

PROCEEDING OF THE CONSULTATION WORKSHOP ON DEVELOPMENT OF STRATEGIES FOR ENTERPRISE PROMOTION AND SUSTAINABLE LIVELIHOODS IN FISHERIES SECTOR IN ORISSA HELD ON 29-30TH AUGUST 2005 AT HOTEL SWOSTI, BHUBANESWAR.

A two-day Consultation Workshop on Development of Strategies for Enterprise Promotion and Sustainable Livelihoods in Fisheries Sector in Orissa was held at Bhubaneswar on 29-30 August, 2005. The list of participants is in Annexure-I.

Sri Surendra Kumar, IAS Director of Fisheries, Orissa, welcomed the Hon'ble Minister, Fisheries & ARD Department, Govt. of Orissa, Commissioner-cum-Secretary, F & ARD Department, Sri P. K. Jena, IAS Team Leader, UNDP, Sri Harsh Singh, Resident Representative of UNDP, other dignitaries from the Central and State Government Departments and Institutions, and the district fishery officers.

2. In his welcome address, Shri Surendra Kumar, Director of Fisheries, Orissa outlined the Fisheries resource potential of the State in having 6.66 lakh ha. of Inland Aquaculture resources, 4.18 lakh ha. of Brackish water resources, 480 Kilometres coast line and 24000 Sq. Km. of continental shelf and 105 lakh of fishermen population. Out of these vast resources, the State has been able to derive 3.16 lakh MT of fish per year for its utilisation. He also outlined the importance of the fishery sector in providing livelihood security and in creating employment opportunities -both direct and indirect. He suggested the need for increasing the per capita fish availability to enhance the nutritional status of our people. To achieve this goal, he suggested the urgency for logistic distribution of aquaculture resources (GP tanks / GP ponds) and scientific intervention in our culture practices.

3. Mr. Harsh Singh, Assistant Resident Representative of UNDP in his address emphasized the role of partnership for mutual benefit to be derived for fishermen, the weaker sections of the society in opening up vast employment opportunity that is available in this sector.

4. Sri P.K. Jena, Team Leader, UNDP, Orissa in his address outlined the following.

- Challenge to double the fish production
- To explore and open up the scope of vast employment opportunity
- Need to be a partner with the financial institutions for overall development of this sector
- His experience in pisciculture under Water shed Mission

He stressed the urgent need for revamping the tank/pond fishery and to make it suitable for scientific pisciculture. Under National Food for Work (NFFW) programme, tank fishery as well as Captive Nursery Tanks should be included. He further stated that under Reservoir Stocking there should be a provision for:

- i) Rearing of fry/fingerling
- ii) Development of Fish Seed Farm in Govt. and private sector
- iii) Development of hatchery infrastructure

Poverty alleviation in Orissa can be possible only through (i) Agriculture (ii) Pisciculture and (iii) Horticulture and hence in the fisheries sector, pisciculture should be promoted as a major employment and income generating activity for the rural poor, who should be motivated to take up this activity on large scale. The cost of fish production to be reduced by adopting a sustainable pisciculture practice, which will go a long way in benefiting the fish farmers and in bringing down the retail market price for fish, which consequently will lead to availability of fish to consumers at affordable price and increase in consumption of fish. He also stressed on developing a policy which is acceptable by one and all and is workable and inviting entrepreneurship for investment in this sector.

5. Mr. M.K.R. Nair, Joint Commissioner, Fisheries, Govt. of India in his address, outlined the following:

- ❖ Govt. of Orissa will be one of the first States to go for such comprehensive Fisheries Policy in the country.
- ❖ Government of India proposes to make fisheries as one of the major sectors by 2020 and proposes to double the fish production and food production.
- ❖ Govt. of India is proposing to bring out a comprehensive Fishery Policy in the country as a guideline to all other States to follow.
- ❖ Govt. of India has evolved a comprehensive Marine Fishery Policy in the country.
- ❖ Aquaculture to emerge as an important sector in the country. It has also passed the Aquaculture Authority Bill in the Parliament. Govt. of India is presently working on a model i.e. "Inland Fisheries Act" in the country.
- ❖ Production should not be the theme alone. Stress to be made on Livelihood, sustainability and Employment Opportunity.
- ❖ Commended the initiatives of the Govt. of Orissa in its Fisheries and ARD Department to double the Inland fish production in the coming 3-5 year.

6. Shri C.J.Venugopal, I.A.S., Commissioner-cum-Secretary, Fisheries and ARD Deptt. Govt. of Orissa in his address, stated that the State Government has already initiated steps to increase fish production and create employment opportunities in the sector. District Collectors have been requested to identify BPL beneficiaries for engaging them in pisciculture by creating new ponds on Government land. He emphasised the need for energising the fisheries sector in the State through people's participation and for the benefit of one and all. Some of the major issues highlighted by him in his address are:

- ❖ Developing a Vision 2020 Document, a comprehensive Fishery Policy and a strategic action plan for Fisheries Development and management in the State.
- ❖ Prioritising the production, productivity, and welfare of fishermen.
- ❖ Doubling the Inland Fish Production and increasing the present value of fishery exports from Rs. 300 crore to 1000 crore.
- ❖ Developing adequate basic infrastructure facilities such as approach road to fish landing shed/reservoirs.
- ❖ Including Aquaculture in the Action Plan of the 12th Finance Commission.
- ❖ Facilitating provision of basic infrastructure facilities such as electricity, communication (road, rail, telephone, etc) to Aquaculture clusters.
- ❖ Developing and upgrading the marine infrastructure to meet the E.U norms.
- ❖ Creating appropriate mechanisms and approaches for ensuring remunerative price to fish producers.
- ❖ Evolving a policy which has a blend of entrepreneurial and pro-poor orientation and Public- Private partnership.

Fisheries Sector now looks to generation of supplementary income and increase in per capita fish consumption. We should look at the ways by which we could bridge the gap between the maximum sustainable yield levels and the present production; how to increase the productivity; how to increase the area under aquaculture; the major constraints and structural deficiencies hampering the faster growth of fisheries sector and our goal; the alternatives to subsidy oriented policy in view of WTO restrictions; generation of self employment opportunities to a cross section of the society, particularly women; the intervention required for promoting fisheries in draught prone areas, water logged areas and along the coastal belt. Since the priorities of the districts vary from region to region within the State, District Level Fishery Development Planning should be prioritise depending on the needs of each district with necessary backward and forward linkages.

7. Sri G.B. Nayak, Hon'ble Minister, Fisheries and ARD Department, Govt. of Orissa, inaugurated the Workshop by lighting the lamp and delivered the Inaugural address. In his address the Hon'ble Minister announced that the State Government will formulate a

comprehensive fisheries policy soon to double fish production during the next five years and take the export earnings from the sector to Rs. 1000 crore per year. He further stated that the fisheries sector in Orissa has great potential to create employment opportunities and bring in revenue. He highlighted the rich fishery resources of the State and stressed the importance of creating awareness/interest among farmers to venture in to pisciculture. He called upon the State fishery officers to give their might to boost fish production by promoting and motivating the people who live below poverty line to venture into aquaculture. He further emphasised that the attitude towards fisheries subsidies should change. He also announced that an Award will be instituted for best pisciculture practice adopted by the farmers in the State.

The inaugural session of the workshop ended with Sri T.K.Behera, Addl. Director of Fisheries, Orissa, Cuttack was over with proposing a vote of thanks to the dignitaries and participants.

SESSION - I: Capture and Culture Fisheries

The Session I dedicated to Capture and Culture Fisheries was chaired by Dr. V. Sampath, UNDP Senior National Consultant (Orissa Fisheries Project), Bhubaneswar. Dr. N.C. Biswal, Senior Research Officer, Fisheries Department, Orissa served as a Rapporteur. The second part of Session I on 30th August 2005, was chaired by Dr. A.K. Patnaik, CE, CDA and Shri H.C. Badapanda, served as the Rapporteur.

There were presentations by five resource persons covering various aspects of capture and culture fisheries, policy initiatives, etc., and by 25 District Fishery Officers/Dy. Directors bringing out the salient features of the fishery resources in each district, their utilization, the gaps/constraints and the future needs, policy requirements, etc.

Presentation by Mr. M.K.R. Nair, Jt. Commissioner (Fisheries), GOI, New Delhi

Mr. M. K. R. Nair, Joint Commissioner Fisheries Government of India made a presentation on the Comprehensive Marine Fisheries Policy announced by the Government of India during 2004. He traced the history of formulation and implementation of the various deep sea/marine fisheries policies including 1981 Policy, 1986 Charter policy and 1991 Policy, which was reviewed and rescinded in 1996. He further informed about the constitution of a Committee to formulate a comprehensive Marine Fishery Policy, the objectives of the 2004 policy, etc.

The main objectives of the 2004 Policy include:

- To augment Marine Fish Production of the Country
 - In a sustainable manner
 - To boost export of sea food
 - To augment per-capita fish protein intake
- To ensure socio-economic security of Artisanal Fishermen by
 - Empowerment
 - Sea safety
 - Participatory management
 - Technological upgradation

- Freedom from exploitation
- To ensure sustainable development of marine fisheries with due concern for ecological integrity and marine biodiversity.
 - Compliance of National and international legislations/conventions
 - Fighting pollution
 - Participatory approach

The developmental goals for fisheries in India are to double fish production by 2020, to augment per capita consumption of fish, to maximise export of fish products, to improve socio – economic well being of fishers and to ensure sustainability of marine fisheries.

While framing the Policy 2004, the status of marine fishery resources, status of harvesting the resources, post-harvest infrastructure, resource management, fishermen welfare, legislative support, the environmental aspects and the special needs of the island groups.

He further outlined the features of the policy, which *inter-alia* are:

- Comprehensive in nature
- Seeks to contain inter-sectoral clashes
- Balanced growth of all sectors
- Thrust on resource management
- Empowerment of fishers
- Stress on reduction of post-harvest losses
- Enhanced food safety
- Legislative support
- International compliances such as UN fish stock agreement 1995, FAO Compliance Agreement 1993, FAO Code of Conduct for Responsible Fisheries
- Resource enhancement measures such as sea ranching, mariculture, FAD

To sum up his presentation he outlined the Road ahead of the policy formulation exercise, which include:

- Preparation of a National Plan of Action
- Ratification/Accession of International instruments and their implementation
- Legal framework

- Assisting States to develop sectoral plans
- Marine Census
- Strengthening of data base
- Action plan for community participation

Presentation by Sri Anoop Agarwala, Director of Fisheries, West Bengal

Sri Anoop Agrawala, IAS, Director of Fisheries, West Bengal presented the success story of fisheries development in West Bengal. Under the title “West Bengal Fisheries: A State of Art”, in which he outlined some of the remarkable developments made by the State in Fisheries sector.

In West Bengal the Fishery has become an important activity offering opportunity for poverty alleviation, employment generation and food security. Fish demand in West Bengal is highest in the country. West Bengal has attained a special position in Fisheries development in the country with annual production of 12.5 lakh MT/year with a per capita fish consumption of 15.6 Kg/year. With the increasing population the demand for fish is also increasing. Estimated demand by the end of 2009-2010 would be around 13.59 lakh MT. The other points touched upon by him in his talk are as under:

- Catch from marine sector has been stagnating.
- Efforts are under process to increase production.
- Emphasis has been laid on ecological sustainability.
- State has come up in a big way in ornamental fish production empowering the women SHG in rural and semi-urban areas.
- Promoting cage culture in bheels & water logged areas.
- Through cooperative societies the poor fishermen have been empowered.
- Construction of houses to the fishermen has been taken up on a massive scale.
- Roads, electrification and other facilities have been developed in fishing harbours and fisheries clusters.
- Research centres have been established for the welfare of the fishermen.
- Use of Database and Information Technology have been made available to the farmers.
- Aqua-clinics have been established in the State for the welfare of the farmers.
- Application of GIS / RS (Remote sensing) has been in the fisheries sector.
- Wets Bengal has potential inland water area of 2.76 lakh ha. Of which, 2.21 lakh ha. is under culture and 1.17 lakh ha. has been developed under FFDA's.

Under FFDA: Gr. I 6000 – 8000 Kg.
Grading is made
as per production. Gr. II 4000 – 6000 Kg.

Gr. III 2000 – 3000 K.g

- Facility by NABARD for doubling the fisheries credit.
- Early financing Credit Card system to cover all the available resources (fit for carp culture).
- Short-term credit plan : Production Target – 3000 to 4000 Kg./ha./year.
- Promotion of Air breathing fish culture.
- 28 schemes – are in operation.
- Insurance for Flood, Calamities, Poaching & Poisoning.
- Quality control hatchery seed.

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|-------------------|-----------|---|----------------|
| - Brackish water: | Potential | - | 2.1 lakh ha. |
| | Culture | - | 0.485 lakh ha. |
| | BFDA | - | 0.53 lakh ha. |
| | Disease | - | Crop rotation |

Crab Culture

- Women and children collect shrimp seed which is hazardous and un-sustainable
- Alternative livelihood of crab fattening has been suggested

Reservoir:

The reservoir fishery resources spread over 16000 ha., of which 3000 ha. is under culture. Irrigation canal / Drainage canal extends to 80000 ha. Hatcheries have been set up for production of seed of threatened species. Sewage fed fisheries is practiced through fish culture in 4500 ha. water area.

Riverine Fisheries: In Malda, river ranching programme for enhancing the fishery resources/potential is being carried out.

In ornamental fish culture special emphasis is given to involve rural folk particularly women, by imparting training through FFDA's and NCDC programme. So far, 128 units have been established.

He went on to outline the major initiatives taken by the State Government in the fisheries sector, which include:

- Strengthening of Research and Development with special emphasis to the need of the area/field.
- Measures for conservation of wetlands and threatened/endangered fish/aquatic species.
- To ensure availability of fund through STCP & FFDA/BFDA and technical know how through training/participatory programme.
- Better management practices & quality control for better input realization.
- Improvement in the Post Harvest Technology & food processing for value addition.
- Training and dissemination of technology.
- Introduction and implementation of Information Technology and Computer net working in all the offices of this department for building up G2G, G2C & C2C portals/websites.
- Application of Geographical information system (GIS) & remote sensing (RS) in fisheries sector and census of important attributes of inland fisheries.
- Employment generation, poverty alleviation and upliftment of rural economy through different developmental programmes with special emphasis on socio-economic upliftment of SC and ST community.

Strategies adopted by West Bengal for augmenting fish production are:

- FFDA areas to be grouped for increasing productivity in the ranges a) 6000 to 8000 Kg /ha. b) 4000 to 6000 Kg /ha and to introduce Intensive Fish Farming with Multiple Stocking and Multiple Harvesting(MSMH) Technology.
- 288.97 ha new water area has been created and 38475.91 ha water bodies has been reclaimed.
- Production of fish per ha has also been increased from 600-800 kg/ha/annum to 3500-4000 kg/ha/annum through this scheme.
- Easy financing to the fisher through Credit Card system with the involvement of the financial institutions.

- To cover rest of the available resources (fit for carp culture) under Short Term Credit Plan (STCP) with the production target of 3000 to 4000 kg /ha.
- To bring all other water bodies/ditches into proper culture / usages viz. air breathing fish culture.
- There are altogether 28 schemes; however depending on the need District Level Task Group can adopt any scheme if found necessary.
- Insurance coverage from the possible losses due to flood, natural calamities, poaching and poisoning etc.
- Quality control of hatchery produced fish seed.
- Programme for magur culture / duckling rearing for rural women folk towards women empowerment-formation of SHG/SGSY.
- Ensuring disease free seed through PCR facility at our research station.
- Easy credit facility and combination of insurance coverage towards increasing productivity and area.
- To avoid recurrence of WSD – Crop rotation and adoption of mixed farming.
- Restrict the number of trawlers and use of destructive crafts & gears.
- Standardisation of captive breeding of many marine fish species, by setting up hatcheries.
- Under Social Fishery Schemes introduction of culture of some of the endangered fishes will be made compulsory.

Presentation by Dr. T. Srinivas Kumar, INCOIS, Hyderabad:

In his presentation on Potential Fishing Zone Advisories and their dissemination to coastal community, Dr. T. Srinivas Kumar outlined the following aspects in prediction fish shoals - both conventional and advanced scientific methodologies:

➤ **Heritage in fish finding**

- Bird Congregation
- Colour
- Bubbles breaking
- Muddy & oily

➤ **Niche for fish**

- Temperature
- Salinity
- DO₂
- Surface current
- Light
- Chlorophyll

He further explained the scientific basis of producing PFZ advisories using the sea surface temperature and chlorophyll data collected through remote sensing satellites and the oceanographic parameters such as eddies, upwelling, currents, etc., from which the PFZ maps are generated and made available to the fishing community in the form of advisories through print media, AIR, TV, Telegrams, phone, fax, e-mail, internet, World Web radio and through digital display boards, information kiosks, etc., from over 225 nodes, in multi-lingual mode. He indicated that the validation of the results obtained from the fisherfolk have shown that the search time for fish was reduced by 30-70 %, Catch per Unit effort had improved, the saving in fuel cost to the tune of Rs. 1.5 – 3.0 lakh per year per vessel, benefiting nearly 1,00,000 vessels in the country.

Presentation by Dr. N.Sarangji, Director, CIFA

Dr. N. Sarangi, Director, CIFA, made a presentation on "Freshwater Aquaculture Development in Orissa". During his presentation he highlighted the Kyoto declaration of 1976, Bangkok declaration of 2000, Status of Fisheries in National Scenario, Scope of seed production and grow out of crops, scenario of Freshwater Aquaculture, Integrated fish farming.

He further highlighted the following issues, need and key factors for fisheries development in the State.

➤ **Issues:**

- Desired size / species of seed materials
- Shortage of rearing space for fingerling production
- Production concentrated on low valued carps
- Lesser degree of diversification
- Non-availability / expensive quality feed
- Water for aquaculture
- Risk for disease outbreak
- Disorganised marketing channels
- Natural calamities
- Social issues
- Mindset

➤ **Need:**

- Hatchery for carps, catfishes and prawn
- Commercial feed production
- Diversification
- Intensification
- Guidelines for hatchery accreditation
- Seed certification
- Quality aquaculture inputs
- Infrastructure development
- Strengthening training / extension
- Post-harvest and quality assurance
- Organised marketing channels
- Social development of farming community

➤ **Key factors for development:**

- Resource management
- Technology dissemination
- Infrastructure development
- Human resource development
- Formulation and implementation of policy guidelines
- Inter-organisational linkage
- Institutional finance, insurance and subsidy

Presentation by Dr. A.K. Patnaik, Chief Executive, CDA

His presentation was on "Management of Fisheries Resources of Chilika". The recommendations are:

- Regulation of fishery activities in the lagoon as per the provision of OMFR Act
- To regulate the fishery activities in the lagoon regular surveillance and monitoring by the joint task force
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- Strengthening the infrastructures of the ADF BT Balugaon.
- Operation of Khanda in the strategic recruitment routes including Magarmukh should be regulated to facilitate free recruitment of juveniles and breeding migration
- The old traditional seasonal capture fishing methods such as Jano, Prawn fishery (prawn khati), Dian, Uthapani, Bahani, etc should be encouraged.
- Operation of very fine mesh size nets (zero nets) should be prohibited.
- Motorisation of wooden boats in Chilika should not be further encouraged and its operation should be regulated based on the carrying capacity.
- The capture fishery exploitation should commensurate with Maximum Sustainable Yield (MSY) level
- Measures should be taken to prohibit high tide mullet fishing along the Outer Channel during the breeding migration period (September–January) for successful spawning in sea and to facilitate auto-recruitment of mullet juveniles.
- Environmental Impact Assessment for commercial exploitation of bio-resources, from the lagoon,(other than fisheries) should be made mandatory.
- Existing Primary Fishery Co-operative Societies should be strengthened
- The procedural hurdles for timely settling of the fishery rights (capture fishery sources) with the societies need to be streamlined.
- The Fishery rights need to be resurveyed and properly demarcated to avoid dispute and conflict.
- The rights should be classified based on the potential productivity level and lease value be assessed accordingly
- The lease term for capture fishery rights should be for a minimum period of 3 to 5 years.
- The existing package of incentives for marine fishery sector should be extended to the Chilika fishermen.
- Infrastructure development like landing centres and ancillaries and for value addition
- Outreach programme for enhancing the awareness about the values and function of the wetland and to stop the destructive fishery practices.
- Capacity building of the fishers on responsible fisheries.

Presentation by the District Level Fisheries Officers:

District Level Fishery Officers representing 25 districts made their presentation, which covered the following aspects.

- District Action Plan to increase production / productivity
- Requirement of infrastructure and input to achieve the target
- Unique aspects of Fisheries specific to the district
- What inputs they would like to contribute to increase fish production and in the matter of policy making

SESSION – II: Presentation by the Technical Sub-Committees

This Session chaired by Shri B.C. Behera, Dy. Director, MPEDA, Bhubaneswar and Smt. U. Behera, Directorate, Cuttack was devoted to presentation of the recommendations of the 7 Sub-Committees by the following:

i)	Mr. M.K.R.Nair, Joint Commissioner, Govt. of India	Technical Sub-Committee on Marine Fisheries
ii)	Sri T.K.Behera, Addl. Director of Fisheries, Orissa	Technical Sub-Committee on Welfare Issues, Co-operatives, SHGs
iii)	Dr. Om Prakash Director, CICEF	Technical Sub-Committee on Infrastructure
iv)	Dr.A.K.Pattanaik, IFS, Chief Executive, Chilika Development Authority	Technical Sub-Committee on Chilika Fisheries development
v)	Sri B.C.Behera, Dy. Director, MPEDA, Bhubaneswar	Technical Sub-Committee on Brackishwater Aquaculture, Processing & Marketing
vi)	Dr.N.C.Biswal, Dy Director of Fisheries (Extension), Orissa	Technical Sub-Committee on Inland, Reservoir Fisheries Project

The recommendations of these sub-committees are given in the Annexure-II.

SESSION – III: Marine Fisheries and Infrastructure

This session was chaired by Mr. M.K.R. Nair, Jt. Commissioner, Fisheries, MOA. Mr. A.C. Naik, Department of Fisheries, Orissa served as the Rapporteur. Under this Session there was a presentation by Shri K. Omprakash, Director, CICEF, Bangalore on the “Present status and future requirement of infrastructure facilities for marine fisheries development and exports in Orissa” and a presentation by Mr. P.K. Behera, Dy. Director, MPEDA, on “Seafood export from Orissa” and presentations by the Assistant Directors of Fisheries of the Coastal/marine States.

Presentation by Mr.K. Omprakash, Director, CICEF

In his presentation titled “Present status and future requirement of infrastructure facilities for marine fisheries development and exports in Orissa”, he outlined the marine fishery resources of India, vis-à-vis that of Orissa, the marine fish production, the harvest and post-harvest facilities

available in Orissa, such as major and minor fishing harbours, landing and berthing facilities, etc, the existing capacity for landing and berthing of fishing vessels, constraints and gaps such as:

- No post-harvest support facilities such as cold storages, processing plants and marketing available in any of the FH/FLC and hence exporters are shy of using these facilities.
- No approach road , electricity, water supply in most of the FH/FLCs.
- There is no appropriate mechanism in place for operation, management and maintenance of the facilities created.
- Insufficient fund allocation for construction, operation, management and maintenance of the facilities.
- Needs full-time dedicated fishery harbour unit

Requirement for the future which includes:

- Post-evaluation on the present status of existing capacity and its utilisation.
- Identification and upgradation of the existing FH and FLCs
- Repair and Renovation of the existing FH and FLC
- Development of a master plan for creation of additional facilities including
 - Identification of new sites
 - Carrying out macro and micro level survey
 - Preparation of detailed design and estimates
- Modernisation of the FH/FLCs keeping in view the HACCP and EU norms
- Establishment of a fishing harbour authority for guiding the entire process of harbour/FLC operation and management.
- Setting up an exclusive Harbour Wing for supervising construction of FH/FLCs.
- Provision of adequate budgetary provision for feasibility studies and matching grant for construction and operation.
- Encouraging private sector participation in the construction, operation and maintenance of the FH/FLCs on BOOT concept
- Creation of adequate post-harvest facilities for reducing post-harvest losses in the FH/FLCs as per EU standards
- Marketing infrastructure
- Policy initiatives required for augmenting infrastructure such as public-private participation for the creation and maintenance of all the basic facilities.
- Exposure visit of fishery personnel to other States
- Mapping of the coastal areas using RS and GIS for understanding the carrying capacity and to identify locations for establishing the FH/FLCs

Inland fisheries related infrastructure such as

- Captive nursery
- Landing platforms
- Approach road
- Electricity
- Ice plant/cold storage
- Marketing facilities

Presentation of Mr. B.C. Behera, Dy. Director, MPEDA

In his presentation titled “Seafood export from Orissa” , he explained India’s position in World Marine fish production and marine products exports vis-à-vis Orissa’s position, top exporting and importing countries of the World, major markets & their share 2002-03, etc. He outlined in his talk a number issues which are as under:

- Sea Food Industry Infrastructure
- Major Marine Products Items Exported (2004-05 (Apr-Mar)
- Export Performance 1990-2005
- Contribution Of Cultured Shrimp To Total Export Of Shrimp From India By Value
- Future Scenario - Vision 2010
- World Demand Estimated To Increase To 140-150 Million Mt By 2010.
- To Achieve An Export Turnover Valued At 3 Billion Us Dollars By 2010.
- To Achieve Steady Growth In The Unit Value From The Current Level Of 3.6 To 5 Dollars Per Kg. In The Next 5 Years.
- To Achieve 50% Value Addition Of The Quantity Exported From The Country.
- To Achieve Sustained Production Through Aquaculture
- To Enhance The Image Of The Indian Marine Products In The Leading Markets With A View To Achieving High Degree Of Differentiation And Commanding Premium Price For Its Products
- Contribution Of Cultured Shrimp To Total Export Of Shrimp From India By Volume
- Contribution Of Cultured Shrimp To Total Export Of Shrimp From India By Volume
- State-Wise Details Of Shrimp And Scampi Culture (As On 31.3.2003)
- Aquaculture - Shrimp Production
- Progress Of Shrimp Culture In India
- Distribution Of Farms Based On Area Holdings

MPEDA SUB ASST IN ORISSA SINCE 1980

- New Farm Dev. @ Rs.50,000-00/ha wsa max upto 5 ha. w.e.f 1.4.2005 – 25% of the Cap. Cost - for shrimp, within 1 year of AAI approval. 331 / Rs.2.07 Crores.
- ETS in shrimp farms @ Rs 1.5 lakh/unit - max 4 units per farm – 25% of the Cap. Cost – 1 unit / 5 ha wsa – small farm clusters also eligible. 19 / 48 Units / Rs. 72 lakhs.
- WTK in farms having more than 1 ha wsa @ Rs.30,000-00 / farm – 25% of the Cap. Cost: 10 / Rs.2.68 lakhs.
- Hatcheries @ Rs.3 lakhs for 10-30 milln & Rs.6 lakhs for bigger cap.- 25% of the Cap. Cost.
 - Shrimp: 8 / Rs.33.50 lakhs.(ii) Scampi: 2 / Rs.3.74 lakhs.
- PCR Lab. @ Rs.5 lakhs - 50% of the Cap. Cost –
- 2 Nos / Rs.8,74,529-00
- Other subsidy schemes cover Chill Room, Insulated Fish Box, ETS in hatcheries etc.

STRATEGY FOR INCREASING EXPORTS

ISSUES:

● Consumer perception towards environmentally safe food (eg. organic shrimp) - uncertain mkt – comptn thro diversified species (e.g. *P. vennamei*) – antidumping – antibiotic – incrgn prodn cost (feed, seed, diesel etc) – poor infra & hence poor quality of raw material – land conversion – water tax – AAI approval (only 10% farm even after 8 years).

STRATEGY:

- Sustained prodn thro aquaculture in clusters for effective mngt, mrktg & to address Traceability issues thro village level aqua-clubs.
- Resurvey of bw land on CRZ rglns and liberal allt of govt. land – Comt. constd in June,2005 by GOO.
- Quality at primary prodn level vide FAO guideline - Value addition – raw frozen to decrease.

Potential for production of value added products

- Availability of high quality raw material of shrimp, cephalopods and fin fishes.
- Processing plants with necessary facilities and high standard of hygiene for the production of value added products.
- Availability of technically competent personnel in the production of value added products

The Assistant Directors of Fisheries of the coastal/marine districts presented status papers on the resources and programmes for marine fisheries development in these districts. Some of the issues raised by them include:

- Introduction of Intermediate craft with improved design for fishing operation beyond 50 m depth zone.
- Installation of GPS, fish finder, wireless sets in fishing boats.
- Development of infrastructure facilities at landing centres.
- Construction of new fishing harbours, new fishing jetties, approach road, seizure yard., display boards and weather warning, provision of PFZ forecasts,
- Installation of permanent ice boxes,
- Provision of drinking water in FLCs,
- Dradging of jetties, and river mouth.
- Reassessment of resources,
- By-catch, AR, FAD, sea ranching, banning of illegal collection of seed.
- Introduction of multi-day long trip fishing vessels with diversified fishing gears.
- Provision of access to market economy.
- Multiple common facility to be created.
- Introduction of mother ship concept for fishing in offshore waters and diversification.
- Amending OMFRA for enforcement of provisions – patrol boats.

While summing up the Session's proceedings the Chairman flagged the following issues::

- ❖ Lack of infrastructure
- ❖ Silting up of the harbours/FLCs
- ❖ Infrastructure of the state government to be included in the proposed master plan for FH/FLCs.
- ❖ Paradip harbour – issues are looked into
- ❖ Empowerment of fishermen/women.
- ❖ OBM – motorization can be taken up.
- ❖ Marine patrol boats introduction
- ❖ Extending to outer sea – overcapitalization will lead to unviability.
- ❖ Existing subsistence fishermen to expand/diversify their activity sustainably.

Open House

The presentation by the Resource persons and the District Fishery Officers was followed by an Open House Session at the end of the Session I on 29th August and at the end of Session III on 30th August, 2005, in which there was an exchange of views.

The Commissioner-cum-Secretary opined that further increase in fish seed (fingerling development) could be from the private sector. We should look at the issues from fish seed production to marketing – value chain – has to come from the private sector.

Mr. PK. Misra, suggested that Quantitative – strategic/comprehensive master plan for fish productivity and production needs to be developed.

Mr. P. K. Behera: MPEDA: BW land should be surveyed and data revalidated keeping in view the CRZ regulations. Water logged areas along the coast, which are un-utilised could be used for shrimp farming by the entrepreneurs.

Commissioner-cum-Secretary DFARD : Draft land allotment policy of 1993 to be re-looked so that it is in tune with the present needs. Gujarat, Maharashtra documents will be collected and modified for our purposes. Similar land leasing policy has to be there for Freshwater areas also.

ADF, Shri Acharya: Conservation for riverine fisheries is needed.

Commissioner - cum- Secretary, DFARD: No land allotment policy is there. Under the NFWP programme both in government and private lands renovation and new tanks could be taken up. BPL people can also be covered under the programme, To enhance the fish production – private sector has to come in.

FEO Bhadrak: Seed certification to be put in place for ensuring production and supply of quality and disease free fish/shrimp/prawn seed and fish seed sale needs to be regulated. Encourage private sector to fill up the gap in fish seed demand and supply.

Dr. Biswal, clarified the points on seed certification and fingerling production.

Assistant Director, Balugaon: OMFRA – regulates the marine fishing and for Chilika also there are separate Rules. Is there any need for any more acts/rules to be issued for Chilika. Whatever has been incorporated, it should be enforced. All destructive fishing methods should be stopped in Chilika and it should be ensured that the existing rules and regulations are enforced. F.W. prawn wild seed collection to be banned. Select mesh size – banning zero mesh sized net.

Patnaik, CDA: Fish farmers association has assured that they will abide with the rules.

Valedictory session

The Valedictory session of the Workshop was chaired by the Commissioner-cum-Secretary, Fisheries & ARD Department, Govt. of Orissa and attended by Sri P.K.Jena, IAS, Team Leader, UNDP, Orissa Hub, Sri Surendra Kumar, IAS, Director of Fisheries, Orissa, Sri Harsh Singh, ARR, UNDP, Dr. V.Sampath, UNDP Senior National Consultant (Orissa Fisheries Project), Mr. Bishnupada Sethi, Programme Coordinator, UNDP and Sri A.K.Patnaik, IFS, CEO, CDA,

Dr. V. Sampath, summed up the two-days proceedings.

In his concluding remarks the Commissioner-cum-Secretary spelt out the follow up actions and the role and responsibility of each and every one who are involved in policy and visioning exercise, which are enumerated below:

- i) The District Level Fishery Officers of the State including marine districts must revise the Action Plans for enhancing the fish production in the light of the discussions made in the Workshop. Shortcomings / Omissions, if any in their presentations may be corrected.
(Action All DLOs)
- ii) Zonal Deputy Directors in-charge of the districts should prepare item-wise action plans (e.g. creation of water bodies under NFFW, RSVY and on-going poverty alleviation programmes at district level, enhancing seed production, fingerling stocking in reservoirs from different sources, provision of critical infrastructure etc.) through SGRY Action Plan for their Zones.
(Action All Zonal DDFs)
- iii) The item-wise Action Plans submitted by the concerned Zonal Dy. Director of Fisheries may be compiled at the Headquarters level to prepare the Action Plan for the State.
(Action: Director, FY)
- iv) All the DFOs to bring to the personal attention of the Collectors to the two important letters issued from the Chief Secretary's level to the Collectors with respect to stocking of

fingerlings in the reservoirs (D.O. No. 11423 dt. 22.7.05) and creation of waterbodies under NFFW programme for enhancing fish production (D.O. No. 11422 dt. 22.7.2005)
(Action: DFOs)

- v) All the DFOs to submit proposals for dovetailing of funds from ITDA/WODC/ Irrigation Department for stocking of fingerlings in the reservoirs.
(Action: DFOs)
- vi) All the DFOs to pursue inclusion of different critical infrastructures in the district Action Plan and the proposals to be submitted to the 12th Finance Commission.
(Action: DFOs)
- vii) The Director of Fisheries, Orissa to pursue through Departmental Officers for:
- ❖ Maintenance of road through 12th Finance Commission grant to Works Department & R.D. Department
 - ❖ Electrification of Fishing Harbours, Fish Landing Centres, Jetties and Aqua Clusters under 12th Finance Commission grant.
 - ❖ Repair and renovation of residential and non-residential buildings under 12th Finance Commission grant.

The meeting ended with a vote of thanks to the Chair, other dignitaries who participated in the Workshop, District Level Officers and other participants by Dr.N.C.Biswal, Dy. Director of Fisheries (Extension), Orissa.

List of participants

SI No	Name	Designation	Organization
1	B.N Rout	ADF	Nayagarh
2	D. Khan	DFO	Khurda
3	B.B Sahoo	ADF	Gajapati
4	Mohan Sa	Dy SF	Jharsuguda
5	T. Srinivas Kumar	Scientist	INCOIS
6	S. Kumar	Director	Directorate of Fisheries
7	T.K Behera	Add Director	Directorate.of Fisheries
8	Dr N.C Biswal	Sr Research Officer	Directorate of Fisheries
9	Sri A.K Acharya		Directorate of Fisheries
10	Dr K.K Samal		Directorate of Fisheries
11	Mr N.K Pradhan	DFO	Bhadrak
12	S.P Bho	ADF	Nabarangpur
13	S.Pattanaik	ADF Cum	
14	M.Mohapatra	DDF SSBW	
15	B.C Mishra	ADF(Marine)	Puri
16	Pramod Rout	DFO	
17	P.K Behera	Asst Director, Fy	Deogarh
18	U. Behera	Dy Director, Fy	Cuttack
19	G.B Parida	DFO cum CEO FFDA	
20	P.K Mishra	ADF cum CEO FFDA	
21	B.C Hembram	ADF(M)	Keonjhar
22	Rameswar Sah	ADF	Bargarh
23	B.C Behera	Dy Director,	MPEDA
24	Sarvik Moharana	FBO	
25	P.C Padhi	DFS	Malkangir
26	S.Kar	Dy Director, Fy	
27	Mrs P. Paikaray	PRO to Director	
28	Sutapa Gopangana	Directorate of Fisheries	
29	Ananda Pattanaik	Directorate of Fisheries	
30	Suresh Ch Sahoo	ADF, Kalahandi	
31	K. Omprakash	Director	CICEF
32	M.K.R Nair	Jt Fy Commissioner	
33	J.B Dash	DFO	Kendrapara
34	Hrushikesh Mishra	Depp of Fisheries	
35	P.K Sethy	DRS (f)	

36	B.K Padhy	ADF, KANDHAMAL	
37	S.K Ghadei	I/C SDF	Jeypore
38	J.Lenka	JFO, Baragarh	
39	Rabinarayan Pattanaik	JFO, Balasore	
40	Sanjay Mishra		
41	Surapratap Sahu		
42	M.N Parida	DDF(Plan)	
43	Santanu Ku Sahu	ADF , Malkangir	
44	A.K Pattanaik	CE, CDA	
45	H.N Mohanty	GM, FISHFED	
46	A.K Agarwala	Director, Fy West Bengal	
47	K.C Badpanda	DDF, Cuttack	
48	Pitabas Behera	DDF (SBW), Cuttack	
49	Radhasyam Mishra	DFO, Jagatsinghpur	
50	S.S Soren	ADF (BST), Balugaon	
51	Binsing Munda	ADF	
52	Sashikanta Acharya	ADF, Baragarh	
53	Debendra Bhanja	ADF, HQ CTC	
54	Jayanta Samal	NABARD	
55	Subrat Dash	JEO (M) Directorate of Fisheries	
56	S.P Burma	ST	
57	P.R Rout	ADF, Dhenkanal	
58	M.K Mohanty	Dy SF , Balasore	
58	B.K Majhi	DFO , Ganjam	
60	U.K Mohanty	ADF, Boudh	
61	A Panigrahi	ARC (SC FY), Bolangir	
62	U.C Chandra	ADF, Nuapara	
63	Dr N. Sarangi	Director, CIFA	
64	Mrs S. Mishra	DFO, Sundergarh	
65	G.B Taran	DDF(NZ/SBP)	
66	Dr Basanta Das	CIFA	
67	A.K Bhoi	ADF, Jaipur	
68	A. Nayak	Directorate of fy, CTC	
69	P.K Pradhan	ADF, Balasore	
70	R.S Mishra	Ex Dy Dir Fy	
71	N.K Padhy	FE, FED	
72	P.Ekha	ADF, Anugul	
73	Parimita Routray	UNDP	
74	A.K Satpathy		
75	Dr Anita Anasuya	UNDP	
76	Kalika Mohaptra	UNDP	
77	Ajit Das	E TV	

78	Momin	UNDP	
79	Harsh Singh	UNDP	
80	B.C Behera	MPEDA	
81	Dr V . Sampath	Director, NIOT	
82	K.Allaya	OTFWA	
83	C.J Venugopal	Commissioner-Cum Secy	F & ARD
84	Dr G. Syda Rao	CMFRI	
85	P.K Ramananik	MPEDA	
86	N.C Haldhar		
87	R.N Mishra	SEAIO	
88	Pradeep Jena	UNDP	
89	B.P Sethi	UNDP	
90	D.Samantray	UNDP	

Recommendations of the Technical Sub-Committees

1. RECOMMENDATIONS OF THE INLAND (TANK AND PONDS, RIVER AND RESERVOIR)/FISHERIES SUB-COMMITTEE – Dr. N. SARANGI.

ISSUES ON FISH SEED

- a) **Seed Certification:**
- State to formulate fish seed certification norms in the light of the proposed guidelines to be issued by Govt. of India.
1. Fish seed producers/hatchery owners in the state are required to be duly registered in the event of following conditions
 - Production capacity beyond 1 million spawn/year
 - Exceeding the rearing capacity of 1 million spawn to fry - Coming under the ambit of other regulatory rules mentioned in the form of registration and should bound by the legal provisions to discourage defaulters or violators of hatchery breeding code of conduct
 - 2) District level fisheries officials will be designated authorized officers for enforcing registration
 - 3) Training to be provided for quality seed production by the state
 - 4) Fish seed produced from the registered units will enjoy the right to free movement within the state
 - 5) Inter state movement of fish seed should necessarily require additional clearance from the authority based on the application to that effect by the registered hatcheries only
 - 6) Director of Fisheries will be the appellate authority or of a similar status as decided by the Govt. of Orissa for dispute settlement, if any
 - 7) National Research Laboratories will act as referral bodies for applet authority seeking clarifications, if any
 - 8) Registered units should specify the following information, renewable biannually
 - Source of brood stock
 - Quality of stock
 - Production capacity
 - Provision of stock exchange
 - Equipped with skilled/trained manpower
 - Provision of fish health monitoring
 - Declaration on avoidance of any un-ethical hybridization
 - Provision of good water supply
 - Scope for safe disposal of farm/hatchery wastewater
- 9 a) **Other issues on seeds**
- Bring on prioritization in transport by Air/Rail movement across country/state

- **Specific regulation on movement of the seed within the state - to be left with the concerned states**
- **Exemption on octrai**
- **Exemption on sales tax**
- **Power of arbitration vested on National institutes (Farmer vs. State, State vs. State)**

b) Fish feed

- **All fish feed mills to be registered within the state**
- **Date of manufacture to be printed**
- **Quality to be specified with labeling**
- **Feed formulation/composition to be meaningfully revealed.**
- **Sampling methods and analysis to be proper (at par with vet. Products / cattle feeds / shrimp feed)**
- **Adequate ware housing facilities**
- **Should not contain banned antibiotics/steroids**
- **Exemption on sales tax**
- **Storage should always be on first in, first out basis**
- **Ingredients to be checked and certified by recognized organizations enlisted for the purpose.**

c) Non-conventional aquaculture

- **Water logged areas to be developed for fish production**
- **Flooded paddy fields to be stocked with minor carps/carps/air breathing fishes/prawn**
- **Bird sanctuary including peripheral freshwater bodies to be stocked with species favoured by the birds**
- **Burrow pits alongside Highway/Rly tracks to be brought under fold of pisciculture**
- **Integration of pisciculture with location specific agricultural/horticultural activities**
- **Sewage fishery for combating pollution/malaria control where ever possible depending on the available resources**

d) Reservoir fisheries

- **All open water bodies MIP/Kata/Irr tank/Percolation tanks/Reservoirs to be brought under the fold of culture based capture fisheries.**
- **Reservoir areas (MWSA) / stocking size / number to be at par with the IIM/National Research Institute stipulation**
- **Ban on stocking of exotic carps**
- **Strict conservation measures to be followed as per the norms of the Biodiversity acts**
- **Observance of regulation on fishing, including net and mesh size or less, as per OSRFP 2004**
- **Provision on basic infrastructure viz., ice/boat/net/road/captive NT/cages/fish landing shed etc.**
- **Provision of packaging and transportation**
- **Forward and backward linkage in marketing**
- **Mandatory provision of one hatchery of required capacity adjacent to a reservoir or for a few adjacent reservoirs**

e) Development of riverine fishery

- **River ranching**
- **Provision of breeding and seed production of riverine species**

- Observation of closed season (15 June – 15 August) in active association with fishermen
 - Protection of habitat and improvement of lost habitat where ever possible
 - Control/measures for riverine pollution (domestic / industrial) with special reference to aquatic biodiversity
 - Shallow pools adjacent new rivers to be protected as sanctuary
 - Prevention on ranching of exotic species in rivers
 - Restriction of fishing by destructive methods
 - Proper policy for maintaining environmental flow in rivers
- f) Health and disease monitoring of fish and shellfish**
- Operation of disease diagnosis, control and monitoring centres at district level
 - Support system for establishment of Aqualabs / Aquaclubs / Aquashops
 - Monitoring of key events of epidemic proportions of Headquarters for disease control measures utilizing National Institute as referral lab
- g) Observance of responsible code of conduct as per the guidelines of FAO & Govt. of India**
- h) Study of environment impact assessment by the state (individual / regional basis)**
- i) Establishment of Database**
- Building accurate/dependable upto date database
 - Enhancing e-connectivity to the District/Block level to check and monitor the programme
 - Computerization of District level offices for efficient record keeping and updating of information
 - Accession and dissemination of information from the headquarter level to National Institute / organization with internet
- j) Human Resource Development**
- Updating the technological information/developments of the state to all the FEO's of the state through
 - Refresher course
 - Awareness programme
 - Field visits including interstate for exposure
 - All the district level functionaries to be exposed to most of the relevant developments in other advanced states, phase wise
 - Headquarter level/zonal level officials are to be exposed to the HRD programme related to policy formulation and prioritization, project formulation of the R&D activities including management
- k) Marketing**
- Qualitative post-harvest care of the product
 - Establishment of hygienic fish markets in urban areas
 - Eco-friendly bio-product disposal system
 - State level/regional mundies (wholesale markets) for rationale distribution
 - Establishment of district level market for fish and fish seed
 - Creation of Internet fish marketing

➤ Provision of data-base for production/processing & export

l) Reassessment of resources in terms of cultivable pond/tank area and present level of productivity on GIS platform

2. RECOMMENDATIONS / SUGGESTIONS OF THE TECHNICAL SUB COMMITTEE ON PRAWN FARMING, B.C.BEHERA

FORMATION OF SUB COMMITTEE

• Formed by the Fisheries & ARD dept. , Govt of Orissa after the recommendations of the High Power Committee during a held on 08.12.2004 in connection with the formulation of Comprehensive Fishery Policy.

• The first meeting of the incumbent Sub Com was held on 5.01.2005 & the recommendations submitted to the GOO immediately afterwards.

• Brackish water Shrimp (Black Tiger) and Fresh water Prawn (Scampi) culture has been amalgamated as Prawn Farming for the export potential of these species.

• Suitable land allotment policy superceding all existing notifications to be framed - Almost all pvt. BW land utilized – Policy to include both BW & FW aquaculture – Policies of Gujarat, Maharashtra & UT of Daman & Diu submitted to the GOO.

• Conversion charges to be waived.

• Water Tax to be waived as aqua farms recycle water.

• Survey / resurvey of land for future planning.

• Cluster approach towards Aqua Estates.

• Demarcation of CRZ.

• A definite Time Frame for revenue related policies – Also discussed in the meeting held on 23.8.2004 in the presence of the Hon'ble Ministers for Revenue and Fisheries.

- Road
- Electric power supply
- Drinking water through bore wells
- Ancillary services like cold storage, ice plant, diesel outlet etc.

• Bank finance almost non-existent. Ref. Coastal Aqua Auth. Bill / Inland Fisheries & Aqua Bill etc. Suitable policy measures to be taken.

• Insurance coverage both for farms & crops against natural calamities e.g. Super Cyclone, Tsunami etc.

• Sales Tax on inputs increases cost of production. All Sales Taxes particularly on seed, feed and diesel to be abolished.

• Price fluctuation particularly in the International Market & natural calamities result in distress harvest and therefore heavy loss to farmers. Minimum support price may be considered.

• Formation of Finance Committee within the purview of the Policy.

• Registration of hatcheries & adoption of Code of Practices for healthy seed production.

- Conservation of brood stock - Priority to local hatcheries for using the brooders.
- Implementation of OMFR Act to ban wild seed collection to protect the natural resources – more relevant in connection with Traceability.
- Census for a data base on farms, area under culture, production etc. concurrent to the development.
- Strengthening of district level man power / extn workers through training and orientation programmes.
- Non-use of antibiotics & chemicals in aqua-farms.
- Adoption of Code of Conducts and Best Management Practices for responsible aquaculture.

3. RECOMMENDATIONS OF TECHNICAL SUB-COMMITTEE ON MARINE FISHERIES SECTOR ORISSA – Mr. M.K.R. Nair.

- State resources need to be reassessed by Premier Institutes of GoI
- Fishing capacity to be determined from the assessed fish stock
- A definite Policy for by-catch reduction through mesh size regulation
- Empowerment of traditional fishermen through:
 - o Providing engines for fishing to reduce physical labour & effort time
 - o Multi-day fishing
 - o Sea safety devices
- PFZ information to be validated
- Rehabilitation of traditional fishermen affected due to conservation measures:
 - o Promotion of mariculture such as – seaweed/ mussel/ open sea cage culture
 - o Introduction of environment friendly fishing in restricted areas

Unrestricted catch of brood stock for shrimp hatcheries should be regulated with complete ban on catch of shrimp seed & juveniles from inter-tidal waters & estuaries

Resources enhancement measures should be promoted, such as:

- Artificial reef
- Fish Aggregating Device (FAD)
- Reduction of post-harvest loss through proper infrastructure development
- Create Special Purpose Vehicle (SPV) to take care of all proposed diversification & modernization to obviate financial crunch in the State
- Interaction of stakeholders with successful maritime states for proper technical intervention in respective fields

4. RECOMMENDATIONS OF THE TECHNICAL SUB-COMMITTEE ON CHILIKA FISHERY DEVELOPMENT – Dr. A.K. PATNAIK

Fishing Practices in Chilika & Resources Conservation

- Regulation of fishery activities in the lagoon as per the provision of OMFR Act .
- To regulate the fishery activities in the lagoon,regular surveillance and monitoring by the joint task force .
- Strengthening the infrastructures of the ADF BT Balugaoan.

- Prohibition of fishing within 1km radius of the new mouth (both lake-ward and sea-ward), Palur canal, at the confluence point of Palur canal with Rushikulya estuary should be imposed.
- Chilika should be made free from prawn culture gheries as it adversely affecting the shore-line ecotone, which are the most productive zone of the lagoon.
- Operation of Khanda in the strategic recruitment routes including Magarmukh should be regulated to facilitate free recruitment of juveniles and breeding migration .
- The old traditional seasonal capture fishing methods such as Jano, Prawn fishery (prawn khati), Dian, Uthapani, Bahani, etc should be encouraged.
- Operation of very fine mesh size nets (zero nets) should be prohibited.
- Motorisation of wooden boats in Chilika should not be further encouraged and its operation should be a regulated based on the carrying capacity.
- The capture fishery exploitation should commensurate with Maximum Sustainable Yield (MSY) level.
- Measures should be taken to prohibit high tide mullet fishing along the Outer Channel during the breeding migration period (September–January) for successful spawning in sea and to facilitate auto-recruitment of mullet juveniles.
- Environmental Impact Assessment for commercial exploitation of bio-resources, from the lagoon,(other than fisheries) should be made mandatory.

Fishery Co-operatives

- Existing Primary Fishery Co-operative Societies should be strengthened
- The procedural hurdles for timely settling of the fishery rights (capture fishery sources) with the societies need to be streamlined.
- The Fishery rights need to be resurveyed and properly demarcated to avoid dispute and conflict.
- The rights should be classified based on the potential productivity level and lease value be assessed accordingly.
- The lease term for captures fishery rights should be for a minimum period of 3 to 5 years.
- The existing package of incentives for marine fishery sector should be extended to the Chilika fishermen.
- Infrastructure development ,like landing centers and ancillaries.
- Outreach programme for enhance the awareness about the values and function of the wetland and to stop the destructive fishery practices.
- Capacity building of the fishers on responsible fisheries.
- Infrastructures for value addition.

5. RECOMMENDATION OF THE TECHNICAL SUB-COMMITTEE ON INFRASTRUCTURE – MR. K. OMPRAKASH

Future requirements

- **Total Existing Capacity at fishery harbours in Orissa is for 1170 mechanised vessels.**
- **Additional facility needs to be created for harbouring 450 mechanised craft**
- **Existing capacity of the fish landing centres is for landing of 1800 fishing craft of different categories**
- **Addl. capacity required to be created at FLCs is for an additional 2000 fishing crafts.**

Suggestions/recommendations

- **Creation of adequate state-of-the-art and modern post-harvest support facilities such as cold storages, processing plants and marketing in selected FH/FLC meeting the EU Standards, including:**
 - **Provision of approach road , electricity, water supply.**
 - **Putting in place an appropriate mechanism for operation, management and maintenance of the facilities created and make them self-supporting.**
 - **Making available adequate funding support for construction, operation, management and maintenance of the facilities.**
 - **Mapping of the coastal areas using RS and GIS**
 - **Encouraging private sector and stakeholder participation in construction and management of the FH/FLCs.**
- **Undertaking post-evaluation studies on present status of existing capacity and its utilisation.**
- **Identification and upgradation, Repair and Renovation of the existing FH and FLCs keeping in view the HACCP and EU norms**
- **Development of a master plan for creation of additional facilities**
- **Establishment of a fishing harbour authority at the State level.**
- **Establishment of a Central Harbour Authority.**

6. RECOMMENDATION OF TECHNICAL SUB COMMITTEE ON WELFARE ISSUES – MR. T.K. BEHERA

MARINE FISHERMEN

- **Cyclone Shelter – Cum – Community Centre**
- **Drinking Water Facilities**
- **Deciding on the status of the sea shore villages of marine fishermen, Preferably their right of residence and declaring these as revenue villages, so that the normal developmental programme of the govt. can be made applicable to these villages**
- **Health, Sanitation, Education need Intervention**
- **Alternative Livelihood for migrant & affected fishermen due to conservation activities and defense activities**
- **Old age pension and invalid pension should be prioritised.**
- **Alternative Livelihood: In course of discussion with the stake holders of marine fishery their options for alternative livelihood should be obtained for necessary incorporation in the Policy, as it differs from one marine base to other**

- Wide coverage to be extended to fishermen under National Security Schemes.
- Adequate training for empowerment & capacity building through exposure visit to leading maritime states.

CO-OPERATIVES

- Field Visits to Ideal Co-operatives Institution- Anand, Gujarat.
- In the state 996 co-operative societies needs adequate co-operative inspectors
- Greater involvement of NCDC/Commercial & co-operative banks is needed with lenient terms & conditions
- Introduction of Integrated Pisciculture at PFCS Level
- Strong motivation to be created amongst the member to enhance share capital
- Reduction of intermediaries in market channel with support price to reproduction
- Cold chain & transport facility to be strengthened
- Leasing GP Tanks/Swampy lands/pherighat to the PFCS on priority

SELF HELP GROUPS

- LTL of one GP tank to WSHGs in each GP every year after renovation under NFFW Programme
- Involvement of SHGs in reservoir fishery
- Creation of captive nursery through SGSY Programme
- Dovetailing of funds for fingerling stocking through WODC
- Upgradation of skill of WSHG through Mission Shakti
- Formation of state label trade based “Federation” with Mission Shakti assistance.
- Skill up gradation training on Pisciculture for men SHGs may be conducted through agencies like WODC/ITDA/SGSY
- Strengthening of SHGs through micro finance

7. RECOMMENDATIONS OF THE PROCESSING AND MARKETING SUB-COMMITTEE – MR. PRAMANIK.

- (i) Some model farms may be promoted under private sector, which will be of use for the purpose of demonstration and training.
- (ii) As the market of organic fish is growing, promotion of organic fish production may be taken up.
- (iii) Chilika Development Authority may explore the possibility of marketing of Chilika fish with organic branding.
- (iv) Most of the facilities/assets to be created as suggested above should be either under private sector or in PPP mode.
- (v) An effective market linkage be established for marketing of dry land fish produced by SHGs
- (vi) A Comprehensive Fishery Policy while considering those strategies should decide a timeframe both for short-term and long-term interventions.

