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Section A: Fisheries Sector

Abbreviations

BMP	Better Management Practice
CAA	Coastal Aquaculture Authority
CAGR	Compound Annual Growth Rate
CGIAR	Consultative Group on International Agricultural Research
CIBA	Central Institute of Brackishwater Aquaculture
CIFA	Central Institute of Freshwater Aquaculture
CMFRI	Central Marine Fisheries research Institute
DAT	Distress Alert Transmitter
DLSC	District Level Screening Committee
DSS	Decision Support System
EoI	Expression of Interest
EOM	Establishment, Operation & Maintenance
FLC	Fish Landing Centre
FPG	Fish Production Group
FPOs	Farmers Producing Organisation
FRAD	Fisheries and Animal Resources Development Department
GDP	Gross Domestic Product
GIFT	Genetically Improved Farmed Tilapia
GIS	Geographical Information System
GP	Gram Panchayat
Ha	Hectare
ICAR	Indian Council of Agriculture Research
ICDS	Integrated Child Development Services
IEC	Information, Education, and Communication
IIT	Indian Institute of Technology
IMC	Indian Major Carps
KCC	Kisan Credit card
KVAFSU	Karnataka Veterinary, Animal and Fisheries Sciences University
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MIPs	Micro Irrigation Ponds
MKUY	Mukhyamantri Krishi Udyog Yojana
MoA	Memorandum of Agreement
MoU	Memorandum of Understanding
MPEDA	Marine Products Export Development Authority
MPY	Matsya Pokhari Yojana
MT	Metric Ton
MUY	Matsyajibi Unayana Yojana
NABARD	National Bank for Agriculture and Rural Development
NETFISH	Network for Fish Quality Management & Sustainable Fishing
NFDB	National Fisheries Development Board
NFFBB	National Freshwater Fish Brood Bank
NFHS	National Family Health Survey
OCTMP	Odisha Community Tanks Management Project
ODOP	One District One Product
OIIPCRA	Odisha Integrated Irrigation Project for Climate Resilient Agriculture
OMBADC	Odisha Mineral Bearing Areas Development Corporation

OMFRA	Odisha Marine Fisheries Regulation Act
OPDC	Odisha Pisciculture Development Corporation
ORSAC	Odisha Space Application Centre
PDO	Project Development Objective
PFCS	Primary Fishermen Co-operative Society
PMFME	Pradhan Mantri Formalisation of Micro Small and Medium Enterprises
PMMSY	Pradhan Mantri Matsya Sampada Yojana
PMSBY	Prime Minister Suraksha Bima Yojana
PR&DW	Panchayati Raj and Drinking water Department
RGCA	Rajiv Gandhi Centre for Aquaculture
RIDF	Rural Infrastructure Development Fund
RKVY	Rastriya Krishi Vikas Yojana
SC	Schedule Caste
SME	Small and Medium Enterprise
ST	Schedule Tribe
UN-FAO	Food and Agriculture Organization of the United Nations
WCD&MS	Department of Women and Child Development and Mission Shakti
WSHG	Women Self Help Group
WUG	Water User Groups

Highlights of the Year 2021-22: Fisheries Sector

National level Fisheries Awards

Balasore district received the “**Best Marine District**” award, a prestigious National level Fisheries Award on ‘World Fisheries Day’ held at Bhubaneswar on 21st November 2021.

Adoption of Early Breeding Technology in Indian Major Carp Seed Hatcheries

Successful adoption of **early breeding technology** of Indian Major Carps was achieved in four Government Mega fishseed farms (Kausalyaganga, Chipilima, Bhanja Nagar and Saramanga) during April 2021. This technology will help in achieving self-sufficiency in fish seed production in the State. Over **130 Crore fish spawn** was produced during peak summer months of April-June. During 2021-22, a new scheme was introduced for adoption of early breeding technology in private fish seed hatcheries in the State.

Promotion of Reservoir Cage Culture

A new investor friendly, environmentally sustainable and socially equitable **Policy Guideline for taking up Cage culture in Reservoir** by farmers and private entrepreneurs / companies in collaboration with Primary Fishermen Cooperative Societies was launched in 2020-21. To facilitate the establishment of cages by the investors, GIS based cage culture zonation mapping was done in Hirakud and Indravati reservoirs. The cage culture sub-zones are being leased out to the investors through Expression of Interest. A tremendous interest and enthusiasm has been shown by the entrepreneurs for this program during this year of 2021-22.

Matsya Pokhari Yojana (MPY)

“Matsya Pokhari Yojana” (MPY) is a flagship scheme for creation of additional water bodies on private land for taking up freshwater aquaculture for income generation and employment creation. It is being successfully implemented and a total of 4729.88 Ha has been developed over last 5 years.

Empowering the Women Self Help Groups through Fish Farming

The programme of “Input Assistance to WSHGs for Pisciculture in GP tanks” is an inter-departmental convergence program involving Departments of Fisheries & Animal Resource Development, Mission Shakti and Panchayati Raj & Drinking Water with a facilitating policy of leasing out GP tanks on long term basis (3-5-year lease period) to the women SHGs for carrying out scientific fish farming. In last 4

years, scientific fish culture is being carried out in 7960 numbers of GP tanks with area of 6742 Ha by 7829 numbers of WSHGs.

Promotion of Biofloc Technology for Intensive Fish Farming

Bio-floc technology is an intensive fish/ shrimp production system wherein a person having small landholding (as small as 150-200 square meters of land) and having either municipal piped water supply or bore well water can establish an aquaculture farm. Fish productivity through Bio-Floc technology has a productivity which is 10-15 times higher than the normal pond-based fish farming. During last 2 years, 7480 Biofloc tanks have been installed under the State Plan Scheme (2020-21 and 2021-22)

Commissioning of State-of-Art GIFT Tilapia Hatchery at Kausalyaganga Government Fish Farm, Bhubaneswar

GIFT Tilapia is a fast growing, high yielding, climate smart and commercially feasible fish species for crop diversification and increasing farmer income and resilience. Under State Plan Scheme, the Department has promoted GIFT tilapia farming in the State in collaboration with WorldFish. A state-of-the-art GIFT Tilapia hatchery was brought into operation in Government Fish Seed Farm, Kausalyaganga on 23rd December, 2021. In addition, 4 private tilapia hatcheries are being established in the State to meet the requirement of GIFT seed in the State.

Launching of Fisher Friend Mobile Application (FFMA) for conservation of Marine Olive Ridley Turtle

The Fisheries and ARD Department in collaboration with M.S. Swaminathan Research Foundation (MSSRF), Chennai launched a customised “Fisher Friend Mobile Application” (FFMA) aimed at alerting coastal fishermen regarding the “No fishing zone” in Olive Ridley Sea turtle conservation areas.

Showcasing of Market Opportunities under Fisheries Sector at Odisha Agri Conclave-2021

Odisha Agri Conclave 2021 was organised for linking the farmers directly to the National market for removing intermediaries with the objective of ensuring a better return to the farm produce. The Conclave was inaugurated

by Honourable Chief Minister of Odisha, Shri. Naveen Patnaik on the virtual platform. Market opportunities in Odisha Fisheries sector was showcased to investors.

Promotion of Fish Farming in Agriculture Farm Ponds

Agriculture Farm Ponds developed under MGNREGS by the Directorate of Soil Conservation and Watershed Development, Department of Agriculture and Farmers' Empowerment were taken up for fish farming and raising of fish fingerlings during the year 2021-22 under a new State Plan scheme. It has been targeted to provide input assistance to 10,000 farmers under the scheme.

Expansion and Motorization of Fishing Fleet for Small-scale Fishers

During the financial year 2021-22, around 570 fishermen were supported for replacement of old fishing boats with purchase of new boats, engines and fishing nets. This scheme is enabling the small-scale fishermen to catch the fish more efficiently and thus increase their incomes.

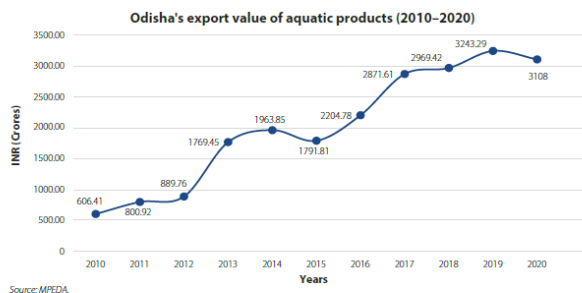
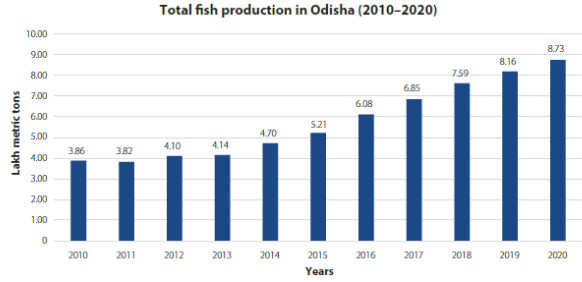


Fisheries & Animal Resources Development
Department, Government of Odisha

Odisha Fisheries Fact Sheet

Odisha general information		Odisha fisheries administrative zones	
Total area	155,707 km ²		
Length of coastline	480 km		
EEZ	0.17 million km ²		
Continental shelf	24000 km ²		
Total Population (Census 2011)	4,19,74,218		
Male	2,12,12,136		
Female	2,07,62,082		
Children	52,73,194		
Scheduled Tribe	95,90,756 (22.8%)		
Scheduled Caste	71,88,463 (17.1%)		
Literacy rate (Census 2011)	72.9%		
Malnutrition rate among children below age 5 (CNNS 2016–2018)	29%		
No. of districts	30		
No. of blocks	314		
No. of tahsils	317		
No. of Gram Panchayat	6798		
No. of coastal districts	7		
GSDP at current price (2019–2020)	INR 521274.65 crore		
Contribution of agriculture and allied sector to GSDP (2020–2021)	21.27%		
Contribution of fisheries Sector to GSDP (2020–2021)	2.43%		
Per capita income (2020–2021)	INR 1,02,156		
Fish consuming population (NFHS-4)	94.4%		
Per capita fish consumption	16.24 kg		

Fisheries resources and fish production during 2020–2021	
Total fish production (2020–2021) 8.73 lakh metric tons	
Freshwater resources	
	Total area 6.86 lakh ha
	Ponds and tanks 1.35 lakh ha
	Reservoirs and MIPs 2.00 lakh ha
	Lakes/swamps/beels 1.80 lakh ha
	Rivers and canals 1.71 lakh ha
	5.75 lakh metric tons
Brackish Water resources	
	Total area 4.18 lakh ha
	Cultivable area 0.33 lakh ha
	Backwater 0.08 lakh ha
	Chilika Lake 0.79 lakh ha
	Estuaries 2.98 lakh ha
	1.25 lakh metric tons
Marine Fisheries Resources	
	MSY potential 2.93 lakh MT
	Fishing harbours 4
	Fishing jetty 25
	Other landing centers 44
	Mechanized craft 1741
	Motorized craft 12,246
	Non-motorized craft 8167
	Fish drying platforms 10
	1.73 lakh metric tons
Export of seafood (2020–2021)	
	Export value INR 3108 crores
	Export quantity 6,0718 metric tons
	Shrimp PL production (2020–2021) 1945.5 million
	Fish seed (fry) production (2020–2021) 141.309 Crore



Hatchery and other resources			
Govt. IMC fish seed hatcheries	28	Private shrimp seed hatcheries	26
Private IMC fish seed hatcheries	96	Seafood exporters	49
Govt. fish seed rearing farm	78	Seafood processing plants	33
Govt. GIFT tilapia seed hatchery	1	Ice plants	57
Private GIFT tilapia seed hatcheries	4	Fish and shrimp feed mills	3
Govt. shrimp seed hatchery	1	Primary fishermen cooperative societies	749

Total fishermen population			
	Inland fishermen	9,21,419	
	Chilika lake fishermen	150,000	
	Marine fishermen (CMFRI 2016)	5,17,623	Marine fishermen families (CMFRI 2016)
	Total fishermen	15,89,042	1,15,228

Training centers of Directorate of Fisheries	
1. Fisheries Training Institute, Balugaon	
2. Brackish Water Fisheries Training Institute, Paradeep	

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Executive summary

- Odisha, being the most diverse region, situated on the eastern seaboard of Indian peninsula, is slowly striding towards an incredible fisheries destination. The State is rapidly progressing in the fisheries sector, contributing to the development from its available fisheries resource. Adorn with 480 km of coastline and 24,000 km² of continental shelf, Odisha has 4.18 lakh hectares of brackishwater bodies and 6.88 lakh hectares of inland water bodies including rivers, ponds, tanks and reservoirs. Currently the fisheries sector in the State plays an important role attracting fishers, farmers, youths and entrepreneurs in enhancing incomes and employment generation through a range of opportunities. To utilize these ample resources, the Government has taken up a mission for doubling inland fish production and increasing the export value. Accordingly, the Department proposes to take up horizontal expansion of culture areas as well as vertical expansion to reach average productivity to the level of 5 metric tons per ha.
- Moreover, Government of Odisha introduced “Odisha Fisheries Policy 2015” with a vision “to be a pioneer in aquaculture development and fisheries extension for ensuring food security, livelihood, the welfare of fishers and employment generation”. This fisheries policy was further revised and updated through Odisha Agriculture Policy, SAMRUDDHI – 2020.
- Odisha is the 4th largest fish producing State in India with 9.91 lakh metric tons in 2021-22. It contributed to 6% of the total fish production in India.
- By the virtue of a host of collaborative initiatives, schemes and absolute support from the Government of Odisha, bolstered by private sector investments streaming in from farmers, fishers and entrepreneurs, the fish production in the State has increased by almost 4 times over the last 21 years with a jump from 2.60 lakh metric tons in 2000-01 to 9.91 lakh metric tons in 2021-22 with a CAGR of 6.58%.
- There is ten-fold increase in value of the fish produced in the State over last 20 years. The contribution of Fisheries sector to Gross State Value Added (GSVA) has increased from Rs.1,046 crores in the year 2000-01 to Rs.10,815.75 crores in 2020-21. The percentage share of fisheries sector to the GSVA is 2.43%.
- The freshwater fisheries sector has shown consistent growth in fish production over the last 21 years with about 8.18% CAGR. It has grown by five-folds from 1.25 lakh metric tons in 2000-01 to 6.52 lakh metric tons in 2021-22. However, the growth rate in this sub-sector has accelerated from 2015-16 achieving a CAGR of 11.67% over last 6 years. The fish productivity in freshwater culture tanks increased by two folds from 1.85 metric tons/Ha/Year in 2000-01 to 4.14 metric tons/Ha/Year during 2021-22.
- To further boost the fish production and nutritional security, increase the income of farmers and fishers, create new jobs to youth and women, and to increase the seafood exports from the State over next 10 years, F&ARD Department has prepared “Odisha Fisheries Master Plan – 2030” with technical support from WorldFish. This plan is aligned to national fisheries policy and fisheries development objectives under PMMSY, Odisha Fisheries Policy-2015 and Odisha Agriculture Policy SAMRUDDHI-2020.

- The total fish seed (fry) production from 28 nos. of Government hatcheries and 96 private hatcheries in the State has substantially increased from 27 Crores in 2000-01 to 151.94 Crores during 2021-22 due to increased local seed demand, modernization of hatcheries, introduction of IMC early breeding technology and periodical introduction of quality broodstock of genetically improved strains. The Government hatcheries produced 44.24 Crores of fry (29%) and private hatcheries produced 107.70 Crores of fry (71%).
- For the first time in the State, early breeding of Indian Major Carps (IMC) was successfully achieved through appropriate technological interventions in 4 Government Mega Fish seed farms (Kausalyaganga, Chipilima, Bhanja Nagar and Saramanga) during April 2020. The same was continued in 2021 and in total, 11 Crore and 28.03 crore IMC spawn was produced during peak summer month of April-June in 2020 and 2021, respectively. Promotion of early breeding of IMC is essential in the State to supply sufficient quantity of fingerlings to farmers and fishers to stock their tanks and reservoirs during early monsoon season (July – September). During 2021-22, the Department has launched a new scheme to promote adoption of early breeding technology in private hatcheries. 49 nos. of private hatcheries have availed the scheme benefits.
- The Department with technical support from WorldFish has prepared “Odisha Fish Seed Master Plan” with 5 year annual action plan for strategic investment for self sufficiency in fish seed production in the State. A programme on network of seed growers has been introduced in 2021-22 for best utilisation of the seeds produced in early breeding programme.
- Over the last two decades the brackishwater fisheries sector has grown by 10 times from 13,442 metric tons in 2000-01 to 1,38,717 metric tons in 2021-22 with a CAGR of 11.76%. Introduction of vannamei shrimp (American white legged shrimp) in 2010-11 has catapulted the brackishwater shrimp production and its exports over the last 12 years. Over last 12 years, the farmed shrimp production from brackishwater tanks has increased from 11,629 metric tons in 2010-11 to 1,09,808 metric tons in 2021-22 with a CAGR of 20.58%. The brackishwater shrimp productivity has increased by nearly 6 folds from 1.06 metric tons/Ha in 2001-02 to 6.59 metric tons/Ha during 2021-22. However, the brackishwater shrimp culture area has grown only by three folds from 6,038 Ha to 16,672 Ha over the last 21 years.
- There was about a spectacular twelve-fold jump in the value of seafood exports from the State during the last 21 years. It has increased from Rs. 379 Crore in 2000-01 to Rs. 4,526 Crore 2021-22 at a CAGR of 12.54%. Seafood exports contributed to 5.90% of the total State export revenue in 2020-21. Similarly, the quantity of seafood export has increased by 800% from 10,644 metric tons in 2000-01 to 86,481 metric tons in 2021-22.
- Odisha strictly implements ecologically sound marine fisheries management practices with focus on welfare of small-scale fishers. There was sustainable harvesting of marine fishery resources with a production growth from 1.21 lakh metric tons in 2000-01 to 2.00 lakh metric tons in 2021-22.
- A special mobile app “Fisher Friend Mobile Application (FFMA)” was launched by the Honourable Minister of Agriculture and Farmers’ Welfare, Fisheries & ARD and Higher

Education on 29 October 2021 for alerting coastal fishermen and prevent them from entering the no-fishing zones declared for Olive Ridley turtle conservation. This offline mobile application developed in collaboration with the MS Swaminathan Research Foundation, Chennai can be downloaded free of cost by fishermen and boat crew so that they can know the GPS locations and boundaries of the no-fishing zones.

- The total fishermen population in Odisha is 15,17,574 (estimated) comprising of 5,96,155 marine fishermen and 9,21,419 inland fishermen.
- Odisha has one of the highest fish consuming population in India. As per National Family Health Survey-5 (2019-21), 94.75% of people in Odisha consume fish. The per-capita annual fish consumption in the State has increased from 7.71 kg in 2000-01 to 16.34 kg in 2020-21. The State has 2.00 lakh Ha of Reservoirs. The 'State Reservoir Fishery Policy Odisha, 2012' was introduced for scientific development and management of 138 major reservoirs with a water spread area of nearly 1.40 lakh Ha. The Department has envisaged the use of these reservoirs for optimal fish production by stocking advanced fingerlings and by adopting advanced fish farming technologies such as cage culture and pen culture.
- To enhance fish production in vast reservoirs of the State, the State Government has unveiled an investor friendly, environmentally sound and socially equitable policy guideline for taking up cage culture in reservoirs by private entrepreneurs / companies in partnership with PFCS and SHGs in 2020-21. As per this policy, cage culture zones in Hirakud reservoir in Sambalpur District and Indravati reservoir in Kalahandi District were opened for leasing to private sector through EoI. In total, so far, 101 sub-zones have been allotted to 96 entrepreneurs for taking up cage culture on "lease-install-operate" basis in Hirakud reservoir. Already, the entrepreneurs have installed 213 nos. of cages (69 circular cages in 23 sub-zones and 144 rectangular cages in 6 sub-zones).
- Several Fisheries sector schemes have been introduced for the welfare of the fishermen and to increase the fish production and thus to increase the incomes of fishers & fish farmers, to create job opportunities for youth and women, especially among poor and vulnerable section of the society.
- Important Fisheries sector schemes and welfare programmes of the Department are:
 - a) Saving-cum-relief scheme.
 - b) Development of Marine Fisheries, Infrastructures & Post-Harvest Operations.
 - c) Motorization of Traditional Crafts; Assistance for Fish Transport infrastructure.
 - d) Safety of Fishermen at Sea.
 - e) Matsya Pokhari Yojana for development of Freshwater Aquaculture
 - f) Development of Brackishwater Aquaculture
 - g) Input assistance to Women SHGs for taking up fishing farming in Gram Panchayat tanks.
 - h) Development of Fishing Harbours, Fish Landing Centres & Jetties.
 - i) Matsyajibi Unayana Yojana (MUY).
 - j) Rural Infrastructure Development Fund (RIDF).
 - k) Livelihood Support to Marine Fisherman during Fishing Ban Period.
 - l) Reactivation of Fisheries Cooperative Societies.

- To promote horizontal expansion of semi-intensive freshwater fish farming in the State, a State Plan Scheme named “Matsya Pokhari Yojana” (MPY) was introduced during 2017-18. In the last five years, 4729.88 Ha new tanks were developed under the scheme. During the year 2021-22, there is a budget provision of Rs.6,273.30 lakhs for the development of 2,550 ha of new tanks under MPY.
- State Government has brought out a long-term leasing policy (3-5-year lease period) for scientific fish farming in GP tanks by Women SHGs in all 30 districts of the State. It is an inter-departmental convergence involving three-line departments (FARD, Mission Shakti and PR&DW). In last four years, in total, 7960 GP tanks with a total water spread area of 6742.36 Ha were brought under this scheme with the involvement of 7829 WSHGs.
- The Mukhya Mantri Krushi Udyog Yojana (MKUY) is a flagship scheme of the Government which provides subsidy upto Rs. 50 lakhs to farmers and entrepreneurs for taking up any fishery related activity in the State including Commercial Fish / Prawn / Crab farming, Hatchery, Processing Units, Aqua shops, Harvest and Post-harvest technologies like vessels, gears, value addition, Cage culture Aquaculture, feed mills etc.
- Under the Centrally Sponsored Scheme (PMMSY), during 2020-21, 29 schemes have been launched with a total project cost of Rs. 185.50 Crore. Out of which Central share is Rs. 56.82 Crore, the State share is Rs. 38.48 Crore and beneficiary share is Rs. 90.19 Crore.
- COVID-19 pandemic significantly affected the Fisheries sector in the last three years. To safeguard the sector and its associated livelihood, the Government took a series of steps to allow various fisheries-related activities during the lockdown period. Additionally, the Government of Odisha announced several financial packages to boost the State’s economy and help overcome the battered economic situation from Covid-19.
- For timely and transparent disbursement of benefits from the Government under 5T Charter, Hon’ble Chief Minister of Odisha, Shri Naveen Patnaik launched online services on 3rd December 2020 under the FARD Department. Nine schemes under fisheries sector are available through online services under the Service Plus platform. In addition, for online monitoring of scheme implementation, all the fisheries schemes are uploaded in DSS (Decision Support System) of the Department.
- To promote fish consumption for nutritional gains among children and pregnant mothers in the State, The State Government under the Women & Child Development Department in collaboration with the Fisheries & ARD Department have successfully piloted inclusion of fish in Anganwadi supplementary nutrition program in Mayurbhanj District during April-September 2021 over 6 months period. Dried fish was included in Take Home Ration (THR) for pregnant & lactating women and adolescent girls and fish powder was blended with Hot Cooked Meal (HCM) for children of 3-6 year age group.
- Odisha received two prestigious national level fisheries awards on the occasion of National level ‘World Fisheries Day - 2021’ organized in Bhubaneswar on 21st November 2021. The Balasore district of Odisha received the “Best Marine District” award in the fisheries sector. Further, one entrepreneur of the State Mr. Sapan Kumar Patra from Bolangir District was awarded as the best freshwater fisheries entrepreneur.

1. Introduction

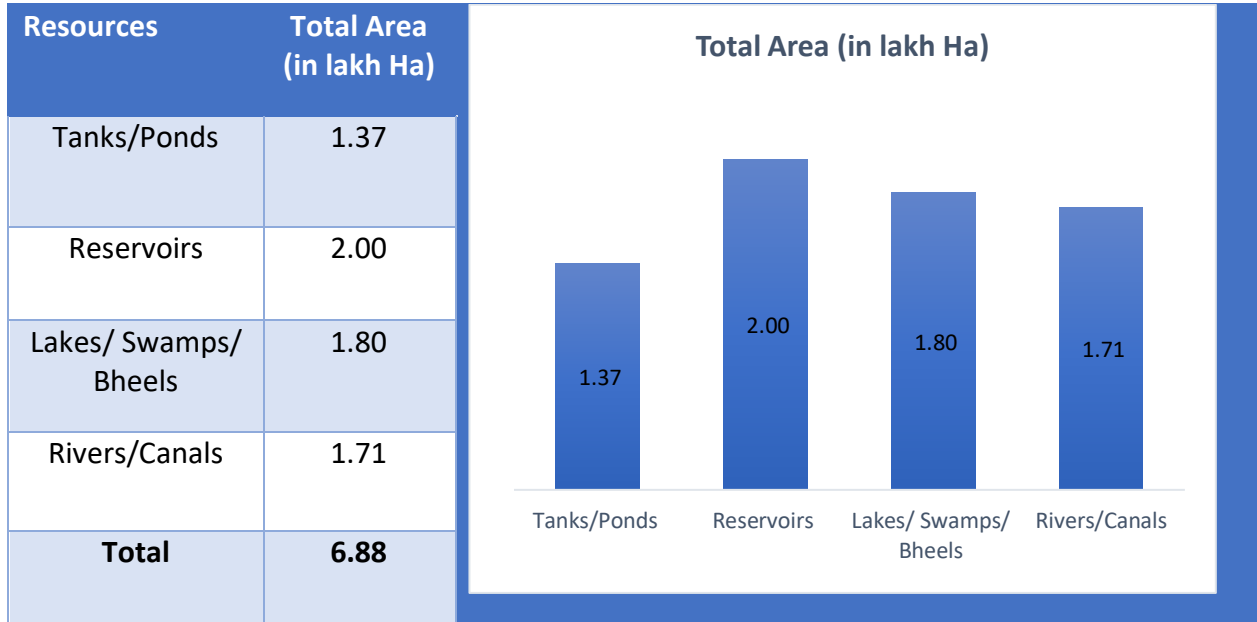
Diverse geographically in many aspects, Odisha have 6.88lakh Ha of freshwater resources, 4.18 lakh ha of brackishwater resources and 480 Kms. of coastline and continental shelf area of 24,000 Km². Along with all these, the State also has two Ramsar sites, Bhitarkanika mangroves and Chilika lake with wetland area of 650 Km² and 1165 Km², respectively. With such diverse aquatic resources at its disposal, the State could benefit immensely with respect to the development of fisheries thereby generating employment and promoting trade and many other associated commercial activities. The food security and livelihood support from fisheries for the rural poor are one of the major benefits. The world has been experiencing fastest growth in fisheries and aquaculture sector, which has been playing an important role in shaping the socio-economic development on account of its contribution to food and nutritional security, national income, employment opportunities as well as generating livelihood options for peoples in many rural backward areas. India currently ranks 3rd in fisheries and 2nd in aquaculture production in the world, contributing 6.3% to the total global fish production. Odisha is one of the major fish producing states and ranks 4th in total fish production in India after Andhra Pradesh, West Bengal and Gujarat.

- Total fish production: 9.91 Lakh metric tons
- Per capita annual fish consumption: 16.34 kg

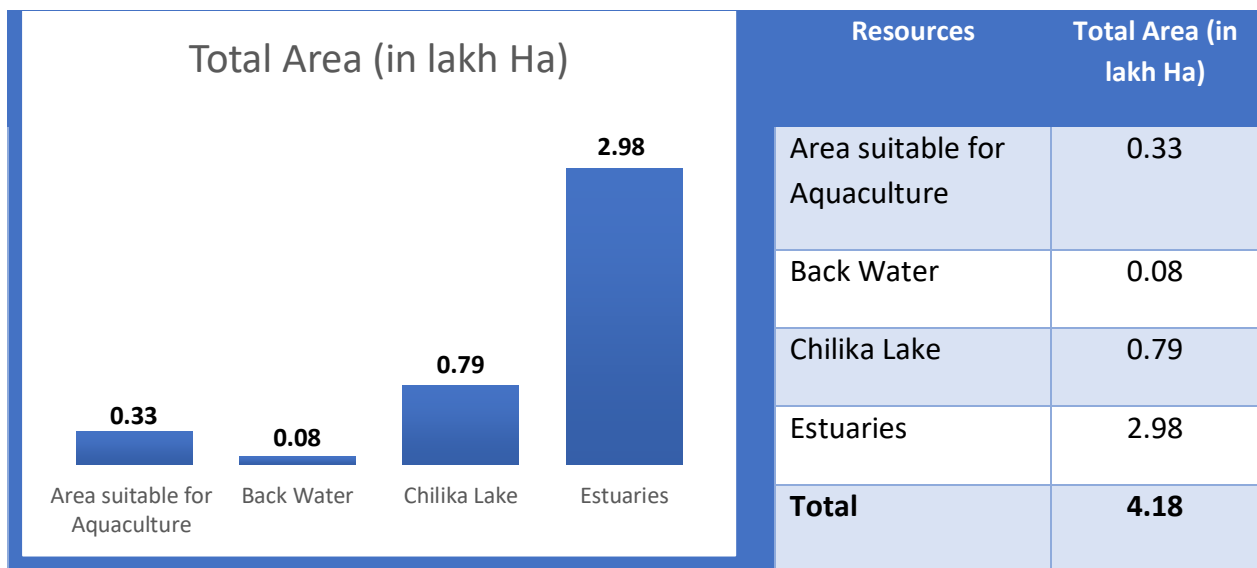
Due to its high proportions of fish-eating population (94.4%) and steady increase in per capita income and consumption, the State Government has been taking decisive action for creating an enabling environment for the fisheries sector to grow in a sustainable manner by utilizing its rich resources. Many such programmes were taken up by the Department with the financial assistance from the State Plan schemes. For integrated development of fisheries sector, fishermen and fish farmers, Government of Odisha introduced 'Odisha Fisheries Policy-2015' in September 2015, to address sustainable utilization, protection, and promotion of the nutritional and livelihood security of the fisher community. The policy also looked into the gaps in the legal, regulatory framework, their enforcement, administrative structure and processes, financing mechanisms, technology, extension support as well as social and environmental implications. The policy was further improvised and updated in "Odisha Agriculture Policy, Samruddhi-2020". The Fisheries and Animal Resources Development (F&ARD) Department in 2016 partnered with WorldFish to increase the productivity of aquaculture through carp intensification, popularisation of small indigenous fish species, introduction of new species, improving reservoir productivity, improvements in seed availability with intense ramification of seed grower, and farming systems. The partnership also aimed at improving natural resource planning and management for sustainable aquaculture and fisheries in Odisha.

2. Fisheries Resources

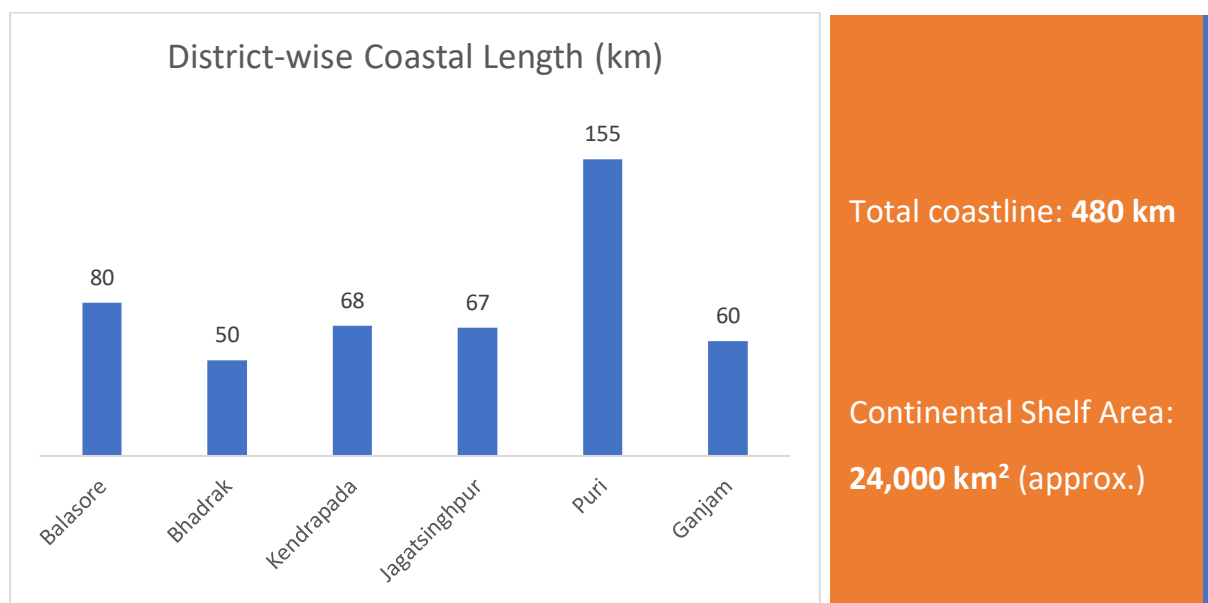
2.1 Freshwater Fisheries Sector:



2.2 Brackishwater Fisheries Sector:



2.3 Marine Fisheries Sector:



Continental shelf area

Continental shelf area in different depth Zone	
Depth Zone (in Meter)	(km ²)
• 0-20	6,820
• 20-50	8,650
• 50-100	4,810
• 100-200	3,550
TOTAL	23,830

2.4 Potential of different of Fishery Resources up to a Depth of 200m along Odisha Coast:

Estimated potential to different resources up to 200m depth contour along the Odisha coast in metric ton			
Name of fish	Potential (in metric tons)	Name of fish	Potential (in metric tons)
Sharks	2,226	Leather-jackets	3,040
Rays	1,705	Silver bellies	5,763
Eels	1,717	Big-jawed jumper	105
Catfishes	12,653	Black pomfret	2,264
Wolf herring	954	Silver pomfret	4,630
Oil sardine	957	Indian mackerel	12,736
Other sardines	15,648	Other mackerels	275

Hilsa shad	2,264	<i>S. commerson</i>	2,789
Other shads	477	<i>S. guttatus</i>	1,509
<i>Coilia</i>	3,115	<i>S. lineolatus</i>	26
<i>Setipinna</i>	6,328	<i>E. affinis</i>	1,108
<i>Stolephorus</i>	5,441	<i>Auxis spp.</i>	1
<i>Thryssa</i>	3,045	K. pelamis	27
Other clupeids	18,078	Other tunnies	12
Bombay duck	4,967	Billfishes	30
Lizard fishes	3,872	Barracudas	248
Half beaks & full beaks	139	Mulletts	464
Rock cods	266	Halibut	1
Snappers	541	Soles	6,660
Threadfin breams	603	Penaeid prawns	49,328
Other perches	4,103	Non-penaeid prawns	8,301
Goatfishes	8,356	Lobsters	43
Threadfins	299	Crabs	3,734
Croakers	45,885	Stomatopods	136
Ribbon fishes	28,575	Squids	516
Horse Mackerel	4,289	Cuttle fishes	1,448
Scads	1,093	Miscellaneous	1,888
TOTAL			2,92,568

Source: Fishery Survey of India (FSI)

2.5 Other Fisheries Resources:

a. Freshwater Fish seed farms and hatcheries

Freshwater Fish seed farms and hatcheries	No./ Unit
Government (R&D)	05
Government hatchery (Leased to OPDC)	18
Government rearing farm	32
Government rearing farm(Leased to OPDC)	3
OPDC	05
Private	96

b. Post-harvest Cold chain and Processing Facilities

Cold chain and Fish Processing Units	No./ Unit
Ice Plant	57
Cold Storage	12
Seafood Processing Plants	33
Seafood Exporters	49
Fish Drying Platform	10

c. Marine Fish Landing Centre

Marine Fish Landing Centre	No./ Unit
Fishing Harbours	4
Fishing Jetty	25
Other Landing Centres	44
Total	73

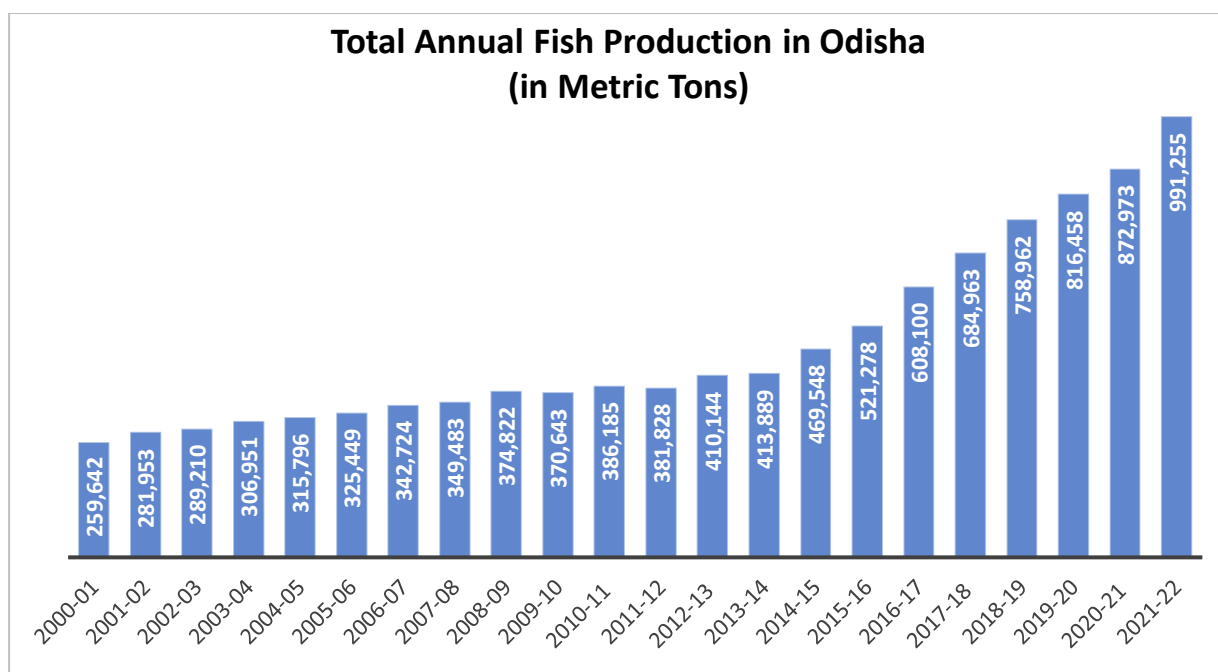
d. Marine fishing crafts and marine fishermen

Crafts	No./ Unit	Total Marine Fishermen*
Mechanized	1,741	Fishermen families:1,15,228 Marine Fishermen Population: 5,17,623
Motorized	12,507	
Country Crafts (Non-Motorized)	9,160	
Total	23, 408	*as per CMFRI census 2016

3. Fish Production, Export, and Consumption

3.1 Fish Production (Freshwater, Brackishwater and Marine):

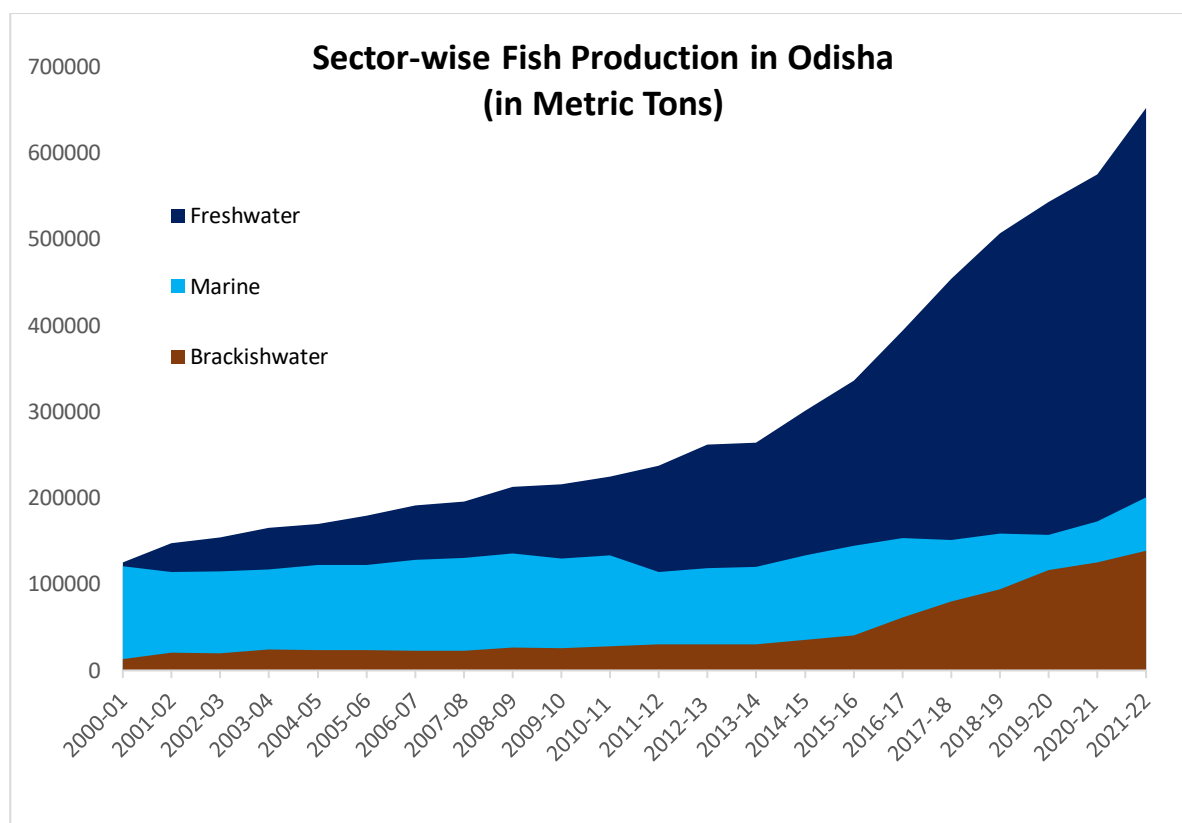
Odisha is the 4th largest fish producing State in India with 9.91 lakh metric tons in 2021-22. It contributed to 6% of the total fish production in India. There is a four-fold increase in total fish production in Odisha with a Compound Annual Growth Rate (CAGR) of 6.58% over the last 21 years (from 2.60 Lakh metric tons in 2000-01 to 9.91 lakh metric tons in 2021-22). At the same time, the value of fish produced and its contribution to the Gross State Value Added (GSVA) has increased by 10 folds from Rs. 1,046 Crores in 2000-01 to Rs. 10,816 Crores in 2020-21 thus contributing to 2.43% of the Gross State Value Added (GSVA) (Source: Odisha Economic Survey 2020-21, Government of Odisha). Best growth in the fisheries sector was noticed during the last 6 years from 2015-16 to 2021-22 where the fish production has steeply increased with a CAGR of 11.31%.



The freshwater fisheries sector has shown consistent growth in fish production over the last 21 years with about 8.18% CAGR. It has grown by 5-folds from 1.25 lakh metric tons in 2000-01 to 6.52 lakh metric tons in 2021-22. The growth in freshwater fish production gained momentum in 2015-16. It increased with a CAGR of 11.67% over last 6 years and almost doubled from 3.36 lakh metric tons in 2015-16 to 6.52 lakh metric tons in 2021-22. There was a marginal horizontal expansion of culture area with the addition of around 20,000 ha in the State over the last 21 years. However, the increase in fish production was achieved mainly from crop intensification. The fish productivity in freshwater culture tanks increased by two folds from 1.85 metric tons /Ha/Year in 2000-01 to 4.14 metric tons /Ha/Year during 2021-22.

The brackishwater fisheries sector has remarkably grown by 10 times over last 21 years from 13,442 metric tons in 2000-01 to 1,38,717 metric tons in 2021-22 with a CAGR of 11.76%. The introduction of exotic shrimp *Litopenaeus vannamei* (American white legged shrimp) in 2010-11 was the main reason for this breakneck growth in the brackishwater sector. Over last 12 years, the farmed shrimp production from brackishwater tanks has increased from 11,629 metric tons in 2010-11 to 1,09,808 metric tons in 2021-22 with a CAGR of 20.58%. The brackishwater shrimp productivity increased by nearly 6 folds from 1.06 metric tons/Ha in 2001-02 to 6.59 metric tons/Ha during 2021-22. The brackishwater shrimp culture area has grown by nearly 3 folds from 6,038 Ha in 2000-01 to 16,672 Ha in 2021-22.

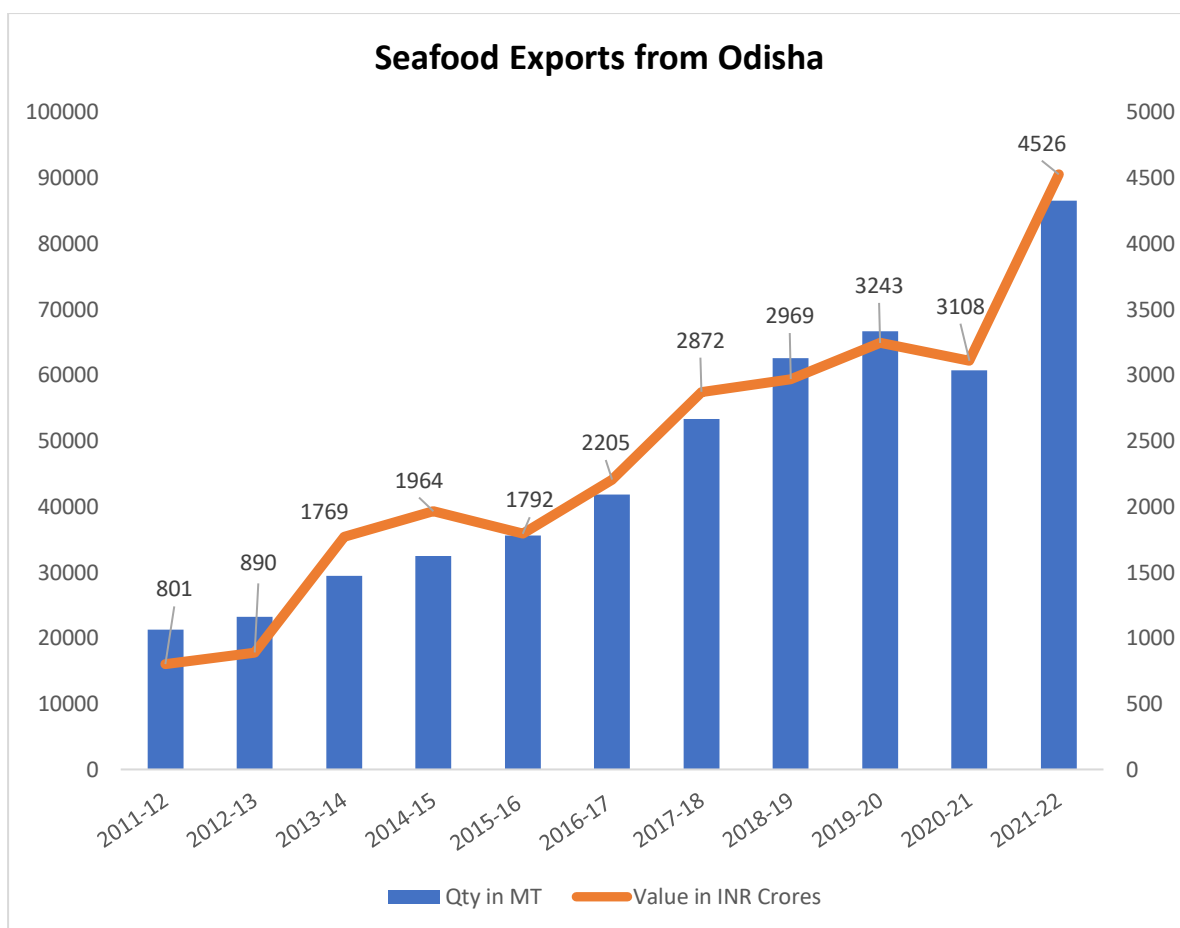
In the marine fisheries sector, there was sustainable harvesting of marine fishery resources with a production growth from 1.21 lakh metric tons in 2000-01 to 2.00 lakh metric tons in 2021-22. However, there is scope to further sustainably enhance marine fish production in the State to harvest at Maximum Sustainable Yield (MSY) level of 2.93 Lakh metric tons with proper management measures in place (*Source: Fishery Survey of India*). Odisha strictly implements ecologically sound marine fisheries management practices with focus on welfare of small-scale fishers. Also, it plans to enhance its Monitoring, Control and Surveillance (MCS) capability for preventing and controlling IUUC fishing (Illegal, unreported and unregulated fishing).



3.2 Seafood Exports:

Odisha has extended its wide range of premium seafood products offering to the vast international market, especially to the USA, European Union, ASEAN, Japan, China and the Middle East Asian countries. There was about a spectacular twelve-fold jump in the value of seafood exports from the State during the last 21 years. It has increased from Rs. 379 Crore in 2000-01 to Rs. 4,526 Crore 2021-22 at a CAGR of 12.54%. Seafood exports contributed to 5.90% of the total State export revenue in 2020-21. Similarly, the quantity of seafood export has increased by about 800% from 10,644 metric tons in 2000-01 to 86,481 metric tons in 2021-22. Tremendous growth in seafood export has been observed from 2010-11 and it can be attributed to the introduction of an exotic variety of American white leggedshrimp called vannamei (*Litopenaeus vannamei*).

In 2020-21, there was slight fall in seafood exports from Odisha due to COVID pandemic related restrictions. It came down from Rs. 3,243 Crores in 2019-20 to Rs. 3,108 Crores in 2020-21. However, it quickly and spectacularly bounced back with J-shape recovery to reach all-time record export of Rs. 4,526 Crores in 2021-22 due to easing of international cargo restrictions and strong demand for seafood from importing countries, especially from China and USA.



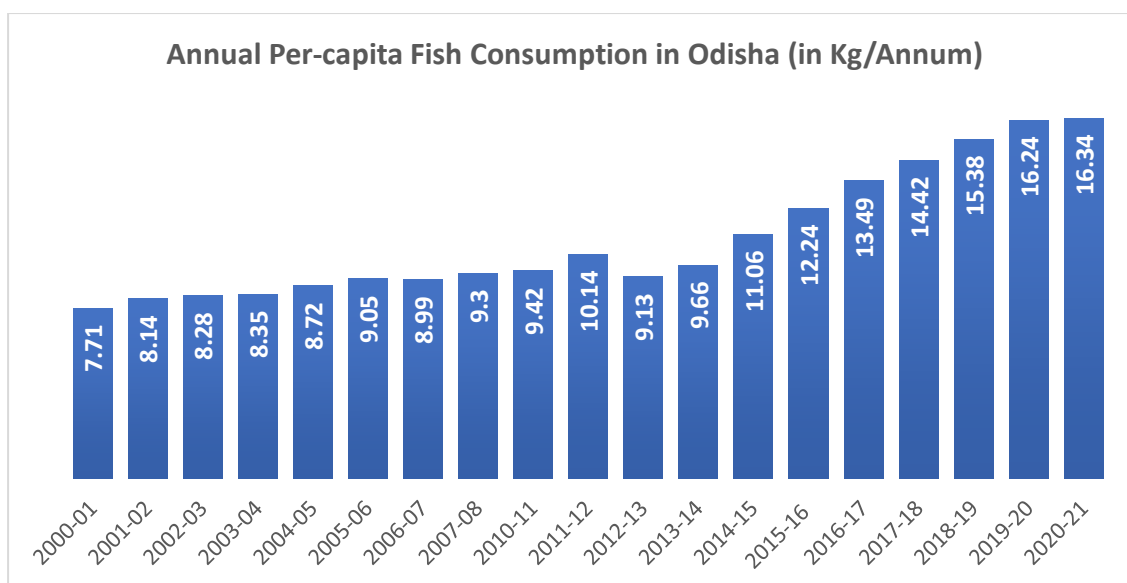
Seafood export from Odisha over last decade (Source: MPEDA)				
Year	Qty. in Metric Tons	Value (Rs. in Crore)	Value in million US\$	Value in million Euro
2011-12	21,311	801	125.83	113.25
2012-13	23,196	890	144.20	129.78
2013-14	29,479	1,769	300.39	280.00
2014-15	32,468	1,964	342.27	311.49
2015-16	35,612	1,792	270.18	237.41
2016-17	41,828	2,205	332.35	279.17
2017-18	53,344	2,872	411.09	368.25
2018-19	62,513	2,969	423.82	349.40
2019-20	66,654	3,243	464.91	365.52
2020-21	60,718	3,108	422.46	NA
2021-22	86,481	4,526	615.30	NA

Market-wise Export of Processed Seafood from Odisha in 2021-22 (Source: MPEDA)				
Sl. No.	Market	Qty in Metric Tons	Rs. in Cr	US\$ (in Million)
1	USA	29,524	1,569	214
2	CHINA	26,971	1,423	193
3	SOUTH-EAST ASIA	12,221	599	82
4	JAPAN	7,095	389	53
5	EUROPEAN UNION	4,325	245	33
6	MIDDLE EAST	2,791	142	19
7	OTHERS	3,554	160	22
	** Grand Total **	86,481	4,526	615

Item-wise Export of Processed Seafood from Odisha in 2021-22 (Source: MPEDA)				
Sl. No.	Item Name	Qty in Metric Tons	Rs. in Cr	US\$ (in Million)
1	FROZEN SHRIMP	86,481	4,526	615
2	FROZEN FISH	0	0.00	0.00
3	FR CUTTLE FISH	0	0.00	0.00
4	FR SQUID	0	0.00	0.00
5	DRIED ITEM	0	0.00	0.00
6	LIVE ITEMS	0	0.00	0.00
7	CHILLED ITEMS	0	0.00	0.00
8	OTHERS	0	0.00	0.00
	** Grand Total **	86,481	4,526	615

3.3 Fish Consumption:

Odisha has one of the highest fish consuming population in India. As per the National Family Health Survey-5 (2019-21), 94.75% of people in Odisha consume fish. The per-capita fish consumption in the State has doubled from 8.14 kg in 2001-02 to 16.34 kg in 2020-21. COVID pandemic in 2020-21 has slowed down the fish consumption pattern in Odisha domestic market. Therefore, the per-capita annual fish consumption has slightly increased from 16.24 Kg in 2019-20 to 16.34 in 2020-21 compared to bigger jumps in fish consumption during previous years.



FISH CONSUMPTION IN ODISHA

94.75% of people in Odisha consume fish (Source: NFHS-5).

16.34 kg is the per-capita annual fish consumption during 2020-21.

3.4 Fish Seed Production:

Fish seed is the primary requisite in fish farming business. There are 28 nos. of Government fish hatcheries and 96 private fish hatcheries in the State. The total fish seed (fry) production has substantially increased from 27 Crores in 2000-2001 to 151.94 Crores in 2021-22 due to increased local demand for fish seed caused by crop intensification and increased farm area, modernization of hatcheries and periodical introduction of quality broodstock under a special scheme of the Department. During 2021-22, Government hatcheries produced 44.24 Crores of fry (29%) and private hatcheries produced 107.70 Crores of fry (71%).

Promotion of technology for early breeding of IMC is essential in the State to supply sufficient quantity of fingerlings to farmers and fishers to stock their tanks and reservoirs during early monsoon season (July – September). Early breeding of Indian Major Carps (IMC) was successfully achieved for the first time in the State in April 2020 through appropriate technological interventions in 4 Government Fish seed farms (Kausalyaganga, Chipilima, Bhanja Nagar and Saramanga) with technical support from WorldFish and in total, 11 Crore and 28.03 crore early breeding IMC spawn was produced during peak summer month of April-June in 2020 and 2021, respectively from these 4 Government fish seed farms.

During 2021-22, the Department has launched a scheme to promote early breeding technology and year-round fish seed production for in private hatcheries. In addition, private fish hatcheries operators were encouraged and assisted to raise quality brood stock to avoid inbreeding depression. In total, 49 nos. of private hatcheries from different districts of the state have availed the scheme benefits.

The Department with technical support from WorldFish has prepared “Odisha Fish Seed Master Plan” in 2020-21 with 5 year annual action plan for strategic investment for self sufficiency in fish seed production in the State. The Department has taken adequate steps for the establishment of fish seed hatcheries in the private sector and block-level network of private fish seed growers through various Government schemes.

Spawn and Fry Production In Odisha from 2016-17 to 2021-22				
Year	Government	OPDC	Private	Total
<i>Spawn Production (in Lakh)</i>				
2016-17	3,756	7,576	19,440	30,772
2017-18	3,651	8,376	26,201	38,228
2018-19	4,062	7,818	26,996	38,876
2019-20	3,796	6,468	24,457	34,721
2020-21	5,220	8,032	34,908	48,160
2021-22	5,652	8,346	34,910	48,908
<i>Fry Production (in Lakh)</i>				
2016-17	423	1,484	5,876	7,783
2017-18	684	1,767	5,626	8,077
2018-19	825	1,852	6,285	8,962
2019-20	578	1,518	7,376	9,472
2020-21	594	2,502	8,847	11,943
2021-22	1,009	3,415	10,770	15,194

4. Budget

4.1 Establishment, Operation & Maintenance (EOM) Expenditure (in Lakh Rs.):

Year	Provision (in Lakh Rs.)	Expenditure (in Lakh Rs.)
2010-11	4,162.00	3,931.00
2011-12	3,819.00	3,703.00
2012-13	4,675.00	4,341.00
2013-14	4,402.00	4,226.00
2014-15	4,823.38	4,616.49
2015-16	5,345.53	5,234.80
2016-17	6,361.46	5,750.49
2017-18	7,722.07	6,426.10
2018-19	7,398.35	6,570.86
2019-20	6,958.54	6,294.43
2020-21	7,131.24	6309.13
2021-22	8248.92	5336.13

* As on 31. 12.2021

4.2 Plan Budget & Programme Expenditure (in Lakh Rs.):

Year	State Plan			Central Sponsored Plan		
	Provision	Sanction	Expenditure	Provision	Sanction	Expenditure
2011-12	2,958.00	1,474.56	1,469.83	2,926.91	1,165.20	1,165.20
2012-13	3,367.44	1,043.27	1,043.27	4,221.89	668.34	668.34
2013-14	5,711.92	5,683.45	5,673.99	3,223.18	1,865.61	1,865.61
2014-15	5,682.31	5,612.29	5,612.29	3,800.04	1,819.61	1,819.61
2015-16	7,350.00	7,043.42	7,043.42	3,319.89	1,124.22	1,124.22
2016-17	8,776.66	7,332.65	7,332.65	3,171.14	2,232.36	2,232.36
2017-18	10,340.01	8,939.95	8,939.95	2,243.00	1,801.43	1,801.43
2018-19	10,543.48	10,227.34	10,227.34	5,067.54	3,345.48	3,345.48
2019-20	8,617.08	8,386.96	8,386.96	8,279.52	1,015.36	1,015.36
2020-21	19,523.30	19,073.18	18,847.68	15,894.70	6,811.96	6,811.96
2021-22	30,516.11	26,746.42	26,623.52	18,056.00	10,124.05	10,124.05

* As on 31.12.2021

5.State Policies and Guidelines Related to Fisheries Sector

5.1Odisha Agriculture Policy SAMRUDDHI – 2020:

SAMRUDDHI- Agricultural Policy 2020, intends to ensure a sustainable, stable, and scalable growth in agriculture sector through optimal use of its resources employing advanced technology. The fisheries component of the policy briefly described below.

Development of inland fisheries

- **Revising the leasing policy of ponds/water bodies and making it fisherman friendly.**
 - Long-term leasing of freshwater ponds/water bodies and government land to take up freshwater fishing by fishermen, entrepreneurs, educated unemployed youth and women SHGs.
 - Fisherman co-operatives/SHGs/FPOs will be given preference in the leasing of ponds.
- **Providing good quality fish seedlings to fishermen by creating a chain of hatcheries for selected fish varieties.**
 - Upgrading private and government fish hatcheries for year-round production of quality carp seeds including genetically improved varieties such as Jayanti Rohu, improved Catla, Amur carp etc.
 - Implementing a fish hatchery certification programme under the national guideline for quality seed production in the State.
 - Promoting advanced carp fingerling production by private seed growers and women SHGs.
 - Promoting species diversification by introducing and scaling minor carps, Pangasius, Tilapia, Anabas, Magur, etc., through the establishment of hatcheries, farm demonstrations and domestic market promotion.
- **Promoting inland aquaculture for high value freshwater prawns.**
 - Expanding freshwater fish farming horizontally in the State by promoting new tank construction
 - Promoting an annual two-crop system by stocking advanced carp fingerlings(100-200g) and thus doubling carp productivity from the present 2.8 metric tons/ Ha/ year to 6 metric tons/ Ha /year in the next five years
 - Promoting solar water pumps and ground water tube wells to facilitate year-round fish farming
 - Promoting freshwater prawn hatcheries &farming.

FOCUS AREA

Ensuring continuous growth in farmers' income.

Making the growth process inclusive of small and marginal farmers, and landless farmers.

Ensuring sustainable, stable, and scalable agricultural growth.

- Promoting ornamental fish production through clusters with market linkage support.
 - Promoting localized fish feed production through SME enterprises.
- **Enhancing reservoir fish production**
 - Encouraging PFCS, WSHGs and young entrepreneurs to adopt cage culture in reservoirs.
 - Promoting aqua parks in large reservoirs for the establishment of export oriented and vertically integrated cage culture by entrepreneurs.
- **Converging schemes like MGNREGA to enhance the water holding capacity of ponds, tanks, etc., to make them suitable for fisheries**
 - Converging with Mission Shakti to promote fish farming in GP tanks and other local water bodies by women SHGs.
 - Renovating derelict GP tanks and revenue tanks to make them suitable for fishfarming.
- **Arranging soft loans to improve fishponds:** As fish farming is a capital-intensive activity, bank loans are essential for the digging of ponds and procurement of farm inputs such as fish fingerlings, feed, fertilizers, medicines, etc.
- Launching a special **skill development module** for inland aquaculture
- **Building capacity among fish breeders and farmers:** Establish fishery Cooperative organizations and run village-level schemes in co-ordination with panchayats to disseminate best practices and research.
- **Modifying the Reservoir Fishery Policy, 2013,** to lease out all water bodies above 10Ha to the PFCS, Fish Production Groups (FPG), WSHGs and educated unemployed youth to boost fish production.
- **Encouraging backyard fishery** through fishermen friendly initiatives; federating fishermen's co-operatives to access funds from NABARD and others
- **Promoting nutrition-sensitive and climate resilient carp-molapolyculture** in backyard tanks and small water bodies (GP tanks, Micro Irrigation Ponds), especially in tribal and vulnerable community areas.

GIS & SPATIAL PLANNING

Digitization and geo-tagging of fisheries assets in the State has been taken up and created OFARIS online map and MIS system to effectively implement all fisheries related schemes. Besides GIS, spatial planning tools will be used to plan fisheries development in the State efficiently.

Strengthening of market infrastructure, processing, and cold chain

- Infrastructure at fish landing centers will be improved to ensure that the quality of fish. This will include hygienic platforms, space for cold stores, provision of ice slabs, etc.
- Deep sea fishing will be promoted by introducing tuna long-liner vessels of >15 meters.

- Welfare schemes for fishermen will be introduced including life insurance, assistance to buy fishing boats, nets, etc., and climate information services to fishers to manage weather-related risks.
- Strengthening marketing infrastructure for fish by setting up exclusive fish processing/sale centers in various parts of the State.
 1. Opening hygienic fish markets in all districts.
 2. Promoting small fish sale kiosks in all blocks.
 3. Supporting existing village-level small-scale fish retail vendors to establish hygienic sale counters.
- Encouraging cold chains for fish marketing by
 1. Establishing ice plants, pre-processing sheds, and processing plants
 2. Promoting the use of, insulated vans, auto rickshaws with ice box, motorcycles with ice box and bicycles with ice box to transport fresh chilled fish.
 3. Establishing fish filleting and value addition plans.
- Promoting modern and cost-effective technology for hygienic dry fish marketing.

5.2 Odisha Fisheries Policy, 2015:

Government of Odisha has come up with the 'Odisha Fisheries Policy, 2015; vide Gazette notification No. 1282, Dt. 2nd September 2015. The Policy intends to be a pioneer in aquaculture Development and fisheries extension for ensuring food security, livelihood, the welfare of fishers, and employment generation. The Policy aims to address sustainable utilization, protection/ promotion of nutritional security, livelihood security of fisher community, gaps in the legal and regulatory framework and their enforcement, gaps in the administrative structure and processes, financing mechanisms including subsidies, technology, and extension support, etc. as well as social and environmental implications. The highlight of the said Policy is as under:

- **Realistic resource assessment:** For sustainable management of capture and culture fisheries, a detailed survey using Remote Sensing and Geographic Information System (GIS) for monitoring of plans and programme in the fishery sector shall be undertaken.
- **Capture fisheries:** Appropriate measures for developing, propagating, conserving, and protecting riverine and other open water fisheries.
- **Culture-based fisheries in lakes/reservoirs:** Regular stock enhancement in reservoirs with basic infrastructure facilities of captive hatcheries, nurseries, fry/ advance fingerling raising centers, fish landing and handling sheds ice plants/ Cage/ Pen culture programme shall be taken up for enhancing the reservoir fish productivity and production. 25% of reservoirs under the

Odisha Fisheries Policy-2015

The policy intends to be a pioneer in aquaculture development and fisheries extension for ensuring food security, livelihood, welfare of fishers and employment generation.

control of the fisheries Department are provided to private entrepreneurs for commercial pisciculture through the leasing process.

- **Aquaculture in tanks & ponds:** Best practices shall be adopted for increasing fish production. The government shall provide a long-term lease of the waterlogged areas/dead rivers to farmers/ entrepreneurs for aquaculture with incentives.
- **Fish seed production:** The Government will augment the existing capacity of the fish seed hatcheries in the private sector to meet the widening gap between the demand and supply of fish fingerlings/ yearlings.
- **Ornamental fish culture:** Freshwater ornamental fish breeding and rearing in backyard hatcheries will be popularized as a cottage industry, among the rural community and SHGs.
- **Sustainable coastal aquaculture:** Development of coastal aquaculture clusters with basic infrastructure such as inlet and outlet channels, road connectivity, electricity, ice plants, cold storages, etc., in PPP mode, will be encouraged and promoted, where the private entrepreneurs and small-scale farmers can co-exist.
- **Marine fisheries:** The guidelines and provisions of the Comprehensive Marine Fisheries Policy (2004) of the Government of India, which advocates protection and conservation of the resources, encouragement to subsistence level fishermen and technology transfer to the small-scale sector, infrastructure support to the industrial sector, ecosystem-based fisheries management, etc., shall be adopted in letter and spirit.
- **Deep-sea fishing:** Deep sea fishing shall be promoted with incentives to marine fishermen and entrepreneurs, wherever necessary.
- **Post-harvest infrastructure support & marketing:** Development of Post-harvest Infrastructure Support & Marketing shall be encouraged, both in inland and marine fisheries sector through suitable scheme/ projects.
- **Fishing harbours & fish landing centres:** Efforts shall be made towards modernization of all fishing harbours/ Jetties/ fish landing centers along the Odisha coast with ongoing/new scheme through PPP mode.
- **Fish marketing & trade:** Odisha Pisciculture Development Corporation (OPDC)/ FISHFED will be strengthened to cater to the needs for fish preservation, transportation, distribution & marketing.
- **Safety of fishermen at sea and welfare of fishermen:** Efforts will be made to provide safety & welfare to the fisher community through various ongoing & new schemes.
- **Capacity building and other support for implementing the policy:** Capacity building of fisher/ extension personnel will be taken up through adequate training and exposure visits to successful sites within & outside the country. Consultants for different activities will be engaged for providing expertise, technology, capacity building and preparation of DPRs, etc.
- **Supplementary nutrition:** A farmer-friendly policy under the broad name 'social fishery' will be initiated where farmers will grow these species of small fish along with other traditional carps without substantial investment for their economic as well as nutritional benefits.

- **Information, education & capacity building (IEC) & awareness:** Comprehensive training, exposure visits, refresher courses, extension services, advisory and awareness programmes will be promoted and implemented to build human resource capacity and to increase levels of knowledge, skill and expertise amongst the State fisheries officials, rural masses, fishers and in the public and private sectors, at district and village levels.
- **Entrepreneurship development & self-employment:** Government will play a catalytic role in self-employment through developing private entrepreneurship in fisheries through various ongoing & new schemes
- **Fiscal incentives:** Declaration of aquaculture at par with agriculture for enabling easy credit flow/institutional finance, lower power tariffs, tax, excise/customs duty concessions/ waiver/ exemptions and water supply, will be considered in consultation with the authorities concerned. Necessary incentives and tax holidays will be provided to large-scale fish farmers who produce 10 tons/ha or more of fish.
- **Planning & governance:** There will be coherence between the policies within and outside the fisheries sector to ensure that all policies and schemes are in harmony with fisheries management objectives.
- **Fishery co-operatives:** Steps will be taken to strengthen the human resource base and improve the financial base of the existing Fisheries Co-operative Societies from Primary to apex level and to revive/ revitalize the ailing Marine PFCS/ PMFCS & Fisheries Federation (FISHFED). The activities of the apex cooperative federation will be re-oriented and re-structured. **Organizational aspects:** Fisheries Department will be strengthened with requisite technical and engineering personnel for smooth and successful implementation of fisheries programmes and activities. Statistical wing in fisheries will be strengthened by developing proper data collection.
- **Legal framework:** The provisions of OMFRA shall be strictly enforced and a stringent fishery management system put in place. Odisha Inland Fisheries Act & Fish seed & hatchery certification will be framed on the lines of the Model Inland Fisheries & Aquaculture Act of the Ministry of Agriculture and that of other relevant States and notified, and the Rules there-under framed and implemented.
- **Funding:** Odisha Government will make extensive efforts to provide adequate funding to the fisheries sector through State and Central Plan schemes, as well as from external sources.

5.3 State Reservoir Fishery Policy Odisha, 2012:

- The 'State Reservoir Fishery Policy Odisha, 2012' was introduced for scientific development and management of 138 major reservoirs with a water spread area of nearly 1.4 lakh Ha. The Department has envisaged the use of these reservoirs for optimal fish production by stocking advanced fingerlings and by adopting advanced fish farming technologies such as cage culture and pen culture. This is the first time in India, IMC has been cultured in circular cages at the Hirakud reservoir, Sambalpur district and their growth performance were also found to be good.

5.4 Policy guideline on cage culture in reservoirs, 2020:

- Promote enhanced fish production in vast reservoirs of the State, the State Government has brought an investor friendly, environmentally sound, and socially equitable policy guideline for taking up cage culture in reservoirs by private entrepreneurs / companies in partnership with Primary Fishermen Cooperative Societies (PFCS) and Self-Help Groups (SHGs) in 2020-21. As per this policy, cage culture zones in Hirakud and Indravati reservoirs were opened for leasing to private sector through Expression of Interest.

6. 5 T Charter of Fisheries Sector

Following major schemes and programs of the Department are brought under 5T Charter during 2020-21.

- Attaining self-sufficiency in fish seed production by adopting advanced technology in government fish farms for early seed production, promoting private hatcheries and developing a network of fish seed growers.
- Transforming inland and brackish aquaculture in the State by intensive freshwater and brackishwater fish farming through attractive incentive mechanisms and encouraging private entrepreneurship for enhancing fish production in reservoirs from 7.5 lakh metric tonsto 12 lakh metric tonsin five years.
- Providing basic infrastructure for brackishwater aquaculture clusters for increasing seafood exports.
- Digitization and geo-tagging of fisheries assets in the State and using GIS and spatial tools to plan fisheries development in the State efficiently.
- Registration of fishing boats, fishing license and registration of shrimp farms and hatcheries to be done online and integrated with Common Service Centers.
- Setting up of Fishing harbours and Fish Landing centers.
- Beneficiary and subsidy schemes in the fishery sector will be available through online and mobile-based applications – Aadhar linked.
- Modern hygienic fish markets in urban centers to provide quality and hygienic fish, a Timeframe and Roadmap will be developed.
- Strengthening of Human Resources, training, and Exposure visits to staff, accessing high quality national & international technical expertise, output-based performance indicators of extension staff to be integrated.
- Providing livelihood to WSHGs- through Mission Shakti from 4000 Groups to 15000 Groups.

ONLINE SERVICES

For timely and transparent disbursal of benefits to farmers and entrepreneurs, Honourable Chief Minister, Shri Naveen Patnaik launched nine online schemes and services for the fisheries sector on 3rd December 2020

Grievances received at the Directorate:

Total No. of calls made to Director of Fisheries till 31st December 2021- 1201nos.

No. of complaints solved by Director of Fisheries till 31st December 2021- 20 nos.

7. Technical Collaboration with WorldFish

Being a non-profit international research organization, **WorldFish** has been working relentlessly to bring in different innovative ideas with proven records to reduce hunger, malnutrition and poverty across Africa, Asia and the Pacific with a mission of strengthening the livelihood process through enhanced food and nutritional security in the aquatic food sector. Being among one of the 15 CGIAR Research Centers whose Headquarter is situated in Penang, Malaysia, WorldFish has been working for 45 years on sustainable aquaculture and fisheries to improve the lives of millions of women, men and youth. Fisheries and aquaculture from all kinds of aquatic systems not only provide food in the form of animal protein to the people around the world but also provide income to more than 800 million people, drawing the focus on the sustainability of the ecosystem to make it work more efficiently for the future generation to come.

Achieving Food and Nutrition Security

- Implementation of Fisheries policy as mandated under MoA between WorldFish and FARD Department
- MoU between WorldFish and WCD&MS Department for inclusion of Fish Based Nutrition in ICDS Supplementary Nutrition

7.1 Implementation of Odisha Fisheries Policy:

Fisheries and Animal Resources Development Department (F&ARD), Government of Odisha and WorldFish, Malaysia agreed upon a technical collaboration through a Memorandum of Agreement (MoA) signed between both partners on 28th June 2016. With the inception of the project since 1st July 2016 which is to be continued till 31st March 2022, the WorldFish has been working closely with FARD with an objective of providing technical support to the Department for implementing "Odisha State Fisheries Policy-2015" and to achieve "Sustainable aquaculture and fisheries sector in Odisha State, India, creating employment, stimulating inward investment and contributing to State goals for reducing malnutrition among vulnerable and marginalized communities, particularly women and children". Initially focusing more on the development of inland fisheries sector, both partners are now gradually getting into other fields of aquaculture for an inclusive development.

The activities that the WorldFish has been associated with accomplishing with collaboration with the F&ARD and other line Departments are:

- Activities under three science flagship programmes viz., Sustainable intensification of carp farming, fish hatchery upgradation & adoption of early breeding technology in IMC, GIFT hatchery and farming, reservoir cage culture and fish production, intensive fish production through Biofloc technology, fish farming in GP tanks by Women SHGs, nutrition-sensitive carp-mola polyculture, solar driers for hygienic fish drying,

production of nutritious fish-based products to be adopted by government and private sector etc.

- Preparation of Annual Action Plans based on the various schemes and related budgets under the Government Department.
- Activities carried out under the MoU with Women and Child Development & Mission Shakti Department, Government of Odisha for piloting of nutrition-sensitive fisheries technologies (inclusion of fish and fish-based products in Anganwadi ICDS nourishment program) and women empowerment (Fish farming in GP tanks by Women SHGs) based activities.
- Building collaboration with Department of Agriculture and Farmers' welfare, Odisha and OUAT for scaling the climate information services in aquaculture under CaFFSA project.
- Support College of Fisheries, OUAT to establish common service center for fishery value added product development under Prime Minister's FME scheme.
- Support the FARD Department in planning and implementation of PMMSY, OMBADC, RKVY, ODOP, PMFME and other Government funded schemes.
- A bilateral project planning and guidelines preparation for the implementation of Odisha (OIIPCRA) with funding from Government of Odisha and World Bank for continuing the existing collaboration with FARD Department.
- Helping the Department in preparation of "Master Plan for Fish Seed Production in Odisha, operational guideline for early breeding of IMC and SOP, planning for the preparation of 4 mega hatcheries for fish seed production through both early-breeding and natural breeding, helping in preparing the policy guidelines for taking up of Fish Cage Cultures in Reservoirs by private sector actor and Reservoir Zonation mapping. An operational guideline was also prepared on the Network of fish seed grower by private player.
- WorldFish has been helping the F&ARD Department to carry out a study on "Odisha Fish Value Chain" with the fund allotted by the Government.
- WorldFish has supported the F&ARD Department to prepare "Odisha Fisheries Master Plan- 2030". This plan is aligned to national fisheries policy and fisheries development objectives under PMMSY, Odisha Fisheries Policy-2015 and Odisha Agriculture Policy SAMRUDDHI-2020.

Pilot feeding program funded by USAID-IPP project and WCD Department:

To improve the nutritional uptake by some of the vulnerable groups of Odisha, by providing fish products like dried fish and dried-fish powder, which is rich in micronutrients, vitamins, and minerals.

7.2 Association with the Department of Women and Child Development of Odisha:

As per National Family Health Survey (NFHS-5) (2019-21) data, malnutrition continues to be the scourge of Odishadespite significant improvements in food production and advancements in science. The Government of Odisha has initiated several nutrition centric and nutrition

specific programs to combat malnutrition like Supplementary Nutrition Programme (SNP) under the Integrated Child Development Services (ICDS) which is given to the children (6 months to 6 years), pregnant women, lactating mother, and adolescent girls to bridges the gap between the Recommended Daily Allowance (RDA) and Average Daily Intake (ADI). WorldFish in the presence of the F&ARD Department, signed a Memorandum of Understanding (MoU) with the Department of Women and Child Development of Odisha with funding support from USAID (United States Agency for International Development) to carry out a piloting study to improve the nutritional uptake by the most vulnerable groups of Odisha by providing them with fish products, a resource that is amply available in the coastal districts of Odisha and is rich in micronutrients, vitamins, and minerals. A six-month piloting study in 50 Anganwadi centers in Kaptipada block of Mayurbhanj District was carried out during April to September 2021, aiming to scale-up in other centers in the future, depending upon the expected outcome.

The effort was undertaken by USAID, WorldFish, FARD and ICAR-CIFT W3 in collaboration with the Government of Odisha to address the common goal of enhancing the nutritional outcomes through introduction of aquatic foods to accelerate the progress on reducing malnutrition in hard-to-reach tribal communities through this piloting in the existing Supplementary Nutrition Programme. Under the pilot program, the inclusion of small fish powder in Hot Cooked Meals (HCM) was done for 3-6-year-old children and dried small fish was given in Take Home Rations (THR) for Pregnant and Lactating Women (PLW) and Adolescent Girls (AG) of 14 to 18 year old.

Target Beneficiaries under the Pilot program	
Target Beneficiaries	Total Sample
Children 3-6 years	1208
Pregnant women	186
lactating mother	284
Adolescent Girls (Out of school age 14-18 years)	329

7.3 Establishment of Solar Tunnel dryer for making hygienic dried fish

With USAID funding support and additionally under the separate programme of One District - One Product (ODOP) of F&ARD, WorldFish in collaboration with FARD Department and ICAR-Central Institute of Fisheries Technology, Cochin (Kerala), has established hygienic solar drying units of marine fish in 6 coastal districts on a pilot basis. 10 nos. of polyhouse solar driers are already built and are being put to use by WSHG in their selected premises. Women SHGs has been given training with regards to its operation to produce dried fish and market to it with proper packaging and labelling with FSSAI certification.

8.State Plan Schemes under Fisheries Sector

State Plan Schemes under Fisheries Sector			
Sl. No.	Name of the Scheme	Sector	Unit Cost and Subsidy
1	Subsidy for Excavation of New Ponds under Machha Chasa Pain Nua Pokhari Kholo Yojana (Matsya Pokhari Yojana)	Freshwater	<ul style="list-style-type: none"> The unit cost for excavation of new tanks for taking up Fresh Water Fish production is Rs.8.50 lakhs/Ha. with 40% subsidy assistance to General and 50% assistance to SC/ ST/ woman beneficiaries. *Excess expenditure may be borne by concerned beneficiary. The ceiling of water area for subsidy admissible is minimum 0.20 Ha to 2.00 Ha WSA.
2	Input Assistance to Women Self Help Groups for Pisciculture in Gram Panchayat Tanks	Freshwater	<ul style="list-style-type: none"> The unit cost is Rs.1.50 lakh/Ha. for Input Assistance to Women Self Help Group for practicing pisciculture in G.P. Tank which includes cost of fish/ prawn seed, feed, manure, disease prevention measures, transportation charges etc. The subsidy assistance is 60% of the unit cost i.e. Rs.0.90 lakh/Ha towards input cost.
3	Input Assistance to Farmers for taking up of Fish Farming in Farm Ponds	Freshwater	<ul style="list-style-type: none"> Unit cost <ul style="list-style-type: none"> Model 1: Farm Pond of 20m x 20m x 3m size is Rs. 6,000 Model 2: Farm Pond of 15m x 15m x 3m size is Rs. 3,000 Model 3: Farm Pond of 10m x 10m x 3m size is Rs. 1,500 Subsidy assistance is 40% of unit cost for General and 60% of unit cost for SC/ ST/ woman category.
4	Support to Private Fish Hatcheries for adoption of Early Breeding and Year-Round Seed Production Technology and for Hatchery Accreditation and Seed Certification	Freshwater	<ul style="list-style-type: none"> Component 1: Early breeding with existing broodstock: (Financial support for CIFABROOD feed or commercial fish broodstock feed from OPDC) Component 2: New Broodstock Infusion with 2 sub-components <ul style="list-style-type: none"> Financial support for Cost of direct buying 2+ yr aged fish from local farmers in September 2021 Financial support for CIFABROOD feed cost for raising the broodstock for 6-7 months Component 3: Raising NFFBB sourced genetically improved strains of IMC fingerlings for 2+ years with 2 sub-components <ul style="list-style-type: none"> Financial support for Cost of buying IMC breeder fingerlings from NFFBB in September 2021 Financial support for Commercial grower feed cost for raising the broodstock for One year Component 4: Construction of new borewell in the hatchery (Maximum One borewell per

			<p>hatchery)</p> <ul style="list-style-type: none"> Subsidy assistance for Component 1, 2 and 3 is 50% of the unit cost and for Component 4 is 40% of the unit cost.
5	Input Assistance to Develop Network of Fish Seed Growers for Early Bred Spawn	Freshwater	<ul style="list-style-type: none"> Input cost for one crop cycle of fish fingerling production (fry, feed, biosecurity bird fence net, seed harvest drag net etc.) is Rs. 1.00 Lakh/Acre Subsidy assistance is 40% of unit cost for General and 60% of unit cost for SC/ ST/ woman category.
6	Subsidy for Excavation of New Tanks under brackishwater fisheries	Brackish water	<ul style="list-style-type: none"> The Unit cost for excavation of new tanks for taking up brackish water shrimp farming is Rs.10.00 lakhs/Ha (Rs. 7.00 Lakhs/Ha for capital costs and Rs. 3.00 lakhs/Ha for input costs). with 40% subsidy assistance to General and 60% assistance to SC/ ST/ woman beneficiaries. The ceiling of water area for subsidy admissible is minimum 0.20 Ha. to maximum 2.00 Ha. WSA.
7	Subsidy for Polylining Technology for Intensive Shrimp Farming	Brackish water	<ul style="list-style-type: none"> The Unit cost for installation of a polylining unit is Rs.2.10 lakh with 40% subsidy assistance to General and 60% assistance to SC/ ST/ woman beneficiaries. Subsidy support is only infrastructure costs and doesn't include any operational costs. The assistance will be available to the above category of beneficiaries for a minimum 0.1 Ha (1000 m²) and a maximum of 0.4 Ha. (4000 m²) per beneficiary.
8	Subsidy for Intensive Shrimp & Fish Farming through Bio-floc Technology	Freshwater / Brackish water	<ul style="list-style-type: none"> The unit cost for installation of a Bio-floc unit (PVC / Tarpaulin tanks) 2 tanks – Rs.1.50 lakh, 4 tanks – Rs.3.00 lakh and 6 tanks – Rs.4.00 lakh; Unit cost of installation of Brick masonry biofloc tanks: 2 tanks – Rs.2.00 lakh, 4 tanks – Rs.4.00 lakh and 6 tanks – Rs.6.00 lakh; Subsidy assistance is 40% of unit cost for General and 60% of unit cost for SC/ ST/ woman beneficiaries. Subsidy support is only for infrastructure costs and doesn't include any operational costs.
9	Subsidy for Fisheries Machinery / Equipment / Implements	Freshwater / Brackish water / Marine	<ul style="list-style-type: none"> Under this scheme, subsidy is extended to fishery equipment, machinery and implements such as Aerators (1-2 HP), Air Blowers (5-10 HP), Fishing net with all fittings, Bio-security nets etc.
10	Reactivation of Fisheries Cooperative Societies	Freshwater / Brackish water / Marine	<ul style="list-style-type: none"> One time revolving funds of Rs.2.00 lakh per eligible PFCS for improvement socio economic condition of Fishers.
11	Subsidy for New Boat, Engine & Net for development of Marine Fisheries	Marine	<ul style="list-style-type: none"> The Unit cost for varying sizes of fishing boat is Rs.7.50 Lakhs and for Engine is Rs. 1.50 Lakhs and for fishing net is Rs. 1.00 Lakh. Financial Assistance shall be limited to 01 (one) unit (Boat with Engine & Net) per

			<p>individual beneficiary.</p> <ul style="list-style-type: none"> • Procurement of Fishing Boat is mandatory under this scheme. However, the procurement of Engine and Fishing Net is optional, based on the requirements of the beneficiary. • Back ended subsidy will be limited to 60% for SC/ ST and 40% for General Category.
12	Subsidy for Motorisation of Traditional Crafts	Marine	<ul style="list-style-type: none"> • The Unit cost for OBM (5-10 HP) varies from Rs.50,000 to Rs. 72,000 and for IBM (10-28 HP) varies from Rs. 85,000 to Rs. 1,40,000. • Financial Assistance shall be limited to 01 (one) unit per individual beneficiary. • Back ended subsidy will be limited to 60% for SC/ ST and 40% for General Category on the actual cost of the boat engine as per the GST bills.
13	Provision of Scholarship to Meritorious Children of Fishermen Community	Marine	
14	Livelihood Support to Marine Fishermen during Fishing Ban Period	Marine	<ul style="list-style-type: none"> • Only one member of the affected families shall be assisted with Rs.7,500/- annually under the scheme in addition to the Saving-Cum- Relief Assistance provided to them. The amount shall be paid to the beneficiaries in between November to March of a financial year in one instalment through DBT.
15	Support to Farmers/ Agri Entrepreneurs for setting up of Commercial Agri Enterprises (CAEs) under Mukhyamantri Krushi Udyog Yojana (MKUY) implemented by APICOL	Freshwater / Brackish water	<ul style="list-style-type: none"> • Entrepreneur Contribution- As per requirement. • Back Ended Capital Investment Subsidy- 40% for general male and 50% for all Women/ SC/ ST/ Graduates in Agriculture & allied sectors limited to Rs.50.00 lakh. • Effective Bank Loan- Minimum of 10% of the outlay for Projects costing more than Rs.10.00 lakhs. Projects costing less than Rs.10.00 lakh may be done with own finance.

9. Development of Inland Freshwater Fisheries Sector

9.1 Women Empowerment through Fisheries activities:

a. Input assistance to Women Self Help Groups for pisciculture in GP tanks:

The programme of “Input assistance to Women SHGs for pisciculture in GP tanks” continued to be executed in the similar manner the way it has been done since its inception from 2017-18. The project is being carried out successfully along with the other converging departmental actors viz., FARD, Mission Shakti and PR&DW with technical support from WorldFish. Even though the project provides an input subsidy of 60% on the Rs.1.50 Lakh/ Ha for WSHGs who have been tagged with GP tanks on a long-term lease basis. The project is implemented in the following manner.

Odisha has about 62,000 Gram Panchayat Tanks (54,000 Ha), most of which remain un-utilised or under-utilised with regards to its potential. Odisha has around 7 lakh Women SHGs with over 60 lakhs of members. These WSHGs are registered and organised under Mission Shakti Department who works for empowering women through various income generating activities. Capitalizing on this opportunity, Government took up the task of scientifically producing fish in the Gram Panchayat (GP) Tanks by the WSGs and providing them the income opportunities since 2017-18, by bringing out a long-term (3-5 years) leasing policy of the GP Tanks across the 30 districts in the State.

b. WSHGs in Biofloc fish farming and ornamental fish culture:

WSHGs have recently opted for other income generating activities in fisheries sector. They have been given chances to venture into many kinds of activities through

Inter-Departmental Convergence & Policy reforms

Unutilised or underutilised tanks of **62,000** GP tanks (**54,000Ha**) in Odishais being put to use for fish production. GPs under Panchayati Raj and Drinking water Department (PR&DW) have around **7 lakh** Women SHGs (WSHG) with a membership of **60 Lakh** women. These WSHGs are registered and organized under Mission Shakti (Department of Women and Child Development and Mission Shakti) (WCD&MS).

Sensing a great opportunity to produce fish in these GP tanks by WSHGs and thus provide them additional income opportunities with aim of social and gender equity and empowerment, during 2017-18, the Government has brought out a long-term leasing policy (3-5-year lease period) for scientific fish farming in GP tanks by WSHGs in all 30 districts of the State.

During last 4 years, in total, **7,960 nos. of GP tanks** with a total water spread area of **6,742.36 Ha** were brought under scientific fish farming with involvement of **7,829 nos. of WSHGs** under this scheme with long-term leasing policy of the State.

extending input in the form of financial and technical assistance to take it to an appreciable conclusion.

c. WSHGs in Hygienic dry fish production:

Women folk of marine fishermen generally engage in drying of the fish for their own consumption, market them in the local village market and also sell it off to the contract traders. Directorate of Fisheries have taken an initiative in collaboration with WorldFish to produce hygienic dried fish by Solar Tunnel Dryers. These kinds of dryers are given to 10 nos. of WSHGs across the coastal areas of the State in ten different locations on a pilot basis to see its efficacy. The WSHGs were given training on the process of dried fish production in the system. The product which will be produced will be subsequently to be marketed through different platforms. Similar kind of Solar Tunnel Dryers are being planned to give to selected WSHGs under One-District One-Product (ODOP) initiative programme.

The major impacts of the scheme “Input to Women Self Help Groups for pisciculture in Gram Panchayat tanks” are:

- (1) More number of WSHGs across the state became aware of the scheme and government policies on fish farming and women empowerment and there was motivation among WSHGs to enroll in this scheme to generate income by selling the bigger carps and produce small fish (Mola) for their household consumption.
- (2) Women became aware on nutrition-sensitive carp-mola polyculture system in GP tanks.
- (3) WSHGs cleaned the derelict and under-used GP tanks from weed plants, tree trunks, etc and maintained the GP tanks very tidy, thus making the water available for multi-purpose utility of the village population.
- (4) WSHGs implemented key BMPs such as fingerling stocking, fish feeding with pellet or homemade feeds, lime application etc.
- (5) WSHGs made significant financial gains from sale of big fishes from GP tanks thus adding additional income to their households.

9.2 Matsya Pokhari Yojana (MPY):

Macha Chasa Pain Nua Pokhari Yojana” or more popularly known as the “Matsya Pokhari Yojana ” (MPY) was introduced since the year 2017-18, with a mandate to popularize scientific pisciculture in the State to increase its fish production thereby doubling the farmer’s income by 2022 as per Odisha fishery policy, 2015. To achieve this goal, a horizontal expansion of the activities was thought of by creating new tanks & ponds in private land to carry out intensive aquaculture to give a boost to income generation and entrepreneurship among the farmers and youth. In the last three years, 6305.75Ha of freshwater fish tanks have been sanctioned under this scheme.

9.3 Input Assistance to farmers for taking up pisciculture in Agriculture Farm ponds:

It is crucial to extend help to the farmers who are small/marginalized. In that regards, agricultural farm ponds are being developed in Odisha under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA) by the Directorate of Soil Conservation and Watershed Development Mission under the Department of Agriculture and Farmers' Empowerment, where in beneficiaries belonging to the small/marginal category are provided with the financial assistance for the excavation of ponds in their own farmland. These ponds act as a reservoir of water utilized to irrigate the farmer's agriculture land during the time of exigency. These same ponds also possess a potential to be utilized for not only raising fish fingerlings but also rearing the fish to its marketable size based on the water retention capacity. During the financial year 2021-22 the Department of Fisheries & ARD under a scheme have targeted to reach out to 10,000 farmers by providing an input assistance to those who have excavated farm ponds under MGNREGS for facilitating production of fingerlings and table size fish too.

9.4 Promotion of Intensive Aquaculture through introduction of Bio-floc Technology in Fisheries:

This is a kind aquaculture system which needs a limited water exchange in which the fish could be cultured at high stocking density where the nitrogenous waste materials of fish can be re-utilized to produce feed for fish in the form of bio-floc. This floc is produced with a strong aeration and biota formed in the water in the culture tank. It is a cost-effective technology in which the toxic materials from the fish and shellfish such as nitrate, nitrite and ammonia can be converted to useful product, *i.e.*, proteinaceous feed. This advanced technology of pisciculture was introduced to provide support to the promising entrepreneurs, job seeker like youth and interested progressive fish farmers in 2020-21, thereby increasing the fish production and to achieve self-sufficiency in the State. This emerging technology has encouraged small landowners to rationally use the available land into a livelihood option by giving them a source of earning. This scheme on bio-floc technology for intensive farming of shrimp and fish provides a financial assistance of 60% and 40% respectively to the SC/ST/Women beneficiaries and to the general category people with an option for 2, 4 or 6 tanks under State Plan Scheme.

Intensive aquaculture through Biofloc technology	
Year of Implementation	Sanctioned (Units)
2020-21	2080 Tanks
2021-22	5000 Tanks

9.5 Promotion Species Diversification through Genetically Improved Farmed Tilapia (GIFT):

Looking at the level of malnutrition level in the State among the marginalised and impoverished people, the need for an inexpensive source of animal protein becomes imminent to this context. Tilapia is a best suitable candidate fish which fits into the requirement to bridge the gap in term of nutritional benefits that it has to offer and secondly, the quantity one gets access to per head at a lesser price. This makes it a best suitable candidate of fish to be utilised to address the food and nutritional security. The wild variety like *Oreochromis mozzambicus*, which is extensively found and not been popular among the local people for not growing faster and its darker appearance has now been replaced by Genetically Improved Farmed Tilapia (GIFT) which is a genetically improved variety of Nile tilapia (*Oreochromis niloticus*) developed by WorldFish, Malaysia over the last 4 decades by employing selective breeding technology. This variety of tilapia is faster growing with high yielding capacity. It is the most widely farmed tilapia variety across the globe. GIFT can grow to market size (600-700g) within 6 months of crop duration and can yield 3-4 tons/acre/crop. It has very good consumer acceptance qualities such as attractive light grey coloration, tasty white meat with single bone. According to the UN-FAO, tilapia is one of the fastest-growing varieties of farmed fish around the world, and along with carps and catfish, it will take a share of more than 60% of the total global farmed fish production.

GIFT Tilapia farm demonstration was done in 133 Acre farms in first two years (2018-19 & 2019-20). The seed of all-male GIFT Tilapia in first 2 years was procured from MPEDA-RGCA Tilapia Hatchery, Vijayawada by the orders of the Directorate of Fisheries and since 3rd year, the procurement of tilapia seeds was done from prototype GIFT hatchery at Government Fish Seed Farm in Kausalyaganga. Selected farmers are provided handholding support for proper implementation of Better Management Practices (BMPs) and assisting farmers to market the tilapia in local fish markets. Proper biosecurity measures are assured during the culture period as per the guidelines of the Government of India. Since the inception of prototype GIFT tilapia hatchery in 2020-21 and a new state of art "GIFT Tilapia Hatchery and Multiplication Centre" at Government fish seed Farm, Kausalyaganga, Bhubaneswar, 9 lakh mono-sex seed has been produced and distributed across the State and to the other States as well. Lots of enthusiasm are being displayed by the farmers in the state for the GIFT seeds with direct procurement from Government fish seed hatchery. The initial farm and market level experiences has brought lot of confidence in Government of Odisha to massively promote tilapia in the State to cater to the demand of local market.

9.6 Popularisation of Amur Common Carp under species diversification:

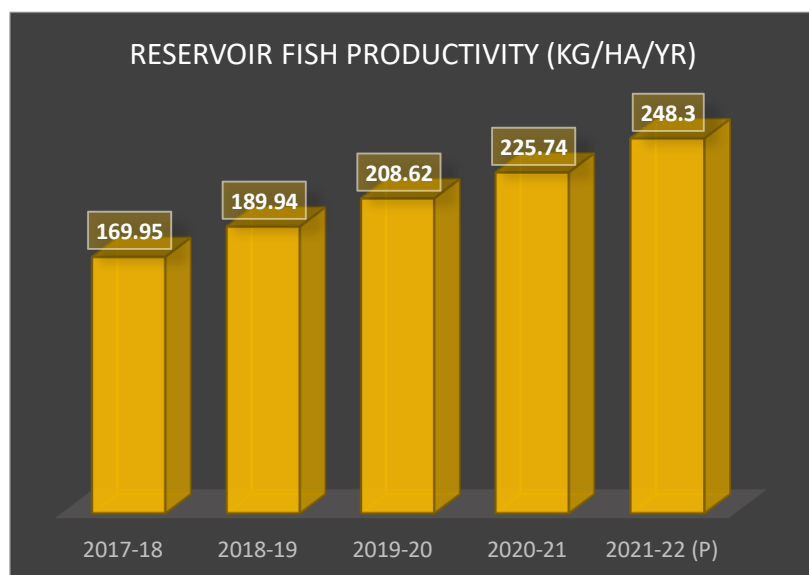
The Government of Odisha has realised the importance of species diversification in fish farming as a strategy to reduce the risk of over-dependence on just a few major species and to increase profits while building resilience among farmers. In this regard Genetically Improved Farmed Tilapia (GIFT) and Amur Common Carp have served as two important

varieties during the last 5 years. Common carp (*Cyprinus carpio*) is one of the most widely domesticated and extensively cultured aquaculture fish species in the world. The year-round availability of seed, high degree of stress tolerance, omnivorous feeding habit and easy acceptance of supplementary feed and faster growth has endeared the Common carp and have increased its popularity as an important candidate for carp polyculture and is also grown in monoculture.

In India, common carp is an important aquaculture species and FARD is promoting Amur common carp in Odisha, as an important component in carp intensification and species diversification plan. During year 2019-20, 1000 nos. of Amur common carp fingerling of higher strain were brought from Bangalore to develop them into future brood stock and were stocked in 10 different Government farms across Odisha. The fingerling was reared to broodfish stage in a separate pond and protocols of brood stock management was given to the concerned farm-in-charge. A successful breeding was carried out with these developed brood stock in the year 2020 and 2021 in all the breeding farms from where the spawn and fry were supplied to farmers to grow them in their ponds.

9.7 Enhancement in reservoir fish production and productivity:

Reservoir are known as sleeping giant and its potential can only be realized when it is harnessed in proper manner by following a process of reservoir ranching. Some reservoirs achieve their stock enhancement through natural fish breeding, but many reservoirs don't have that capacity and so, it requires regular stocking to enhance its fish numbers. Understanding the concern that the local inhabitant face who lives all around the reservoir



for their livelihood, the Department thought of enhance the productivity and production of these reservoirs through different activities along with WorldFish and ICAR institutions. Stocking of reservoirs with advanced carp fingerlings (>100 mm) raised in ICAR-CIFRI model captive HDPE pen nurseries along with direct stocking and co-management of reservoir fisheries was under progress

in all 128 reservoirs in 20 districts. For the year 2021-22, a programme of direct stocking has been planned in all 128 reservoirs for 20 districts by direct stocking from Govt. and private fish farm. This kind of stocking programme will go a long way in maintaining the fish stock in the reservoir as well as will help 8000 families directly by providing the required nutrition and a source of livelihood to their families.

9.8 Cage Culture Fisheries in Reservoirs:

Cage culture fisheries in reservoirs has enormous potential to boost the fish production & create employment opportunities in the state and can add an additional 1.25 lakh tons of fish to the state fish basket. As per the GoI guidelines for sustainable cage culture in inland open water bodies, 1% of the reservoir mean water spread area can be utilized for cage culture purpose. In order to harness this opportunity, Government of Odisha has launched an investor friendly, socially harmonious and environmentally sound policy guideline for taking up reservoir cage culture by farmers / fishermen / entrepreneurs / companies in collaboration with the PFCS/SHGs in 2020. The FARD Department with technical support from ICAR-CIFRI and WorldFish has successfully piloted the intensive cage culture of Catla and Rohu in large circular cages (16 meter diameter and 5 meter depth) in Hirakud reservoir by involvement of a local PFCS during 2018-2020. Interested investors (farmers / fishermen/ entrepreneurs / companies) are being encouraged to take up cage culture on “lease-install-operate basis” through open ended EoI floated by the Directorate of Fisheries. For this purpose, the FARD Department has prepared GIS based cage culture zonation maps for 6 reservoirs (Hirakud, Rengali, Indravati, Hariharjhor, Salandi & Jambira) with the technical support from WorldFish. In total, 791 sub-zones spread over 49 zones in 6 reservoirs have been mapped. Each sub-zone can accommodate 24 nos. of rectangular cages (6 m X 4 m X 4 m) or 3 nos. of circular cages (16 m diameter X 5 m depth). A minimum of 50-75 m distance has been maintained between two sub-zones. In each zone, there are 10-20 sub-zones based on the topography, water depth and other technical parameters. A minimum of 1 km distance has been maintained between two zones in order to facilitate proper water flow, access to fishing grounds by fishermen and for navigation by other stakeholders in the reservoir.

A model bankable DPR for cage culture has been prepared by the FARD Department. This includes detailed business plan, technical specifications of cages, best practices for cage fish farming etc. This is useful to the entrepreneurs while applying for bank loan and Government subsidy such as MKUY. Online trainings, hands-on field level trainings and webinar on techno-economic aspects of cage culture has been conducted for the benefit of cage culture entrepreneurs across the State.

In Hirakud reservoir of Sambalpur District, a total of 621 sub-zones spread under 32 zones have been demarcated for taking up cage culture. So far, 101 sub-zones have been allotted to 96 entrepreneurs. Lease agreement has been signed by 65 entrepreneurs for 70 sub-zones. 213 nos. of cages have been installed by entrepreneurs in 29 sub-zones. That includes 144 rectangular cages in 6 sub-zones and 69 circular cages in 23 sub-zones. Similarly, Expression of Interest (EoI) was advertised for leasing out the cage culture zones in Indravati reservoir, Kalahandi District.

9.9 River Ranching Programme:

Under the programme of “Enhancement of Production and Productivity”, the activity of river ranching was planned with the assistance provided by NFDB which can achieve sustainable fisheries, reducing habitat degradation through biodiversity conservation, restoring the valuable resources and enhance the fish production to a sustainable level by maximizing social-economic benefits. River ranching programme is the need of the hour looking at the dwindling fish numbers in almost all river systems, having direct effect on the fish production and life of the community people who depends on the river system for their nutrition and livelihood. With the programme being mooted out by NFDB, the stocking was carried out in the river Mahanadi, by releasing advance fingerling at two places. These resources could then be judiciously harnessed to give a leap to the riverine capture fisheries to meet the domestic market demands and can increasing the inter-state export of freshwater fish apart from creating income source for many rural poor. In first phase 2.00 lakhs fingerlings were released in Mahanadi near Subarnapur on 28th August-2021 and another release of fingerlings were done in Mahanadi near Munduli, Cuttack, on 8th October 2021. A leaflet was designed and printed for the occasion and distributed to the farmers to disseminate knowledge on the river ranching and its effect on the river system.

9.10 GIS and Spatial Planning for fisheries Resource Management:

a. Reservoir zonation mapping for cage culture

For proper utilization of resources, Government Odisha introduces spatial planning and Geographical Information System (GIS). The objective is to prepare a Geo-tagged master list of all these fisheries resources for proper planning and implementation of the various fisheries programmes. For reservoir cage culture by PFCS/SHG/Private Entrepreneurs, suitable zones inside the leased fishing area were identified using GIS. This year, 31 no. of zones and 620 no. of subzones with GPS co-ordinates of sub-zone area (Buoy Marker and 4 Corners) of Hirakud reservoir has been mapped so far and in addition to it, zonation mapping of 5 other reservoirs has also been completed.

Zones and sub-zones identified in different reservoirs for cage culture				
Sl. No.	Reservoir name	No. of zones identified	No. of sub-zones in each zone	Total sub-zones identified
1	Hirakud	31+1(OLM)	20	620+1(OLM)
2	Indravati	10	10	100
3	Rengali	2	20	40
4	Jambhira	1	10	10
5	Salandi	2	5	10
6	Hariharjor	2	5	10
	TOTAL	49	-	791

b. Reservoir Atlas of Odisha

A “Reservoir Atlas” comprising of geographical details, production, social, infrastructure details etc. Out of 138 reservoirs of Odisha, 79 reservoirs have been delineated so far according to the seasonal water spread area using Google Earth and Sentinel-2 Satellite imageries.

The specific purposes of the reservoir atlas are:

- ✓ To provide geographical overview of the reservoirs having fish production potential
- ✓ To propagate advance knowledge on the seasonality and water availability of a particular reservoir
- ✓ To aid in decision making during stoking of fish fingerling
- ✓ To assist in site selection during pen nurseries
- ✓ To assist in identifying different zones and sub-zones for cage culture
- ✓ To strengthen local institution such as PFCs and SHGs
- ✓ To facilitate better community-based co management and conservation measures

Table: List of Reservoirs in the Atlas

Angul District		Gajapati District		55	Indravati Lake_Indravati Dam
1	Derjang	27	Harbhangi	56	Jamunasagar
2	Rengali	28	Krishnasagar	57	Kantesir
Bargarh District		29	Ramsagar	58	Kerkata
	Jharbandha	30	Sita Sagar	59	Turla
4	Hirakud	Ganjam District		Mayurbhanj District	
5	Kuliarijora	31	Baghalati	60	Arikula
6	Kumbha	32	Baghua	61	Badjore
7	Padamapur	33	Bhalughai	62	Bankabal
8	Victoriasagar	34	Bhanjanagar	63	Haladia
Bolangir District		35	Chhamundaghai	64	Jambhira
9	Bagjharan	36	Daha	65	Kalo
10	Dunguripalli	37	Devijhara	66	Kharkhei/Sulaipat
11	Gaikhai	38	Dhanei	67	Kukudajodi
12	Gandhrel	39	Ganianala	68	Nesa
13	Jogi Sagar	40	Ghodahad	69	Paunsia
14	Krupasagar / Krupasindhu	41	Humuritampara	70	Sunei
15	Mathenpalla	42	Jharanai	Nawarangapur District	
16	Narayana Sagar	43	Kaiyanala	71	Bhaskel
17	Ostali	44	Kanheinala	72	Indravati Lake_Indravati Dam
18	Upper Suktel	45	Lankagada	73	Indravati Lake_Kapoor Dam
Cuttack District		46	Marood / Marudi	74	Indravati Lake_Podagarh Dam
19	Jamuna Bundha	47	Raghunath	Nuapada District	
			Sagar		
Deogarh District		48	Salia	75	Dumberbahal
20	Gohira	Jharsuguda District		76	Patora
Dhenkanal District		49	Hatia nalla	77	Saipala
21	Dadaraghati	50	Hirakud	78	Sundar
22	Dhanianali	Kalahandi District		Rayagada District	
23	Gunduriposhi	51	Asuragarh	79	Badanallah
24	Panaspala	52	Behera		

25	Sapua	53	Chahaka		
26	Sarapa	54	Chhuriagarh		

c. Geo-fence installation in Marine GPS

Along the 480 km of coastline in Odisha, Gahirmatha marine sanctuary in Kendrapara District, Dhamara river mouth in Bhadrak District, Rushikulya river mouth in Ganjam District and Devi River mouth in Puri District are the main rookery or arribada beaches of olive ridley turtles. Every year, hundreds of thousands of turtles congregate in these locations, and mass mating of Olive Ridley turtles happens between October to January and may continue into the month of February, while mass nesting on sandy beaches occurs between late December and April-May.

Despite several conservation efforts and awareness, the populations of the Olive Ridley turtles in the Indian waters are under severe threats and confronts conservation challenges. Aside from other factors, indiscriminate fishing practice and incidental catch while fishing is the primary causes of species decline. Consequently, to accelerated conservation efforts, a Public Interest Litigation (PIL) was filed in the Odisha High Court in response to the deaths of approximately 800 turtles in the Gahirmatha marine sanctuary during January 2021. The High Court of Odisha constituted a three-member expert committee to investigate the problem to submit a report by 10th March 2021. The bulk of turtle deaths have been documented as a result of trawling operations; mortality owing to entanglement in gill nets, trawl nets, or injuries inflicted by trawler propellers during their mating season around nesting beaches.

In this plausible scenario, the High Court of Odisha directed the State Government to intensify its efforts on turtle conservation and advised to clearly delineate the notified fishing ban zones. The Gahirmatha marine sanctuary is managed by the State Forest and Climate Change Department, and fishing is prohibited throughout the year in the Gahirmatha area under the Wildlife Protection Act, 1972. Fishing operation is under the jurisdiction of the Fisheries and Animal Resources Development Department (FARD) and has already notified fishing prohibitions from 1st November to 31st May up to 20 km from the sea turtle congregation areas and their buffer zone in the vicinity of three river mouths of Odisha Coast.

In this context, WorldFish has provided the technical support in this process such as

- Creation of the Geo-fence with the help of geo co-ordinates provided by the Government of Odisha.
- Prepared and installed geo-fence files in the GPS devices.
- Provided handhold training on 8th April, 2021 for the uploading procedures to 18 nos. of fisheries officials at conference hall of Paradeep fishing harbour management society.
- Supervised the uploading process.

The FARD department plans to incorporate the delineated no fishing boundaries in the form of a geofence in the GPS devices of all licensed mechanized fishing boats as part of its ongoing efforts. This initiative will enable fishermen or skippers to understand the exact demarcated areas for turtle conservation during their offshore fishing activities. So far, 533 numbers of GPS devices has already been installed with Geo-fencing.

Fig: Fishing restricted zones of Dhamra, Gahirmatha, Devi and Rushikulya river mouths for Olive Ridley turtle conservation (Source: FARD, Department, Government of Odisha)

9.11 OMBADC Funded Schemes:

During 2020-21 it is proposed to utilize Rs. 11.26 Crores for the holistic development of the fisher community in 7 nos. of mineral-bearing districts (Keonjhar, Mayurbhanj, Sundergarh, Jharsuguda, Jajpur, Deogarh, and Dhenkanal) through Odisha Mineral Bearing Area Development Corporation (OMBADC) funds. Rs. 1.21 Crore has been released so far by OMBADC. The activities include Excavation of new ponds/tanks along with input, Renovation of old tanks, Bio-floc Pisciculture, Fish seed Hatchery, Input Assistance to WSHG for Pisciculture in GP tanks / MIPs, Capacity building (Training & Exposure Visit). The proposed components on Fisheries activities under OMBADC are as follows:

Beneficiary Centric Components:

- **Excavation of new ponds/tanks along with input:** The project envisages excavating 450 Acre of new tanks with a unit cost of Rs. 3.40 lakhs/ Acre and intend to produce 1800 metric tonsof fish per year during the project period i.e., 2020-21 to 2023-24. Carp-mola polyculture will be undertaken to mitigate malnutrition among the tribal community.
- **Bio-floc Pisciculture:** The project envisages promoting 218 units of Bio-floc pisciculture system by 218 nos. of beneficiaries for fish production with a unit cost of Rs. 2 Lakhs.

Community Centric Components:

- **Input assistance to WSHG for pisciculture in GP tanks / MIP:** The project aims at increasing fish productivity in GP tanks / Micro Irrigation Ponds (MIPs) available in the mining-affected villages. The tanks will be leased out for 5 years to the Tribal SHGs. In case of selected community tanks, carp mola polyculture will be encouraged. Input assistance in form of fish fingerlings, fish feed etc. will be provided @Rs. 0.90 lakh/ Ha for demonstration of scientific fish farming.

9.12 World Bank Assisted OIIPCRA Project:

As per the previous year, the FARD continued with the implementation of the World Bank assisted Odisha Integrated Irrigation Project for Climate Resilient Agriculture (OIIPCRA), a project under the Department of Water Resources which will be continued for five years since its inception to aid in the overall development of the fishery sector in the State. Under World Bank assisted OIIPCRA project, it is planned to promote (i) species diversification in freshwater aquaculture sector through polyculture of IMC with Amur carp, minor carps and freshwater prawn (ii) monoculture of GIFT tilapia and pangasius in order to enhance the fish productivity, income and resilience of farmers. This activity will be taken up in private tanks belonging to eligible existing fish farmers / entrepreneurs and individuals who have newly entered fish farming in 15 OIIPCRA districts during 2021-22 to 2023-24. The key focus area of the OIIPCRA is "Climate-Smart Intensification and Diversification of Production" and objective of this component is to intensify production, strengthen farmers' capacity to adapt to climate change stressors affecting crop and aquaculture production, and diversify production, especially during rabi season in response to effective market demand.

These farmers / entrepreneurs / individuals will be trained on culture of diversified species by employing local tailor-made BMPs, biosecurity and marketing opportunity. All the beneficiary farmers will be connected to the Kausalyaganga Government GIFT multiplication centre and hatchery and other accredited private and government/OPDC Fish hatcheries across the State for procurement of quality fish seed. Further, market linkage with the local wet market will facilitate a better remuneration to the farmers and increasing the financial capital of the household. Under the scheme, farmers will be financially supported to implement the polyculture system by providing financial assistance for farm inputs (40% of unit cost for General and 60% of Unit cost for SC/ST/Women/WSHG category) in a participatory mode. Under this support to aquaculture production, FARD will be implementing the project in close coordination with Odisha Pisciculture Development Corporation Ltd. (OPDC). Aquaculture is one of the important value chains chosen under the OIIPCRA. The following which are being covered under OIIPCRA.

OBJECTIVE OF OIIPCRA

- Achieve self-sufficiency in quality fish seed production
- Develop and promote climate resilient aquaculture practice to enhance the adaptive capacity of small-scale farmers including women and to manage climate-induced impacts
- Aquaculture species diversification as an adaptation strategy to reduce the risk and mitigate climate change impact
- Capacity building programme of aquaculture stakeholder to foster enhanced knowledge on aquatic food production system and to strengthen community-based institutional architecture

- a) **Support for Adoption of Early breeding and brood stock management for quality fish seed production:** Due to non-availability of the fingerlings to farmers during early monsoon season (July-September), farmers are dependent on fish seed imported from

neighbouring states. This shortage is because the local fish hatcheries start to breed fish upon on-set of the monsoon season (June) which ends up in production of fingerlings during October-November, whereas, the neighbouring states such as West Bengal and Andhra Pradesh start fish breeding in the pre-monsoon period (March) itself, leading to the huge production and supply of spawn during summer. To address this specific issue in OIIPCRA funded project State Plan Scheme, it is planned to upgrade the existing 31 nos. of private fish hatcheries in OIIPCRA project districts (15 nos.) for adoption of early breeding and year-round seed production technology through financial support for captive raising the genetically improved varieties of IMC (Jayati Rohu and Improved Catla) brought from the National Freshwater Fish Brood Bank (NFFBB) of National Fisheries Development Board (NFDB), Kausalyaganga and through training and hand-holding support to produce additional 499 Cr spawn through early breeding technology. Also, the hatchery operators will be trained and hand-held for implementation of early breeding and year-round seed production technology. This activity will supplement **'Master Plan for Fish Seed Production in Odisha'** prepared by the FARD Department. The private fish hatcheries will also be brought under "Fish Hatchery Accreditation and Seed Certification" program of the government to ensure quality seed production and supply to farmers in the State by linking to the block-level network of certified fish seed growers for the timely sale of spawn and fry at reasonable profits to achieve self-sufficiency in fish seed production in the State.

- b. Promotion of Polyculture of IMC, GIFT, Amur Common Carp and Pangasius in private tanks for increasing the yields, profits, and farmer resilience:** Under this scheme supported under the World Bank assisted OIIPCRA project, the aims is to promote species diversification in freshwater aquaculture sector through both polyculture and monoculture of GIFT tilapia (*Oreochromis niloticus*), Pangasius (*Pangasionodon hypophthalmus*), Amur carp (*Cyprinus carpio*), Fimbriatus (*Labeo fimbriatus*), Gonionotus (*Puntius gonionotus*), Bata (*Labeo bata*) and Freshwater Prawn (*Macrobrachium rosenbergii*) in order to enhance the fish productivity and incomes of farmers. This scheme will be taken up in private tanks belonging to farmers / entrepreneurs and individuals in the 15 OIIPCRA districts during 2021-22 to 2023-24. These farmers / entrepreneurs / individuals will be trained on culture of diversified species by employing local tailor-made Better Management Practices (BMP), biosecurity and marketing. All the beneficiary farmers will be linked to the Kausalyaganga Government GIFT multiplication centre and hatchery and other accredited private and government/OPDC Fish hatcheries across the State for procurement of quality fish seed. The farmers will also be provided with the financial assistance for farm inputs; 40% of unit cost for General category and 60% of Unit cost for SC/ST/Women/WSHG category.
- c. Promotion of Scientific Fish Farming in 395 MIPs (2600 Ha) (by WSHGs / PFCS / WUG / Pani Panchayats:** 391 Minor Irrigation Projects (MIPs) with lean season water spread area (WSA) of 2851 Ha are present in 15 districts under OIIPCRA project. Out of this, 376 MIPs

of <40 Ha size with a total lean season WSA of 1716.19 Ha (approx.) is available for promotion of scientific fish farming in climate smart way through community management mode by WSHGs and thus provide income and nutritious food for local people. The rest 9 MIPs which are >40 Ha are covered by FARD Department under reservoir fingerling stocking program. For 6 MIPs, WSA data is not available. Local tailor-made package of BMPs for fish farming (catla, rohu, mrigal, exotic carps, amur carp, freshwater prawn) will be provided for sustainable crop intensification. The target beneficiary groups will be empowered on different aspects of scientific fish farming, viz., pre-stocking, stocking and post-stocking management; feed management; optimal usage of inputs and supplements; water quality management; biosecurity measures etc. All the beneficiary groups will be linked to the accredited hatcheries (including OPDC/Government Hatcheries) and block-level network of seed growers across the State for procurement of quality fish fingerlings. The WSHG/ Pani Panchayat/Water User Group will be financially supported to implement the activity by providing financial assistance for farm inputs at 60% of Unit cost in a participatory mode.

Activities and sanctions under OIIPCRA during 2021-22

Sl. No.	Activity	Sanctioned
1	Support to Hatcheries for Adoption of Early Breeding for quality fish Seed Production	31 no. of Hatcheries
2	Promotion of Species Diversification through Polyculture and Monoculture in private tanks	100 Ha
3	Promotion of scientific fish farming in MIP by WSHG/ WUG/ Pani Panchayat	150 no. of MIPs (1000 Ha)

9.13 Fish Hatchery Up-gradation for Early Breeding and Year-round IMC Seed Production:

Self-sufficiency in quality fish seed production is a priority for the State Government. The Department with technical assistance from WorldFish has initiated a hatchery up-gradation programme. As a result, Odisha has achieved a breakthrough in the early breeding of IMC in 4 Government Hatcheries during April 2020 (Kausalyaganga, Saramanga, Bhanja Nagar and Chipilima) and 1061.50 lakhs IMC spawn was produced during April – June 2020. These 4 hatcheries are under up-gradation process to establish Mega Spawn Centers which will supply the spawn to other 24 government/OPDC hatcheries. The production of spawn from these 4 hatcheries was 2803 lakhs for the year 2021-22. The Department has launched a new scheme for promotion of early breeding and year-round seed production in private hatcheries during 2021-22.

SL	Name of the farm	Spawn production during 2020-21 (In Lakh)	Spawn production during 2021-22 (In Lakh)
1	Kausalya Ganga	458.50	1103.00
2	Bhanjannagar	248.00	485.50
3	Chhipilima	219.00	810.00
4	Saramanga	136.00	405.00
	Total	1061.50	2803.00

9.14 Establishment of Network of Fish Seed Growers:

The Department has taken steps to increase the spawn production from Government and private hatcheries in the State through various programmes and schemes. Early breeding of IMC is being taken up in 4 mega Government fish seed farms and 49 private hatcheries. For timely distribution of spawn produced from these hatcheries, especially during early breeding season, establishment a network of seed growers is essential. The private seed growers having perennial fishpond can grow this early breeding spawn and make the fingerlings available to the farmers during July-September. A new scheme to provide input support to fish seed growers has been introduced by the FARD Department which intends to grow advance fingerlings (above 100mm) in 3 -4 months of seed rearing cycle. Fish farmers, WSHGs, PFCS and other entrepreneur in all the blocks are to be encouraged. During the year 2021-22, the FARD Department plans to cover 400 Acres of ponds for the same purpose. Subsidy assistance of 40% shall be provided to general category and 60% to the SC/ST/ Women categories.

9.15 Infrastructure Development:

Under Infrastructure Development scheme in Fisheries Sector, an amount of Rs.100.00 crore was provided in the budget for the year 2021-22 for the undermentioned activities:

- Renovation & upgradation of OPDC fish farm at Saramanga of Bhadrak District, Chipilima of Sambalpur District and Bhananagar of Ganjam District,
- Supply & installation of Marine Bouys in No Fishing Zone for demarcation of boundary at Devi River mouth in Puri District and Rushukulya River Mouth in Ganjam District,
- Development of Fish Farm at Barimula (Phase-II) in Kendrapara District, Binika (Phase-II) in Subarnapur District and Chipilima (Phase-II) & Bhanjanagar,
- Construction of Hygienic Fish Market at Nayagarh and Odogaon,
- Development of ponds (Brood and Nursery) for GIFT Tilapia Hatchery, bio-security for existing and new ponds and water supply system in Kausalyaganga Fish Farm in Puri District,

- f) Construction of New Fish landing Centre at Kalupadaghat & Sorana in the District of Khurda,
- g) Upgradation/renovation of Dhamara Fishing Harbour in Bhadrak District, Renovation of Tidal Channel of Brackishwater Cluster in Coastal District,
- h) Wholesale Dry Fish market at Huma, Ganjam (Phase-II),
- i) Construction of DFO & DDF Office Building at Sambalpur, Additional Fisheries Officer(Marine) in Balasore and DFO (B&T), Balugaon,
- j) Renovation & Upgradation of Government Fish Farm at Kausalyaganga,
- k) Hygienic Fish Market at Balasore,
- l) Perpheral development, reclamation, chilled room, parking area, drainage channel of Hygienic fish market at Talabania, Puri,
- m) Overhauling of engines and repair of hull of 2 nos. of departmental Patrol boats and
- n) Procurement of one new patrol boat for surveillance of OMFRA.

9.16 Skill Upgradation and Capacity building & Awareness Meeting Fisheries Sector:

During Financial year 2021-22, there is no proposal for training due to the restrictions imposed due to Covid-19 pandemic, steps are being taken to achieve the target of 2020-21. However, long-term residential skill up-gradation training of freshwater and brackishwater fish farmers for 15 days will be conducted at 4 nos. of Government training centers. During 2021-22, 7 nos. of institutional training, 104 nos. of awareness meet, and 3 nos. of Exposure visits was proposed covering 13,970 of fish farmers/entrepreneurs with fund provision of Rs.3.00 Crores.

9.17 Matsyajibi Unnayana Yojana (MUY):

Under MUY, funds of Rs.200.00 lakhs have been released to the District Level Officers towards award of scholarship to meritorious student of fishermen community. This scholarship is awarded based on the mark on last HSC examination to the children of fisherfolk to encourage them for higher education.

9.18 Co-operative Sector Development:

Reactivation of Fisheries Cooperative Societies:

During 2020-21, under the State Plan Scheme 'Reactivation of Fisheries Cooperative Societies' an amount of Rs.486.00 lakh was provided for reactivation of 243 PFCS @ Rs.2.00 lakhs per PFCS & Rs.14.00 Lakhs to 14 no. PFCS @ Rs.1.00 lakh. So, far 574 Primary Fishermen Co-operative Societies have been given revolving fund assistance.

a. Kisan Credit Card:

The Government of India has launched Kisan Credit card (KCC) for coverage of all fishermen, fish farmers and fishers, so that, they can avail working capital for the development of fisheries activities. In this context, 30138 no of KCC applications of fishermen, fish farmers and fishers of the State submitted to the different banks for issue of KCC cards as on 20-12-21. Out of that, 1802 of KCC cards issued to the fishermen, fish farmers and fishers and 18356 no of applications pending for sanction.

b. Insurance coverage under Group Accidental Insurance Scheme (GAIS) of PMMSY:

11,50,000 fishers of State have been provided with insurance coverage during the period of 2021-22 (26th July 2021- 25th July 22) under Group Accidental Insurance Scheme (GAIS) of PMMSY which is a Centrally Sponsored Plan Scheme. The State of Odisha has been topping the lists among all the States and UTs in terms of extending this insurance coverage to highest numbers of fishermen under the scheme since 2008-09. The scheme covers victims affected by thunder, electric shock, road accident, drowning and death caused due to animal bite. The premium amount of Rs.72.44 per fisher is contributed by Government of India along the State Government on a ratio of 60:40. The scheme provides compensation of Rs.5 lakh in case of death /full permanent disability and Rs.2.50 lakh in case of partial permanent disability. During the year 2021-22, a claim has been settled with an amount of Rs.5.00 lakhs (as on 31.12.21) under this scheme of GAIS of PMMSY.

c. Hygienic Fish Kiosks:

For providing quality fish in hygienic condition at reasonable price to the fish eaters of Bhubaneswar, M/S Falcon Exports Pvt. Ltd, Bhubaneswar is maintaining 13 Modern Hygienic Fish Kiosks under brand name "Falcon Chilika Fresh" under Bhubaneswar Municipal Corporation area. Similarly, 3 no Kiosks are maintained by FISHFED in three places under Bhubaneswar Municipal Corporation Area. Further, another kiosk is operated under the brand name Chilika Fresh at Nayagarh.

d. Fish on Wheels:

16 nos. of FISH ON WHEEL are functioning on PPP mode through FISHFED by which fish loving population of Bhubaneswar are getting good quality Fish and other fishery products.

10. Development in Brackishwater Sector

10.1 Brackishwater Area Development:

The State have around 4.18 lakh Ha. of total brackishwater areas, including the existing shrimp culture area, estuaries, Chilika and backwaters. At present, the areas under brackishwater aquaculture is around 17,780 Ha. The Coastal Aquaculture is regulated and managed as per the norms of Coastal Aquaculture Authority (CAA) guidelines. It is mandatory to register all the up-coming farms and renewal of license of existing farms under the CAA Act, 2005. At present, the area development is taken up under State plan scheme and CS-Scheme of PMMSY with subsidy assistance of 40-60% of the project cost for different categories of beneficiaries. Under the prescribed unit cost, a new pond including its excavation and input assistance is Rs. 10.00 lakh per Ha. A beneficiary is eligible to get a subsidy maximum upto of 2.00 Ha water area.

10.2 Principles for Leasing of Brackishwater Government land in the State:

The Fisheries department along with Revenue & Disaster Management Department issued notification for leasing of suitable brackishwater Government land on a long-term basis of 15 years for the development of brackishwater aquaculture through SHGs, co-operatives, educated unemployed and entrepreneurs. Till date, 1,436 nos. of applications have been received from interested people to take up brackishwater aquaculture on Government land which covers an area of 1,517.038 Ha. and 323 nos. of applications covering an area of 199.5978 Ha has been approved in the District Level Committee for long term lease.

10.3 Export Promotion Cell:

The government of Odisha is envisaging to increase its export of seafood from its present level of Rs. 3107.68 crore to 20,000 crore/annum as per the road map and action plan suggested by NITTE University, Mangalore, for which a Cell for Export Promotion has been established to function from the Directorate of Fisheries, Odisha, Cuttack. This was done to leapfrog the export of seafood export to a new height. The feasibility of brackishwater aquaculture in the coastal areas and its suitability under CAA Act, 2005, in Government and private land in Odisha was mapped through GIS and was entrusted to Odisha Space Application Center (ORSAC).

10.4 Development of New Brackishwater Ponds:

Government has sanctioned the funds for development of 562.50 Ha of new brackishwater ponds under State Plan scheme and another 560 Ha under PMMSY during the year 2021-22. The unit cost is Rs.10.00 lakh and the admissible subsidy is Rs.4.00 lakh (@ 40% of unit cost) for General category of beneficiaries and Rs.6.00 lakh (@ 60% of unit cost) for SC/ST/Women category of beneficiaries.

10.5 Poly-lining Technology:

During 2020-21, the Government of Odisha has introduced a new State Plan scheme to promote intensive Aquaculture through the Poly-lining Technology” of shrimp farming. Under the above scheme, Government has sanctioned the funds for development of 455 units. The unit cost is Rs.2.10 lakh and the admissible subsidy is Rs.0.84 lakh i.e., 40% of the unit cost for all categories of the beneficiary.

10.6 Dredging of Tidal Channels to Brackishwater Aqua Clusters:

Under the scheme Infrastructure Development for the year 2021-22 in Phase-I, an amount of Rs. 2450.00 Lakhs is earmarked for dredging of 06 nos. of tidal channels measuring length of 24.50 km in brackishwater aqua clusters in two Coastal districts (i.e., Bhadrak&Puri) of Odisha.

10.7The GIS based coastal Aquaculture Information System (COAST):

Odisha accounts for 8% of total coastline of India, spread over 6 districts namely Ganjam, Puri, Jagatsinghpur, Kendrapada, Bhadrak and Baleswar, are considered as coastal districts and brackishwater source in all of the above districts and in addition to the district of Khurda, which has a lot of potential in approx. 2.93 lakh Ha of land in private sectors in order to carry out aquaculture in mariculture and production of aquatic organism in brackishwater zone. Shrimp farming is the major brackishwater aquaculture in Odisha. Odisha occupies fourth place in brackishwater shrimp farming, area wise and third place production wise, among the coastal States of the country. Geospatial Technology has been successfully used in assessing the natural resources and monitoring changes. High-resolution Remote Sensing data and Geographic Information System (GIS) help in integrating multi-parameter spatial information for generating locale-specific plan. A Geo-ICT based application web portal called Coastal Aquaculture Information System (COAST) has been undertaken based on above experience and expertise by Odisha Space Applications Centre (ORSAC), Bhubaneswar with the help of Fisheries Department, Government of Odisha. The website contains thematic information on occurrence on aquaculture ponds (interpreted from Satellite data), information on Coastal area (As per Coastal Aquaculture Authority), Coastal Regulation Zone, High Tide Line (HTL), CRZ categories, CZMP maps, Ecologically Sensitive Area (ESA), availability of Government land at Cadastral levels. Information on Registered farm (as provided by the Fisheries & ARD Department) are also incorporated. Ancillary data such as Ports, Harbour, Jetties, Fish Landing Centre, Light house, Multiple Cyclone Centre have also been provided.

11. Development in Marine Sector

Odisha is an eastern Indian state situated on the coast of Bay of Bengal and holds an excellent scope for fisheries development for being one of the important maritime states of India. It has a coastline of 485 km (301 miles) with a continental shelf area of 25000 km². The State has six maritime districts namely Balasore (80 Km), Bhadrak (50 Km), Kendrapara (68 Km) Jagatsinghpur (67 Km), Puri (155 Km) and Ganjam (60 Km), for which the marine fishery of Orissa assumes importance both in term of domestic market and export earnings. The coastal and offshore waters of Orissa form a rich abode of many a quality pelagic and demersal resources. According to the richness of bottom trawl fishery resources along the northeast coast of India, Orissa ranks first, followed by Andhra Pradesh and West Bengal. With estuarine, coastal and offshore fish resources, Odisha has a small but diverse coastline, a large part of this oceanic stocks however is totally protected or only fished for part of the year due to fishing restrictions imposed for protection of Olive Ridley turtle while the national seasonal ban on mechanized vessels also severely restricts the fishing, restricting the growth of marine fisheries to a large extent.

Marine fisheries in Odisha are small-scale enterprises engaging human resources of around 1,15,228 fishermen families out of which four-fifth are traditional fishermen families employing traditional crafts and gears for catch. Around 102 species of fish are caught contributing significantly to the State's income and employment besides nutritional betterment of the population. At the same time, it adds to the country's exports thereby helping earn foreign exchange. For the socio-economic development of fishermen and improvement of quality of life among fishers living along the coast, some of the welfare measures are introduced from time to time.

11.1 Livelihood and nutritional support for conservation of fisheries resources during ban period:

This is a scheme promulgated by Central & State Government to instill a habit of making savings for the future among the BPL category fishers' family by providing a financial assistance of Rs. 3000 on 50:50 shared basis. The beneficiary contributes Rs.1,500 @ Rs.170 per month and the last installment of Rs.140 in nine months. The assistance of Rs.4,500

MARINE FISH LANDINGS

An unusual increase in **White sardine landings** in the State was noticed as compared to previous years.

The maximum catch per unit effort was estimated for **multi-day trawl**, followed by mechanized gillnet.

Among six coastal districts in Odisha, a large quantum of marine fish landings was shared by two districts namely **Balasore** and **Jagatsinghpur**.

Source: FRAD, CMFRI, 2020. Marine Fish Landings in India 2019. Technical Report. ICAR-Central Marine Fisheries Research Institute, Kochi

including the Government and beneficiary contribution is provided during the lean period i.e., from April to June. During 2021-22 nos. 10228 of beneficiaries have been covered under the scheme.

11.2 Livelihood Support to Marine Fishermen During Fishing Ban Period:

In order to support the marine fishermen families affected due to conservation of the nesting grounds of the vulnerable Olive Ridley Sea Turtle (*Lepidochelys olivacea*) throughout the stretch of 120 km of coastline from November- May. This scheme was launch under the State Plan Schemefrom the year 2016-17. Marine fishers of 14178 numbers from Kendrapara, Jagatsinghpur, Puri and Ganjam are covered under this scheme for an allowance of Rs. 7,500 per family. A budget of Rs. 10.63 crore was allocated under this programme for the year 2021-22. This programme is covered under the Special COVID package of the Hon'ble Chief Minister since 2020-21.

11.3 Upgradation of Fishing Harbour & FLCs:

Under Sagarmala, PMMSY, FIDF and State Plan schemes of the Government, the modernization and up-gradation of existing fishing harbours along with providing infrastructure facilities for a safe landing, berthing and hygienic handling of fish catch. It also includes survey & investigation, pre-execution work like preparation of DPR, consultancy service of external agencies etc. During the year 2021-22 an amount of Rs 200.00 lakh has been received under "Survey and Investigation" and Rs 100.00 lakh for "Preparation of DPR" and Rs1800.00 lakh for" Infrastructure Development" under State Plan scheme and placed to the EE, FED, Bhubaneswar. The pre-execution work of 21 nos. FLCs/FHs like Survey & Investigation and soil exploration for preparation of DPR is going on by EPIL and IDCO and the work shall be started after EIA/EMP Clearance and CRZ Categorization. ABC Techno Labs India Ltd has been awarded to conduct the EIA &EMP study including obtaining EC for the proposed Chandipur FH. The TEFr has been prepared by CICEF Bangalore and the vetting work has been entrusted to IIT- Madras for FHs/FLCs. The arrangement of funds has been made from PMMSY/RIDF/FIDF and State Plan etc.

11.4 Implementation of Odisha MFRA:

The Odisha Marine Fisheries Regulation Act, 1983 regulates the marine fishing resource, conservation and management within the territorial limit of the State. The Registration, Licensing and Renewal of fishing vessels, enforcement, adjudication, and fishing ban are also regulated under the Act & Rules.

11.5 Popularisation of Fishery Machinery/ Equipment/ Implements

This scheme encourages the use of various machinery and equipment like aerators, air blowers, fishing nets, and bio-security nets to improve fish production and productivity which is being promulgated by the State Plan Scheme of Government of Odisha, covering over marine, inland & brackish water aquaculture with an admissible subsidy of 40% for all categories.

11.6 Motorization of Traditional Craft

The State Plan scheme “Motorisation of traditional craft” has been introduced during the year 2021-22 to increase the marine fish production of the State and increase the income and livelihoods of traditional fishermen by motorizing their traditional non-motorized crafts. Provision is made for an amount of Rs 406.00 lakh to provide marine fishermen OBM engine (5 HP to 10 HP) and IBM engine (10 HP-28 HP) with subsidy assistance of @ 40% for General Category and @ 60 % for SC/ST category. The target for OBM is 905 and IBM is 200.

11.7 Support to Coastal communities for Marine Fisheries for Obtaining New Boat, Engine and Net.

Under this State Plan scheme provision is made to provide new wooden/FRP Boat with Engine and purchase new fishing net to eligible beneficiaries at unit cost of Rs. 10.00 Lakh. Subsidy assistance is provided @ 40% for General Category and 60 % for SC/ST category. During 2021-22, an amount of Rs. 1200.00 lakh has been received and it is intended to cover 270 no’s beneficiaries in the scheme.

11.8 Assistance for Fish Transport Infrastructure

This programme aims at providing Auto Rickshaw with Ice Box (Unit cost - Rs.3.00 lakh), Motorcycle with Ice Box (Unit Cost – Rs.0.75 Lakh), Insulated Vehicle with (Unit Cost Rs. 20.00 Lakh) as per the guidelines of the scheme. The admissible subsidy as per the present funding pattern is 40% for the General category and 60% for SC/ST/Women beneficiaries. Total Budget provision made for implementing the scheme is Rs 642.95 lakh and is intended to facilitate 220 beneficiaries in the scheme.

11.9 Deep Sea Fishing Vessels for Traditional Fishermen

Acquisition of deep-sea fishing vessel is envisaged to utilize the extensive marine resources and for enhancement of marine catch with unit cost of Rs.120.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. With the approval of IRS model of deep-sea fishing vessels by Government of India it is intended to cover 5 beneficiaries during the present year.

11.10 Upgradation of Existing Fishing Vessels for Export Competency

Up gradation of existing fishing vessels for export competency is envisaged to increase the profit margins and income of fishers through better price utilisation with unit cost of Rs.15.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 50 nos. of beneficiaries have would be facilitated during the year.

11.11 Establishment of Bio-toilets in Mechanized Fishing Vessel

For hygienic surrounding at the fishing points and encouragement for Swachh Sagar Programme, installation of bio-toilets in mechanized fishing vessels have been envisaged with

unit cost of Rs.0.50 lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 10 nos. of beneficiaries would be covered during the year.

11.12 Providing Boats Replacement and Nets for Traditional Fishermen

This scheme aims at replacement of boats and Nets for traditional Fishermen to strengthen the safety and security of fishermen for increase of their income and sea worthiness for deep sea with unit cost Rs.5.00 Lakh per unit with subsidy up to 40% for General category and 60% to SC/ST/Women beneficiaries isadmissible. 100 nos. of beneficiaries would be covered during the year.

11.13 Construction of new Cold Storage/Ice Plant

Construction of New Cold Storages/ Ice Plants is envisaged to ensure supply of quality ice to the fishers and fish /shrimp farmers for maintaining proper cold chain facility. To prevent spoilage of fish and shrimp during transportation and make available quality fish to consumers. Improve socio-economic condition of the fishers and fish/shrimp farmers. The unit cost of Rs.150.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 5 nos. of beneficiaries covered during the year.

11.14 Modernization of Cold Storage/ Ice Plant

Modernization of existing Cold Storages/ Ice Plants is envisaged to ensure supply of quality ice to the fishers and fish /shrimp farmers for maintaining proper cold chain facility. To prevent spoilage of fish and shrimp during transportation and make available quality fish to consumers. Improve socio-economic condition of the fishers and fish/shrimp farmers. The unit cost of Rs.50.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 4 nos. of beneficiaries are intended to be covered in this year.

11.15 Construction of Fish Retail Market

Construction of Fish Retail market to establish private modern hygienic fish retail market complexes in the town of the State for supply hygienic and quality fish and fishery products to the consumers. The unit cost of Rs.100.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 3 nos. of beneficiaries are intended to be covered under this scheme.

11.16 Construction of Fish Kiosk

Construction of Fish Retail market to establish modern hygienic fish selling kiosks in the State for supply of fresh, hygienic and quality fish and fishery products to the consumers. The unit cost of Rs.10.00 Lakh per unit with admissible subsidy up to 40% for Gen category and 60% to SC/ST/Women beneficiaries. 12 nos. of beneficiaries would be covered during this year.

12. Mukhyamantri Krushi Udyog Yojana (MKUY)

The State Government had launched the modified/revised guidelines on Commercial Agri Enterprises (CAEs) implemented as Mukhyamantri Krushi Udyog Yojana (MKUY) which was in effect since June, 2018. MKUY envisages the ease of doing agribusiness through process simplification of CAE implementation modalities by making it to apply online in a simple, transparent and in a time bound manner at all the stages, especially for the growth and benefit of farmers and agricultural entrepreneurs of the State.

The Agricultural Promotion and Investment Corporation of Odisha Limited (APICOL), a Government of Odisha undertaking, is the nodal agency for providing assistance to agricultural enterprises in the State of Odisha. APICOL promotes enterprises in agriculture within the State with suitable guidance for project formulation, counseling, enterprise development and assistance in project implementation. The assistance for establishment of commercial agri-enterprise is 40% of the fixed capital investment (excluding the cost of the land) subject to a maximum limit of 50.00 lakh for general entrepreneurs and 50% of the fixed capital investment (excluding the cost of the land) subject to a maximum limit of 50.00 lakh for SC/ST/Women/Persons with disability(PWD)/Graduates of Agriculture & Allied disciplines.

List of Enterprises under MKUY in Fisheries Sector:

- Commercial Fish/Prawn/Crab farming: Minimum 1 acre water area.
- Freshwater Pearl culture.
- Hatchery for Fish/Shrimp seed/ Fingerling production: Minimum 1 acre water area.
- Fish/Prawn/Crab processing units.
- Establishment of Aqua shop.
- Ice plant/ Flake ice plant/ Insulated vans as a part of Fisheries Project only.
- Harvest and post-harvest technology like vessels, gears, processing, value addition and packaging for fisheries products.
- Bio-floc Fish farming: with permanent infrastructure
- Ornamental fish breeding-cum-marketing Unit.
- Re-circulatory Aquaculture system (RAS).
- Cage Aquaculture.
- Fish Feed Plant
- Deep Sea fishing vessels and fishing Trawlers
- Quality testing & Disease diagnostic labs for aquaculture.

List of Enterprises under MKUY in Interdepartmental Sector with Fisheries as a component:

- Export Oriented Agriculture, Horticulture, Fisheries & ARD projects
- Refrigerated van
- Agro Eco Tourism
- Cold Storage/Cold room/Pre-cooling chamber for storing of fishery products
- Integrated farming

- Enzymes, Vitamins and other similar products out of agriculture, horticulture, fish and animal products.
- Technology Upgradation/Modernization/Expansion of existing Agro-based and food processing industries
- Solar Cold storage
- Cold chain logistics for maintenance of cold chain
- Rural Godown
- Commercial Organic farming
- Post-harvest management
- Rural Technology & Renewable energy system

Project Developed in Fisheries Sector during 2021-22

Sl. No.	District	Project	Unit	Project cost (in Rs)
1	Mayurbhanj	Composite (Broiler+Fisheries)	1	5802969
2	Nayagarh	Fishery	1	790974
3	Dhenkanal	Fishery	1	6095650
4	Sundargarh	Fishery	1	5205347
5	Jagatsinghpur	Composite (Broiler+Fisheries)	1	5401000

13. Pradhan Mantri Matsya Sampada Yojana

Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme was launched by Government of India to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India” with an estimated investment of Rs. 20050 crores. The PMMSY is designed to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernization and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers’ welfare. The Centrally Sponsored Scheme (CSS) Component is further segregated into non-beneficiary and beneficiary orientated sub-components/activities under the following three broad heads: (i) Enhancement of Production and Productivity (ii) Infrastructure and Post-harvest Management (iii) Fisheries Management and Regulatory Framework.

PMMSY aims at technology infusion along the value chain for enhancing fish production and productivity, quality, hygiene, modernization and strengthening the supply and value chain. During the year 2021-22, 26 numbers of beneficiary-oriented sub-components have been approved and implemented in Odisha.

PMMSY Schemes during 2021-22		
S.N.	Name of the Component	Units Sanctioned (No./ha/units)
1	Establishment of New Freshwater Fin fish Hatcheries	10
2	Construction of new rearing ponds	200
3	Construction of new grow out ponds & Input for freshwater Aquaculture	300
4	Establishment of need based New Brackishwater Hatcheries	2
5	Construction of new ponds for Brackishwater Aquaculture & Input for Brackishwater Aquaculture	400
6	Backyard ornamental rearing unit	5
7	Medium scale ornamental fish rearing unit	2
8	Construction of Large Re-circulatory Aquaculture (RAS)/ Biofloc Culture System (50 tanks of 4 m dia & 1.50 m height)	10
9	Construction of Medium Re-circulatory Aquaculture(RAS)/Biofloc Culture System (25 tanks of 4 m dia & 1.50 m height)	10
10	Construction of Small Re-circulatory Aquaculture(RAS)/ Biofloc Culture System (7 tanks of 4 m dia & 1.50 m height)	20
11	Installation of Cages in Reservoirs (Rectangular Cages)	1800
12	Construction of Cold Storage /Ice Plant	2
13	Modernization of Cold Storage /Ice Plant	4
14	Insulated Vehicles	50
15	Motor-Cycle with Ice Box	400

16	Autorickshaw with Ice Box	90
17	Live fish vending centers (stationary center or mobile vehicle or a combination)	5
18	Fish Feed Plants (Medium with capacity of 8 ton/day)	6
19	State of Art Fish large feed Plants	3
20	Construction of fish retail market	5
21	Construction of fish kiosk	12
22	Upgradation of existing fishing vessels for export competency	50
23	Communication and / or Tracking Devices for traditional and motorised vessels	1700
24	Providing Boats and nets for traditional fishermen	100
25	Livelihood and nutritional support for socio economical Backward fishers families during fishing ban period	20,000
26	Insurance to Fishers. This includes 2 policies. Policy 1: Group Janata Personal Accident Policy covering Death and Permanent Total Disability with CSI of Rs. 5 Lakhs. + Policy 2: Special Contingency Policy Covering Permanent Partial Disability and Hospitalisation	11.50 Lakh Fishers

14. Odisha Fisheries Cooperative Corporation Ltd. (FISHFED)

14.1 Fish on Wheels:

16 nos. ready to eat Canteen Van “Fish on Wheels” are being operated at Bhubaneswar & Berhampur Municipal area with an objective to provide ready- to- eat fresh, hygienic and nutritious fish & fishery products to the consumers at their demand of places.

14.2 Management and Maintenance of Fish Landing Centres & Jetties:

Fisheries & ARD Department has been pleased to hand over the existing Jetty and Fish landing Centres to FISHFED for its management vide letter no. 3157 on dated 8th March, 2019. In this regard, the Director of Fisheries has already handed over 24 nos. of FLC and Jetties to FISHFED for its operation and management. At present, Bahabalpur FLC and Balugaon FLC are being managed by FISHFED and other Jetties are being managed by local PFCS through FISHFED with the provision of all basic facilities for the development of fishermen community at the base site.

14.3 Modern Fish Selling Retail Outlets:

FISHFED has its own three nos. of “Chilika Fresh Kiosks” at Siripur, CRP Square, Sahid Nagar in Bhubaneswar. 13 nos. of Modern and Hygienic Chilika Fresh are being operated by M/S Falcon Marines Exports Ltd. in PPP mode inside Bhubaneswar Municipal Corporation area & one number of CHILIKA FRESH at Nayagarh town operated by Friends in PPP mode.

15. Odisha Pisciculture Development Corporation Ltd. (OPDC)

Odisha Pisciculture Development Corporation Ltd. Was established in the year 1998 with the following objective:

- Production and supply of best quality fish seed to fish farmers of Odisha as well as outside State;
- Production and sale of high-quality nylon and HDPE fishnet webbings for farmers and fishermen of the State;
- Sale of quality fuel High Speed Diesel (HSD) & Motor Spirit (MS) and lubricants to fishermen community operating trawlers, boats as well as surface transporters.
- Scope to enter into other businesses for the development of the fisheries sector which will make the corporation stable and sustainable.

The OPDC has five of its own Fish Seed Hatchery Projects (FSHP) and 18 departmental farms which are on lease for fish seed production meeting the requirements of the fish farmers of the State. Further OPDC operated eight numbers of HSD & MS outlets along the coast supplying quality fuel and other lubricants meeting the requirements of fishermen venturing into the sea for fishing as well as surface transporters for minimizing post-harvest loss have been established along the coast. For the year 2021-22, spawn and

were produced and provided to the farmers as follows:

Sl.No	Fish Seed	Production in own five farms (Cr.)	Production in 18 leased farms (Cr.)
1	Spawn	82.80	28.90
2	Fry	6.79	4.96

15.1 New initiatives are taken up by OPDC:

Sl.No	Project	Project Cost
1	Demonstration of new technology, " In Pond Race way system" on pilot basis at Bhanjanagar for intensive rearing of Carp fingerlings (RKVY)	55.00 Lakh
2	Establishment of mini fish feed manufacturing unit at Sarmanga (RKVY)	81.25 Lakh
3	Establishment of one stop Aquashop at Bhanjanagar (RKVY)	60.00 lakh
4	Establishment of RAC units at Bhanjanagar & Chiplima (BR)	100.00 lakh

5	Upgradation and renovation of 3 mega hatcheries (Chiplima, Sarmanga and Bhanjanagar) to promote early breeding.	2100.00 lakh
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15.2 Important activities carried out during the year by OPDC:

- a) OPDC had supplied 2.80 cr. nos. of advanced fingerlings for stocking at Balimela reservoir under SETU Program during the year 2020-21 through its own farm and empaneled Private Seed Growers. 2.00 cr. advanced fingerling stocking is undergoing during the current year at Balimela Reservoir following the prescribed SOP of Fisheries Department.
- b) OPDC through its own hatcheries and empaneled Private seed Growers is also supplying fingerlings under various other programmes like OIIPCRA, State Plan, Farm ponds etc.
- c) OPDC has empanelled 12 Boat Builders for construction of both wooden and FRP Boats in the designated areas to be supplied under various Government schemes like SETU, PMMSY and under State Plan.
- d) Work Orders have already been issued for construction of 100 fishing boats for the Fishermen of Balimela Reservoir under SETU programme which are being constructed at the Reservoir site under direct supervision of DFO, Malkangiri. So far 80 units have been completed and the balance would be completed by end of January.
- e) OPDC Net Unit will exclusively supply all types of fishing nets under all Government sponsored programmes to both marine and inland Fishermen
- f) OPDC will provide quality Breeder Feed to the Private Hatchery operators under the ongoing Early Breeding program through empanelled Feed Suppliers.

15.3 Net Manufacturing Unit of OPDC

The OPDC Net manufacturing unit main function is the production and marketing of fishing nets of various specifications. This unit produces net webbings of different types such as Nylon mono gill net, HDPE net, fish drag net, nylon multi filament webbings etc. These types of nets are being supplied to fishermen of Odisha under various subsidy schemes such as CAE, Blue Revolution, RKVY and Matsyajibi Unnayana Yojana (MUJ) etc.

Production & Sales report of Net Unit			
Sl.No.	Year	Production (metric tons)	Sales (metric tons)
1	2019-20	14.303	23.358
2	2020-21	16.404	23.175

16. Publicity and Awareness in Fisheries Sector

PUBLICITY is a kind of marketing strategy to increase the public visibility or creating awareness or giving out information to draw attention of the public through different methods of mass media to popularize Government as an organization, its programmes and schemes to attract the targeted people towards the activities of fisheries. FARD publishes many kinds of prints and electronic knowledge products besides conducting fair, workshop, symposium, etc. Public awareness has been given a high priority by the Directorate of Fisheries through creation of IEC materials on varied subjects, TV spots, Video films and radio Jingles on different occasions to popularize the activities of fisheries sector in Odisha.

16.1 Publication of Newsletter:

A Newsletter named “Matshya Darpana” is being published on quarterly basis from the Directorate of Fisheries highlighting every important activity done by itself and its related organizations like FISHFED, OPDC and WorldFish who works under its aegis. The Newsletter those were published were as follows:

- a) Special Issue in Krushi Odisha published in March, 2021
- b) Second issue on Odisha Fisheries Day, published in 10th July, 2021
- c) Third Issue on World Fisheries Day, published in 21st November, 2021

16.2 Publication of Leaflet/ Brochure:

Leaflets and brochures are best tools for popularizing fisheries activities. The materials on different subjects and activities are published by the Directorate and are sent to districts for its distribution among the farmers participating in the meetings, trainings and exhibitions. The following leaflets were published under the active guidance of Odisha-WorldFish Project:

- a) Matsya Pokhari Yojana (MPY)
- b) Input assistance to WSHG for practicing pisciculture in GP Tanks
- c) Popularisation of Fisheries equipment
- d) Early breeding programme in Pvt Fish farm
- e) Pisciculture through Bio-floc System
- f) Motorization of Traditional Craft (Marine)
- g) Brackishwater Development through Prawn Culture
- h) Assistance to marine fishermen for Boat, Net and Engine
- i) Fish farming in Farm ponds
- j) Other than the above, leaflet on River Ranching programme in Mahanadi River and FFMA for Olive ridley conservation.

16.3 Publication of training manual and Books:

The following books and training materials were written, designed, in English language and subsequently translated into odia by the Communication Manager with the publicity wing of Directorate of Fisheries.

- a) Training manual on “Hygienic preparation of Dry fish” (In solar Tunnel Dryer)
- b) Training Manual on Bone less Rohu and value-added products
- c) Odisha Fisheries Development Schemes (For World Fisheries Day)
- d) Odisha Fisheries Profile (For World Fisheries Day)
- e) Handbook on “Year-round seed production of IMC through Early Breeding-Odisha.”
- f) Poster on Coastal Security
- g) Publication of a SoP on inclusion of dried fish in SNP programme

16.4 Preparation of Video film and Radio jingles:

Five nos. of Video clips/documentaries and three nos. of Radio Jingles on different aspects of Fisheries activities i.e., Cage culture, Biofloc system of pisciculture, FFMA for conservation of Olive ridley, Odisha Fisheries development in last twenty years, Coastal security and SOP for cyclone and heavy rain were developed in consultation with higher officials from the Department. All these videoshave been displayed in State and District level function/exhibition/training programme for creating more awareness among public towards fisheries.

16.5 Social Media:

The Social media platforms (WhatsApp and Facebook and website) has been utilised very well on regular basis to create awareness among the wider audience and disseminating fisheries activities, schemes, guidelines, etc. All Video spots /Audio spots/Video documentaries posted in different social media groups of Fisheries and Agriculture Department where more than 11 lakhs farmers are linked with. Similarly, Review meeting on Fisheries activities, achievement and progress are organized through Video Conference regularly.

Fisheries Programmes in TV and AIR: During this period, 64 programmes on fisheries were telecasted in Doordarshan (Television broadcast) and 34 programmes from All India Radio (AIR). The programmes were mostly on fish farming practices, Prawn and shrimp farming, Departmental schemes available were in different scheme were informed in the programmes. Appreciation and response of farmers in Phone –in programme was praiseworthy.

16.6 Preparation of advisories:

Advisories on different activities, Government programmes and farming activities are prepared in every week by the Communication Manager and provided to the Government

programme “AMA KRUSHI” and another platform as Reliance Foundation. So far 24 advisories disseminated.

16.7 Celebration of Various Programmes

a. Odisha AgriConclave-2021:

Odisha Agri-Conclave-2021 was held at Convention Hall, Lokaseva Bhaban on 8th October 2021. Hon’ble Chief Minister of Odisha inaugurated the occasion and stressed upon linking farmers directly to market and removing intermediaries with the objective to improve the income of farmers. Agri-Conclave is a joint Endeavour of Department of Agriculture & Farmers’ Empowerment, Odisha and National Agricultural Cooperative Marketing Federation of India to make the process of farming easier to Farmers. Leading private sector executives in Agribusiness sector from across India participated in the conclave. Hon’ble Minister for Agriculture & Farmers’ Empowerment, Fisheries & ARD, WODC Chairman and Principal advisor to Hon’ble Chief Minister, Development Commissioner-cum-ACS, MD, NAFED, Principal Secretary, Agriculture & FE, Commissioner-cum-Secretary, FARD Department and other Agri-business tycoons spoke in the occasion.

A special session with interaction of Fisheries entrepreneurs/ Progressive Fish Farmers and Fisheries Officials was organized under the chairmanship of Commissioner-cum Secretary during the conclave.

b. Celebration of National Fish Farmers Day:

Fish farmers Day was celebrated on 10th July in all the 30 districts with farmers meet. The day is celebrated on first successful celebration of “Induced Breeding of carps” by eminent scientists like Dr. K.H. Alikunni and Dr Hiralal Choudhury on 10.7.1957 in the Narayan Sagar Government fish farm of Angul. The day is celebrated by all fish lovers every year.

c. Celebration of World Fisheries Day:

On the request of NFDB, the National level World Fisheries Day was celebrated on 21.11.2021 at Rail Auditorium, Rail Kutir, Mancheswar, Bhubaneswar, with auspicious presence of Hon’ble Union Minister for Fisheries, Animal Husbandry and Dairying, Hon’ble Union Minister of State for Fisheries, Animal Husbandry and Dairying, Govt of India, Secretary, Fisheries, Ministry of Fisheries AH and Dairying, GOI, Commissioner-cum Secretary, Fisheries & ARD, Govt of Odisha, Chief Executive NFDB, Director of Fisheries, Odisha and VVIPs from other states. Progressive Fish Farmers, Entrepreneurs and All Higher Officers attended the function observing Covid Protocol. Balasore district bagged the national level best marine district award and Sapan Patra, a progressive farmers of Bolangir District awarded as best entrepreneurs during the occasion. Director of Fisheries, Odisha and DFO, Balasore received the best Marine District award and incentive of Rs 3.00 lakhs from Hon’ble Union Minister for

Fisheries. All the District Fisheries Officer also observed the World Fisheries Day and felicitated the best performers in Fisheries sector in their respective districts

d. Launching of Fisher Friend Mobile Application (FFMA)

The Fisheries and ARD Department, Govt of Odisha in collaboration with M.S. Swaminathan Research Foundation (MSSRF) launched a customized “Fisher Friend Mobile Application (FFMA)” aimed at alerting fishermen regarding to the “No Fishing Zone” declared for Olive ridley conservation. The offline application can be downloaded freely by fishermen boat crew members so that they can clearly know the GPS locations and the boundaries of no-fishing zone. Hon’ble Minister for Agriculture & FE, Fisheries & ARD, Commissioner-cum-Secretary, Fisheries 7 ARD, Director of Fisheries, Principal Chief Conservator of Forest, Executive of MSSRF attended the launching programme. The programme was anchored by the Communication Manager of Odisha WorldFish Project.

e. Krushi Odisha-2021

“Integrated Farming-Towards Farmers Prosperity” was the objective of the Odisha Krushi Fair-2021 which served as a platform for farmers to explore Agriculture, Food Processing and allied sectors i.e. Fisheries etc, Krushi Odisha -2021 organised by FICCI and Department of Agriculture and FE, Govt of Odisha from 15-19th March-2021. During the occasion Fisheries Live models of Biofloc system of pisciculture, Polylining of pisciculture, Cageculture and Fish seed hatchery demonstrated in outdoor exhibition along with indoor exhibition with fish diversification. Fisheries stall bagged the best stall award during the occasion. Appointment letter distributed to newly recruited Asst Fisheries Officer by Hon’ble Minister, Agriculture & FE, Fisheries & ARD on 18th March-2021. Workshop on “Fish farming-A Road to economic Upliftment of Farmers” and an Investor Meet for “Reservoir cage culture in Hirakud” organized on 16th march-2021 in auditorium of Krushi Odisha-2021 with the chairmanship of Commissioner cum Secretary, Fisheries & ARD. Entrepreneurs and progressive fish farmers of the State participated in the programme and interacted.

f. Exposure Visit of senior officials:

A group of three officers lead by Additional Director of Fisheries (Technical) and Odisha-WorldFish Project Manager visited Tamil Nadu from 10th -13th February 2022 to give a visit to Coastal Aquaculture Authority (CAA) Head Quarters, Chennai, Rajiv Gandhi Center for Aquaculture (RGCA), MPEDA, Seabass & Crab hatchery at Sirikali, Central Institute of Brackishwater Aquaculture (ICAR-CIBA) and Seabass hatchery at Muthukadu, Chennai. The purpose of the visit was to gather firsthand information on the technology employed in seabass hatchery which is being followed in MPEDA-RGCA and ICAR-CIBA. In addition to it, the officer also went to the Office of Coastal Aquaculture Authority to discuss about the issuance of registration for brackishwater aquaculture farms and hatcheries in Odisha.

g. Inauguration and induction of State-of-Art GIFT Hatchery and Multiplication center at Kausalyaganga:

GIFT Tilapia Hatchery and Multiplication Centre constructed in the Government Fish Farm, Kausalyaganga was inaugurated by Hon’ble Minister, Agriculture and farmer Empowerment,

Fisheries & ARD and Higher Education Dr. Arun Kumar Sahoo on 16.12.2021. This GIFT hatchery is the first of its kind in Odisha to provide quality GIFT seeds at the doorstep of Fish farmers of Odisha and neighboring states. During the inauguration, Shri R Raghu Prasad, Commissioner-cum-Secretary, Fisheries & ARD Department and Shri Smruti Ranjan Pradhan, Director of Fisheries were present in the occasion. The present Hatchery and Multiplication Centre has been established with an expenditure of Rs. 2.00 Crores which includes Hatchery building, infrastructure, office equipment and laboratory facilities. The production capacity of this new hatchery is 50 lakhs per annum. With growing demand of GIFT Tilapia fish, the seed requirement in the State can be met from this hatchery. The interested progressive farmers can procure fish seeds from this hatchery with at a reasonable price in addition to it, they also can also have access to technical guidance from experts for doing culture as well. The students from College of Fisheries, farmers and interested entrepreneurs will also be provided with technical exposure visit of this hatchery.

17. Fisheries Statistics

a. Fish Production in Odisha (In metric tons)					
Year	Freshwater	Brackishwater	Total Inland(Freshwater + Brackishwater)	Marine	Grand Total
2015-16	3,36,216	40,307	3,76,523	1,44,755	5,21,278
2016-17	3,93,730	61,268	4,54,998	1,53,102	6,08,100
2017-18	4,54,189	79,936	5,34,124	1,50,839	6,84,963
2018-19	5,06,608	94,033	6,00,641	1,58,321	7,58,962
2019-20	5,43,049	1,16,099	6,59,148	1,57,310	8,16,458
2020-21	5,74,983	1,25,521	7,00,504	1,72,469	8,72,973
2021-22 (P)	6,51,936	1,38,717	7,90,653	2,00,602	9,91,255

b. Year Wise Resource Wise Freshwater Fish Production (In metric tons)					
Year	Tanks/ ponds	Reservoirs	Lakes/Swamps/ Bheels	Rivers/ Canals	Total
2015-16	2,89,666	22,761	4,245	19,544	3,36,216
2016-17	3,31,187	30,068	4,881	27,594	3,93,730
2017-18	3,93,606	33,990	4,929	21,664	4,54,189
2018-19	4,42,854	37,388	5,279	21,087	5,06,608
2019-20	4,72,845	41,725	6,135	22,344	5,43,049
2020-21	5,01,106	45,147	5,345	23,385	5,74,983
2021-22 (P)	5,53,325	65,131	6,717	26,763	6,51,936

c. Year Wise Resource Wise Brackishwater Fish Production (In metric tons)				
Year	Culture shrimp	Estuaries	Chilika	Total
2015-16	23,343	4,729	12,235	40,307
2016-17	29,409	5,497	26,362	61,268
2017-18	58,110	5,468	16,358	79,936
2018-19	71,615	5,518	16,900	94,033
2019-20	90,160	9,712	16,227	1,16,099
2020-21	97,125	11,000	17,396	1,25,521
2021-22 (P)	1,09,808	9,481	19,428	1,38,717

d. Fish Production from Chilika Lake (In metric tons)				
Year	Fish	Shrimp/Prawn	Crab	Total
2015-16	7,272	4,565	399	12,235
2016-17	12,715	13,295	351	26,362
2017-18	11,375	4,707	276	16,358
2018-19	11,618	4,951	331	16,900
2019-20	11,787	4,135	305	16,227
2020-21	11,960	5,049	387	17,396
2021-22 (P)	12,188	6,762	479	19,428

e. Year Wise District Wise Marine Fish Production (in metric tons)							
Year	Balasore	Bhadrak	Jagatsinghpur	Kendrapara	Puri	Ganjam	Total
2015-16	39,327	12,006	34,503	9,059	37,979	11,881	1,44,755
2016-17	39,490	12,001	40,284	9,409	39,598	12,320	1,53,102
2017-18	38,017	12,060	41,319	8,566	38,906	11,971	1,50,839
2018-19	43,133	13,010	42,469	9,475	38,033	12,201	1,58,321
2019-20	41,100	13,358	42,725	9,399	38,165	12,563	1,57,310
2020-21	45,085	15,583	43,634	11,076	42,000	15,091	1,72,469
2021-22 (P)	42,622	18,124	54,271	20,289	45,056	20,240	2,00,602

f. Import of Freshwater Fish from Neighboring States	
Year	Qty. (in metric tons)
2015-16	46,275
2016-17	35,156
2017-18	40,742
2018-19	49,607
2019-20	46,273
2020-21	43,009

g. Year Wise Annual Per Capita Consumption of Fish	
Year	Annual Per capita Fish Consumption (in Kg/Annum)
2015-16	12.24
2016-17	13.49
2017-18	14.42
2018-19	15.38
2019-20	16.24
2020-21	16.34

Section B

Animal Resources Development Sector

Abbreviations

ABC	Animal Birth Control
ABST	Antibiotic Sensitivity Test
ADRI	Animal Diseases Research Institute
ADVO	Additional District Veterinary Officer
AFDO	Assistant Fodder Development Officer
AH&VS	Animal Husbandry & Veterinary Services
AHL	Animal Help Line
AI	Artificial Insemination
AMCU	Automated Milk Collection Unit
APICOL	Agricultural Promotion & Investment Corporation of Odisha Limited
ARD	Animal Resources Development
AV	Artificial Vagina
AVAS	Additional Veterinary Assistant Surgeon
BBR&BMF	Bovine Breeding, Research & Bull Mother Farm
BCPPS	Binjarpuri Cattle Promoters' and Producers' Society
BVO	Block Veterinary Officer
CB	Cross Bred
CBHF	Cross Bred Holstein Friesian
CBJ	Cross Bred Jersey
CBPS	Chilika Buffalo Promoters' Society
CCBF	Central Cattle Breeding Farm
CDVO	Chief District Veterinary Officer
CIL	Clinical Investigation Laboratory
CIS	Capital Investment Subsidy
CMU	Central Monitoring Unit
CPCSEA	Committee for the Purpose of Control and Supervision of Experiments on Animals
DAH&VS	Directorate of Animal Husbandry & Veterinary Services
DD	Deputy Director
DDL	Disease Diagnostic Laboratory
DLRDS	District Livestock Resources Development Society
DMF	District Mineral Fund
DVH	District Veterinary Hospital
F&ARD	Fisheries and Animal Resources Development
FDO	Fodder Development Officer
FMD	Foot and Mouth Disease
FSB	Frozen Semen Bank
FY	Financial Year
GCBS	Ghumusari Cattle Breeders' Society
GOI	Government of India
Govt.	Government
HF	Holstein Friesian

HOST	Hypo Osmotic Swelling Test
HRD	Human Resources Development
HRSI	High Resolution Satellite Images
IBR	Infectious Bronchitis
ICAR-ICFMD	Indian Council of Agricultural Research International Centre for Foot & Mouth Disease
ISO	International Organisation for Standardisation
JD	Jhone's Disease
KBPS	Kalahandi Buffalo Promoters' Society
KCBS	Khariar Cattle Breeders' Society
LAC	Livestock Aid Centre
LI	Livestock Inspector
LIT	Low Input Technology
LLPD	Lakh Litres Per day
Ltd.	Limited
LWY	Large White Yorkshire
MCPS	Motu Cattle Promoters' Society
MDM	Mid Day Meal
MPCS	Milk Producers' Cooperative Society
MT	Metric Ton
NADCP	National Animal Diseases Control Programme
NAIP	Nationwide Artificial Insemination Programme
NDDB	National Dairy Development Board
NDP	National Dairy Plan
NECC	National Egg Coordination Committee
NIC	National Informatics centre
NLM	National Livestock Mission
NPBB	National Programme for Bovine Breeding
NPCBB	National Project for Cattle & Buffalo Breeding
OBPI	Odisha Biological Products Institute
OLRDS	Odisha Livestock Resources Development Society
OMBADC	Odisha Mineral Bearing Areas Development Corporation
OMFED	Odisha State Cooperative Milk Producers' Federation Limited
OPOLFED	Odisha State Poultry Producers' Co-operative Marketing Federation Limited
PKVY	Paramparagat Krishi Vikas Yojana
PT	Progeny Tested
PTM	Post Thaw Motility
Pvt.	Private
RDDL	Regional Disease Diagnostic Laboratory
RGM	Rashtriya Gokul Mission
RIDF	Rural Infrastructure Development Fund
RKVY	Rashtriya Krishi Vikas Yojana
RRT	Rapid Response Team
RS	Red Sindhi
RT-PCR	Real Time Polymerase Chain Reaction

SAD Small Animal Development
SAFDO Sub Assistant Fodder Development Officer
SAWB State Animal Welfare Board
SDO Strengthening of Dairy Organisation
SDVO Sub-Divisional Veterinary Officer
SMILE Society for Management of Information, Learning and Extension
SPAD Society for Prevention of Animal Diseases
SPCA Society for Prevention of Cruelty to Animals
SSMS Semen Software Monitoring Software
SVL State Veterinary Laboratory
TMDD Technology Mission on Dairy Development
TMT Thousand Metric Ton
UGS Utkal Gomangal Samiti
VAS Veterinary Assistant Surgeon
VD Veterinary Dispensary
VH Veterinary Hospital
VOTI Veterinary Officers' Training Institute
VT Veterinary Technician
WSHG Women Self Help Group

Highlights of the Year 2021-22: ARD Sector

Dedication of Ultra-Modern OMFED Dairy Plant

Hon'ble Chief Minister Shri Naveen Patnaik dedicated an ultra-modern OMFED Dairy Plant at Arilo in Cuttack district on 10th November, 2021. OMFED is targeted to enhance the milk procurement capacity from 5 lakh litres to 10 lakh litres per day in order to support the dairy farmers in the State. This modern Dairy Plant is fully automated with capacity to convert 2 lakh litres of milk per day to Skimmed Milk Powder.

Agri Conclave 2021

Odisha Agri Conclave 2021 focused on creating market linkages for Agricultural and Allied sector products in the State. The primary objective was to link farmers with prospective buyers / aggregators to organize the market and promote investment in Agri & Allied sectors in the state. The department hosted a session on fish and animal products which was attended by major players (buyers, integrators and producers) in the space such as Magnum, Devi Seafood's, Venky's Indian Broiler, Suguna, Srinivasa Farms, Manikstu Agro and a lot of entrepreneurs.

Entrepreneurship Development in Poultry Sector

State Government has extensively supported the poultry sector which has enabled creation of thousands of entrepreneurs in setting up of small scale, semi commercial and commercial units. Apart from this, the sector has also provided direct and indirect employment for large number of skilled and semi-skilled workers.

Animal Welfare

The State Animal Welfare Board (SAWB) has been reconstituted during July 2020. As a measure to take care of old, destitute, abandoned and stray animals for healthcare, rehabilitation and maintenance; the department has launched various animal welfare schemes namely - Animal helpline facility; Establishment of Cattle Shelter Houses; Animal Birth Control and Infrastructure Support to NGOs involved in animal welfare activities.

Expanding Artificial Insemination (AI) Coverage

Artificial Insemination has been taken up on a mission mode to improve genetic potential of the cattle and buffaloes so as to improve productivity of animals. Cross-breeding with high genetic merit bulls of indigenous and exotic breeds has been taken up in a massive scale.

Self Help Groups in Animal Husbandry Activities

Self-Help Groups under Mission Shakti undertake a wide range of economic activities and generate substantial income, enabling financial stability and empowerment of lakhs of women in the State. Fisheries and Animal Husbandry sectors hold tremendous prospects for

SHGs to take up micro enterprise activities including poultry, goat rearing, pisciculture etc. Accordingly, various tailor-made Fisheries and Animal Husbandry schemes are being rolled out by the Fisheries & Animal Resources Development (F&ARD) Department in coordination with the Mission Shakti Department, which aim to cover around 30,000 SHGs over the next 3 years.

Disease Diagnostic Laboratories

Disease Diagnostic Laboratories (DDL) have been set up in 26 districts; Central Investigation Laboratories (CIL) in 3 locations Cuttack, Berhampur and Bhawanipatna have been upgraded to provide diagnostic support. Apart from this, the State level Animal Disease Research Institute (ADRI), Phulnakara has been upgraded and is functioning to cater the diagnostic support for animal health care. PCR/RT PCR tests against common infectious/ contagious diseases of livestock & poultry are being conducted at State Referral laboratory, ADRI Phulnakara for quick and confirmatory diagnosis. Any livestock owner can avail diagnostic facility at local level at a nominal charge.

FARMS

FARMS (Fisheries and Animal Resources Mapping System), a web and mobile application is being developed by ORSAC (Odisha Space Application Centre). The main objective of the platform is to generate spatial and attribute data relating to all kinds of animal resources/assets using High Resolution Satellite Images (HRSI) and also by mobile App and web-GIS technology. FARMS will be used to geotag the assets created under various beneficiary oriented schemes. It will also be used to track and monitor the progress of the schemes.

Ama Krushi

Ama Krushi provides customized advisory services aimed at improving livestock and fisheries practices to farmers, extension workers and other groups with the goal of strengthening the existing extension machinery while improving farmers' livelihood. Experts from the department support the Ama Krushi team in developing and vetting of the content that is disseminated through the IVR system. During the period about 8.50 lakhs farmers have been registered who receive weekly advisories. So far about 1.0 Crore advisories have been sent on 20 important topics.

1 Introduction

Livestock sector plays an important role in rural economy of the State. The growth rate of livestock sector is steady. This is the sector where the poor gets benefits directly. This sector has the highest potential for rural employment generation at the lowest possible investment per unit. Unlike land resources, ownership of livestock in the State is egalitarian with landless laborers and marginal farmers owning majority of livestock. Out of Rs. 106,940 crore (at current price during 2018-19) worth of agricultural and allied output in the State, about 19 per cent is generated from livestock sector. Meat & egg accounts for 8 per cent and milk accounts for 8 per cent of the total Agriculture output. Odisha produces 2400 Thousand Metric Tons of milk, 216.00 Thousand Metric Tons of meat and 3091.30 million eggs annually. Livestock sector's share in state's GVA (Gross Value Added) was 2.99% in 2019-20 while the growth of GSVA in livestock sector stood at 19.57%, which is higher than other primary sectors.

Since, around 92% of farmers of State are small and marginal farmers, the livestock sector assumes immense significance in promoting goat, sheep and poultry farming as additional activities which contribute substantially in enhancing the income and overall wellbeing of the farmer. Allied sector specifically, livestock based activities are the key drivers of economic growth in rural areas particularly for small and marginal farmers as the income from agriculture alone is insufficient.

Odisha possesses 3.4 % of livestock wealth of the country. Twentieth quinquennial Livestock Census has been conducted in the State during 2019-20. For the 1st time, there was collection of data through Tablet based App and supervision through web based App developed by National Informatics Centre.

Following is the 2019 livestock census statistics.

	Species		20th Livestock Census-2019 (population in lakhs)
1	Cattle	Indigenous	83.23
		Crossbred	15.80
		Total Cattle	99.03
		Indigenous Female	44.96
		Crossbred Female	13.44
2	Buffalo		4.58
3	Goat		63.93
4	Sheep		12.79
5	Pig		1.35
6	Poultry		274

The State recorded a substantial increase in cross-bred cattle population. The cross-bred cattle population has increased from 13.06 lakh in 2012 to 15.8 lakh in 2019. The most significant aspect is cross bred female cattle population in the State has increased by 44 per cent from 8.97 lakh in 2012 to 13.44 lakh in 2019.

The activities of Animal Resources Development sector have been oriented towards increased production of milk, meat and eggs through control of animal diseases, scientific management and up-gradation of genetic resources. The schemes in Animal Resources Development Sector have been formulated in pursuance to the well-laid national policies targeted to improve livestock production, fight protein hunger, improve nutritional standards of human population, create processing and marketing facilities and provide technical support for improvement of livestock breeds. Animal Resources Development sector in the State works towards dairy development, poultry & small animal development, fodder development, animal welfare and control of animal diseases along with zoonotic diseases like bird flu, anthrax, brucellosis etc. The Animal Resources Development sector in the State is rendering services to all sections of people particularly weaker sections for rural development.

Vision:

“To excel as a holistic support system by providing, securing and facilitating effective and efficient services to become self-sufficient/ surplus in milk, egg and meat by enhancing livestock productivity along with helping the poor to secure sustainable livelihood through livestock development while working in close coordination and partnership with allied institutions”.

Mission:

- ✓ To make Animal Resources Development an engine of growth in rural economy of the State; providing income and livelihood opportunities to the people.
- ✓ To enable farmers to enhance their income and earn livelihood by improving productivity of animals
- ✓ To achieve self-sufficiency/ surplus in milk, meat and egg production
- ✓ To provide efficient veterinary services at the door step of the farmers
- ✓ Transforming veterinary service delivery through strengthening and modernization of veterinary institutions

Resources Available:

A. Institutional Resources:

The following institutions provide services in Animal Resources Development sector.

Institution	Numbers
Veterinary Hospital/Dispensary (VH/VD)	541
Livestock Aid Centre (LAC)	3239
Frozen Semen Artificial Insemination Centre	5145

Clinical Investigation Laboratory/State Veterinary Laboratory	4
Animal Diseases Research Institute	1
District Diagnostic Laboratory	26
Odisha Biological Products Institute	2
Department Training Centres	7
Livestock Breeding Farms	16
Poultry/Duck Breeding Farms	10
Fodder/Seed Production Farms	21

B. Human Resources (Staff Strength):

Sanctioned staff strength in different cadres:

Group	Category of Posts	Sanctioned Strength
A	Director	1
	Additional Director	9
	Joint Director /CDVO	41
	Deputy Director/ SDVO/ ADVO	189
	Block Veterinary Officers/ Asst. Director/Specialists	370
	VAS/AVAS/Other Officers	1300
B	Fodder Officers	43
	Asst. District Dairy Officer / Dairy Inspectors/ Farm Managers	23
C	VT & VT cadre	667
	Livestock Inspector	3330
	Field Fodder Staff with Sanctioned Strength	125
	Dairy Supervisor / Dairy Overseer / Dairy Extension Overseer	42

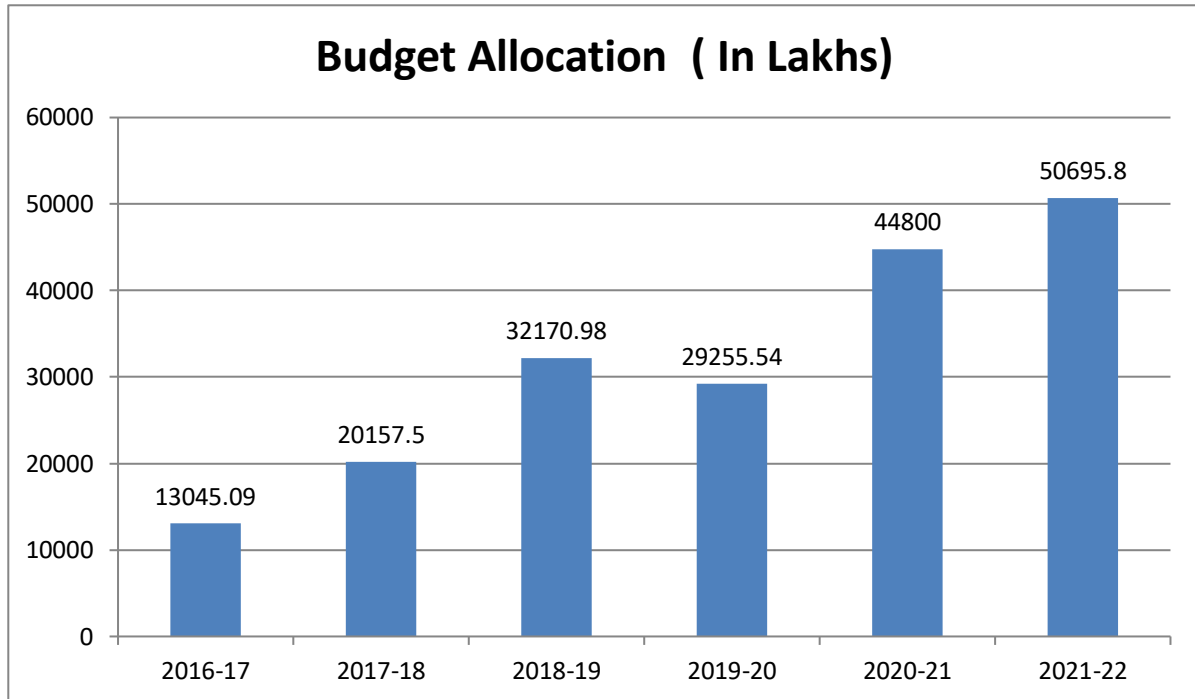
C. Financial Resources

Budget**Administrative Budget Provision & Expenditure (in Lakh Rs.)**

Sl. No.	Year	Provision	Expenditure
1	2011-12	17,669.98	17,525.02
2	2012-13	18,683.23	17,873.78
3	2013-14	19,852.56	18,511.71
4	2014-15	20,669.39	20,311.35
5	2015-16	23,978.23	23,230.57
6	2016-17	26,820.59	24,733.16
7	2017-18	32,560.21	27,682.55
8	2018-19	36,272.32	28,885.57
9	2019-20	36,849.82	30,794.52
10	2020-21	37,051.63	29,935.26
11	2021-22	38,861.78	32,307.06

Programme Budget Provision & Expenditure (in Lakh Rs.)

I. No.	Year	State Plan			Central Plan			Centrally Sponsored Plan		
		Provision	Sanctioned	Expend.	Provision	Sanctioned	Expend.	Provision	Sanctioned	Expend.
1	2011-12	6238.00	5838.17	4311.91	1597.94	5.00	5.00	1604.75	1101.03	1059.30
2	2012-13	6235.00	4498.52	4432.72	1648.19	914.97	899.67	1891.00	608.96	577.52
3	2013-14	8310.40	7755.36	7523.27	1010.06	268.77	268.77	2169.12	892.29	862.54
4	2014-15	12244.96	11589.15	10728.52	3891.56	1163.20	1163.20	4560.48	3010.97	2944.96
5	2015-16	17308.97	15662.29	15325.00	376.25	5.00	5.00	5620.75	2142.14	2128.82
6	2016-17	17578.68	11850.72	11773.49	0.00	0.00	0.00	6147.16	2568.24	2556.08
7	2017-18	14143.26	12793.27	12735.71	0.01	0.00	0.00	11313.95	2846.45	2811.79
8	2018-19	23037.87	22410.45	22232.76	0.00	0.00	0.00	9133.11	3230.32	3081.04
9	2019-20	22128.01	22127.82	22106.20	0.00	0.00	0.00	7127.53	3226.78	3221.56
10	2020-21	36366.36	32524.97	32524.97	0.00	1654.294	671.904	10340.30	3882.61	3866.79
11	2021-22	42192.29	40759.32	40759.32	0.00	5524.65	2153.78	10513.05	895.70	872.33



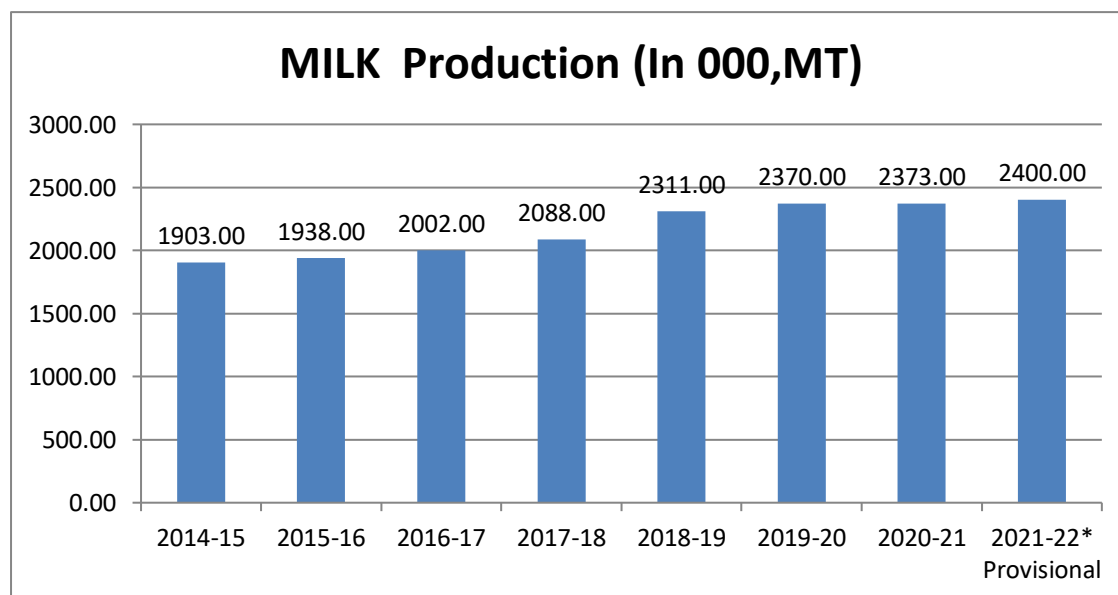
Major Outputs from Livestock Sector:

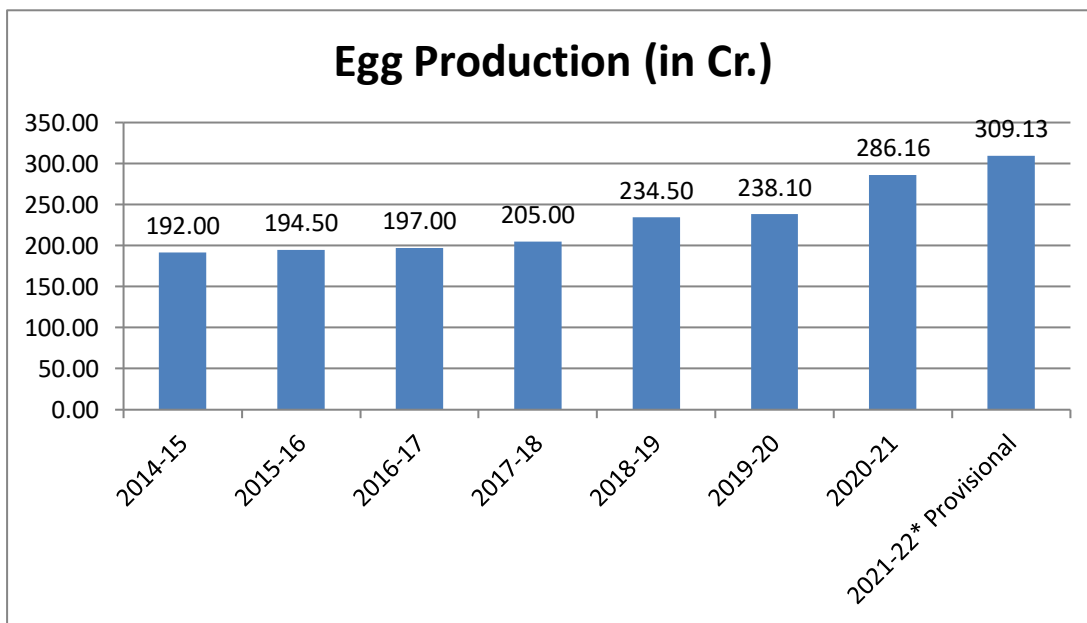
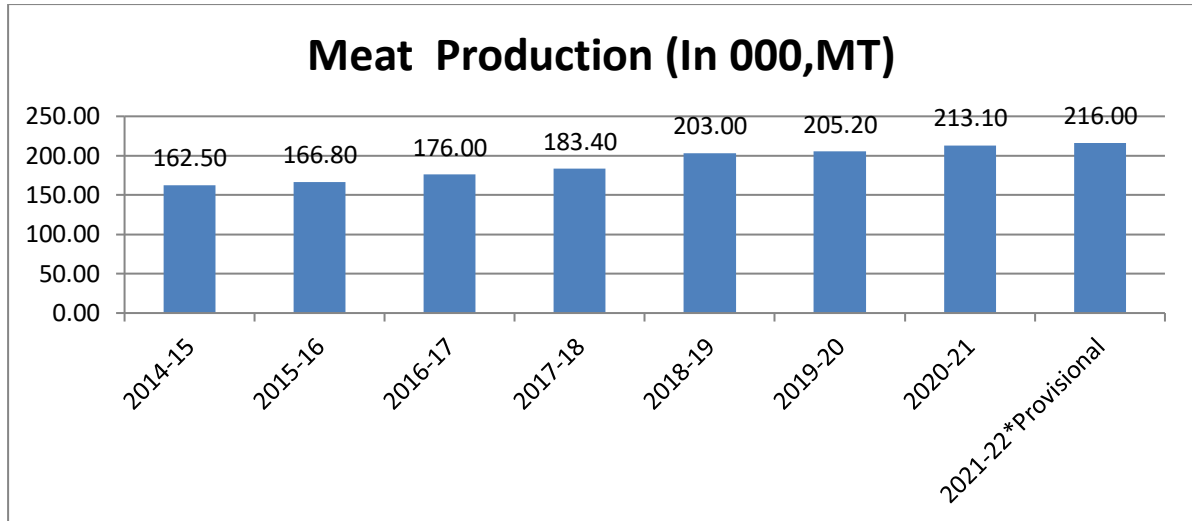
Livestock sector produces milk, meat & egg. Milk production in the State has increased from 1670 TMT during the year 2010-11 to 2372.81TMT in 2020-21. Meat and egg production have increased from 138.06 TMT to 213.01 TMT and 2357 million to 2424 million respectively in the same period. The year wise production and per capita availability of milk, meat and egg in the State are mentioned below.

- **CAGR OF MILK PRODUCTION IS 5.1% OVER 20 YEARS**
- **CAGR OF MEAT PRODUCTION IS 9.0% OVER 20 YEARS**
- **CAGR OF EGG PRODUCTION IS 7.0% OVER 20 YEARS**

Year-wise Production and Per Capita Availability of Milk, Meat and Egg:

Year	Production of milk (TMT)	Per Capita availability of Milk (gram/day)	Production of Meat (TMT)	Per Capita availability of Meat(kg/annum)	Production of Egg (million numbers)	Per Capita availability of Eggs (numbers/annum)
2010-11	1670.00	109	138.06	3.06	2357	56
2011-12	1718.00	112	138.00	3.29	2301	55
2012-13	1784.00	113	141.83	3.24	2323	54
2013-14	1861.00	117	153.82	3.29	2361	54
2014-15	1903.00	118	162.50	3.52	1924	43
2015-16	1938.00	118	167.00	3.66	1927	43
2016-17	2002.00	120	176.00	3.71	1974	46
2017-18	2087.50	124	183.42	3.86	2062	48
2018-19	2310.93	135	201.50	3.96	2345	50
2019-20	2370.27	136	205.18	4.29	2381	50
2020-21	2372.81	135	213.01	4.41	2862	54
2021-22 (Provisional)	2400.00		216.00		3091	60





2 Dairy Development

Dairying has proved to be a key farming activity which can enable augmentation of farm income and provide continuous income throughout the year. Milk is the single largest agricultural commodity in terms of value of our country, which is more than the combined value of paddy and wheat. The dairy animals are mostly owned by small and marginal farmers whose resource availability and land holding are comparatively lesser than the farmers growing other agricultural produce.

Of the total livestock population of the State, bovines account for over 57% indicating their importance in livestock production. Though the State has made progress in dairy sector, it contributes only 1.17% to the country's total milk production possessing 6.82% of female cattle population of the country. Per capita milk availability of the State is 144 gram against the national average of 406 gram.

Cattle Breed improvement activities

Cattle Breed improvement related activities are coordinated by the designated agency Odisha Livestock Resources Development Society (OLRDS). It is the State Implementing Agency (SIA) for taking up the organized bovine breeding and related activities in Odisha. Scientific bovine breeding services through artificial insemination are being delivered across the State through 4798 centers (541 Veterinary Dispensaries & Hospitals, 2892 Livestock Aid Centers, 285 Cattle Development Centers operated by BAIF, 354 Gomitras and 726 OMFED AI centers). A total of 17.67 lakh artificial inseminations and 5.25 lakh calves born have been reported during 2021-22.

Nationwide Artificial Insemination Programme (NAIP):

Nationwide Artificial Insemination Programme Phase-1: "RashtriyaGokul Mission" was launched in the State in September 2019 with an objective of enhancing milk production and productivity of bovine population along with focus on conservation and development of indigenous breeds. It has been extended to all districts of Odisha and has been implemented to cover 300 villages / clusters in each district identified for the programme. Under these programme, 6 lakh animals have been targeted for coverage in the State, against which 6.82 lakh animals were covered with 8.60 lakh artificial inseminations. Odisha stood 2nd in terms of percentage of AI done against the target in the country under NAIP – I.

Owing to the success of the programme, it has been decided to continue the AI programme in campaign under NAIP Phase-II in all 30 districts of the State, covering all breeds of bovines in all villages. The second phase was implemented in all the districts of the State over a period of 12 months from 1st August 2020 to 31st July 2021. Breeding services under the programme are being provided free of cost to the dairy farmers. 14.15 lakh animals have been covered with 17.20 artificial inseminations under NAIP-II. For awareness among the farmers, village level wall painting, distribution of leaflets, display of banners and broadcasting through radio jingles and telecast through Doordarshan was taken up in a massive scale.

Odisha stood 2nd in terms of percentage of AI done against the target as well as number of animals covered in the country under NAIP – II.

Comparative Achievement on Nationwide Artificial Insemination Programme (NAIP)* amongst 5 top leading states under NAIP – II (01.08.2020 to 31.07.2021)

Rank	Name of the State	No. of animals inseminated	Total no. of A.I done	No. of farmers benefitted
1	MADHYA PRADESH	16,79,286	19,46,460	11,12,972
2	ODISHA	12,28,427	15,70,184	8,49,727
3	UTTAR PRADESH	11,07,038	14,52,788	8,39,458
4	GUJARAT	8,66,713	11,21,604	6,43,233
5	RAJASTHAN	8,38,455	9,78,717	6,88,826
6	TELANGANA	7,88,519	9,40,261	4,54,523

* Data source- INAPH Portal

Under NAIP Phase-III AI is being taken up in all 30 districts of the State, covering all breeds of bovines in all villages over a period of 10 months from 1st August 2021 to 31st May 2022. Breeding services under the programme are being provided free of cost to the dairy farmers. 9.66 lakh animals have been covered with 10.91 lakh artificial inseminations till 31.03.2022.

1.Total 2,12,044 numbers (Large Animal 1,48,457 & Small animal 63,557) of livestock has been covered under insurance so far.

2.Frozen Semen Bank (FSB), Cuttack (ISO 9001:2008 certified, Graded “A”) has produced 8.66 lakh semen straws during the year 2021-22. (till March 31st) to be used for artificial insemination.

3.FSB has been modernized and bull station strengthened by availing assistance under Rashtriya Gokul Mission (RGM).It presently has a herd strength of 69 bulls for regular semen collection comprising of Jersey (05), Jersey Cross (24), Red Sindhi (06), Hariana (05), Gir (04), HF Cross (13), Tharparkar (01), Sahiwal (05), Binjarpuri (03), Khariar (01), Ghumsari (01) and HF (01).

4.Construction work of District Semen Depots have been completed in 12 districts, work is in progress in 07 districts.

5.Construction work of Regional Training Centre at Koraput district is completed.

6.Construction work of Administrative Building of OLRDS is completed.

Conservation and Improvement of Native Breeds

- Six Breeders' Societies namely Chilika Buffalo Promoters Society (CBPS), Kalahandi Buffalo Producers Society (KBPS), Binjarpuri Cattle Promoters and Producers Society (BCPPS), Motu Cattle Promoters Society (MCPS), Ghumusuri Cattle Breeder Society (GCBS) and Khariar Cattle Breeders Society (KCBS) are functioning in native tracts of

Chilika, Kalahandi, Binjharpur, Malkangiri, and Ganjam & Nuapada respectively towards breed improvement & conservation of all registered breeds of Odisha.

- Manda buffalo breed of Koraput dist has been registered by NBAGR (INDIA_BUFFALO_1500_MANDA_01019) during 2021-22.
- New proposals of Sambalpuri buffalo, Keonjhar goat, Khadia poultry, and Chittri poultry have been submitted to NBAGR for registration.
- 9200 doses of Binjharpuri semen straws have been produced from 03 Binjharpuri bulls maintained at FSB, Cuttack for use in the native tract.
- Semen collection started from Khariar bull (4570 doses), Ghumsari bull (6610 doses) at FSB Cuttack.

Sex sorted Semen

For promoting Assisted Reproductive Techniques, sex sorted semen technology is a new scientific innovation wherein the tangible and transformational outcome in the form of birth of large number of high genetic merit female calves will be visible prominently in a short duration making a profound positive impact on dairy farming. The technique is efficient enough to produce about 90% female progeny, thus giving automatic elimination of the male progeny. By eliminating the male stock, the pressure on feed and fodder to maintain these animals will also be reduced.

Objective of the Scheme:

- To produce more female calves by using sex sorted semen
- To improve milk production.
- To improve the income of the farmers in a rapid way.
- To enhance the availability of feed & fodder to the productive stock.
- To eliminate male & uneconomic stock scientifically.
- To reduce the stray animals causing public nuisance.

Under the programme 5.5 lakh doses of Sex Sorted semen will be made available to the farmers at a subsidized rate across the State for production of improved female calves. Out of this, 2.5 lakh doses will be used in seven OMBADC operational Districts.

Frozen Semen Bank (FSB)

The Frozen Semen Bank (FSB), Cuttack is the only semen producing station of the State, supplying semen to all the 30 Districts. The institution has obtained ISO 9001:2008 certifications and has been awarded with 'A' Grade by the Central Monitoring Unit of Government of India. FSB is being strengthened under State Plan Scheme "Strengthening Dairy Organisation (SDO)" and Central Sector Scheme "Rastriya Gokul Mission (RGM)" for production of quality frozen semen. Further, 04 high genetic merit GIR bull calves, 03 Sahiwal & 03 Tharparkar HGM Bull Calves from Rajasthan Livestock Development Board (RLDB) and 04 high genetic merit GIR bull calves from NDDB, Gujrat have been inducted & are being reared at FSB, Cuttack for future semen collection. Further, six number of Sahiwal Bull Calves and one CBJ Bull Calf have been inducted from BBR & BM farm Kuanmunda, Sundargarh and BBR & BM farm Remuna, Balasore. Eight number of Red Sindhi Bull Calves have been inducted from CCBF, Chipilima.

Key focus areas:

- Procurement & Management of Bulls
- Production of Quality Frozen Semen
- Storage & Dispatch of Frozen Semen to different Field Institutions
- Procurement of High Pedigree Semen
- Procurement & Distribution of Liquid Nitrogen
- Procurement & distribution of Logistics required for Artificial Insemination
- Refresher Training and Basic AI Training of Vets & Para Vets

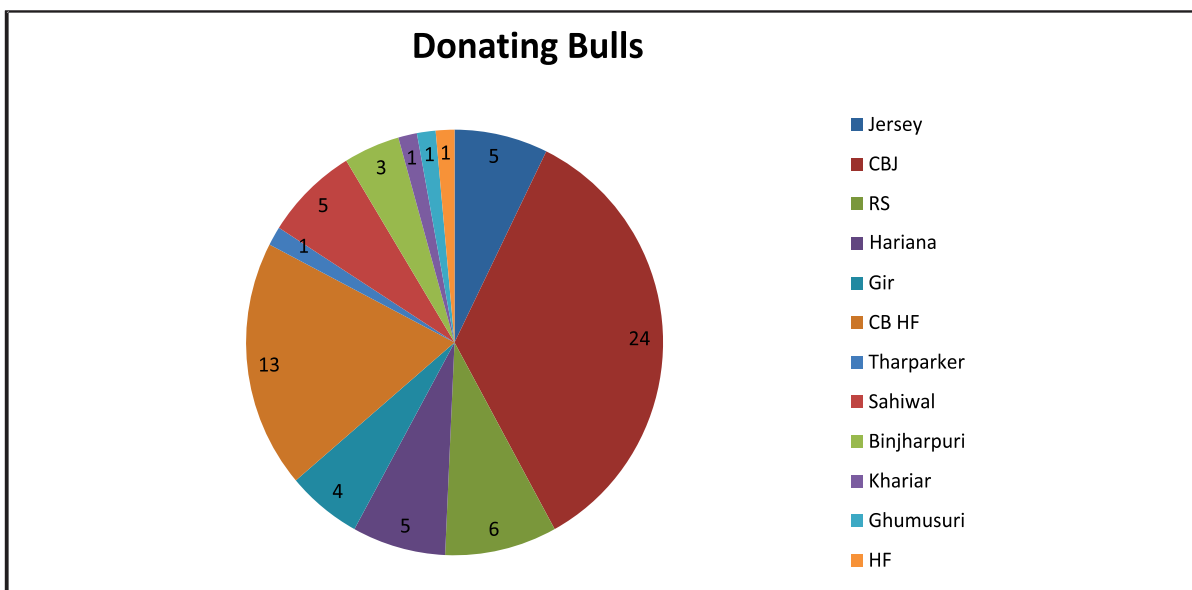
Bull Station:

At Frozen Semen Bank, Cuttack, 117 bulls of eleven categories i.e. Jersey, Holstein, Cross Bred, Hariana, Gir, Tharparker, Sahiwal, Red Sindhi, Binjharpuri, Khariar, Ghumsari are now maintained. Bulls are strictly maintained as per MSP prescribed by GOI. New bulls are inducted from sources like CCBF, UGS, State Livestock Breeding Farm and Bull distribution committee, Government of India. The bulls are regularly screened for diseases like IBR, JD, Brucellosis, Vibriosis, Trichomoniasis and Tuberculosis by RDDDL, Kolkata. Karyotyping of all donating bulls is being done by NDDDB. Genomic estimation of Breeding Value is being done by NDDDB.

Old bull sheds have been renovated with NPCBB funding to single pen accommodation for 72 bulls. Now a new bull shed for accommodation of 40 bulls has been completed under NPBB thereby increasing the bull strength to 112 with single pen facilities.

The Bull Calf Rearing Farm is presently functioning at BBR & BM Farm Chiplima till a new farm with a capacity to accommodate 100 no's of bull calves / grower bulls is established at Sagadi, Cuttack, where the civil works is going on and will be made functional.

Bull position at FSB, Cuttack:



Frozen Semen Processing Laboratory:

The frozen semen processing laboratory established in 1978, was strengthened with financial assistance from TMDD (Government of India) during 1996-97. The laboratory was again renovated to provide more space and creating a separate block for storage and dispatch of semen as per the recommendations of CMU. It is well equipped with imported equipments to produce 10 lakhs doses of semen per year. The laboratory was producing German straws earlier but subsequently started producing French Mini straws after receipt of instruments from TMDD since 1996-97. The frozen semen processing laboratory is strengthened under NPCBB, NDP-I & RGM funding. It includes marble flooring, installation of air shower, Semi-Automatic Delivery of Liquid Nitrogen, IMV cold handling unit, IMV Bio-freezer, IMV AV fittings, Millipore water system. Subsequently other equipments like Filling & Sealing machine (IS-4), Automatic semen straw gobletting machine & Bulk semen storage containers, are purchased from state budget.

Frozen semen production during 2021-22

Name of the Breed	Doses of semen produced
Jersey	1,44,145
Cross Bred Jersey	3,02,985
Red Sindhi	42,450
GIR	25,965
Sahiwal	51,550
Cross Bred Holstein Friesian	1,50,995
Tharparkar	5,960
Pure HF	37,960
Haryana	57,830
Binjharपुरi	17,895
Khariar	13,345
Ghumusuri	15,050
Total	8,66,130

Procurement of Semen Straws during 2021-22

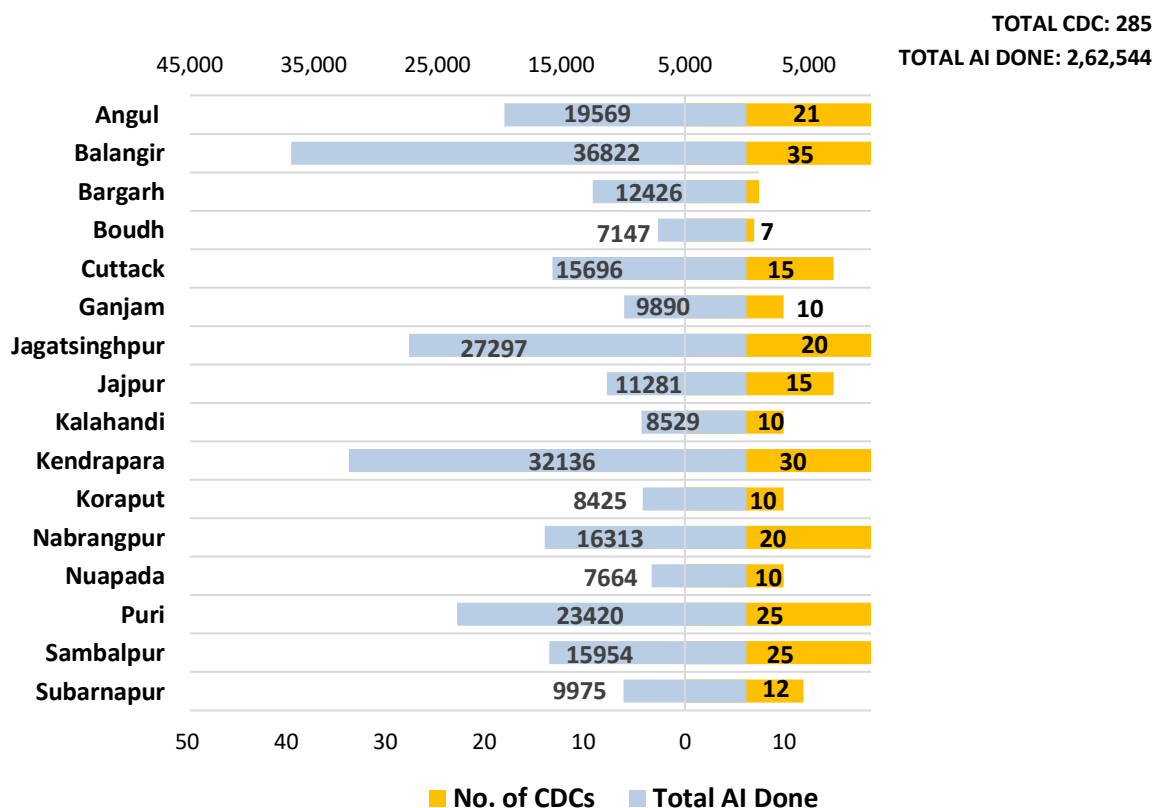
Name of the Breed	Doses of semen procured
Jersey	2,03,000
Cross Bred Jersey	1,28,785
Red Sindhi	1,98,956
GIR	3,44,800
Sahiwal	2,61,300
CBHF	89,800
Tharparkar	80,000
Pure HF	90,000
Murrah	30,000
sex sorted semen	1,14,800
Total	15,41,441

Integrated Livestock Development Programme (ILDP) by BAIF Development Research Foundation.

To boost up Artificial Insemination of non-descript Dairy cows, Integrated Livestock Development Programme has been launched in Odisha in joint collaboration of Government of Odisha and BAIF Development Research Foundation, Pune with a budget allocation of Rs.24.83 Crore for a period of three years. The programme is being implemented through establishment of 285 no. of Cattle Development Centres (CDC) covering 16 districts of the State such as Angul, Bargarh, Bolangir, Boudh, Cuttack, Ganjam, Jagatsinghpur, Jajpur, Kalahandi, Kendrapara Koraput, Nawarangpur, Nuapada, Puri, Sambalpur and Sonapur. The Programme came to a successful completion on 15 October 2021 with a cumulative achievement on AI at 98%. The specific objectives of the programme have been:

- Creation of awareness among the farmers about the socio-economic benefits of improving the local animals.
- Production of improved animals out of local non descriptive low productive animals.
- Generation of employment & income for rural families through Livestock component.

List of District wise Cattle Development Centres with no of AI performed is as follows.



The total no. of overall AI done under ILDP programme is 6,28,973 and the estimated addition of improved progenies is 2,26,430. During the 3rd and final year of the project implementation 2,62,544 AIs were performed and birth of 71,761 number of calves reported.

Strengthening of Dairy Organization:

The scheme envisages supply of breeding inputs to the 4841 field level frozen semen artificial insemination centres (Department: 3433+ Gomitra:397+ BAIF:285+ OMFED:726) for production of high pedigree progenies and augmentation of milk production in the State. Setup and logistics covering cryo-containers, LN2, AI gun, equipment, spares, annual maintenance cost, infrastructure, repair and renovation of the semen station, processing units and field institutions are taken up for rendering uninterrupted services to the farmers.

Eight Bovine Breeding Research and Bull Mother Farms of the State maintain herd of 690 animals. 4,54,055 litres of milk has been produced during the year 2021-22 & Rs.139.96 lakh revenue has been deposited in the treasury. Out of the total target of 30, 12 nos. of Bulls (Sahiwal-6 + CBJ-1 + CBHF-1 + Binjharपुरi-4) has been sent to FSB, Cuttack for breeding purpose. The native breed like Sahiwal & Binjharपुरi are maintained in BBR & BM Farm Kuarmunda & Khapuria. The Bovine Breeding Research and Bull Mother Farms of the State are to be strengthened to the full capacity to rear high quality bull mothers of both native and crossbred animals for production of high pedigree donor bulls for FSB and conservation of native breeds. Accordingly, infrastructure development, induction of bull mothers of different native breeds/cross-bred and their operational cost for management of these farms are being taken up. Scientific breeding through artificial insemination plays a key role for enhancing milk production of the State and thus the scheme assumes importance in augmenting income of dairy farmers.

Utkal Gomangal Samiti

Utkal Gomangal Samiti was established in the year 1936. The aim and objective of the Samiti is to bring all round development of the livestock through up-gradation of local indigenous stock by providing improved bulls & Buffalo Bulls etc. and to propagate different types of fodder cultivation & encourage public for the same.

There are 2 farms one at Patha near N.R.R.I., Bidyadharpur, Cuttack with an area of 15 Acres, another at Bhogara near Khuntuni with an area of 17 Acres. Buffalo Bull calves for Natural Breeding programme are being maintained at Patha Farm near N.R.R.I., Cuttack and another Farm at Bhogara near, Khuntuni under Athagarh Sub-Division of Cuttack district.

The Utkal Gomangal Samiti is engaged for purchase and rearing of Murrah Buffalo Bulls under Natural Breeding programme in remote areas of the State by supplying of Murrah Buffalo Bulls to selected farmers of the State after its maturity.

In the financial year, 2021-22 Government has sanctioned Rs.42.00 lakh as Grant-in-aid to implement the Programme towards Bull Rearing and Fodder cultivation along with sale of Green Fodder and Fodder roots to the farmers of the State.

During the year 18 Nos. of Murrah Buffalo Bulls/ Bull Calves have been supplied to the selected hosts. At present, 12 Nos. of Murrah Buffalo Bull Calves procured from Central Cattle Breeding Farm, Avadi, Chennai-52 are being maintained at Patha Farm Cuttack.

3 Small Animal Development

Small animal rearing is a primary source of livelihood for poor people and a significant contribution to animal protein is being met through meat. In Odisha rearing large ruminants is restricted by acute scarcity of feed and fodder. Small animal rearing has distinct economic and managerial advantages over other livestock species because of less initial investment, low input requirement, higher prolificacy, early sexual maturity and ease of marketing. Goats can efficiently survive on available shrubs and trees in unfavorable environment. Similarly, Sheep rearing is also very popular because they are good grazers and that is why a small holding is seen in many places where the family keeps cows and buffaloes. Small animal acts as a shock absorber in the scarcity period and fulfil the desired need.

Small Animal Population Scenario in the State:

As per the 20th Livestock Census (2019), India has a total goat population of 1488.8 lakhs. Being the 9th largest state in goat population, Odisha contributes about 4.29 % of India's total goat population. Similarly total sheep population of the country is 74.26 million and Odisha is the 9th largest state in sheep production. Odisha contributes about 1.72% of India's total sheep population. Total pig population of the country is 906 lakhs and that of Odisha is 1.35 lakhs contributing about 0.14% to the national population.

As per 20th Livestock Census, (2019), goat population of Odisha is 63,93,452 and that of sheep and pig is 12,79,149 and 1,35,162 respectively.

INTERVENTIONS TO SUPPORT SMALL ANIMAL PRODUCTION IN THE STATE

A. Support to Farmers for “Small Scale Goat Farming” under OMBADC:

The aim of the project is to support 429 farmers of 7 mineral bearing districts of Odisha for setting up of backyard goat units with a capacity of 11 no of animals (10 Doe +1 Buck) per unit during year 2021-22.

Objectives:

- To improve the livelihoods of the very poor Mining Affected communities especially belonging to ST&SC category.
- To build the capacity of the mining affected families for undertaking goat farming as a profitable mini-enterprise
- Livelihood promotion & income generation support to the mining affected farmers through small scale goat farming.
- To support nutritional requirement of people through consumption of animal protein.
- To create employment in rural areas particularly among the women/S.C./S.T.

Area of operation:

SI No	District	Mining affected Blocks as Identified under OMBADC	Nos of Blocks
1	Keonjhar	All Blocks	13
2	Mayurbhanj	All Blocks	26
3	Sundergarh	All Blocks	17
4	Jharsuguda	All Blocks	5
5	Deogarh	All Blocks	3
6	Jajpur	Sukinda, Danagadi	2
7	Dhenkanal	Kankadahada	1
	Total		67

Scheme financial outlay

Sl. No	Particulars	Subsidy Amount in Rs. per Farmer	Units	Amount (Rs. in lakh)
1	@ Rs. 0.80 lakh/- as back ended subsidy per farmer for (10+1) goat unit	0.8 lakh	429	343.2
2	Administrative cost including documentation and monitoring.			1.80
	Total:			345.00

Salient Feature of the Scheme –

- The scheme will be implemented only in the mining affected Gram Panchayats and villages of seven OMBADC districts.
- The scheme targeted to support 429 farmers.
- Very poor households in the mining affected villages shall only be selected as beneficiaries.
- Priority will be given to SC/ST farmers to improve their livelihood.
- Unit cost of one (10+1) goat unit is Rs.80, 000/- with 100% subsidy.
- The overall budget is Rs.345.00 lakh.

B. Goat Development and Scientific Breeding through Goat AI

This scheme is a State Plan scheme that is designed to address the challenges faced by the farmers rearing goat for organized breeding in goats. In order to enhance the productivity like

increase in birth weight, growth rate, prolificacy etc. Artificial Insemination technology will be introduced in a wider scale for genetic improvement of goats in our State.

The aim of the scheme is to genetically improve the local goat population of the State by adopting advanced scientific breeding technology, Goat Artificial Insemination.

The objectives of scheme are

- To genetically improve the goat population by introducing Artificial Insemination using semen of superior sires.
- To sensitize the farmers for enabling rapid goat herd multiplication & strengthening through goat AI
- To produce superior kids with better production traits born out of AI
- To avoid inbreeding in the herd and restrict indiscriminate breeding

Area of Operation

Under the scheme, 565 LACs across the State will provide Goat AI services and cover around 1.5 lakh of female goats during the year 2021-22.

Salient Feature of the scheme

- Capacity building of field staff on Goat AI - Training programme have been organized for 260 Vets, 700 paravets and awareness programme under Goat AI have been organized for 20,000 farmers covering 30 districts. Further, 30 no. of district level and 314 no. of block level awareness programme have been organized on Livestock Insurance.
- Breeding services through doorstep goat AI - Total 1.50 lakh female goats will be covered under Artificial Insemination program.
- Priority shall be given to SC and ST beneficiaries for taking up Goat AI programme at field level.
- The data of SC & ST benefitted under the scheme will be captured properly to access the flow of benefits under the scheme.
- As per breeding policy 2002, semen of Black Bengal and Ganjam breed will be used for Artificial Insemination under the scheme.
- The entire goats inseminated under the scheme will be ear tagged if not done earlier. An incentive amount of Rs. 20/- per AI for insemination and subsequent follow up will be given to AI technicians.

C. Goat Farming through Women SHGs

Goat farming is a highly profitable venture as there has been a growing demand of meat across the State. Commercial Goat rearing under intensive and semi-intensive systems have been gaining momentum for the past couple of years. Under this new State Plan scheme, the women Self Help Groups (WSHG) will be supported with 50% subsidy for establishment of commercial goat rearing units with a budget outlay of Rs. 2300.00 lakh for the year 2021-22.

AIM

The scheme aims to support 2000 WSHGs to take up commercial goat rearing units for enhancing livelihoods and incomes of rural women.

Objective:

- To enhance livelihoods and incomes of SHG members through commercial goat farming.
- To increase the meat production and meet the growing demand of meat in the state.

Financial Out Lay

The unit cost of (30+2) goat unit is Rs. 2,30,000/-. The total expenditure under State Plan for establishing 2000 Goat units during the year 2021-22 with 50% subsidy is Rs. 2300.00 lakh.

Sl. No.	Particulars	Unit Cost (Rs. in lakh)	No. of Unit	State Share @ 50% per unit (Rs. 1.15 lakh)	WSHGs Share @ 50% per unit (Rs. 1.15 lakh)	Total Project cost (Rs. in lakh)
1	Establishment of Goat Unit (30+2)	2.3	2000	2300.00	2300.00	4600.00
	Total			2300.00		4600.00

Salient Feature of the Scheme –

- The scheme will be implemented in all 30 districts.
- The Scheme targeted to support 2000 WSHGs.
- Unit cost of one (30+2) goat unit is Rs.2,30,000/- with 50 % subsidy.
- The overall budget is Rs.2300.00 lakh.

D. Semi-commercial Pig Farming

Among the various livestock species, piggery is most potential source for meat production and pigs are more efficient feed converters after the broiler. Apart from providing meat, it is also a source of manure. Pig farming will provide employment opportunities to seasonally employed rural farmers and supplementary income to improve their living standards.

As the major feed ingredients for pig are by-products of rice processing units, our state has an advantage with regard to availability of raw material for formulation of feed. Rice bran, rice polish, waste from chuda processing units, cashew processing units are utilised locally to make low cost feed for pigs. Due to existence of Government Pig Breeding Farm, Chipilima and other private piggery units in our state availability of good quality piglet is an added advantage.

A new scheme Semi-commercial pig farming has been introduced under State plan Scheme with an budget outlay of Rs.140.00 lakh for the year 2021-22 to support 87 farmers. This

scheme aims to support the entrepreneurs for setting up of pig farms with a capacity of 10 female +1 male pig for income generation.

Objectives:

- To create small mother units with 10 sows and 1 boar at individual level.
- To support the nutritional requirement of the people through consumption of animal protein.
- To build the capacity of the farmers for undertaking pig farming as a profitable mini-enterprise

Financial Outlay

The unit cost of 10 female+ 1 male unit is Rs.4,00,000/-. The total expenditure under State Plan towards subsidy (40% of unit cost) for establishing 87 semi-commercial pig units during the year 2021-22 including administrative cost is Rs.140.00 lakh.

Salient Feature

- The scheme will be implemented in all 30 districts.
- The Scheme targeted to support 87 farmers.
- Unit cost of one (10+1) pig unit is Rs.4,00,000/- with 40 % subsidy.
- The overall budget is Rs.140.00 lakhs

E. Small Animal Farms under ARD Sector:

Small Animals like goat, sheep and pig are reared mostly by economically marginalized famers. In order to provide genetically upgraded breeding stock to the farmers, seven small animal farms are being maintained.

List of the Small Animal Farms:

Sl. No.	Name of the Farm	District	Year of Establishment	Area (Acres)	Breed maintained
1	Sheep Breeding Farm, Chiplima	Sambalpur	1965-66	55	Ganjam Sheep
2	Pig Breeding Farm, Chiplima	Sambalpur	1965-66	6	LWY
3	Goat Breeding Farm, Deogaon	Balangir	2011-12	138.91	Ganjam Goat
4	Goat Breeding Farm, Jaring	Kalahandi	2013-14	25	Black Bengal
5	Goat Breeding Farm, Dadapaju	Kandhamal	2008-09	17	Sirohi & Black Bengal

6	Goat Breeding Farm, Chiplima	Sambalpur	1965-66	Commonly shared with SBF, Chiplima	Black Bengal
7	Goat Breeding Farm, Kuarmunda	Sundargarh	1993-94	Inside the BBR & BM Farm, Sundergarh	
8	Goat Breeding Farm, Salapada,	Keonjhar	2009-10	Inside SDVO office campus	

4 Poultry Development

Poultry Development in the State has taken a quantum leap in the last decade. 70% of the poultry products and eggs are consumed in urban and semi urban areas. Poultry products like egg and chicken constitute a primary source of animal protein. Poultry sub sector in Odisha has made significant progress over the years providing employment and income to the rural youth. Backyard Poultry also plays a vital role in the livelihood of millions of poor people particularly the tribal population. The State Government has declared poultry as Agriculture in 2005 to promote production in the state.

The growth of layer sector in the State is increasing steadily. The Government is putting more thrust to facilitate egg production through several initiatives and policy decisions. The increase in egg production of the State will not only bring self-sufficiency, but also can create huge employment opportunities for rural youth. The scope in this industry is enormous.

The growth in poultry sector will help in development of a number of allied sectors like agriculture, compound feed manufacturing, equipment and machinery, pharmaceuticals and biological, transport etc. The Department of Fisheries and ARD has embarked upon an ambitious programme to produce 120 lakh eggs per day during the next 5 years period. For this, a road map has been developed to establish 150 Commercial layer farms over a period of 5 years. Introduction of egg in MDM programme further increases the scope of small and medium commercial layer farming in the State.

Odisha with a commercial layer population of 99.65 lakhs in 142 commercial layer farms is producing 85.09 lakh eggs per day. In addition, 8.0 lakh eggs are produced from the Backyard Poultry sector and 2.45 lakh eggs from the units under State Plan scheme totaling to production of 95.54 lakh eggs per day. In order to increase the per capita availability of eggs and to meet the nutritional requirement, layer poultry farming sector needs to be expanded.

Poultry Population and its Growth:

During the 19th livestock census, Poultry Population in the state was 198.90 lakh whereas in 20th census the population is 274.39 lakh with a growth of 38%.

Rationale for augmenting Poultry meat production:

- Inclination of population towards chicken meat

- Short gestation period in rearing broiler birds
- Low investment and high returns
- Launch of Poultry Policy which is farmer friendly
- Implementation of new State Plan Government scheme, OMBADC, DMF, MKUY.
- Ease of doing business with ease of Credit Linkages
- Ease of marketing from farm gate

Comparative Broiler Meat Production:

Name of the Item	2018-19	2019-20	2020-21	2021-22
Meat Production	97 TMT	98.6 TMT	102 TMT	104 TMT

Continued Effort by the Department to Support Meat and Egg Production:

- Meeting with NECC – Integrators & Private Entrepreneurs.
- Consultative forums to discuss issues and challenges with regards to fixation of reasonable price of commercial eggs in reference to NECC.
- Regular interaction with the layer entrepreneurs looking to the various aspects of growth of poultry industries and marketability of egg in a well-designed manner.
- Strengthening OPOLFED for smooth marketing.
- Greater Role of Private Sector to Boost Poultry Production.
- Developing the integration model of Broiler farming for all round support to the Broiler farmers.
- Providing quality chicks both in Broiler and Layer sector.
- Providing quality feed for Broiler production.
- Health care products are made available for the commercial poultry.
- Automation system is developed for easy production of meat and egg.

Approach:

- a. Supporting farmers to improve the production and livelihood by providing inputs and subsidy.
- b. Online mode of submitting application by farmers to avail various schemes.
- c. Bringing more entrepreneurs into the poultry production process.
- d. Organizing State and district level interface meetings with bankers and entrepreneurs to sanction credit linkages

Rolling out of livelihood Package – At a glance

In order to provide livelihood support to the rural poor, the department has implemented the following schemes in poultry sector.

- I. Livelihood support to farmers through rural back yard poultry rearing with supply of 50 numbers of 04 weeks old LIT birds to each beneficiary with unit cost of Rs 3750.00 (Rs 3250.00 towards bird cost and Rs 500.00 towards night shelter).

- II. Broiler unit of 500 bird capacity in individual mode under Deep Litter System with unit cost of Rs 1.80 lakh and subsidy of Rs 0.72 lakh.
- III. Broiler unit of 1000 bird capacity in WSHG mode under Deep Litter System with unit cost of Rs 3.60 lakh and subsidy of Rs. 1.44 lakh.
- IV. Semi commercial layer unit (1000 bird capacity) in individual mode under Cage System, with unit cost of Rs.7.592 lakh and subsidy of Rs.3,03,680.00
- V. Livelihood support to farmers through duck farming with supply of 50 numbers of 02 weeks old ducklings to each beneficiary with unit cost of Rs.4000.00 (Rs 3000.00 towards cost of duckling and Rs.1000.00 towards night shelter).
- VI. Semi-commercial Duck Farming in individual mode with unit cost of Rs.3.75 lakh and subsidy of Rs. 1.50 lakh.
- VII. Establishment of Mini Poultry Feed Mill both through individual and WSHG mode with unit cost of Rs.2.80 lakh and subsidy of Rs.1.40 lakh for WSHG and Rs.1.12 lakh for individual beneficiary.
- VIII. Establishment of Small Scale Poultry Hatchery through individual mode with unit cost of Rs.6.60 lakh and subsidy of Rs.2.64 lakh.
- IX. Support to Particularly Vulnerable Tribal Group (PVTG) households under the scheme Livelihood support to farmers through Rural Back Yard Poultry rearing with supply of 50 numbers of 04 weeks old LIT birds to each beneficiary with unit cost of Rs.3750.00 (Rs.3250.00 towards bird cost and Rs.500.00 towards night shelter).

SCHEMES INITIATED BY STATE GOVERNMENT TO INCREASE IN BROILER MEAT & EGG PRODUCTION:

A. Support to Farmers for Broiler Farming (500 bird capacity) in Deep Litter System in Individual Mode:

- i.The scheme targets to support 4120 no. of individual members for setting up of broiler farm with a subsidy of 40%.
- ii.The unit cost of 500 birds Broiler unit is Rs.1.8 lakh which includes cost of poultry shed, chicks etc.
- iii.Back ended subsidy of 40% amounting to Rs.72,000/ will be provided by State Government.

The overall budget is Rs.2968.00 lakh.

B. Support to Farmers for Broiler Farming in Deep Litter System in WSHG Mode:

A sum of Rs.1440.00 lakh has been sanctioned to support farmers through broiler farming in Deep Litter system in WSHG mode.

Out of targeted 2000 WSHG of State, 906 numbers of WSHG have been identified.

Each WSHG will be supported with 1000 broiler chicks with a unit cost of Rs.3.60 lakh and 40% subsidy amounting Rs.1.44 lakh which will be provided by State Government.

C. Support to Farmers for Layer Farming (1000 bird capacity) in Cage System in Individual Mode:

The scheme targeted to support 100 farmers, migrants and entrepreneurs to support for establishing layer units in cage system.

The unit cost of 1000 birds capacity Layer unit is Rs.7.592 lakh with 40% subsidy amounting to Rs.3.0368 lakh which will be provided by State Government.

The overall budget is Rs.303.68 lakh.

Go-ahead letters have been issued to all the farmers and establishment of these units are under progress.

D. Encouragement of Backyard Poultry Production Programme:

The scheme targeted to support 10000 no. of individual members of WSHGs in shape of supplying 50 no. of LIT birds of 04 weeks old with a temporary night shelter to each beneficiary.

A sum of Rs.3750/- per farmer is to be expended with an overall budgetary provision of Rs.375.00 lakh.

Funds for night shelter has been released to 8130 beneficiaries, 3009 beneficiaries have been provided with first phase of chicks with 25 no. of birds each and the second phase of birds have been supplied to 963 farmers. An amount of Rs.65.386 lakh has been utilized so far for assisting the farmers for establishment of these units.

E. Livelihood support to farmers through duck farming

The scheme targeted to support 1000 no. of individual members in shape of supplying 50 no. of ducklings of 02 weeks old with a temporary night shelter to each beneficiary.

A sum of Rs. 4000/- per farmer is to be expended with an overall budgetary provision of 40 lakh.

Funds for night shelter have been released in favour of 891 farmers and 2 week old ducklings are being supplied. An amount of Rs. 12.765 lakh has been utilized so far towards night shelter and supply of ducklings to the beneficiaries.

F. Semi-commercial Duck Farming in deep litter system through individual mode

Duck rearing is a profitable activity compared to raising chicken as they are more resistant to diseases and can withstand natural calamities. Duck farming does not need much investment and skill set. Among the egg laying breeds, Khaki Campbell is an ideal breed which lays nearly 250 eggs per duck per year in semi-intensive system. Khaki Campbell ducks weigh about 2 to 2.2 kgs and drakes 2.2 to 2.4 kgs. The agro climatic conditions and vast expanse of natural water bodies prevalent in the State are favorable for duck farming. Ducklings can be reared in semi-intensive or range system. Under this new State plan scheme individual farmers will be supported for taking up semi-commercial duck rearing with a subsidy of 40% subsidy, with an overall budget outlay of Rs.150.00 lakh for the year 2021-22.

Each individual beneficiary will be supported with 1000 unsexed ducklings with a unit cost of Rs.3.75 lakh and 40% subsidy amounting Rs.1.50 lakh which will be provided by State Government.

G. Establishment of Mini Poultry Feed Mill through individual and WSHG mode

Odisha ranks 11th in chicken meat production in the country with a total production of 109.74 TMT per annum. There are about 15000 broiler farms with capacity ranging from one thousand to one lakh, making the state self-sufficient in broiler meat production. Currently, under the state plan scheme establishment of broiler units with 500 and 1000 bird capacity are being taken up throughout the state both on individual and SHG mode. The demand for quality poultry feed is huge at the local level as the cost of feed contributes 75 to 80% of total production cost. Accordingly, this new state plan scheme is introduced for supporting the establishment of mini poultry feed mill under State plan Scheme with a budget outlay of Rs. 140.00 lakh for the year 2021-22.

Key Highlights

- i. A sum of Rs.140.00 lakh has been sanctioned to support farmers through establishment of Mini Poultry Feed Mill in individual mode and WSHG mode
- ii. The unit cost of mini poultry feed mill is Rs.2.80 lakh and subsidy of Rs.1.40 lakh for WSHG and Rs.1.12 lakh for individual beneficiary will be provided by State Government.

H. Establishment of Small Scale Poultry Hatchery through individual mode

Poultry sector has been fast growing and has enabled many farmers and youths to become entrepreneurs providing stable incomes. Government of Odisha has rolled out many incentive based schemes for establishment of broiler and layer farms both on individual and group mode through various state plan schemes. Development of the poultry sector can be further accelerated, if improved varieties of layer/broiler chicks are made available to the poultry farmers. Therefore, it is essential that hatcheries are promoted different areas of the State, so that poultry farmers may get high yielding varieties of chicks easily.

Accordingly, this new state plan scheme is introduced for supporting the establishment of small-scale poultry hatcheries with a budget outlay of Rs.132.00 lakh for the year 2021-22.

The scheme targeted to support 50 individual beneficiaries. The unit cost of small scale Poultry Hatchery is Rs.6.60 lakh and subsidy of Rs.2.64 lakh will be provided by state government. A sum of Rs.132.00 lakh has been sanctioned to support farmers for establishment of small scale poultry hatchery.

I. Support to Particularly Vulnerable Tribal Group (PVTG) households under the scheme Livelihood support to farmers through Rural Backyard Poultry rearing

The scheme targeted to support 10,000 no. of PVTG households of 12 districts in shape of supplying 50 no. of LIT birds of 04 weeks old with a temporary night shelter to each beneficiary.

A sum of Rs. 3750/- per farmer is to be expended with an overall budgetary provision of Rs.375.00 lakh

State Poultry Farms and Hatcheries:

There are eight Government poultry farms and two duck breeding farms in Odisha. The major objective of the poultry farms is to maintain Parent Stock for production of good and healthy chicks which is to be distributed to needy farmers at reasonable price for livelihood improvement. The farms also act as major technology transfer and skill upgradation centers for the unemployed youth in poultry production.

Further, there are forty Government hatcheries in the State which provide Low Input Technology chicks to the farmers for promotion of backyard poultry production for egg and meat.

Mukhyamantri Krushi Udyog Yojana (MKUY):

Mukhyamantri Krushi Udyog Yojana – is a State funded scheme for establishment of more number of commercially viable Agri Enterprises in the State in a simple, online, transparent & time bound manner. An agri entrepreneur has to apply online through a user friendly web portal www.apicol.nic.in

MKUY has been launched on 01.06.2018 for ensuring efficient service delivery for agri entrepreneurs by way of ease of doing agribusiness under State Agriculture Policy. APICOL is designated as the State Nodal Agency and Line Departments are implementing MKUY in the state.

Objectives:

- i. To promote agro-based/food processing industries, Commercial agriculture/ Horticulture/Animal husbandry & Fisheries, in broad terms to enhance private investment in Agriculture and allied sectors.
- ii. To generate employment, provide livelihoods and sustainable income for farmers/agri entrepreneurs.

Government Assistance:

- Back-ended Capital Investment Subsidy – 40 % for general male/ and 50% for all Women/SC/ST/PD, Graduates in Agriculture & allied sectors; limited to Rs.50.0 lakh.
- MKUY supports entrepreneurs with innovative bankable projects in the area of Agriculture, Horticulture, Animal Husbandry and Fisheries sector. There are about 62 types of projects which can be chosen by the applicant.
- The Projects under ARD are of greater demand by the applicants since these projects need less land area to set up the unit, have a shorter gestation period, highly remunerative, assured marketing with dedicated Veterinary field functionaries for hand holding.

Key Changes in Revised Guidelines:

- The scheduled completion period of the project will be maximum 2 years from the date of issue of Go-ahead Letter. However, in case of inordinate delay by the financing institution, the period will be extended beyond 2 years i.e. maximum

one year from the date of sanction of loan or the stipulated 2 years whichever is later.

- The mandatory bank finance condition for project above Rs.10.00 lakh is made optional.
- Entrepreneurs preferring to establish enterprise costing more than Rs.10.00 lakh under self-finance mode will have the projects assessed and evaluated by an independent agency. Parallely, valuation will be done by the Departmental staff and the lesser of the two valuations will be considered for CIS.
- Projects with value less than Rs 10.0 lakh will be exempted from third party evaluation, even if they opt for self-finance.
- Persons with Disabilities (PwD) are preferred and proposed for eligibility of 50% subsidy like ST / SC / Women candidates. The minimum age for application is 18 years.
- Farmer ID is not mandatory, applicants has to submit application with Aadhar ID.
- Integrated enterprises with a combination of any two or more from out of the list of approved enterprises may be considered without referring to minimum capacity of any component enterprises; but the overall net profit should be of Rs.2.00 lakh per annum.
- WSHG proposals with a minimum average annual net profit of Rs.1.00 lakh will be considered to avail assistance under MKUY.
- Manufacturing of Ice Cream utilizing at least 100 litres of milk per day will be considered as an eligible enterprise under MKUY.
- The riders like no. of birds / animals / area of water body/ no. of bee colonies will be withdrawn from existing guidelines, but the project should satisfy the cardinal principle of average annual net profit of Rs.2.00 lakh per project.
- The time limit for approval of projects will be of 7 days for BLO, 8 days for DNO and 30 days for DLC.

Achievements under MKUY in ARD Sector

	Go-ahead issued	Credit Linked	Self-Finance	Projects Grounded	Projects Completed
In Nos	1984	1889	95	710	435
Rupees in Crore	855.21	845.71	9.50	283.43	234.24

5 Fodder Development

The existing trend in livestock feeding system in Odisha, a “Low input Low output” system is practiced. Almost all the livestock species in Odisha depend on seasonal occurrence of natural grass, crop residue, crop by products and grazing on the common property resource such as village Gochar land, forest floor, village waste land and along the irrigation canal where ever available. Few number of elite farmers/ dairy entrepreneurs grow cultivated fodder species that are cut and carried to the shed which again do not meet to the nutritional accomplishment of production requirement. Further, small ruminants survive entirely on grazing.

Thus, enhancement of fodder production is quite inevitable for the State of Odisha for economic milk and meat production. Millions of small livestock enterprises are scattered around the State, suffer from inadequacy in green fodder for which they are compelled to shut down their enterprise.

Since animal husbandry is mostly practiced by small and marginal farmers; there is always a trade-off dilemma for the farmers to decide on growing fodder for livestock or food grains. As a consequence, the availability of fodder and feed in adequate quantity and desired quality is always a challenge. In addition, there is inefficiency in utilization of by-products which are available in the farm. By promoting crops that produce better quality and quantity of dry fodder and better utilization of locally available forest produce can mitigate the shortage of feed available for livestock. In addition, better approach should be adopted for promoting new and better variety of fodder grass or fodder trees with less water. Such practices will also make fodder and other supplement affordable for poor households.

To make farming for small and marginal farmers economically viable and environmentally sustainable a holistic approach needs to be adopted. New and innovative approaches such as integrated crop-livestock farming systems are required to be developed that improve the overall agricultural productivity, help diversify the livelihoods and increase incomes of farmers. This will contribute to building resilient livelihoods of small and marginal farmers. Promotion of improved variety of fodder grass and trees for increased availability and sustainable management of fodder grass and tree leaves.

In order to reduce the gap and create the awareness among the livestock farmers of the State, various fodder development programme has been taken up by the Department.

Fodder Development Programmes in the State:

- Seasonal fodder cultivation Programme
- Perennial fodder cultivation Programme
- Fodder Seed Production Programme (Farm).
- Fodder Production & Demonstration Programme (Farm).
- Establishment of Azolla Demonstration unit
- Crop Residue Enrichment Programme
- Conservation & Development of Gochar land for fodder cultivation

Seasonal Fodder Minikit Programme:

In Odisha, with an objective to double the income of the farmers' family, the productivity from the Animal Husbandry Sector to be increased by reducing the cost of production of milk & meat by adopting scientific feeding practices. The cost of milk production per day is steadily getting high due to higher market rate of concentrated feed. In order to make dairy farming a profitable enterprise, introduction of green fodder in the daily ration of the cows becomes essential.

In view of that the farmers are encouraged to cultivate seasonal fodder in their own land and Department is providing the most critical input i.e. Fodder Seed both in Kharif and Rabi season in the form of Minikit containing both cereal & legume fodder seed at the farmer's door step free of cost to cover an area of 0.25 Ac.

In this scheme one farmer can avail minimum one to maximum 20 minikits depending on the availability of land and number of animals. The technical support for raising a fodder crop and its utilization also transferred to the beneficiary in the form of leaflet and through personal contact by the Animal Husbandry Department. Before the Fodder Seed Minikits supplied to the farmers' doorstep the Germination percentage is tested at the district level by the fodder staff. Generally, the Kharif Season minikits contains the seed of Maize (African Tall), Sorghum, M. P. Chari, Bajra as cereal component and Cowpea (EC – 4216) as legume component. Similarly, in Rabi season the seed of Oats as cereal component with Berseem or Lucerne as legume component are provided to the farmers. During the current year 29,565 Nos of minikits were supplied, 7738 Acre area covered under seasonal fodder crops and the total production till the end of March - 2022, 44474 MT green fodder produced.

Perennial Fodder Production:

The main aim of this scheme is to create a permanent green resource base in the farmer's field for their milch animals or small animals. The selection of perennial fodder crop species depends on the category of land, availability of irrigation facility and type of animal maintained by the farmer. Most of the perennial fodder crops are propagated through stem cuttings or rooted slips and Department have fodder farms in district level for production and supply of planting materials to the farmers and supporting the beneficiaries to establish perennial fodder plot.

Multi-cut Sorghum Varieties like COFS-29, COFS-31 & Anant (CSV-33) crops are included in the list which is propagated through seed. The Milk Producers Co-operative Society members or Self Help Group (involved in Animal Husbandry sector) members are the preference target groups as they maintain the milch animals or small animals for generating income for their livelihood.

	Year	Fodder area promoted
2	2020-21	2150.75
3	2021-22	2500

Fodder Seed Production Farms in the State :

In the field of Fodder Development, farmers usually face one major challenge to collect the planting material (both seed and root cuttings/ slips) in time. In order to address the problem ARD Department has established 8 fodder seed production farms in the State with an objective to ensure supply of quality fodder seeds to the farmers for enhancing the productivity of the fodder crops. The Fodder Seed Production Farms are established in the following districts for easy distribution of the seed to different zones of Odisha.

	Name of the farm	District	Area in Ac.	Agro-climatic zone
1	Panchamahahal	Angul	100.22	Mid-Central table land Zone
2	Salapada	Keonjhar	89	North-eastern coastal plain zone
3	Tarbod	Nuapada	96	Western undulating zone
4	Chiplima	Sambalpur	50	Western- central table zone
5	Kathapal	Mayurbhanj	55	North-central plateau zone
6	Kurmunda	Sundargarh	30	North-western plateau zone
7	Randapalli	Koraput	25	Eastern Ghat highland zone
8	Landibandh	Boudh	60	Mid-Central table land Zone
		Total	505.22	

Fodder Seed Farms in the State

Fodder Seed Production Farms with the list of district for supplying quality fodder seeds:

	Name of the Fodder Seed Production Farm	Name of the Districts to avail fodder seed and planting materials from respective fodder seed farms.
1	FSF, Panchamahahal, Angul	Cuttack, Angul, Dhenkanal, Khurdha and Puri
2	FSF, Salapada, Keonjhar	Keonjhar, Jajpur, Kendrapada and Jagatsinghpur

3	FSF, Tarbod, Nuapada	Nuapada, Kalahandi and Bolangir
4	FSF, Kathapal, Mayurbhanj	Mayurbhanj, Balasore and Bhadrak
5	FSF, Kuarmunda, Sundargarh	Sundargarh, Jharsuguda
6	FSF, Randapalli, Koraput	Koraput, Nabarangpur, Rayagada and Malkangiri
7	FSF, Landibandha, Boudh	Boudh, Kandhamal, Ganjam, Nayagarh and Gajapati
8	FSF, Chiplima, Sambalpur	Sambalpur, Bargarh, Deogarh and Subarnapur

The fodder seeds produced are being utilized for demonstration programme (minikits), fodder production in the Departmental dairy farms. Besides these, the fodder/pasture seeds produced in these farms are being sold to Soil Conservation Department, Forest Department and public for undertaking fodder/pasture development programme in the State. For production of certified fodder seed, funds have been allocated from state plan scheme. During this year i.e. 2021-22, towards production of quality fodder seeds/planting materials/green fodder an amount of Rs.37.85 lakh has been allotted to the six functional departmental fodder seed production farms to cover an area of 99 Acres fodder seed crop. So far from the aforesaid farm 10.38 lakhs root slip, 1028 Qtl green fodder has been produced and supplied to the beneficiaries. Further, from the available seed crop 279 Qtl of fodder seed is estimated to be produced during the year 2021-22 for utilization in the farmer's field.

Fodder Demonstration Farms:

Most of the perennial fodder crops are propagated through root cuttings and slips, to cater the requirement of the planting materials (Root/ slips) in the State, the ARD Department has 13 different Fodder demonstration Farms & these farms also serves as live demonstration sites for the farmers/ farmer groups to visualize different varieties of fodder. The details of Fodder demonstration Farms are as follows:

Sl. No.	Name of the farm	District	Area in Ac.	Agro-climatic zone
1	Bahudarada	Bhadrak	10.00	North Eastern Coastal plain
2	Hansapada	Puri	11.20	East & South Eastern Coastal Plain
3	Pipili	Puri	6.5	East & South Eastern Coastal Plain
4	Sagadi	Cuttack	20	Mid Central Table Land
5	Barimul	Kendrapada	10.90	East & South Eastern Coastal Plain
6	Badmal	Jharsuguda	5.0	West Central Table Land
7	Laxmisagar	Khurda	5.0	East & South Eastern Coastal

				Plain
8	Gatiroutpatna	Cuttack	25.0	Mid Central Table Land
9	Haldipalli	Bargarh	11.07	West Central Table Land
10	Ainthapalli	Bargarh	8.0	West Central Table Land
11	Mahakhand	Bargarh	8.0	West Central Table Land
12	Pratappur	Mayurbhanj	7.8	North Central Plateau
13	Saru	Ganjam	4.95	East & South Eastern Coastal Plain
Total			148.42	

These farms are also utilized for imparting training and demonstrations to the farmers group regarding the cultivation practices of different fodder crops. The green fodder and root slips produced in these farms are supplied to dairy farmers and other agencies of the State. During the year 2021-22, 3,41,450 nos. of root/ slips were distributed and 844 Qtls. of green fodder was produced and sold to the public. In the current year, an amount of Rs.19.63 lakh have been allotted to different farms to produce green fodder, planting materials and infrastructure development.

Establishment of Azolla Demonstration unit :

Azolla, an aquatic fern rich in protein, contains free nitrogen and soft palatable feed supplement for the milch and small animals. It can be grown in a small pit in the backyard round the year. It can benefit landless farmers maintaining dairy or small animals

A pit, with a dimension of 2 m X 2 m X 0.2 m is sufficient to produce 1 to 1.5 Kg. Azolla per day for feeding one dairy cattle or 2-3 small animals. Establishment of Azolla unit, its production and feeding is very simple so can be easily managed by the women members of the livestock farming family

Therefore, Government is extending support to the women livestock farmers for establishing one unit of Azolla in their backyard. One women farmer is assisted with all the required inputs (@Rs.2000/- per unit in kind) for establishment of one unit along with required technical know how. It is a onetime assistance to the farmer.

Under state sector scheme, during the year 2021-22 this programme implemented in all blocks of the State. Accordingly in 314 blocks, 6280 no. of Azolla units are targeted to be established @ 20 Units per block during the year 2021-22. This programme is especially meant for women farmers for production of Azolla in their backyard for feeding the milch animals to increase the profit margin on milk production by reducing the consumption of the concentrated feed. One farming family will be assisted with one Azolla unit for larger

coverage and that will serve as a source of Azolla Seed Culture unit for the other interested farmers of that locality in future. For the year 2021-22 out of the targeted 6280 no. of Azolla cultivation units, 6280 no. of units have been established.

Crop Residue Enrichment Programme:

In Odisha, generally the main feed stuff of stall fed dairy animals are concentrated feed mostly wheat bran and paddy straw (crop residue). After introduction of short statured High Yielding Varieties of paddy and use of harvester machine, the availability of paddy straw for cattle feed is reducing day by day. It is also worth to mention that now a major portion of the paddy straw is diverted for mushroom cultivation which limits the availability. Only during rainy season natural green grasses collected from field bunds and fellow land is included in the dietary ration of the stall fed milch animals. The main roughage i.e. paddy straw is very poor in nutritional aspect, unpalatable and difficult to digest because of strong lingo-cellulose bond. Hence applying some mechanical and chemical treatment the nutritional status as well as palatability and digestibility can be enhanced. Enrichment of crop residue is a simple and easily replicable method and can be well handled by the farm women. Therefore Government is extending support exclusively to the women dairy farmers through supply of required inputs like Urea, Common salt, Di-Calcium Phosphate powder, Ground maize and Jagerry/ Molasses and technical knowhow for enriching their crop residue i.e. paddy straw to feed the dairy animals for better productivity and consumptive use of paddy straw.

The main aim of the programme is:

- I. To feed the Livestock with better nutrient enriched Crop Residue for maintaining their production as per the genetic production potentiality.
- II. To reduce the wastage of crop residues converting it to more palatable and digestible feed
- III. To increase the Farmers income by reducing the use of costly concentrate feed
- IV. To empower Women and participation of vulnerable population

The scheme envisages establishment of 6280 no. of crop residue enrichment units by utilizing Rs.141.30 lakh in all the blocks of the State @ 20 units per block during the year 2021-22. This programme is especially meant for women farmers for utilization of crop residue/paddy straw enrichment in their backyard for feeding the milch animals to increase the profit margin on milk production by reducing the consumption of the concentrated feed. One farming family will be assisted with one unit for larger coverage and that will serve as a source of 10 Qtl. enriched crop residue for feeding the livestock.

The input cost of one crop residue enrichment unit is Rs.2200/- and Rs.50/- for each unit towards transportation of the input from the district level storage point to the farmers' door step. It is a onetime assistance to the farmer. Till end of the March 2022, 6280 no. of Crop Residue Enrichment units have been established.

Conservation & Development of Gochar land for Fodder Cultivation

In Odisha, the landless, small and marginal farmers in rural areas mostly depend on common property resources to meet the green fodder requirement of their animals. Many poor farmers do not have resources to buy expensive feed and fodder for their domestic animals

for maintaining their health and productivity. Grazing land provides economic support to these indigent people, and is a very source and means for their livelihood. Grazing lands are part of our ecology and helps a lot in maintaining the ecological balance. Due to over grazing, the quality and quantity of pasture grass in Go-char have been reduced to a great extent. Hence, there arises a need to conserve & develop those Go-chars for fodder cultivation. The existing MGNREGS scheme can be converged to take up the Go-char development program with active involvement of Self-Help Groups enlisted in Mission Shakti Department in collaboration with F & ARD Department.

During the year 2021-22, it is targeted to conserve & develop 100 Go-char sites by 100 SHGs with a budget provision of Rs.10.00 crore. During the year 2021-22, 38 Go-char sites have been identified for conservation & development of Go-char through fodder cultivation and 11 WSHGs have been selected in coordination with Mission Shakti Department.

6 Health Care Service Delivery

Institutional Delivery:

Odisha's livestock wealth (18.17 million) includes 9.90 million cattle, 0.45 million buffaloes, 6.39 million goats, 1.28 million sheep and 0.13 million pigs as per Livestock Census 2019. Prevalence of animal diseases is a serious impediment to the growth of the Livestock and Poultry Sector in the State. Ailments in animal health not only lead to reduction in meat, milk and egg production but seriously impact the livelihoods of millions of farmers in the State. In order to cater to the livestock health care, the Animal Husbandry Department offers veterinary services throughout the State by dedicated Veterinary institutions which can be broadly classified into four categories:

	Name of the Veterinary Institution	Location	No of Units
1	District Veterinary Hospital	District Head Quarter	30
2	Veterinary Dispensary	Block level	511
3	Mobile Veterinary Service Units	Block level	314
4	Livestock Aid Centres	Gram Panchayat level	3239

Strengthening Infrastructure Facilities of ARD Sector

Transforming Veterinary Service Delivery in all district & sub-divisional Veterinary Hospitals through strengthening and modernization of referral services

The Veterinary Hospitals at District and Sub-divisional Headquarters will be strengthened and modernized. It has been planned to convert the 58 existing Veterinary Hospitals at District

and Sub-divisional Headquarters to Model referral Hospitals by means of Retrofitting/Renovation/ new constructions under the State plan scheme in a phased manner. Field survey at 23 District Veterinary Hospitals has been conducted and construction / Retrofitting of 3 Veterinary Hospitals is under progress by National Projects Construction Corporation (NPCC) Ltd at Saheednagar, Bhubaneswar, Buxibazar, Cuttack and Sambalpur. All of these hospitals will have OPD, reception area, modern OT facility, X-ray & ultrasound facilities and diagnostic labs.

Under Ph-II during 2021-22, 20 Veterinary Hospitals & 149 Veterinary Dispensaries have been given to PSUs i.e Odisha Small Industries Corporation Ltd., Odisha State Police Housing & Welfare Corporation & Odisha Construction Corporation for upgradation with a budget of Rs.114.50 crore. The list of equipment required for Model referral hospitals and Veterinary Dispensaries has been finalized.

For 2022-23, 11 Veterinary Hospitals & 100 Veterinary Dispensaries will be taken up with a projected budget of Rs.82.00 cr. These departmental veterinary institutions are well equipped and having trained Professional staff who can cater the health care need of livestock and poultry in the State

District Veterinary Hospital:

A District Veterinary Hospital (DVH) functions at each district headquarter for providing Veterinary and Animal Husbandry services in the concerned district. There are 30 DVHs functioning in the Department.

Each DVH is headed by a Veterinary Doctor in the rank of Deputy Director (OVS Gr- A Sr. Br.) and is assisted by Additional Veterinary Assistant Surgeon for day-to-day management of works at Veterinary Hospital. The VH works towards providing services in animal health care, breeding, immunization, feeding and fodder technology and advisory services. It also works for facilitation of treatment of predominant diseases of livestock by means of testing of different samples.

Under the 5 T charter - Transforming Veterinary Service Delivery in all district & sub-divisional veterinary hospitals, it has been planned to convert the 58 existing Veterinary Hospitals at District and Sub-divisional Headquarters to Model referral Hospitals by means of Retrofitting/new constructions under the State plan scheme "Strengthening of Livestock Service Infrastructures and Modernisation of offices" in phased manner.

At each Veterinary Hospitals, DDLs (Disease Diagnostic Labs) have been set up to offer one-stop shop facility for all pathological tests as health care needs and advisory services to livestock owners.

Veterinary Dispensary:

A Veterinary Dispensary (VD) is the unit of Veterinary and Animal Husbandry service delivery mechanism at block level. Each VD is headed by a Block Veterinary Officer, in the rank of OVS Gr- A (Jr. Br.-I). To make the Animal Husbandry & Veterinary Services accessible to every part of the state, blocks having wide area of operation and higher number of livestock population have additional Veterinary Dispensary within the same block. These additional VDs are

headed by VAS in the rank of OVS Gr- A (Jr. Br.-II). and work closely with the BVO in the respective blocks. Currently, there exist 541 Veterinary Dispensaries in the State. Out of these, 314 are located at block headquarters and rest 227 in the peripheral area having potential for Animal Husbandry activities.

There is a basket of services provided by the VD viz. Animal health care services, organization of health camps, Artificial Insemination, Pregnancy Diagnosis, Castration, Extension Services, Livestock Insurance, Fodder related services, Nutritional Management Services and Advisory Services etc. A VD is the major unit of service delivery in Veterinary Department.

Livestock Aid Centre:

A Livestock Aid Centre (LAC) is the unit of Veterinary and Animal Husbandry service delivery mechanism at Gram Panchayat level. An LAC may comprise of more than one Gram Panchayat. The LAC is headed by a Livestock Inspector/ Veterinary Technician and at times has an attendant to assist in the Animal Husbandry services. There are a number of services provided by the LAC viz. Vaccination, Artificial Insemination, Castration, Extension Services etc. An LAC is the prime unit of livestock service delivery at the Gram Panchayat. There exist 3239 LACs in the state.

LACs are under the technical control of Veterinary Dispensaries/Hospitals and discharge duties like vaccination, first-aid treatments, artificial insemination, extension activities and fodder development.

Mobile Veterinary Unit (MVU): (Mukhyamantri Bhramyamana Prani Chikitsa Seva)

Mobile Veterinary Unit is funded under the state plan scheme through which farmers can get health care, breeding & advisory services for their livestock at their door step in the interior villages where veterinary institutions are far away. It is also helpful for providing services during natural calamity, outbreaks & public emergency.

MVUs are currently functioning in all the 314 blocks of the State with a vehicle hired for the purpose. A Veterinary Doctor in the rank of Veterinary Assistant Surgeon (VAS)/ Additional Veterinary Assistant Surgeon (AVAS) is managing the MVU. To support the VAS/AVAS of the MVU, there is provision of a Livestock Assistant and an MVU Attendant.

Objectives:

- To provide livestock health care services (preventive & curative) at farmer's door step/ village level camp.
- To provide "On the Spot" diagnostic services.
- To make disease surveillance and monitoring of livestock and poultry diseases.
- To detect early, the communicable & non- communicable endemic diseases.
- To attend outbreaks of livestock & poultry diseases on priority basis.
- To create awareness on preventive health care of livestock & poultry and other available departmental services/schemes for better implementation.
- To educate people for adopting appropriate modern technology in animal husbandry practices for improving the productivity of livestock leading to increased income generation of farmers.

Veterinary Services provided:

- Treatment of presented cases at the doorstep of farmers.
- Referring complicated cases to the specialists/experienced officers to provide better healthcare services.
- Minor surgical procedures at the door step of the farmers.
- Artificial Insemination.
- Castration of male animals.
- Vaccination of livestock and poultry in consultation with the local field functionaries.
- On-spot examination of faecal samples (F/S), blood smears (B/S), urine samples (U/S), nasal smears (N/S), skin scrapings (S/S).
- Collection of blood/sera samples, cloacal & tracheal swabs & other samples for subsequent delivery to referral laboratory for further diagnosis.
- Provision of Animal health care during Natural calamities /Outbreaks.
- Preventive vaccination program under different Control Programmes like NADCP for FMD and Brucellosis, PPR CP etc.
- Pregnancy diagnosis.
- Treatment of anoestrus and other infertility cases (sexual & reproductive diseases)
- Attending Dystocia, Referring of complicated pregnancies, wherever required.
- Sensitisation of farmers about departmental schemes using suitable IEC materials like leaflets/ pamphlets etc.
- Public health awareness on diseases of zoonotic importance.

Achievements under MVU during 2021-22:

Sl. No.	Activities	2021-22 (upto March '21)
1	No. of MVU days conducted	74,829
2	No. of villages covered	1,46,508
3	No. of livestock covered under treatment, castration	36,70,756
4	No. livestock covered under vaccination	58,27,388
5	No. of pathological sample examination	1,66,902
6	No. of Pathological sample send to DDL/CIL/SVL/ADRI	39,224
7	No. of awareness camp conducted	44,494

National Animal Disease Control Programme for FMD & Brucellosis:

NADCP-FMD control Programme

The NADCP for Foot and Mouth Disease (FMD) is a Central Sector Scheme launched on 11th September, 2019 (2019-20) for control/eradication of Foot and Mouth Disease (FMD) and Brucellosis. The implementation of the programme (1st Round, vaccination of large animals) started in the state during Jan, 2020.

Objectives:

To control FMD by the year 2025 with vaccination and its eventual eradication by the year 2030. This will result in increased domestic production and ultimately in increased exports of milk and livestock products. Intensive Brucellosis Control programme in animals is envisaged for controlling Brucellosis which will result in effective management of the disease, in both animals and in humans.

Features:

- 100% vaccination coverage of susceptible livestock (cattle, buffaloes, sheep, goats and pigs) at six months interval in the entire state in mission mode.
- Identification of animals using 12 digit unique animal identification ear tags.
- Registration of animals & livestock owners.
- Uploading of registration & vaccination data mandatory on Information Network for Animal Productivity and Health (INAPH) portal through android app (offline) / web (online).
- No user fee collected from livestock owners towards vaccination.
- Use of separate syringe/needle for each vaccination.
- Provision of remuneration to each vaccinator for ear tagging including data uploading on INPAH portal.

Progress under Round -1of FMD Vaccination:

- 94.17 lakh no. of large animals have been ear tagged.
- 90.66 lakh no. of large animals have been vaccinated.
- 4524 samples (2262 pre-vaccinate and 2262 post-vaccinate) sera tested

District wise Vaccination Progress under Round-1:

Sl. No	District	Bovine population	Tagging done	Vaccination done	% Vaccination against population
1	Nuapada	1,68,230	1,67,592	1,65,650	98
2	Deogarh	1,29,909	1,26,197	1,26,210	97
3	Anugul	3,70,584	3,69,951	3,59,600	97

4	Malkangiri	3,07,211	3,02,836	2,97,976	97
5	Kandhamal	3,09,747	3,00,402	3,00,332	97
6	Dhenkanal	3,89,925	3,76,459	3,69,115	95
7	Sundargarh	4,76,827	4,60,822	4,50,629	95
8	Boudh	1,36,361	1,33,522	1,27,946	94
9	Jharsuguda	97,162	95,207	90,434	93
10	Ganjam	4,92,688	4,57,423	4,54,742	92
11	Balangir	3,32,965	3,25,042	3,04,589	91
12	Sambalpur	2,53,693	2,39,458	2,30,601	91
13	Mayurbhanj	6,82,011	6,26,855	6,14,437	90
14	Nabarangpur	3,66,563	3,36,421	3,29,184	90
15	Kalahandi	3,05,965	2,79,084	2,71,528	89
16	Koraput	5,04,797	4,49,047	4,45,228	88
17	Bargarh	2,49,580	2,32,174	2,12,001	85
18	Khordha	2,85,967	2,43,028	2,42,152	85
19	Gajapati	1,73,118	1,52,763	1,46,300	85
20	Kendujhar	6,32,540	5,65,667	5,34,113	84
21	Rayagada	2,95,527	2,67,090	2,47,356	84
22	Cuttack	5,63,597	5,30,431	4,71,000	84
23	Nayagarh	2,22,455	1,99,264	1,84,784	83
24	Jajpur	4,82,405	4,09,818	3,93,174	82
25	Bhadrak	4,55,636	3,77,600	3,69,966	81
26	Baleswar	6,23,470	5,22,352	5,01,375	80
27	Sonepur	1,14,903	95,826	92,400	80
28	Kendrapara	3,37,045	2,72,294	2,69,838	80
29	Jagatsinghapur	2,20,739	1,98,010	1,75,400	79
30	Puri	3,80,674	3,04,072	2,87,710	76
Total		1,03,62,294	94,16,707	90,65,770	87

Under NADCP round-2 during 2021-22, 29.48 lakh doses of FMD vaccine has been received from DAHD & distributed with CDVOs for vaccination as detailed below. Out of the supplied vaccine 15.86 lakh doses of vaccination have been made till 31st March 2022.

Sl. No.	Name of the District	Vaccination Target (Bovine population including booster doses for calves)	Vaccines distributed
1	Angul	3,73,384	1,00,000
2	Balasore	6,27,470	2,00,000
3	Bargarh	2,53,380	80,000
4	Bhadrak	4,59,236	80,000
5	Bolangir	3,36,365	88,000
6	Boudh	1,37,361	40,000
7	Cuttack	5,71,197	2,48,000
8	Deogarh	1,30,509	48,000
9	Dhenkanal	3,93,925	80,000
10	Gajapati	1,73,918	48,000
11	Ganjam	4,95,488	1,00,000
12	Jagatsinghpur	2,25,039	1,00,000
13	Jajpur	4,86,205	1,64,000
14	Jharsuguda	97,762	40,000
15	Kalahandi	308,165	80,000
16	Kandhamal	3,10,947	48,000
17	Kendrapara	3,41,645	1,00,000
18	Keonjhar	6,36,940	2,52,400
19	Khordha	2,89,167	1,76,450
20	Koraput	5,06,997	60,000
21	Malkanagiri	3,08,011	48,000
22	Mayurbhanj	6,86,211	2,00,000
23	Nawrangpur	3,68,563	60,000
24	Nayagarh	2,24,055	80,000
25	Nuapara	1,69,030	48,000
26	Puri	3,85,874	1,00,000
27	Rayagada	2,96,527	60,000
28	Sambalpur	2,56,193	80,000
29	Sonepur	11,6103	40,000
30	Sundargarh	4,79,027	1,00,000
	TOTAL	1,04,44,694	29,48,850

NADCP-Brucellosis control Programme

Bovine brucellosis is endemic in India and appears to be on the increase in recent times, perhaps due to increased trade and rapid movement of livestock. The nature of livestock rearing, especially in rural India, is conducive to spread of infection from livestock to humans due to close contact with animals. Intensive Brucellosis Control programme in animals is

envisaged for controlling Brucellosis which will result in effective management of the disease. 4.49 lakh doses of vaccine have been received during 2021-22 and supplied to the districts for vaccination. 4.44 lakh calves have been vaccinated up to March 2022.

Assistance to States for Control of Animal Diseases (ASCAD):

Under ASCAD assistance is provided to the State of Odisha for control of economically important and zoonotic diseases of livestock and poultry through immunization, strengthening of existing State Veterinary Biological Production Units & State Disease Diagnostic Laboratories, for holding of workshops/seminars & training of Veterinarians and Para-veterinarians.

Peste des Petits Ruminants Control Programme (PPR-CP):

It is a component of the Centrally Sponsored Scheme “Livestock Health and Disease Control” (60% Central Share & 40% State share) implemented in the State with the objective of mass vaccination of all susceptible goats & sheep and their three subsequent generations to control the disease in the country in a time-bound manner. During the year 2021-22, 15.68 lakh doses of vaccine have been supplied. 17.39 lakh vaccination have been made during the year including the carry forward vaccines of previous year.

Odisha Biological Products Institute (OBPI)

“Odisha Biological Products Institute (OBPI)” is a premier institute of Fisheries & Animal Resource Development Department, Government of Odisha. OBPI formerly known as Orissa Serum Institute was established at Cuttack in the year 1946 and happens to be one of the oldest of its kind in the country. Later it was shifted to Bhubaneswar in 1961 keeping in view of its future expansion programme for production of vaccines against different dreaded infectious diseases of livestock & poultry.

Objectives:

To produce and supply Veterinary Biological (Vaccines) against commonly occurring infectious and economically important diseases of livestock & poultry of the state.

Mandate:

To ensure production and regular supply of quality vaccines to field institutes for taking up preventive measures in livestock and poultry.

OBPI – Bhubaneswar:

The campus of OBPI is situated in close vicinity of Odisha University of Agriculture & Technology (OUAT) and spreads over an area of 7.84 acres comprising of Administrative block, Laboratory block, Experimental animals block & Vaccine Standardization Division-cum-Epidemiological Cell. One new building is being constructed to facilitate Good Manufacturing Practice (GMP) for the bacterial vaccines.

OBPI – Berhampur:

OBPI- Berhampur a satellite unit of OBPI, Bhubaneswar is located at Berhampur city in Ganjam District. This satellite Unit was established at Berhampur on 15.06.1992 to cater the

vaccine requirement of 10 Southern districts of Odisha including KBK districts. At first, it started production of Black Quarter and Haemorrhagic Septicaemia vaccines during May 1997 after receiving a license from the Drug Controller, Odisha vide License No. 572 dt.09.05.1996.

Currently, OBPI Berhampur produces Anthrax Spore Vaccine (Living) and Enterotoxaemia vaccine for the entire state of Odisha. The biological produced here are standardized at OBPI, Bhubaneswar.

Salient features

- I. The Institute plays a vital role in maintaining Good Management Practice (GMP) and Good Laboratory Practice (GLP) for producing standard vaccines for mass vaccination against economically important diseases of livestock & poultry (e.g. Hemorrhagic Septicemia, Black Quarter, Anthrax, Enterotoxaemia etc. in livestock and Ranikhet Disease, Fowl Pox etc. in poultry).
- II. The Fermentation technology has been adopted for the first time to produce high quality HS vaccine production through specific bacterial biomass production using stringent parameters of pH, Temperature, O₂ tension in a fermenter. The vaccine production is of high quality in terms of biological and immunological value.
- III. The first batch of vaccine with fermenter technology was successfully produced during March, 2009. Automatic Bottling Unit has been installed.
- IV. The institute became eligible for ISO: 9001-2000 certification on 20.12.2006 for its quality management system through year 2007, 2008 & 2009.
- V. Every year the institute imparts training to the interns of College of Veterinary. Sc& AH on the methodology of vaccine production and its quality control.
- VI. Every year the institute follows prescribed protocols that are approved by the committees like Institutional Animal Ethics Committee (IAEC) and CPCSEA for Standardization and quality control for production of different Vaccines using different lab. Animals.

Types of Vaccine Produced:

The vaccines produced by OBPI against the commonly encountered diseases of livestock & poultry in Odisha are as follows:

A. Bacterial Vaccines

A.	<u>Bacterial Vaccines</u>	
I	Hemorrhagic Septicemia (Fermenter) Vaccine.	
II	Hemorrhagic Septicemia (Alum ppt.) Vaccine.	
III	Black Quarter Vaccine.	
IV	Enterotoxaemia Vaccine.	} Produced at OBPI, Satellite Unit Berhampur
V	Anthrax Spore Vaccine (Living)	

B. Viral Vaccines (for Poultry):

- i. Freeze Dried Ranikhet Disease Vaccine (F1 Strain)
- ii. Freeze Dried Ranikhet Disease Vaccine (R2B Strain)
- iii. Freeze Dried Fowl pox Disease Vaccine

Optimal Production capacity:

By manual method the optimum production capacity of vaccines (both HS and BQ) is around 2.16 crore doses. But through GMP it would be around 4 crore doses.

Status of Vaccine Production (doses in lakh):

	Name of the Vaccine	2019-20	2020-21	2021-22
1	HSV(A)	87.73	84.11	92.04
2	BQV	61.19	59.11	65.66
3	ASV	24.65	20.55	21.49
4	ENTV	17.32	14.08	14.75
5	FDRDV(R ₂ B)	57.00	47.93	47.25
6	FDRDV(F ₁)	5.79	8.5	10.90
7	FPV	2.45	0.98	--
	Total	256.11	235.26	252.09

Good Manufacturing Practice Laboratory:

Good Manufacturing Practice (GMP) compatibility bacterial Vaccine production laboratory for HSV & BQV production (as per the Drug and Cosmetic Act 1940 of India and G.O.I. Notification No. G.S.R.864 (E) dt.11.12.2001) using fermentation technology has already been established at this Institute by which the future demand of the state can be fulfilled.

	Name of the Vaccines	Name of the Manufacturing Unit	Total Production till March'22 (doses in lakh)
1	HSV(Alum)	O.B.P.I.BBSR	92.04
2.	BQV	O.B.P.I.BBSR	65.66
3.	FDRDVF1	O.B.P.I.BBSR	10.90
3	RD (R ₂ B)V	O.B.P.I.BBSR	47.25
4	ASV	OBPI (SU) BAM	21.49
5	ENTV	OBPI (SU) BAM	14.75
	Total		252.09

Animal Disease Research Institute (ADRI)

The Animal Disease Research Institute (ADRI) is a State Level Referral Laboratory of the Department dealing with research and diagnosis of different livestock diseases as well as disease monitoring & surveillance in the state. The institute further imparts training to the field functionaries working in different capacities of this department for up-gradation of their scientific know-how. The institute also renders expertise service during the phase of different natural calamities like flood, cyclone, outbreaks of Avian Influenza & Japanese Encephalitis etc.

Objectives:

- I. Prompt diagnosis of different contagious/infectious diseases of livestock/poultry with timely intervention to reduce spread of infection and economic loss.
- II. Regular disease monitoring and surveillance of livestock and poultry diseases in the state.
- III. Investigation of different animal disease outbreaks for early detection, diagnosis and characterize infectious agents and provide expert advice for control & containment.
- IV. Monitoring the activities of Disease Diagnostic Laboratories (DDL), Clinical Investigation Laboratories (CIL), State Veterinary Laboratory (SVL) at Dist. & Regional level and providing technical supervision to these laboratories.
- V. Collection, compilation and analysis of epidemiological data related to diseases and dissemination of disease related information to different quarters.
- VI. Imparting need based trainings on disease control to the in-service Veterinarians and Para-veterinarians of the State.
- VII. Act as state coordinating agency with different Regional / National level laboratories like RDDDL (ER), Kolkata / ICAR-NIHSAD, Bhopal / ICAR-IVRI, Bareilly & Mukteswar /ICAR-PDFMD, Argul, Jatni / ICAR-NIVEDI, Bengaluru / OUAT, Bhubaneswar etc. on disease monitoring/surveillance, diagnosis of different emerging and exotic diseases.

Facilities available:

As of now, the ADRI is functioning with the synergistic effect of the following key laboratories (Divisions).

1. Pathology Division - Deals with Testing of Pathological samples & conducting post-mortem.
2. Parasitology Division – Deals with Parasitic & Blood Protozoan diseases
3. Bacteriology Division – Deals with Bacterial diseases & Antibigram Study
4. Virology Division – Deals with Viral diseases i.e. FMD, PPR, Goat Pox etc.
5. Bio Safety Level-II Laboratory (BSL-II Lab.) – Deals with certain zoonotic/exotic Diseases like Avian Influenza (Bird flu), Brucellosis, Lumpy skin disease etc.
6. ELISA facilities for detection of antigen/antibody against different diseases using standard recommended protocol.

7. Molecular diagnostic lab with PCR/RT-PCR facilities for quick and confirmatory diagnosis of livestock diseases.

Ongoing activities:

- (i) Foot and Mouth Disease (FMD) diagnosis and sero-monitoring /sero-surveillance as a collaborative centre of AICRP on FMD.
- (ii) Network unit for AICRP on Animal Diseases Monitoring and Surveillance (ADMAS).
- (iii) Disease surveillance and monitoring under
- a) NADCP for FMD & Brucellosis
 - b) PPR control programme.
 - c) Anthrax control programme
 - d) Bovine Spongiform Encephalopathy (BSE) surveillance.
- (iv) Screening of Avian serum samples by ELISA in BSL-II Lab. against Avian Influenza and dispatching swab and environmental samples to RDDI, Kolkata / ICAR-NIHSAD, Bhopal under Avian Influenza Surveillance Programme.
- (v) PCR based molecular diagnosis of diseases.

Pathological Samples Examined (up to March, 2022)

Sl No.	Type of Samples tested	Samples (in Nos.)
1	Feecal samples examined	21,596
2	Nasal smears and Skin scrapping	1,341
3	Blood smears examined	2,80,28
4	Haemogram done	38,684
5	Urine samples examined	6,731
6	Milk samples tested by CMT	5,589
7	Bacterial cultural test conducted	1,288
8	ABST conducted	1,270
9	Other tissues smear examined	532
10	PCR based molecular diagnosis	126
	Other activities	
a.	No. of P.M. Conducted	291
b.	No. of Outbreaks attended	30
c.	No. of Vets. & Para-Vets trained in under ASCAD & other disease control programmes	265 (Para-Vets.)
d.	Nos. of Farmers trained under AICRP on FMD	0

Surveillance & Allied Activities (upto March, 2022)

Type of Samples collected	Samples (in Nos)
a) Avian Influenza	41,511
b) FMD (under the project AICRP on FMD/ FMD C.P.)	10,139
c) Brucellosis (RBPT & ELISA)	1,607
d) Salmonellosis sero-monitoring	0
e) Bovine Spongiform Encephalopathy (BSE) surveillance	16
f) Tuberculin test for detection of Tuberculosis	80
g) Johnin test for detection of Johne's disease	80
h) Sero-surveillance against different diseases under AICRP on ADMAS	165
i) Japanese Encephalitis	181
j) PPR C.P.-PPR diagnosis & sero-surveillance	3,000
k) Theileriosis C.P.	0
l) Anthrax sample	16
m) Samples collected from other diseases (including outbreak)	670
Total -	57,465

Disease Diagnostic Laboratories (DDLs):

Disease Diagnostic laboratories (DDLs) are functioning in all the district headquarters to provide need based diagnostic services of livestock & poultry diseases. There are 30 DDLs functioning in the State namely:

- One - State Veterinary Laboratory (SVL) at Chiplitima, Sambalpur
- Three - Clinical Investigation Laboratories (CIL) functioning at Cuttack, Bhawanipatna, Berhampur and
- 26 - DDLs in rest of the districts.

Objectives:

- I. Examination of clinical materials and specimens collected/received from different parts of the district and communication of the results.
- II. Attending outbreaks as and when required for investigation of the disease and collection of representative samples from morbid animals for diagnosis.
- III. Collection, compilation of epidemiological data on different outbreaks/occurrence of diseases for analysis and follow up strategy for prevention, control of livestock & poultry diseases.
- IV. Collection of sera samples for sero-monitoring/sero-surveillance work under different ongoing disease control programmes, e.g, NADCP for FMD & Brucellosis, PPR-CP etc.
- V. Guiding field veterinarians for timely reporting of outbreaks/diseases, collection and submission of sera and clinical samples for diagnosis.
- VI. Submission of monthly reports to higher quarters on different disease control activities.

Facilities available:

- (I) Basic facilities for routine testing to support diagnosis and treatment
 - a) Faecal samples for different endo-parasitic infection.
 - b) Blood samples for haemoglobin estimation, ESR, predominant/ economically important blood protozoan, bacterial diseases
 - c) Skin samples for ecto-parasitic infestation
 - d) Urine samples for ketosis, bile pigments etc.
 - e) Milk samples for screening mastitis
- (ii) Screening of blood/sera samples for Brucellosis, Salmonellosis.
- (iii) Tuberculin/Johnin test for screening of animals against Tuberculosis, Johne's disease.
- (iv) Rapid test kits for urine analysis & haematological parameters.

Sl. No.	ADRI /CIL / DDLs /SVL	FAECAL SAMPLE	BLOOD SMEAR	WET BLOOD	HAEMATO LOGICAL	SKIN SCRAPPING	NASAL SMEAR	URINE SAMPLE	MILK SAMPLE	CULTURE & ABST	POST MORTEM	Total
1	ADRI	803	12864	0	6432	0	0	2049	601	1716	291	24756
2	Angul DDL	629	8	0	103	31	0	0	84	0	0	855
3	Balasore DDL	261	201	71	123	41	0	24	40	0	0	761
4	Bargarh DDL	907	39	36	112	18	0	8	54	0	1	1175
5	Bhadrak DDL	533	183	0	176	57	17	137	129	0	166	1398
6	Bolangir DDL	211	111	0	104	2	0	97	150	0	0	675
7	Boudh DDL	332	33	0	0	50	21	16	70	0	0	522
8	Deogarh DDL	287	33	0	0	29	0	15	23	0	0	387
9	Dhenkanal DDL	273	260	0	520	0	0	19	10	20	0	1102
10	Gajapati DDL	840	101	10	81	35	2	49	70	0	0	1188
11	Jagatsinghpur DDL	0	5207	0	15621	0	0	1189	62	0	0	22079
12	Jaipur DDL	422	57	0	36	0	0	30	31	0	0	576
13	Jharsuguda DDL	526	0	77	51	81	0	0	0	0	0	735
14	Kandhamal DDL	302	950	0	0	11	0	682	963	0	0	2908
15	Kendrapara DDL	2863	3256	0	6512	0	0	225	92	0	0	12948
16	Keonjhar DDL	885	180	0	171	0	0	905	858	0	0	2999
17	Khurda DDL	290	85	0	110	9	0	0	6	0	0	500
18	Koraput DDL	359	79	95	483	0	0	464	117	0	0	1597

19	Malkangiri DDL	284	3	0	13	0	0	0	6	0	0	306
20	Mayurbhanja DDL	724	190	9	0	2	0	36	123	0	0	1084
21	Nawarangpur DDL	491	1	0	39	0	0	0	41	0	0	572
22	Nayagarh DDL	594	43	0	172	0	0	52	145	240	0	1246
23	Nuapada DDL	859	0	0	0	261	0	0	301	0	0	1421
24	Puri DDL	786	555	0	1058	0	0	174	0	0	0	2573
25	Rayagada DDL	1977	89	0	89	0	0	2	5	0	0	2162
26	Subarnapur DDL	219	0	0	0	0	0	0	37	0	0	256
27	Sundargarh DDL	679	640	0	0	583	51	79	326	0	0	2358
28	Cuttack CIL	949	1669	43	3381	2	0	325	131	288	585	7373
29	Berhampur CIL	415	572	49	1650	30	0	112	256	132	25	3241
30	Bhawanipatna CIL	664	99	0	88	0	0	1	324	174	27	1377
31	Chipilima SVL	2232	520	0	1559	8	0	41	534	520	3061	8475
Total -		21596	28028	390	38684	1250	91	6731	5589	3090	4156	109605

7 National Livestock Mission

Department of Animal Husbandry & Dairying, Government of India is implementing the scheme of National Livestock Mission since the financial year 2014-15. In view of the present need of the sector the NLM scheme has been revised and realigned from Financial year 2021-22. The revised scheme of National Livestock Mission (NLM) aims towards employment generation, entrepreneurship development, increase in per animal productivity and thus targeting increased production of meat, milk, egg and wool under the umbrella scheme. The excess production will help in the export earnings after meeting the domestic demands. The concept of NLM Scheme is to develop the entrepreneur in order to create the forward and backward linkage for the produce available at the unorganized sector and to link with the organized sector.

The realigned National Livestock Mission will have the following three Sub-missions:

- Sub-mission on Breed Development of Livestock and Poultry
- Sub-mission on Feed and Fodder Development
- Sub-mission on Innovation and Extension

During the year 2021-22 the following activities in ARD sector have been taken up in our State under National Livestock Mission. An amount of Rs.3224.897 lakh (CS:Rs.1996.272

lakh:SS:Rs.1228.625 lakh) has been proposed for implementation of various component activities under NLM as mentioned below.

a) Establishment of Entrepreneurship for breed development of Rural Poultry

One Time 50% capital subsidy of the total project cost will be provided with maximum subsidy up to Rs.25.00 lakh for each unit. In the year 2021-22, it has been proposed to establish 60 units in 30 districts of Rural Backyard Poultry units under the programme. The project comprises of a composite unit comprising of 1000 Poultry Parent stock, Hatchery of 3000 capacity and Mother unit of 2000 capacity. The interested entrepreneurs have to apply through the Online Portal NLM. udyamimitra.in.

b) Establishment of Entrepreneur for breed development in small ruminant sector (sheep and goat farming)

One Time 50% capital subsidy of the total project cost will be provided with maximum subsidy up to Rs.50.00 lakh for each unit. In the year 2021-22, it has been proposed to establish 30 units in 30 districts of Breeder Goat/ Sheep farm under the programme. The project comprises of a unit comprising of 500 female & 25 male Breeder Goat/ sheep Farm. The interested entrepreneurs have to apply through the Online Portal NLM. udyamimitra.in.

c) Promotion of Piggery Entrepreneur

One Time 50% capital subsidy of the total project cost will be provided with maximum subsidy up to Rs.30.00 lakh for each unit. In the year 2021-22, it has been proposed to establish 30 units in 30 districts of Breeder Pig unit under the programme. The project comprises of a unit comprising of 100 sows & 10 boars Breeder Pig. The interested entrepreneurs have to apply through the Online Portal NLM. udyamimitra.in.

1. Advertisement of Expression of interest for inviting applications from eligible entity for Entrepreneurship development programme for rural poultry, sheep, goat, piggery, feed & fodder development was floated in English and Odia daily on 26.09.2021.
2. All the Scheme Guidelines along with model DPRs of all the Entrepreneurship programme activity communicated to all field level officers.
3. Three Nodal Officers assigned to 30 districts to follow up with the BVOs and CDVOs and conduct meeting weekly once to review progress under NLM Entrepreneurship Programme.

ii. Livestock Insurance :

To manage the life risk and uncertainties by providing protection mechanisms to the farmers against any eventual loss of their animals due to death and to demonstrate the benefit of the insurance of livestock to the people. The indigenous / crossbred milch animals, pack animals (Horses, Donkey, Mules, Camels, Ponies and Cattle/ Buffalo Male) and other Livestock (Goat, Sheep, Pigs, Rabbit, Yak and Mithun etc.) will be under the purview of this component. In the year 2021-22, it has been proposed to cover 3 lakh large animal & 2 lakh small animals with a Central Share of Rs.1921.795 lakh and State Share of Rs.1220.625 lakh.

8 Capacity Building

Animal husbandry and poultry farming are expected to play an important role in supplementing the limited income and employment opportunities particularly for the small and marginal holdings.

The Capacity Building Plan thrusts upon developing the capacity of employees of Department working at different levels as well as the entrepreneurs/ farmers involved in livestock farming by means of upgrading their existing skill and knowledge in accordance to the prevailing recent trends in the sphere of livestock and poultry development. A comprehensive capacity building plan has been designed based on the persisting ground reality and in view of the emerging skill and knowledge requirements in implementing ongoing schemes.

Society for Management of Information, Learning and Extension (SMILE):

The Society for Management of Information, Learning and Extension (SMILE) was constituted during July, 2007 and was registered under the Society Registration Act, 1860. It is functioning under the aegis of Animal Resource Development Department, Government of Odisha. Presently the Society is located at VOTI Campus, Laxmisagar, Bhubaneswar.

SMILE is coordinating the training activities at State and District level more effectively. In order to perform the activity effectively, District training unit at each district is the functional unit of SMILE for organisation of Training & Extension activities.

Objectives:

- To Develop the Training and Extension system approach in all the training institute of Animal Husbandry Department.
- To facilitate extension & training activities at State, Regional, District, Block and Village level for different stakeholders associated with livestock development.

Veterinary Officers' Training Institute (VOTI):

Veterinary Officers' Training Institute (VOTI) is the state level Training Institute of F & ARD Department, Government of Odisha, located at Laxmisagar, Bhubaneswar and established in the year 1994.

Capacity building Activities during 2021-22

During the current year, the prospective entrepreneurs willing to set up commercial livestock/ poultry unit were invited to attend training in 8 nos of trades namely Commercial Layer Farming (3 batches), Commercial Dairy Farming (5 batches) , Commercial Broiler Farming (3 batches), Commercial Pig Farming (1 batch), Semi-intensive Goat Farming (2 batches), Commercial Poultry Hatchery and Chick Rearing Unit Management (1 batch), Milk Processing and Value Addition (1 batch), Poultry Meat Processing and Value Addition (1 batch) totalling to organisation of 17 nos of training programmes at VOTI.

Abstract on Capacity Building during 2021-22 State Plan

Sl. No.	Type of Training	No. of batches	Venue	No. of participant trained
1	In-service Training of Veterinary Staff			
a	Project Management to Vets	1	VOTI	20
b	ToT on Livestock based Entrepreneurship to Vets (Online)	10	VOTI	171
c	ToT on Goat Artificial Insemination (AI) to Vets	3	FSB, Cuttack/ LITC, Bhanjanagar/ LITC, Chipilima	60
d	Goat AI to Vets	10	FSB, Cuttack/ LITC, Bhanjanagar/ LITC, Chipilima	200
e	Goat AI to Paravets	35	District Training Centers	700
2	Entrepreneurship Training			
a	Livestock and Poultry based entrepreneurship at State level (Online)	23	VOTI	592
b	Medium scale Entrepreneur in Goat/ broiler/ layer/ dairy farming training at District/ regional level	366	DTC/ KVK/ RTC/ ATMA training hall	7320
c	Small-scale entrepreneur in Goat/ poultry/ dairy farming at block level	582	VD level	11640

Development of Training Materials:

Different kinds of Capacity Building Programme are being organised in the Department of Animal Resources Development. While imparting training visual aid and Training materials are highly required. VOTI has taken initiatives to develop teaching materials which are being used during Training Programme. During the reported period VOTI has developed Booklet on Dairy Farming, Goat farming, Backyard Poultry Farming and Broiler farming in simple odia language. Training manuals to be used as reference guide during district/ regional level entrepreneurship development training was prepared. Apart, Goat Artificial insemination has been introduced for the first time in a wider scale in the State.

The training manual for Goat AI training for field Veterinary officers and Para-vets were developed by VOTI.

Training Manual for medium level entrepreneurs at District level

Four no. of training manual for medium level entrepreneurs at district/ regional level have been prepared by VOTI involving Subject Matter Specialists. These manuals were used as reference guide during entrepreneurship training.

Training manual on Goat Artificial Insemination for Veterinary officers

Reproduction is critical to attainment of profitability in goat farming. The organised breeding program plays a key role in the attainment of reproductive efficiency. The State Government has taken initiative to introduce goat artificial insemination in a wider scale to accelerate genetic gain. One manual on “artificial insemination in goat” was developed by VOTI involving Subject Matter Specialists to uniform and standard skill based training for the field Veterinary Officers at different departmental training institutes.

a. Training manual on goat Artificial Insemination for Para-vets

In order to train the field AI technicians one manual in Odia language have been prepared to train the Livestock Inspectors/ Veterinary technicians at District level. The manual has covered important aspects along with relevant photographs that an Artificial Insemination Technician (AIT) needs to learn to take up goat AI in field. The standard operating procedure to conduct artificial insemination in goat has been described in the manual.

One brochure in odia was prepared for sensitizing the goat owners regarding artificial insemination in goat.

b. Reference material for small entrepreneurs at block level

Four no. of training manual for farmers at block level have been prepared by VOTI involving Subject Matter Specialists. These manuals were used as reference handout for distribution amongst the trainees during block level skill up-gradation training.

Information, Education and Communication Programme

“Information, Education and Communication” intends to educate the livestock farmers of the state so that they can take up livestock farming in a better way in order to increase the production and productivity. This in turn provides livelihood to the livestock farmers, creates entrepreneurs in livestock sector and contributes to the state's GSDP. Various schemes of Government in livestock sector like dairy development, poultry development, small animal development, fodder development etc. are being streamlined to extend assistance to the interested livestock farmers and farmers are getting the required information through effective communication processes under IEC programme.

IEC programme educates livestock farmers of the state to opt for different livestock related activities like dairying, poultry and small animal rearing along with fodder production.

These programmes play a very important role for creation of awareness among livestock owners in order to make them ready to take up modern livestock practices. Besides creation of awareness on different Government schemes and programmes, IEC programme educates

livestock farmers on disease control measures, immunisation programmes, production and productivity enhancement and the like. It also aims to provide hassle free services to the livestock farmers by taking measures regarding online service delivery under different schemes. Creation of awareness through IEC programme helps the farmers to overcome panic situation during occurrence of natural disasters and various emerging diseases like Bird Flu, Swine Flu, Rabies, Anthrax, etc. which are having zoonotic importance and public health problems. IEC programme contributes a lot by providing timely advice about the care and management, feeding and disease control aspects of animals during natural disaster/calamities like flood, heat wave, cyclone etc.

IEC Activities under Electronic & Print Media

Television and radio play a crucial role as mass media in circulating messages through nook and corner of the state. Television Commercials/ TV Spots and Radio Jingles on various livestock related activities have been prepared and telecast/broadcast through Door Darshan and All India Radio in prime time for educating the livestock farmers of the state. Similarly, educative messages in advertisement form have been published in all the leading Odia dailies of the state for creation of mass awareness.

IEC Activities under Electronic Media

	Name of Event	Number
1	Programmes broadcast in AIR & audio spots	56
2	Duration of broadcast in AIR & audio spots	18,000 Sec.
3	Programmes telecast in TV media	7
4	TV spots telecast in Doordarshan	32
5	Audio visual materials prepared for telecast	10
6	TV Scrolls for creation of mass awareness (numbers)	120

IEC activities under Print Media

	Name of Event	Number
1	Advertisements/advisories floated in numbers of newspapers and periodicals	63
2	No. of articles published in different newspapers and periodicals	10
3	Pieces of news published in various newspapers	62

IEC Activities under Social Media

Social media has taken the centre stage in today's technology savvy society for dissemination of messages of any form. Going with the flow, Animal Resources Development sector in the State Government has created Facebook Profile, Twitter Account and Youtube Channel to reach to a large chunk of people and educate them regarding modern animal husbandry practices along with sensitizing them on various government schemes. The highlights of government programmes and achievement of lead livestock farmers are also being disseminated through these social media platforms. To get firsthand information regarding the Department and ARD sector activities, people can surf the Directorate website.

IEC activities under Social Media

	Name of Event	Number
1	No. of website maintained	1
2	Postings in Facebook	52
3	Tweets in Twitter	50
4	Re-tweets in Twitter	47
5	Videos uploaded in You-tube	7
6	Templates, videos, audio clips shared through WhatsApp Groups	16

New Initiatives in IEC Activities

To take the government schemes and programmes of ARD sector up to the level of livestock farmers residing at village level, hoardings have been erected at district, block and gram panchayat level highlighting the salient features of ARD sector schemes. A total of 554 hoardings have been erected throughout the state to attract the attention of farmers towards government programmes. Besides, social messages in form of SMS and letters have been sent to the livestock farmers for creation of awareness on modern animal husbandry practices and pattern of government assistance under different programmes.

	Name of Event	Number
1	No. of Hoardings Erected for creation of mass awareness (20'*10')	350
2	No. of Hoardings Erected for creation of mass awareness (15'*10')	204
3	Social messages (SMS) sent to popularize livestock schemes (no. of farmers including OMFED farmers)	98,553
4	Social messages (Letters) sent to popularize livestock schemes (no. of farmers)	11,384

Other IEC activities

	Name of Event	Number
1	Exhibition in Krushi Odisha (no. of stalls erected in closed hanger)	12
2	Exhibition in Krushi Odisha (no. of stalls erected in open space)	20
3	Organisation of Workshop on Entrepreneurs-Farmers Interface	12
4	Organisation of Workshop on Animal Welfare	1
5	Organisation of State Level Livestock Exhibition (Go-Sambardhana Utsav)	1
6	Organisation of District Level Livestock Exhibition (Go-Sambardhana Utsav)	30
7	Preparation of leaflet/poster designs for farmers	6
8	Advisory for Cyclone Jawaad (Template)	1
9	Social Media Templates for creation of mass awareness on KCC Campaign (Livestock Sector)	1
10	Articles for the convergence magazine published by Dept. of A&FE, Government. of Odisha	4

Organization of Exhibition for Buyer-Seller Meet & Transfer of Technical Know-how

The objective of Buyer-Seller Meet is to acquaint the farmers with rearing practices of livestock for their economic benefits. This establishes direct contact between producer, buying agents, processor and users. Cattle worship and farmers' training programmes have been organized in the districts and state level during Gosambardhana Week to make the people aware of Livestock production management and for scientific interaction between the farmers and the scientists for transfer of technical knowhow on milk, meat and egg production and organized marketing.

Observation of 70th Gosambardhana Week-2021

70th Gosambardhana Week-2021 was observed from 05.11.2021 to 11.11.2021 and celebrated throughout the state. Both state level and district level functions were organized at different places where various activities such as cattle exhibitions, calf rallies, meetings, prize distributions, farmers' trainings etc. were organized. The State level function has been organized at Macchipada, Nayagarh on 06-11-2021 where the Hon'ble Minister, A&FE, F&ARD and Higher Education has graced the occasion as chief guest. Go-Sambardhana,

Farmers' Training Programmes, Farmer-Scientist Interaction Programmes were organized at the state level function as well as in each district level observation. The state level function has been shared live through virtual platforms Facebook live and Youtube to reach to maximum number of farmers in the state.

Krusha Odisha-2021

Krusha Odisha is being organised every year at the state level to have farmers-scientists interaction. It also eases the dissemination and adoption of new technologies in agriculture and allied disciplines. ARD sector activities have been exhibited in Krusha Odisha and interaction programmes organized for educating the livestock farmers and to ease out the process of adoption of intricate technologies by them. There was exhibition of Government programmes and modern practices in dairying, poultry and small animal rearing, fodder development, disease control, value addition of livestock products etc. for creation of mass awareness. Exhibitions in ARD sector were made in two categories i.e. stalls erected inside closed hanger and open space. In the closed hanger, modern animal husbandry practices have been showcased with a corporate look and in the open space live animals along with fodder demonstrations were made. Exhibition of ARD activities has been adjudged the best and bagged the 1st prize in Krusha Odisha-2021.

Organisation of Animal Welfare Workshop

A Workshop on Animal Welfare Schemes has been organised through virtual mode on 11th November 2021. The presentations in the workshop have been made from Krusha Bhawan Auditorium, Bhubaneswar and the CDVOs have joined through virtual mode (Zoom App) from their respective districts. Animal Welfare organizations and NGOs working for animal welfare at state and district levels have joined the workshop. It aimed to create sensitization among animal welfare organizations on various animal welfare schemes launched by the State Government. for welfare of the stray and destitute animals.

9 Animal Welfare Activities

State Animal Welfare Board was constituted in 2002 (Notification no.22225/FARD dt.28.11.2002) for the purpose of proper implementation of Animal Welfare activities in the state and reconstituted in the year 2013 (Notification no. 5589/FARD dt.16.05.2013) and 2020 (Notification no.7557/FARD dt.09.07.2020) in which Hon'ble Minister, F & ARD, Odisha is the Ex-officio Chairman, APC-cum-ACS, Odisha is Vice-chairman and Commissioner-cum-Secretary, F & ARD Dept. along with 4 Hon'ble sitting MLAs, Representatives of Municipalities, Goshala, other depts. of Government, animal welfare division of India etc act as members. The Director, AH & VS, Odisha acts as the Member Secretary of the society. The tenure of the Board is 05 years from the date of official notification.

The SAWB, Odisha is registered under Society Registration Act, 1860 bearing registration no.21823 of 2004-05. The Department has taken up following major activities towards welfare of animals.

- A. Prevention of Cruelty to Animals
- B. Expansion of Animal Helpline facility
- C. Supporting Animal Birth Control Programme
- D. Establishment of New Cattle Shelter Houses & Support to Private Goshalas
- E. Infrastructure Support to NGOs involved in Animal welfare Activities

Prevention of Cruelty to Animals

Objectives:

- To promote animal welfare and wellbeing.
- To prevent the infliction of unnecessary pain or suffering on animals, in terms of the provision of the Prevention of Cruelty to Animals (PCA) Act, 1960.
- To monitor and ensure that the PCA Act, 1960 and the Rules framed under the act are enforced.
- To make provisions for widespread publicity in the State as well as to build capacity (impart adequate training to all government officers who are required to enforce the provisions of this Act and the Rules made there under) and conduct awareness workshops with the local bodies, police departments and other enforcement agencies.
- To assist and advice the State Governments and exercise those functions which the State Government may wish to vest in them in furtherance of animal welfare activities in the State.
- To take steps for reconstitution of all District SPCAs.

District Societies for Prevention of Cruelty to animals

The District Societies for Prevention of Cruelty to animals (SPCA) functioning at District level under the guidance of Collector & District Magistrate as President, Superintendent of Police as Vice-president and Chief District Veterinary Officer(CDVO) as Honorary Secretary as per Government Notification no. 23513/FARD dt. 21.11.2000. All the 30 Dist. SPCAs are also registered under Society Registration Act, 1860.

Activities Undertaken:

- The Prevention of Cruelty to Animals Act 59 of 1960 (Central Act) has been enforced in our state for Welfare of animals.
- Government of Odisha vide notification No.15545/FYAH dated 03.08.1976 do hereby authorise the inspectors of SPCA to function & exercise, powers under the section 34 of the PCA Act 1960 on the entire state of Odisha.
- The Inspectors of SPCA in the field of animal welfare are conducting mobile courts with the help of police and judiciary to check animal cruelty cases in different part of the state as well as awareness programmes in educational institutions, public places, religious places, cattle markets to rouse public consciousness towards kindness and compassion of animals.

- Animal Welfare activity - Animal Birth Control (ABC) programme, Development of Goshala activities, Relief & rescue operation, T.V & Radio programme, training programme on animal welfare, participation in exhibition & mela etc.
- The Regd. Private Goshalas are being provided with financial support towards feeding & maintenance of abandoned animals.

Achievements made under SPCA:

Activities	2021-22 (up to March 2022)
No. of cases prosecuted under PCA Act 1960	129
No. of cases booked jointly by Police & SPCA to check up illegal transport of animals in the State	129
No. of cases convicted	129
Fine money Collected in Rs/-	19,900

Animal Help Line (AHL) facility with Veterinary Ambulance Services Introduction:

Fisheries and ARD Department, Government of Odisha under the State Sector Scheme has introduced services for ailing stray animals in five districts with Animal helpline (AHL) facility along with provision of well-equipped animal ambulances. In the 1st phase during 2016-17, such facilities were introduced in Saheed Nagar, under Bhubaneswar Municipal Corporation followed by services under Cuttack & Berhampur Municipal Corporation during 2017-18. During October 2019-20, the AHL facility was extended to Sambalpur Municipal Corporation and Municipality in Puri district.

During 2021-22, the Animal Helpline and Ambulance Service (AHL) has been revamped looking into the need of facility in the urban localities. Additional six new municipalities in the districts namely at Angul, Jagatsinghpur, Baripada, Balasore, Bhawanipatna and Rourkela have been added to the current 5 existing facilities to take emergency health care of the stray and abandoned animals during road accidents etc.

Extending AHL Services working hours

Location	No. of Shifts	Shift- I	Shift- II	Shift- III
Bhubaneswar & Cuttack	3 shifts (24x7)	6 am-2 pm	2 pm-10 pm	10 pm-6 am
Puri, Sambalpur, Angul, Jagatsingpur, Baripada, Berhampur, Balasore, Bhawanipatna & Rourkela	2 shifts	6 am-2 pm	2 pm-10 pm	-

Scope of program

- Each AHL shall provide health care services to stray and abandoned animals on receipt of the call within 25 km radius of the ULBs.
- Emergency calls for treatment of injured and distress animals will also be taken up Setup of AHL team
- The team will consist of - Veterinary Officer, AHL Assistant, Driver and Attendant
- The team will report to the Nodal Officer in charge of AHL (SDVO/ ADVO/ DD (DVH)) as decided by the CDVO
- In Bhubaneswar and Cuttack, the AHL program will also be supported by a Facilitating NGO.

Infrastructure/equipment and medicines

- The ambulance will be well equipped with instruments/equipment.
- CDVO will take steps for procurement of need based medicines & equipment.
- The medicines and other consumables shall be used for treatment of stray/abandoned animals.
- No free medicines/ consumables shall be used for treatment of pets.

Aim:

Animal helpline facility aims to provide emergency help to the injured / distress livestock that remain unattended and uncared for a long period of time.

Objectives:

- To treat the injured / distress / abandoned animals/pets at the spot with First-Aid & lifesaving drugs.
- To make available emergency services to animals in distress.
- To transfer the sick & injured livestock to the nearest Veterinary Dispensary/Hospital for additional/better treatment whenever required.
- To clear the road blocks occurred due to accident involving animals, so that traffic inconveniences in National Highway and State Roads will be reduced.
- To cater better and timely veterinary service during natural calamities, when large number of animals become prone to injuries.

Implementation procedure:

Timings- The animal Ambulance will run in 2 shifts i.e. 6 am to 2 pm & 2 pm to 10 pm in all places except in BBSR & CTC where it will run in 3 shifts i.e. 6 am to 2 pm, 2 pm to 10 pm & 10pm to 6 am.

AHL team- Each ambulance will have a team consisting of a Veterinary Doctor, Attendant, AHL Assistant & Driver. In Bhubaneswar and Cuttack, a Programme Co-ordinator and Field Assistants will be engaged in addition to the dedicated team.

Sl. No	Name of the ULB	Veterinary Doctor	Animal Helpline Asst	Project Coordinator	Field Asst.	Attendants
1	Bhubaneswar	03	03	01	02	03
2	Cuttack	03	03	01	02	03
3	Puri, Sambalpur, Angul, Jagatsingpur, Baripada, Berhampur, Balasore, Bhawanipatna & Rourkela	02 each	02 each	-	-	02 each

AHL toll free number- The process of setting up a dedicated Animal Helpline Toll Free number is ongoing and shall be launched for the State. Wide publicity through print, electronic and social media, etc. would be taken up. The Toll Free number will be displayed in the ambulance vehicle and institutions.

Animal treatment-

- On receiving a call/any communication about a sick/injured animal, the AHL ambulance with the team will reach the spot as early as possible to provide necessary First-Aid/ health care.
- In critical cases, the affected animals wherever required may be shifted to the nearest Veterinary Hospital /Veterinary Dispensary / nearest goshalas / animal shelter homes for necessary treatment/care.
- If dead animals are recovered from the accident site, the same are to be disposed preferably by deep burial method in the nearby government land away from human habitation. This will be done in coordination with the local Deputy Commissioner/Health Officer of concerned municipality/ corporation/NAC.
- In case of natural calamities, the Animal Helpline will continue to deliver the requisite services as usual subject to its utilization in affected areas as per the instruction of the concerned CDVO/DD (DVH) in exigencies.
- No user charges will be collected towards providing ambulance service to injured stray animals.
- The Veterinary officer along with animal health assistant engaged in Ambulance should maintain all the requisite registers.
- The Animal Helpline team when not in service will assist the DD (DVH) in their day-to-day work in VH/VD.

Animal Helpline Contact Numbers in use at Present:

	Places	Contact no.
1	Bhubaneswar	0674 -2540924 / 1800 3457 458 (Toll Free)
2	Cuttack	18003458186

3	Berhampur	06802226157 / 18003452298(Toll free)
4	Sambalpur	8895814042
5	Puri	06752-221111
6	Baripada, Angul, Rourkela, Balasore, Bhawanipata & Jagatsingpur	Animal Helpline is to be Lunched

Merging the district level Toll Free number with a Unified State Level Animal Help Line is in progress.

Year wise Achievements made under AHL

Year	No of cases treated				
	Cuttack	Berhampur	Bhubaneswar	Puri	Sambalpur
2019-20	335	236	2258	36	86
2020-21	552	429	2362	123	1098
2021-22	861	660	3148	158	1343

Animal Birth Control (ABC) programme

Aim:

The aim of the programme is to expand and streamline Animal Birth Control Program in 12 urban locations i.e Bhubaneswar, Cuttack, Puri, Sambalpur, Angul, Jagatsinghpur, Baripada, Berhampur, Balasore, Bhawanipatna, Rourkela and Jajpur. The Fisheries and ARD Department supports the said 12 Urban Local Authorities (Municipal Corporations, Municipalities, NACs) in implementation of the ABC program by providing requisite budget to onboard the veterinary staff. The Field Assistant & Programme Coordinator engaged through FNGO will also be involved in implementation of ABC programme in Bhubaneswar & Cuttack by coordinating with the Municipal corporation authorities, active Animal Welfare Organizations and Volunteers.

Initially the ABC programme started at Veterinary Poly Clinic, Saheed Nagar, Bhubaneswar from June - 2008 with the financial assistance from Bhubaneswar Municipal Corporation. Funding made to BMC from Housing & Urban Development Department, Government of Odisha; are being placed to the SDVO, Bhubaneswar who is overall supervising officer of the Programme.

This scheme will support the Municipal Corporation/ Municipality/ NAC for hiring of contractual Veterinary Doctor and contractual ABC Assistant in 12 urban locations with a target to achieve 200 surgeries/month by one Veterinary Doctor. The respective Municipal Corporation, Municipality, NAC can hire Contractual Veterinary Doctors & Contractual ABC Assistant by engaging Service Providers through tendering processes. The contractual manpower to be engaged through Service Provider by various Urban Local Authorities.

Objectives

- To control the population of stray dogs in humane manner in urban areas

- To control the incidence of Rabies through vaccination
- To reduce the stray dog related menaces
- To protect the stray dogs from cruelty

Sl. No.	Name of the Municipality /Municipal Corporation	Funds placed (In Lakhs)
1	Bhubaneswar Municipal Corporation	35.040
2	Cuttack Municipal Corporation	17.520
3	Puri Municipality	87.60
4	Sambalpur Municipal Corporation	87.60
5	Baripada Municipality	87.60
6	Berhampur Municipal Corporation	87.60
7	Rourkela Municipal Corporation	87.60
	Total	140.160

Year wise Achievements made under ABC Saheed Nagar, Bhubaneswar:

Year	Male	Female	Total
2020-21	255	769	1024
2021-22	591	1559	2150

Achievements under ABC in other Centers

Year	Cuttack	Sambalpur	Rourkela	Baripada	Puri
2020-21	558	208	40	31	312
2021-22	463	152	152	231	856

Support to Private Goshalas

The Government of Odisha under State Plan programme provide financial assistance to registered private Goshalas since 2016-17 for maintenance of the uncared old, destitute and stray animals sheltered and to promote/encourage the Goshalas to increase their activities towards rehabilitation of old, sick & abandoned animals as a part of prevention of cruelty to animals and to ameliorate their pain/sufferings on humane ground.

An amount of Rs.16, 000/- is provided as annual assistance to each adult cattle unit (one ACU is considered as 350 kg body weight) for maintenance/care and management of animals towards expenditure on feed & fodder, medicines and vaccines.

Provision of Infrastructure Support to Voluntary Organisation engaged in Animal Welfare

The objectives of the programme is to strengthen the infrastructural facilities of the Voluntary Non-Government Organisations working in the field of Animal Welfare in order to provide Veterinary Health services and shelter homes for stray, abandoned and destitute animals. The scheme will be implemented by the State Animal Welfare Board, Odisha through District SPCA.

The scheme will provide finance assistance to the eligible organisations/ institutes for setting up capital infrastructure for welfare of stray, abandoned and destitute animals. Funds is being provided for the following components under the scheme.

- Veterinary Hospital, Clinics, Health Infrastructure including building.
- Operation Theatre and equipments.
- Vehicle for transportation of animals.
- Construction of Kennels and shelter houses for stray and abandoned animals.
- Any other essential infrastructure/equipments or implement as per assessment of the SWAB.

Establishment of New Stray Cattle Shelter Houses / Goshala

The objective is to encourage establishment of new Stray Cattle Shelter Houses/ Goshala in the State for providing shelter to old, destitute, stray cattle through Voluntary Non-Government Organisations working in the field of Animal Welfare.

Under the scheme, assistance shall be given to eligible NGOs / VOs for taking up construction of new goshalas to the tune of Rs.20.00 - Rs.52.00 lakh for a minimum unit size of 50 animals to a maximum of 150 animals.

Extent of Assistance

Sl. No.	Component	Maximum Admissible Amount (Rs in Lakh)
Financial Assistance for Stray Cattle Shelter for 50 animals		
1	Cost of boundary wall/ Barbed wire fencing	3.00
2	Cost of construction of Animal shelters (Housing, isolation, treatment etc.)	13.00
	Total	16.00
Financial Assistance for ancillary infrastructure		
1	Construction of water tank, water trough, feeding trough,	0.50
2	Dug well/ bore well, water pump etc.	1.00
3	Construction of drains	0.50
4	Construction of Attendant shed and store room	1.50
5	Electrification, pathways etc	0.50
	Total	4.00

10 Odisha Livestock Resources Development Society (OLRDS)

The Odisha Livestock Resources Development Society (OLRDS) was formed in the year 2000 under the Societies Registration Act to streamline & strengthen the breeding operations in cattle and buffalo of Odisha. This has been formed vide Government Notification No. 10220-3V (D)-7/99/FARD dt.29.05.1999.

OLRDS is the State Implementing Agency for all bovine breeding activities of the State. OLRDS is committed for the socio-economic development of the people through genetic up-gradation of existing cattle and buffalo. The improvement of local cattle and buffalo through genetic up-gradation under the assistance of Central and State sponsored schemes.

The Society focuses on:

- Organized breeding through Artificial insemination (AI) or Natural Service by high quality bulls.
- Improving access to quality livestock breeding services.
- Arranging and in time supply of breeding inputs to field AI institutions.
- Educating farmers for genetic improvement of their cattle and buffaloes.
- Initiating appropriate research work for conservation of important indigenous breeds so as to prevent the breeds from deterioration and extinction.

Management:

Odisha Livestock Resources Development Society (OLRDS) is having a Governing Council with following statutory members. The Principal Secretary/ Secretary to Government, Fisheries & Animal Resources Development Department, Government. of Odisha administers as President. The Director, Animal Husbandry & Veterinary Services, Odisha functions as Vice President. The Chief Executive Officer, OLRDS works as Member Secretary. The Governing Council has Addl. Secretary/Joint Secretary to Government, Finance Department, Addl. Secretary/Joint Secretary to Government, Planning & Convergence Department, Managing Director, OMFED & other senior officers from Directorate o

11 Odisha State Poultry Producers Co-operative Marketing Federation Ltd (OPOLFED)

Odisha State Poultry Products Co-operative Marketing Federation Ltd. (OPOLFED) is a state level apex co-operative organization registered as a society on 29-03-1976 and declared as an Apex Co-operative Federation on 22-3-1984. OPOLFED operates in two tier system i.e., Poultry Producers Co-operative Society (PPCS) & Women Poultry Co-operative Society (WPCS) at grass root level and the Federation at the apex level as on date, 35 PPCS/WPCSs have been affiliated to this Federation. OPOLFED's marketing activities like supply of eggs, packet eggs, dressed chicken meat to the consumers of Bhubaneswar and Cuttack is continuing through the authorised sales booth agents, Government & private organizations as well as the Chicken Fresh outlet established at SDVO campus Sahidnagar, IRC Village, OUAT Campus, Chandrasekharapur and Sambalpur. Six number of chicken fresh outlets on PPP mode has already been established at Jagatsinghpur, Phulabani, Khurdha, Bhawanipatna, Jeypore & Berhmapur town.

Activities taken up by OPOLFED during 2021-22

- OPOLFED has marketed around 18.50 lakh number of eggs and 85 MT of chicken meat and 750 MT of Poultry Feed.
- OPOLFED has been supplying four weeks' old LIT birds, Layer birds, 14 weeks old Pullet & Duck in different government schemes throughout the state.
- OPOLFED has established Chicken Fresh Outlet on PPP mode at Berhmapur, Ganjam for marketing of poultry & poultry products.
- OPOLFED has supplied inputs like bird, feed, equipments etc. to the members of GPLFs under Odisha Livelihood Mission and marketing their poultry products.
- OPOLFED has procured the Egg & Chicken meat from the different WSHGs under Mission Shakti and sold in OPOLFED Chicken Fresh outlets in various cities.
- OPOLFED has taken up the integration of Layer bird programme in Koraput district through the WSHGs.
- OPOLFED has purchased egg @Rs. NECC + 0.97P from individual poultry farmers of under the scheme "Support to farmers for layer farming (1000 Capacity) in cage system under COVID-19 package 2020-21".

Inauguration of the OPOLFED Chick Fresh Outlet

Inauguration of OPOLFED Chicken Fresh Outlet at CDVO Campus, Berhmapur, Ganjam By Shri Vijay Amruta Kulange, IAS, Collector and District Magistrate, Ganjam in Presence of Shri Siddeshwar Baliram Bondar, IAS, Commissioner, Berhmapur Municipal Corporation & CDVO, Ganjam.

12 The Odisha State Cooperative Milk Producers' Federation Ltd. (OMFED)

The Odisha State Cooperative Milk Producers Federation was started during the year 1980 under Operation Flood-II programme and registered under Society Act with Registration No. 6/BBSR dated 28.01.1980. OMFED is headed by elected Board of Directors represented by Chairman and Managing Director as CEO. The functions of OMFED are carried out through the affiliated thirteen District Milk Unions (Cuttack, Puri, Dhenkanal, Sambalpur, Keonjhar, Balasore, Mayurbhanj, KMNR, BKN, Boudh, Kandhamal, Sundargarh & Mayurbhanja). OMFED has its own twelve Dairies (Bhubaneswar, Balasore, Sambalpur, Keonjhar, Rourkela, Jeypore, Berhampur, Bhawanipatana, Dhenkanal, Slapada, Angul & Arilo) and other two Dairies i.e at Tirtol (10,000 LPD) & Tangi (30,000 LPD) maintained by Cuttack & Puri Milk Union respectively. Two new Dairies are coming up 50000 LPD at Sonapur and 20000 LPD at Kendupatna, Cuttack. In addition to this, two Cattle Feed plants one is situated at Radhadamodarpur in Cuttack district and another is at Jagannathapur in Khurda District. State Level Apex Cooperative Society having its brand name OMFED, has taken the responsibility to increase the Dairy Development activities in the State like Milk Procurement, Processing & Milk marketing.

Every financial year OMFED has prepared a budget for its turn over including all units in order to carry out its activities from Milk Procurement to Milk Marketing and developmental works. The budget is duly approved by the Board and after completion of the financial year, the achievements made against the budgetary allocation was reviewed once again by the Board.

During the year 2021-22, OMFED has budgeted turnover of Rs.812.26 Crore and achieved Rs. 694.64 Crore in different fields such as Milk Procurement & Marketing.

Milk Procurement:

- As of now, 6596 societies have been organized in which 2.90 lakh farmers have been enrolled, out of which 1.18 lakh are enrolled as women members. In the year 2021-22, OMFED has procured around 4.16 lakh litres of milk/day from all the 30 districts of the State. The farmers have been assured for procurement of all the marketable surplus milk in the societies without imposing any restriction.
- OMFED has organized 263 nos. of Tribal Women Dairy Society and enrolled 8815 nos of farmer members and collecting 11815 ltrs of milk daily. There is a provision to give subsidy on cattle feed, mineral mixture, SS Milk Can, De-worming medicines and different kinds of training programme to tribal women farmer members.
- In order to maintain transparency in milk procurement, quality test and price payment to farmers, 2320 nos. of Automatic Milk Collection Units (AMCU & DPMCU) have been installed at Society level.
- Chilling infrastructure of 402 number of Bulk Milk Coolers with capacity of 9.14 lakh litres is available.
- Milk processing capacity of OMFED reaches to 8.90 lakh litres per day.
- Milk Powder Plant is made operational for conversion of 2 lakh ltrs per day of milk to milk powder at OMFED Dairy, Arilo .

- Farmers are provided with special package of Rs.10.71 crore towards cattle feed incentives for one month to support Dairy Farmers under OMFED.
- 8217 number beneficiaries have been sanctioned with KCC loan by different banks amounting to Rs.22.23 crore.
- On 10th November 2021, a fully automated 5 lakh litres Dairy plant at Arilo, Govindpur of Baranga Tahsil has been established under RIDF with the cost of Rs.273.00 crore .
- During the year 2021-22, 71.84 lakh litre of milk has been sold as bulk sale and 80.37 lakh litre of milk has been converted to milk powder and ghee.

Milk & Milk Product Marketing:

- OMFED is supplying about 3.75 lakh liters Milk & Milk Products to the customers through retail outlets/ distributors in the State.
- Due to purity of OMFED Ghee, on demand of Lord Jagannath Temple and Lingaraj Temple, Federation is supplying OMFED Ghee.
- Federation has launched fat rich Gold Premium Milk, Chai Special Milk, A2 Milk & new Milk Products such as Sugar Free ice-cream/Sweet curd, Sugar Free Vanilla ice-cream & Probiotic Curd, fortified milk with vitamin A & D, A2 SFM, Pouch curd (200 gm.), dairy whitener for lakh of customers in the State.
- OMFED has started online marketing and home delivery system through Retailer & Swiggy.
- OMFED has appointed distributors for enhancing distribution network to market milk & milk products and Ice cream in new areas, townships and virgin clusters having low penetration in different Dairy operational areas. OMFED has appointed 49 number of Milk Distributors, 268 number of Product Distributors and 42 number of ice-cream Distributors for enhancing distribution network.
- OMFED has appointed 4079 number of retailers to sell milk and milk products in the State.
- OMFED has opened Sales Counters in special Jail Jharpada, Bhubaneswar Circle Jail, Choudwar, Berhampur, Baripada & Balasore.
- OMFED has tied up with reputed departmental stores such as modern trade super stores to market its value added products in organized retail & chain of retail stores on long term basis.
- Cold chain facility (Bottle Coolers, Deep Freezers & Vizicoolers) has been provided to 930 nos. of outlets/agents throughout the state to maintain the quality of milk & milk products.

Cattle Feed:

Premium cattle feed at Radhadamodarpur and Pallet Cattle feed having 20% crude proteins(Nutrigold) at Jagannathpur, Khordha are produced and supplied to the farmers at subsidized rate @ Rs.23.00/Kg & Rs.23.50/kg respectively. The total capacity of both the plants is 350 MT/day.

13 Natural Disaster Management

Animal Resources Development sector in the State is working towards management of natural disasters to save the livestock resources and provide livelihood to the farmers. Preparedness, Relief and Reconstruction activities during natural disasters like cyclone (FANI, TITLI, AMPHAN, YAAS etc.), flood, cold wave, heat wave etc. are being taken up by the Department for protection of livestock resources. Veterinary staff had braved the flood situations and toured to the marooned villages by boats in order to provide livestock health care services and carry out relief and reconstruction measures. Every care had been taken to immunise animals in the flood affected areas to protect them from various contagious diseases. Animal Health Camps were organised regularly in the flood and cyclone affected areas of the State. Cattle feed and green fodder was distributed to the affected farmers to feed their livestock during flood and cyclone.

Disaster Management Activities during 2021

I. YAAS

The very severe cyclonic storm 'Yaas' made landfall in coastal Odisha on 26th and 27th May 2021. Due to the storm, about 11.15 lakh animals in our State were affected. The Department took immediate step to mobilize teams of veterinary professionals to the cyclone affected districts to provide livestock health care measures, preventive vaccination & supply of cattle feed etc. The support measures provided during post Yaas period is detailed below.

Sl. No.	Activities	Achievement
1	No. of Veterinary RRT Teams engaged	106
2	No. of camps organized	1125
3	No of Animals Treated	65217
4	Quantity of Cattle Feed distributed (in MT)	582.25
5	Quantity of fodder distributed (in Qtl.)	140
6	No.of vaccination done	189300
7	No. of carcasses disposed	Large Animal- 60 Small Animal- 14 Poultry- 28502

ii. Extreme Rainfall

After extreme rainfall during 2nd week of September 2021, 580.25 qtl. of cattle feed was distributed in six affected districts i.e. Jagatsingpur, Cuttack, Kendrapada, Jajpur, Balasore & Khordha.