list with 1169.60 TMT of fish production. The total fish production of Andhra Pradesh, Kerala and Orissa during 2003-04 are 944.63 TMT, 684.70 TMT and 306.95 TMT respectively. Orissa produced 4.80 percent of the total fish production in the country and occupied 7th position among the States during 2003-04.

ANIMAL RESOURCES

7.34 Development of animal resources has considerable relevance and significance for development of an agrarian economy. Next to crop production, animal husbandry is the most important income generating activity in rural households. Over 80% of the rural households in Orissa keep livestock of one specie or another. The State Agricultural Policy, 1996 aims at increasing the production and productivity in dairy, poultry, and other animal husbandry activities through scientific breeding, balanced feeding, adequate health care, better marketing facilities, and improved management practices. The objective of the Animal Resource Development Programme is not only to increase the animal resources and to increase availability of their products but also to provide employment and income generating opportunities through both main and supplementary enterprises.

7.35 During the 9th Plan period, emphasis was laid on bringing about genetic improvements in the live stock breeds and to enhance their productivity. Besides,

efforts have also continued to upgrade skill of farmers by imparting required training. During Tenth Plan the following strategies have been envisaged.

- i. Expanding and Strengthening of cross-breeding programme through Frozen Semen Technology and improvement of local cattle and buffalo wealth of the State for production of high-yielding milch cows and working bullocks.
- ii. Control of major livestock disease through systematic research and monitoring.
- iii. Strengthening of disease reporting network.
- iv. Revamping of production infrastructure for biologicals with a view to enhancing quantum of production of life-saving vaccines for livestock.
- v. Genetic improvement of small animals for enhancement of meat production.
- vi. Introduction of State implementing agency "Orissa Livestock Resources Development Society" for facilitating implementation of project Cattle and Buffalo Development.
- vii. Utilisation of surplus milk by establishment of Milk Powder Plant.
- viii. Reduction of Livestock Mortality and development of nutritional status of tribal through cluster approach of integrated Animal Husbandry in KBK districts.
- ix. Professional efficiency development by enforcement of the Veterinary Council Act.
- x. Creation of resources by introducing user charges for various veterinary services to provide better qualitative and non-interrupted services.

LIVESTOCK POPULATION

7.36 The distribution of livestock population in the State into various species is indicated in Table 7.7. The livestock population in the State excluding dogs, was 234.59 lakh as per the Livestock Census held in 2001, registering a marginal decrease of about 3.3% over the Livestock Census held in 1995. Out of the total Live Stock Population, cattle population was 138.10 lakh (58.9%), buffaloes population 13.88 lakh (5.9%), goats 58.80 lakh (25.1%), sheep 17.79 lakh (7.6%) and pigs 6.02 lakh (2.5%). Apart from this population, other animals i.e, dogs, horses etc. figures at 9.25 lakh. During 2001, while the cattle, buffaloes and sheep population decreased by 6.5%, 16.0% and 4.6% respectively, the population of goats and pigs were increased by 8.7% and 5.2% respectively over the previous Livestock Census held in 1995. Further it is observed that the percentage of crossbred / improved animals in our State is very poor i.e. out of total cattle population the percentage of cross bred cattle is 6.3%, and in case of buffalo, the percentage of improved

buffaloes is 2.3%. Similarly the percentage of crossbred goats and sheeps were 0.6% and 0.4% respectively and in all species the percentage of female animal population is much higher than the male.

Table 7.7
Livestock Population in Orissa

(Figures in lakh)

Census Year	Cattle		Buffaloes	Goats	Sheep	Pigs	Total
	Total	Cross bred					
1	2	3	4	5	6	7	8
1982	129.30	N.A.	13.33	49.31	19.90	4.10	215.94
1991	135.77	5.63	15.09	48.04	18.41	5.90	223.21
1995	147.66	7.44	16.52	54.12	18.65	5.72	242.67
2001 (P)	138.10	8.70	13.88	58.80	17.79	6.02	234.59

P : Provisional

Source: Directorate of Animal Husbandry & Veterinary Services, Orissa, Cuttack.

AVAILABILITY OF ANIMAL PRODUCTS

7.37 Table 7.8 shows the production and per capita availability of milk, meat and eggs in Orissa for the period from 1998-99 to 2003-04. The per capita availability of these products has by and large gone up steadily. The per capita availability of milk has exceeded the Ninth Plan target of 66 gms / per head / per day while that of egg is lagging behind the target of 32 eggs / per head / per annum during 2003-04. During 2001-02, the per capita availability of milk and egg at the National level was 226 gms/ day and 34 nos./ annum respectively while it was 70 gms/ day and 24nos./ annum in our State. While the production of milk and egg was 84.6 million tone and 34,034 million nos at all India level, in our State it was only 0.93 million tone and 858.02 million nos respectively during 2001-02.

Table 7.8
Year-wise Production and Per capita Availability of Milk, Meat and Eggs in Orissa

Year	Production of milk (thousand MT)	Per capita availability of milk (gms/day)	Production of meat (in thousand MT)	Per capita availability of meat (Kg/annum)	Production of eggs (in millions)	Per capita availability of eggs (nos/annum)
1	2	3	4	5	6	7
1998-99	733.00	57	38.12	1.080	762.79	22

1999-00	847.78	65	36.67	1.029	648.31	18
2000-01	875.00	67	38.38	1.067	730.10	20
2001-02	929.00	70	42.64	1.176	858.02	24
2002-03	941.00	71	44.72	1.224	909.49	25
2003-04	995.08	74	44.89	1.218	931.06	25

P : Provisional

Source: Directorate of Animal Husbandry & Veterinary Services, Orissa, Cuttack.

ANIMAL HEALTH CARE

7.38 Provision of adequate health care is a prerequisite for increasing the production potentiality of livestock. The spread of veterinary services in the State has resulted in the control of some communicable diseases and improvement in animal health. By the end of 2003-04, the State had built up a network of 540 Veterinary Hospitals/Dispensaries with 613 Veterinary Doctors, 2,939 Livestock Aid Centres (LACs) with 2,566 Livestock Inspectors and Technicians, 3 Clinical Investigation Laboratories, 3 Disease Research Centres, one Animal Disease Research Institute at Phulnakhara in Cuttack district, and two Biological Product Institutes (one at Bhubaneswar and the other at Berhampur) to provide curative and preventive health services. In order to provide better health care to the animal population, there is need to open at least one Livestock Aid Centre in every Gram Panchayat in the State in a phased manner. During 2003-04, preventive inoculation was given to 105.21 lakh animals, 4.31 lakh castrations were performed and 51.06 lakh animals and birds were treated.

7.39 It was targeted to treat 2.61 lakh animals against parasitic worm diseases and to organise 6,766 infertility camps during 2003-04, against which 2.60 lakh animals have been dewormed and 5,523 infertility camps have been organised. Orissa Biological Product Institute, Bhubaneswar and Berhampur are functioning in the State which are producing lifesaving biological vaccines and medicines against contagious diseases. During 2004-05, it has been targeted to produce 200 lakh doses of vaccine of different specification and an amount of Rs.8.58 lakh has been provided in the Annual Plan 2004-05. Rinderpest Eradication Scheme, a 100% Central Funding scheme, is in operation in the State with the aim to eradicate rinderpest diseases in cattle and buffaloes including small animals by arousing mass awakening among the farmers in the State. It is proposed to provide Rs.30.00 lakh during 2004-05 under the scheme.

CATTLE AND BUFFALO DEVELOPMENT

7.40 According to the livestock census held in 2001, the cattle and buffalo population together was 151.98 lakh which constituted 64.79% of the total livestock population of the State. Out of this, the female animals were 71.76 lakh including 21.45 lakh milched and 19.62 lakh were dry. Besides, out of the total cattle and buffalo population in the State, 9.01 lakh (5.93%) were crossbred / improved variety, of which 6.49 lakh were female and 2.33 lakh were milched. This indicates that, out of total female cattle and buffaloes, 9.04% belonged to cross bred / improved variety and 3.25% were milched.

Table 7.9**Cattle and Buffalo Population as per 2001 Animal Census**

(In thousand)

Category	Total animals	Adult female animals		Milch animals	
		Total	Cross bred	Total	Cross bred
1	2	3	4	5	6
Cattle	13,810.44	4,061.73	362.90	1,939.38	223.64
Buffaloes	1,388.02	385.36	16.03	206.03	9.76
Total	15,198.46	4,447.09	378.93	2,145.41	233.40

7.41 The productivity of the cattle of our State is very low. In order to upgrade the production potential of cattle and buffaloes, two schemes, namely, Artificial Insemination through Frozen Semen Technology and Strengthening of State Cattle Breeding Farms are being implemented. While the former aims at production of superior breeds of female progeny, the latter is intended to provide breeding bulls.

7.42 Besides the Veterinary Hospitals / Dispensaries, there are 252 pure artificial insemination centres and 2,180 LACs in the State having the facility of artificial insemination through frozen semen technology. During 2003-04, 4.37 lakh artificial inseminations and 6883 natural services were performed against the target of 8.06 lakh artificial insemination. Against the above insemination 1,86,375 progeny were born. It has been targeted to conduct 8.33 lakh artificial inseminations during the year 2004-05.

7.43 During 2003-04, 8 livestock breeding farms were functioning in the State under the Government sector to undertake the activities of Frozen Semen Insemination. Different breeds of cattle and buffaloes are reared in these farms to produce genetically superior bull calves. During 2003-04, 57 bull calves have been produced for natural insemination in remote and in-accessible areas of the State.

7.44 Two externally aided projects namely, Indo-Swiss Natural Resources Management Programme on Animal Husbandry Development with financial assistance from the Government of Switzerland and the Integrated Livestock Development Project with financial assistance from Government of Denmark are in operation in the State. An amount of Rs.81.92 lakh has been proposed during 10th Plan for these projects with DANIDA assistance.

7.45 The Orissa State Cooperative Milk Producers Federation Ltd. (OMFED) came into being on 01.10.1980 with objectives of promoting production, procurement, processing and marketing of milk and milk products for the economic development of the rural farming community. The Federation had received funds from the Indian Dairy Corporation/National Dairy Development Board (NDDB) for implementation of Operation Flood Programme in undivided districts of Cuttack, Dhenkanal, Keonjhar, Puri and Sambalpur. This Federation also received funds towards Co-operative Development Programme from NDDB which has been successfully implemented in the undivided districts of Cuttack, Puri, Sambalpur and Keonjhar for implementation of Technology Mission on Dairy Development (TMDD) in the Operation Flood districts. Apart from NDDB, the Federation is also receiving financial assistance from the Government of Orissa as Grant-in-aid and share capital for different activities. At present it is functioning with 9 dairy plants with a capacity of 225.00 thousand litre per day, 25 milk chilling plants with capacity of 115.00 thousand litre per day and 13 bulk coolers with a capacity of 11.50 thousand litre per day. The dairy plant at Bhubaneswar is under expansion from the present capacity of 75.00 thousand litres per day to 125.00 thousand litre per day. Besides, a cattle feed plant with capacity of 100 MT/day is functioning under OMFED.

7.46 During 2003-04, 1,097 Milk Producers Cooperative Societies were functioning in the State. These societies procured 1,35,573 kg milk per day on an average. OMFED marketed 1,35,835 litres milk per day on an average. It has also marketed milk products such as ghee, sweet curd, plain curd, butter, butter milk and paneer etc during 2003-04. Besides the above, OMFED has also extended its business by marketing cattle feed and horticulture products like squash, jam, sauce, pickle, turmeric powder and mustard seeds. Besides OMFED is also providing health care facilities to the farmers through it's A.I. Centres and sales cattle feed to the farmers in reasonable prices.

7.47 In order to ensure the overall development and well being of rural based women from all walks of life, OMFED has been implementing "Orissa Women's Dairy Project" in the undivided districts of Cuttack, Puri, Dhenkanal, Sambalpur, Keonjhar, Ganjam and Balasore with financial support from W & CD Department (a wing of HRD Ministry, Government of India) under Support to Training and Employment Programme for Women (STEP). The main objective of this programme is to make the women of weaker section especially from SC & ST, marginalised asset-less families and families below poverty line self-reliant, through Dairy Development Programme and building of a strong leadership quality in them. The duration of the project is 3 years and total project cost is Rs.31.76 crore. The project was started in 1996 in undivided district of Sambalpur and subsequently it was implemented in the undivided districts of Cuttack, Puri & Dhenkanal from the year 1997. Later Keonjhar in 1999, undivided districts of Ganjam in 2000 and Balasore in 2002 were also included under this project.

7.48 An Integrated Dairy Development Project, designed for hilly and backward areas, is being implemented since 1994-95 in 14 non-Operation Flood districts of the State with the aim of increasing milk production and generating self-employment. Infrastructure has been built up for collecting about 30,000 litres of milk per day with potentiality of generating income of about Rs.2.40 lakh to the milk producers. During the year 2001-02, 597 primary M.P.C.Ss. were functioning in the State with 34,546 members. These societies collected about 19.6 thousand litres of milk per day during 2001-02.

7.49 The total milk production in the State during 2003-04 was about 995 thousand MT as against 941 thousand MT during 2002-03. The per capita per day availability of milk during 2002-03 was 71 gms which increased to 74 gms during 2003-04. This figure is

however much below the per capita per day requirement of 210 gms recommended by the Indian Council of Medical Research (ICMR). The per capita per day availability of milk at the all India level was 226 gms (provisional) during 2002-03. The yield of milk per adult milch animal is still very low at about 298 gm per day. This low yield is mainly due to the poor availability of hybrid/improved animals in the State. Awareness and infrastructure for rearing cross bred/hybrid animals is lacking in the private sector. However, by introduction of frozen semen technology and embryo transfer technology, the population of crossbred cattle has increased over the years and production of milk has also gone up considerably. The possibility of leasing Government's Livestock Breeding Farms to private entrepreneurs with a view to ensuring full utilisation of available infrastructure is under examination. It is targeted to produce 950 TMT of milk with availability of 72 gms of milk per day / per head by the end of 2004-05.

FEED AND FODDER DEVELOPMENT

7.50 Green fodder is essential not only for raising production of milk, meat and eggs but also for reducing the cost of rearing animals and keeping them healthy. This underlines the need for pasture development programmes. Farmers having milch cows are being encouraged to take up fodder cultivation in their own land. There are seven Departmental fodder seed farms which are supplying fodder seeds to farmers at subsidised rate under the fodder minikit programme. During 2003-04, 27,891 quintals of green fodder and 122.14 quintals of fodder seeds were produced and 6,738 minikits were distributed against the target of 44,470 quintals of green fodder, 326.05 quintals of fodder seeds and 7,530 minikits. It is targeted to produce 43,160 quintals of green fodder, 358 quintals of fodder seeds to ensure expansion of fodder cultivation activities in the State during 2004-05.

SMALL ANIMAL DEVELOPMENT

7.51 Majority of our people are non-vegetarian and usually they prefer to take meat of goats, sheep, and poultry broilers. There is a good potentiality for development of sheep, goat and piggery resources in the State. The State Agricultural Policy provides incentives to farmers for production of small animals and poultry. At present six farms for

goats, two farms for sheep and four farms for pigs are functioning in the State. Against the target for maintaining 700 sheep, 1,450 goats and 450 pigs during 2003-04, 434 sheep, 430 goats and 117 pigs were reared in these farms. During 2003-04, 44 sheep, 83 goats and 52 pigs were born in these farms. Efforts are being made for introduction of goat semen technology in the State for production of heavy weight goats to increase the yield of meat. It is also proposed to strengthen the pig breeding programme for production of improved boars for natural breeding.

POULTRY DEVELOPMENT

7.52 Poultry development in Orissa has made significant progress over the years. As per 2001 live stock Census, the total poultry population including duckery in the State, was 184.38 lakh. The demand for poultry meat and egg has been increasing over the years. There is vast scope for generation of employment in poultry farming. The egg production in the State during 2003-04 was 931.06 million with per capita availability of 25 eggs per annum against the production of 909.49 million and per capita availability of 25 eggs per annum during 2002-03. The State has 9 departmental poultry and duck breeding farms to supply day old chicks and ducklings to farmers. During 2003-04, about 0.23 lakh eggs and 0.65 lakh chicks were produced in these farms. In order to increase the egg production, it is proposed to rear Rhode Island Red, Kalinga Brown, and Commercial Parent line poultry birds in departmental poultry farms. There are about 110 large organised commercial poultry farms in Orissa, mostly in semi-urban areas. Leasing out of departmental farms to private entrepreneurs is also under consideration.

7.53 Orissa State Poultry Producers' Cooperative Marketing Federation (OPOLFED) is a State level apex organisation for marketing poultry products of the 71 Poultry Producers' Cooperative Societies affiliated to it. OPOLFED has three zonal offices at Bhubaneswar, Angul and Cuttack. It owns two modern Feed Mixing Plants at Bhubaneswar and Cuttack with 12 MT capacity per shift. There are two hatcheries, one at Bhubaneswar (with production capacity of 36,000 chicks per month) and another at Similiguda (with production capacity of 50,000 chicks per month). OPOLFED assists Poultry Producers'

Cooperative Societies by providing inputs like day old broiler chicks, pre-mixed poultry feed at subsidised rate, technical guidance and health care. OPOLFED also imparts training, medical care, technical know how to the poultry farmers and organizes poultry workshop, symposia and exhibitions. It also implements self-employment programmes for the educated unemployed youth. OPOLFED has sold 25.38 lakh egg worth of Rs.35.58 lakh, 121 qtls. of poultry meat worth of Rs.7.64 lakh and 559.60 MT of feeds worth of Rs.43.20 lakh during 2003-04.

7.54 "Orissa Women's Poultry Project" is being implemented by OPOLFED from April 2003 in the district of Khurda and Angul under STEP with the aim to uplift the socio-economic standard of the rural women through poultry farming. The duration of the project is 3 years and the total project cost is Rs.430.776 lakh. A total number of 110 "Women Poultry Co-operative Societies (WPCS) will be organised in the above districts in 3 years benefiting 10,000 women beneficiaries during the project period. Under this project each women beneficiaries will be given 20 numbers of one month old chicks, cages and a substantial amount for pre-mixed poultry feed. During the year 2003-04, 20 Women Poultry Co-operative Societies have been formed with 1,800 members. Women members will rear the poultry birds and marketing of eggs and chicken meat will be carried out through the W.P.C.S. and OPOLFED, as joint venture.

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