

PRESENTATION ON INDIAN FISHERIES



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Outline of Presentation

- About India
- Indian Fisheries Issues, Concerns and Activities (Paper)
- Inland Fish culture (ppt)
- About National Institute of Rural Development (NIRD)
- Video clippings on fish culture
- Placing documents



INDIAN FISHERIES

Coast line	8,118 kms (3,600 fishing villages)
EEZ	2.03 million sq. km
Continental Shelf	0.506 million sq. km
Rivers & Canals	1,91,024 km
Reservoirs	3.15 million ha
Ponds and Tanks	2.36 million ha
Oxbow lakes & derelict waters	1.3 million ha
Brackishwater	1.2 million ha
Harbours	Major -7, Minor 61
Landing centers	194

Source: Fisheries statistics-2008, GoI

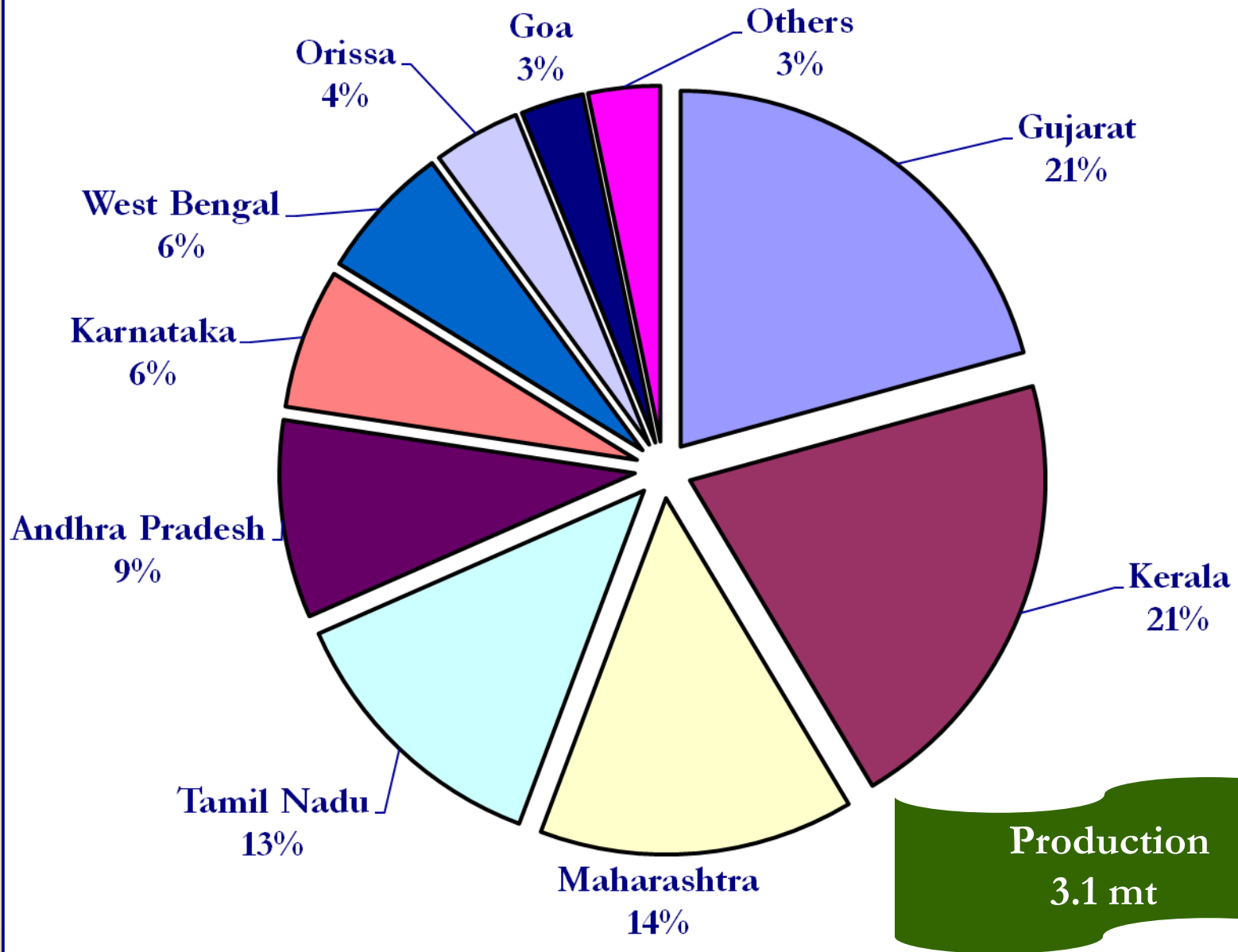
Indian Fish Facts

- ✚ Global position:
 - 2nd in Total fish production
 - 2nd in Aquaculture
- ✚ Fish production of India : 8.2 million tons
(5.0 million tons- inland, 3.2 million tons- marine)
- ✚ Per capita fish availability: 8.54 kg based on 56% of population as fish-eating and 4.78 kg for 100%
- ✚ Annual Export Earnings: 8.13 lakh tonnes;
`Rs 12,901 crores

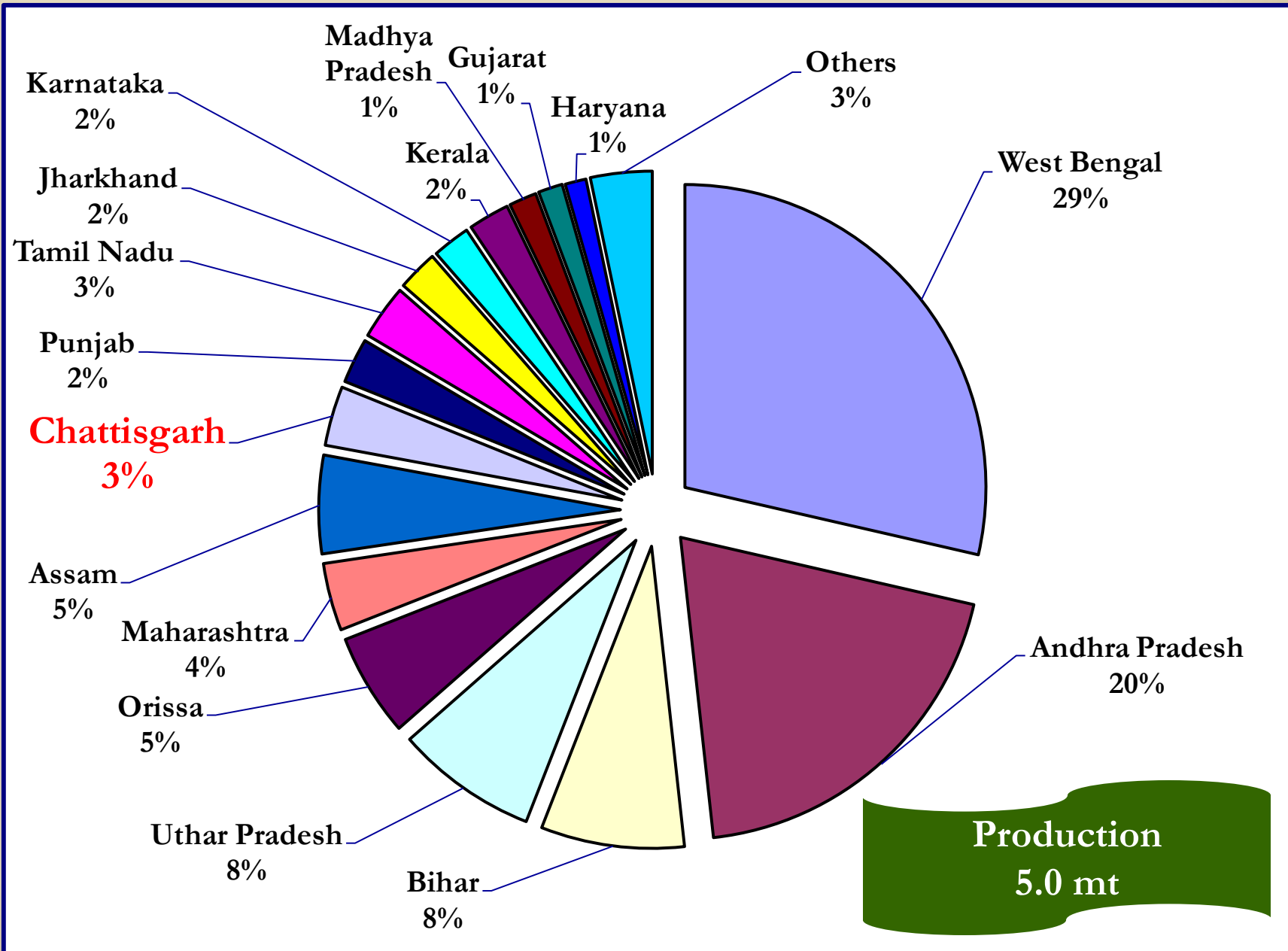
Indian Fish Facts

- + 5.54% of global production
- + 1.07% of GDP & 4.9% of Ag GDP
- + 2.5% of global trade
- + 17% of National Agricultural Exports

State-wise Marine Fisheries Production



State-wise Inland Fisheries Production



Status of Inland fish production

Year	Production ('000 ton)	Annual Growth rate (%)
2001-02	3126.18	9.88
2002-03	3209.86	2.69
2003-04	3457.89	7.73
2004-05	3525.88	1.97
2005-06	3755.56	6.52

Source: Handbook on Fisheries Statistics, GOI, 2006

COMMERCIAL SPECIES

- ❑ Catla
- ❑ Rohu
- ❑ Mrigal
- ❑ Common Carp
- ❑ Silver Carp
- ❑ Grass Carp
- ❑ Pangasius
- ❑ Prawn

CULTURABLE SPECIES

Indian Major Carps:



Catla
(*Catla catla*)



Rohu
(*Labeo rohita*)



Mrigal
(*Cirrhinus mrigala*)



Exotic carps:



Silver carp
(*Hypophthalmichthys molitrix*)



Grass carp
(*Ctenopharyngodon idella*)



Common carp
(*Cyprinus carpio*)

Fresh Water Prawn
(*Macrobrachium rosenbergii*)

WILD SPECIES

- ☐ **Murrel**
- ☐ **Thilapia**
- ☐ **Mastocembalus**
- ☐ **Etroplus**
- ☐ **Wallago**

MAIN ACTIVITIES

- ❑ **Fishing in natural waters**



- ❑ **Culture through selective stocking**

- ❑ **Extensive culture**

- ❑ **Intensive culture**

- ❑ **Marketing of fish**

- ❑ **Wholesale , retail, export**



ANCILLARY ACTIVITIES

- ☐ Transportation
 - Supply of chemicals and sanitizers
- ☐ Harvesting
 - Seed suppliers
- ☐ Supply of Ice and packing
 - Hatcheries
 - Rearing activities
- ☐ Feed manufacturing
 - Farm labour
- ☐ Boat building
 - Supply of traps
- ☐ Net suppliers
 - Valued products
- ☐ Farm equipment
 - Processing
- ☐ Labs & Technicians
 - Traders

12.7 mmt

2020-21

Fresh. Aqua	7.20
Coast Aqua.	0.30
Inland capture	1.60
Mariculture	0.10
Marine	3.5

10.0mmt

2011- 12

Fresh. Aqua	5.26
Coast Aqua.	0.20
Inland capture	1.20
Mariculture	0.03
Marine capture	3.3

8.20 mmt

Current

Fresh. Aqua	5.0
Coast Aqua.	0.19
Inland capture	0.85
Mariculture	0.01
Marine capture	2.9

**Projected
annual fish
production**



Issues of concern for the progress of Fisheries and Aquaculture in India

- ✓ Up-gradation of production technologies
- ✓ Species diversification and feed based aquaculture
- ✓ National seed action plan
- ✓ Promotion of cage culture in reservoirs and seas
- ✓ Conservation of natural resources and germplasm
- ✓ Awareness building of fishers and farmers through Information and communication technology
- ✓ Promotion of deep sea fishing

Issues of concern for the progress of Fisheries and Aquaculture in India

Contd...

- ✓ Promotion of value added products
- ✓ Proper regulation and guidelines
- ✓ Disease management
- ✓ Adequate infrastructural facilities
- ✓ Good market price
- ✓ Post harvest handling & Marketing linkages
- ✓ Modernization of harbours and landing centers
- ✓ Financial support
- ✓ Aquaculture to be treated on par with agriculture

Strategies to enhance production in India

1. Intensification of aquaculture through productivity enhancement

- ✓ Enhancement of seed production and stocking desirable fish species
- ✓ Promotion of fish feed mills to produce and supply quality feeds.
- ✓ Promotion of feed based aquaculture through species diversification
- ✓ Popularization of GMP/BMP for various aquaculture activities.
- ✓ Disease management by establishing disease diagnostic labs.

2. Diversification of species

- ✓ Culture of *L. vannamei*, seabass, pangasius, tilapia, catfish, cobia, milk fish, mullets, groupers, lobsters and seaweeds.

3. Expansion of production areas

- ✓ Bringing in new areas under aquaculture in freshwater and brackish water areas
- ✓ Planned development of reservoirs, bheels, jheels, wetland etc.
- ✓ Promotion of mariculture in open Seas, bays, back waters (Cage culture, mussel culture, seaweed culture & marine ornamental fish breeding)
- ✓ Technology up gradation and adoption of innovative technologies.

Opportunities for Aquaculture development

Reservoir Fisheries

- ✓ About 3.15 million hectares of potential area available for stocking fish fingerlings for increasing the productivity
- ✓ Reservoirs can be used for cage culture and pen culture of economically important fresh water fishes.
- ✓ Vast areas of flood plains, chauris, Mauns, Oxbow lakes etc for culture of commercially important fishes

Inland Aquaculture

- ✓ About 2.41 million hectares of potential area available for culture of Indian Major carps, catfishes and other commercially important fishes
- ✓ Large area to be brought under private ponds and tanks

Coastal Aquaculture

- ✓ About 1 million hectares of potential area available for development
- ✓ Species for culture: *P. monodon*, *P. indicus*, *L. vannamei*, *L. calcifera*, mullets, mud crabs, milk fish, etroplus etc
- ✓ Mud crabs *Scylla serrata* and *Scylla tranquebarica* have good farming potential in some areas
- ✓ High value marine ornamental species culture for export

Mariculture

- ✓ About 8,129 kms of coast line potential for cage culture in open water bodies
- ✓ Cage culture systems for finfish sea bass, cobia, grouper, mullets etc
- ✓ Cultivation of sea weeds in in-shore waters
- ✓ Culture of mussels and oysters

Progress of Important schemes

(2007 – till now)

(i) Reservoir Fisheries Development

- No of reservoirs stocked - 3419
- Area covered - 17.01 lakh hectares
- Amount sanctioned - Rs 98.05 crores
- Initial production level - 15- 20 kg / ha
- Present production - 110 kg / ha
- Additional fish production achieved- 1.40 lakh tons

Fingerlings stocking in Reservoirs of Nagapur region of Maharashtra State



Reservoir stocking program In Ranjit Sagar Dam of Punjab State



Stocking Program in Chandil reservoir of Jharkhand State



Harvesting the fingerlings from rearing pond for reservoir stocking – Nizamabad District , Andhra Pradesh (2010-11)



Fingerlings stocking in Nizamasagar Reservoir, Nizamabad District, Andhra Pradesh - 2010-11



Transporting Fingerlings from rearing pond to reservoir – Nizamabad District, Andhra Pradesh



Seed Stocking at Gangrel Reservoir, and Kshirpani Reservoir of Chattisgarh State.



Reservoir stocking program In Serlui B Reservoir under Second Consecutive year Stocking Program of Mizoram State



Training Program on Reservoir Fisheries Management at Jharkhand State



Pen –Culture at Linganamakki reservoir –Karnataka

Stocking at Linganamakki Reservoir



Pen-culture at Linganamakki reservoir



Fish seed rearing – Karnataka State for stocking in Reservoirs



Fish Culture Ponds at
Bellary District , utilized
for Fish seed rearing



Rearing in minor tanks success Story of
Mr Shivaraju, Chinthamani

Reservoir Training program at DVC -Tilaiya ,Konar and Maithon



(ii) Intensive aquaculture in ponds and tanks

- Area covered under ponds - 7916 ha
- Amount sanctioned - Rs 74.64 crores
- No of hatcheries established - 66
- Seed production capacity – 334 million fry
- No of fish seed rearing farms renovated - 84
- Fingerling production capacity – 388million
- Additional contribution to total fish production – 0.25 lakh tons

Fish pond construction in Arunachal Pradesh



Construction of new fish pond in Tamirisa Vilage, Krishna Dist. A.P.





Fish seed hatchery at Maithon



**Fish seed hatchery at Anguri
Village, Dibrugarh**



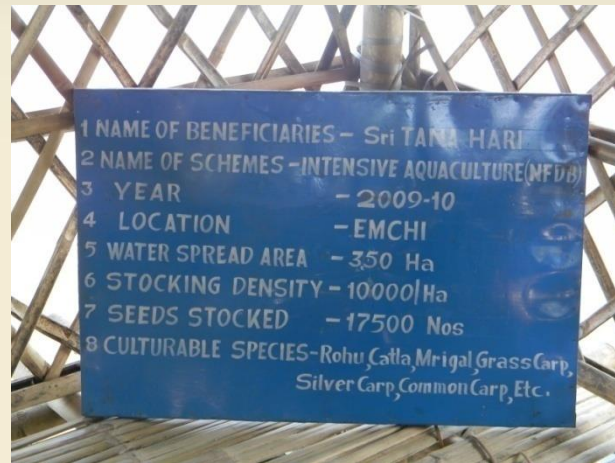
**Freshwater prawn
hatchery in Assam**

Renovation of fish seed hatchery and fish farm of Chhattisgarh Fish fed/nigam, Chhattisgarh

राष्ट्रीय मात्स्यिकी विकास बोर्ड अन्तर्गत स्वीकृत कार्य वर्ष - 2010-2011	
1. हेचरी नवीनीकरण/उन्नयन	1 चायनीज हेचरी यूनिट
1. स्पानिंग पूल 1	- रु. 2.84 लाख
2. इन्क्यूवेशन पूल 2	- रु. 0.86 लाख
3. स्पान रिसिविंग पूल	- रु. 0.38 लाख
	रु. 4.08 लाख
2. प्रक्षेत्र नवीनीकरण/उन्नयन	1 पोस्टर गहरीकरण
(पोस्टर क्र.1 से 3 एवं 16 से 18)	रु. 9.97 लाख
3. कियान्वयन एजेन्सी-ध.ग.राज्य सह.मत्स्य महासंघ	
4. कार्य प्रारंभ दिनांक	5. कार्य पूर्णता दिनांक-



Trial Netting of NFDB funded fish pond at Emchi, Arunachal Pradesh



Establishment of fish feed mills



KVK Karda, Maharashtra

(iii) Modernization of fishing harbours and landing centers

- No of Harbours/Landing centers- 23
- Amount Sanctioned - Rs. 64.52 Crores
- States - Andhra Pradesh- 3,
Karnataka- 2,
Kerala- 5,
Tamil Nadu- 5,
Gujarat- 2
Orissa - 6

Modernization of Fishing Harbour at Karwar, Karnataka



(iv) Modernization/ construction of whole sale / retail markets and retail outlets

- No of whole sale markets being established - 55
- No of retail markets - 37
- No of retail outlets - 23
- No of Kiosks - 20
- Amount Released - Rs. 65.75 Crores.
- States- Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, New Delhi, Pondicherry, Rajasthan, Sikkim, Tamil Nadu and West Bengal states

Whole sale fish markets sanctioned

Andhra Pradesh	9
Delhi	1
Karnataka	5
Madhya Pradesh	2
Maharashtra	22
Puducherry	1
Kerala	7
West Bengal	5
Gujarat	1
Rajasthan	1
Tamil Nadu	1
Total	55

Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Market- Nellore, Andhra Pradesh



Modernization of Fish Markets - under construction



Wholesale Fish Market, Eluru, A.P.



Retail fish market under construction at Mirjapur, West



Wholesale Fish Market, under construction at Berhampur, West

Bengal



Fish market under construction at Kakinada, A.P.

Modern Fish Retail Outlets

Private Retail
outlet at
Chennai



Retail outlet by TNFDC, Chennai

Modern Retail outlets



Private Retail outlet in Bangalore

Modern Fish Retail Outlets



Retail outlet at Eluru, A.P.

(v) Fish Net making plant

- Established by Matsyafed
in Kerala at cost of - Rs. 18.0 Crores
- Amount sanctioned - Rs.10.00 Crores
- Production capacity - 575 tons per annum.
- Funded sanctioned during 2009-10
- Project completed during February 2011

Fish Net Making Plant being established by Matsyafed, Kerala



(vi) Fish Dressing Centre and Solar Drying Units

- ❑ An amount of Rs 71.43 lakhs was released to the Coastal Area Development agency, Kerala for establishment of model fish dressing centre.
- ❑ Rs 40.05 lakhs has been released to Government of Puducherry for setting up of solar fish drying unit at Yanam and
- ❑ Rs. 19.50 lakhs has been released for establishing 6 demonstration units of solar drying units by the Directorate of Research on Women in Agriculture, Orissa.



Model



Under Construction by CADA, Kerala

(vii) Fish Festivals conducted

- No of fish festivals supported - 26
- Places- Bangalore, Guwahati, Jharkhand, Kolkata, Hyderabad
Lucknow, Mumbai, Puducherry & Thiruvananthapuram
- Amount sanctioned - Rs. 3.13 crores

Fish Festivals

INFISH 2009



INFISH 2010



Matsyagandha Festival, Mumbai



Matsyagandha Festival, Mumbai



Matsya Mela, Bangalore



Matsya Mela, Bangalore



Matsya Mela, Bangalore



Funding support to organize fish festivals



Assam



Lucknow, U.P.



Ben Aqua, Fish festival at Kolkata inaugurated by the Hon'ble Chief Minister of West Bengal



Funding support to organize fish festivals Ben Aqua, Kolkata



(viii) Aquatic Quarantine Facility for *L. vannamei* at Chennai

- Amount sanctioned - Rs. 3.50 crores
- No of brood stock quarantined - 25,000
- Area promoted under farming - 2200 ha
- Vannamei prawn production - 11,000 tonnes

Aquatic Quarantine Facility at Chennai





Bio secure Vannamei farm



Vannamei harvest

(ix) Ornamental Fisheries

- No of back yard units sanctioned - 734
- No of aquarium fabrication units - 12
- Amount sanctioned - Rs 5.70 crores
- Production capacity created -32 million fish/ year
- Value of the fish produced –Rs. 4.50 crores/year

Home-stead ornamental fish rearing units in Kerala State (NFDB funded through KAVIL)



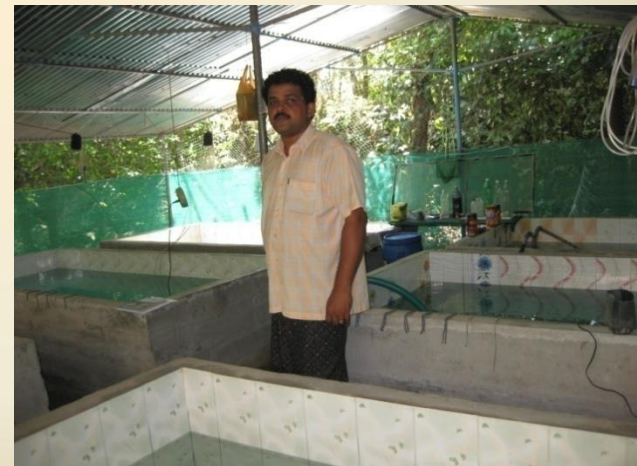
Home stead unit of Sri . K.V.Ullas ,
Alangad P.O , Ernakulam dt



Home stead unit of Mrs. Shyla Jose,
Alangad P.O , Ernakulam dt



Homestead unit of Smt . Roshini
Dinesan , .V.Puram G.P , Vaikom
Tq, Kottayam District.



Home stead unit of Sri . Titus Joseph ,
Parakkadavu P.O , Ernakulam dt

Ornamental units in Kerala State (NFDB funded through MPEDA)



Large scale unit of Sri. P.K.Mathew, Thazhekkad P.O. Thrissur District



Medium scale unit of Smt R.R.Sujatha , Edavilangu P.O.
Kodungallur, Thrissur District



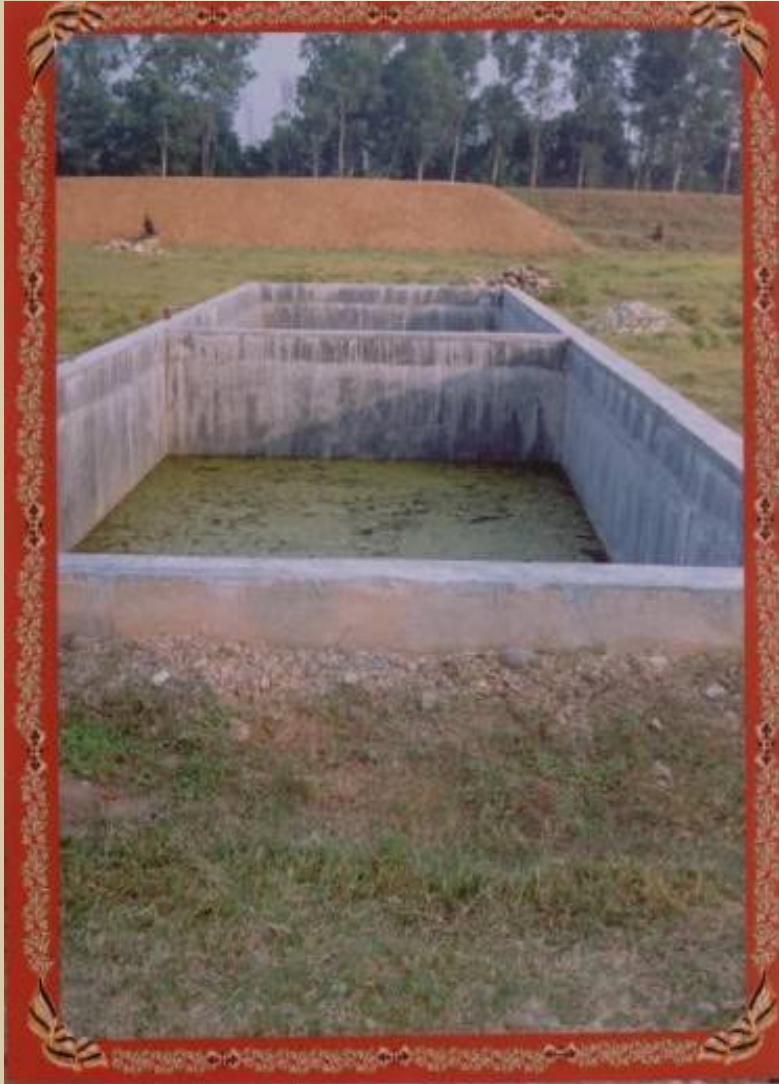
Construction of Ornamental Fish Hatchery at Dumi , Jammu & Kashmir with NFDB Assistance.



Ornamental Fish Hatchery with the assistance of NFDB at Doomi, Akhnoor Jammu.



Ornamental Fish Farm at Doomi , Jammu



(x) Technology up-gradation projects

- Institutes supported -ICAR Institutions -CMFRI, CIBA, CIFE, CIFA, CIFRI, DCFR
- Amount sanctioned - Rs. 7.95 crores

Areas of technology up-gradation -

- Cage culture of marine fin fishes and lobsters,
- Farming of Sea bass in the brackish water ponds,
- Development of technologies for chours and mauns,
- Conservation of mahasheers in Indrayani river,
- Development of breeding technologies for Pangasius,
- Use of cryo-preserved fish milt for stock improvement in carps,
- Cage culture of fish in reservoirs,
- Breeding and conservation of Golden and Chocolate mahasheers
- Genetic improvement of Amur common carp.

Demonstration of Open Sea Cage Culture

- To demonstrate the techno economic viability of open sea cage farming, NFDB has sanctioned Rs. 115.00 lakhs to the CMFRI, Kochi for taking up of culture of Asian sea bass, lobsters etc.
- A production of about 4 tons of sea bass and 1 ton of lobsters per cage of size 6m dia X 6m depth was achieved.



Demonstration of Seabass Culture:

- NFDB has funded to the CIBA, Chennai to demonstrate techno economic viability of Seabass (*Lates calcarifer*) culture in farmer's ponds under the Technology Upgradation scheme of NFDB



(xi) Common facility centre for Tuna processing

- Established by NIFPHATT at Vishakapatnam
- Amount sanctioned - Rs. 1.85crores

Tuna Processing facility by NIFPHATT at Vizag, A.P.



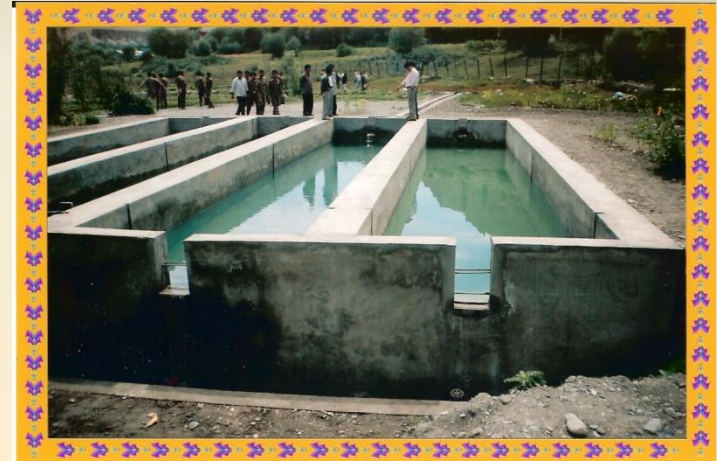
(xii). Cold water fisheries

- Amount sanctioned - Rs. 10.80Crores
- No of trout raceways established – 219
- No of running water fish culture units established- 300
- Renovated/ upgraded 3 trout farms
- Established 1 trout feed mill
- No. of farmers/ fishermen trained - 561
- An additional Trout and Carp fish production of 600 metric tons is anticipated from NFDB assisted raceways and running water culture units.

Trout Fisheries in Ladakh Division



TROUT UNIT WAKHA, KARGIL



TROUT UNIT WAKHA, KARGIL



TROUT UNIT DRASS, KARGIL



TROUT UNIT DAMSANA, KARGIL

(xiii) Human Resource Development

Training and capacity building

- Amount sanctioned - Rs. 24.39 Crores
- No. of farmers/ fishermen trained -1.26 lakh
- No of officers/ fisheries professionals trained - 1273



BARPETA

SEED PRODUCTION AND GROW-OUT CULTURE OF INDIGENOUS CAT FISH, MAGUR THROUGH TRAINING AND DEMONSTRATION IN ASSAM. STATE FUNDED BY NFDB, HYDERABAD



BARPETA

**SEED PRODUCTION AND GROW-OUT CULTURE OF INDIGENOUS CAT FISH, MAGUR
THROUGH TRAINING AND DEMONSTRATION IN ASSAM. STATE
FUNDED BY NFDB, HYDERABAD**



IMPHAL

SEED PRODUCTION AND GROW-OUT CULTURE OF INDIGENOUS CAT FISH, MAGUR THROUGH TRAINING AND DEMONSTRATION IN MANIPUR STATE FUNDED BY NFDB, HYDERABAD



**SEED PRODUCTION AND GROW-OUT CULTURE OF INDIGENOUS CAT FISH, MAGUR
THROUGH TRAINING AND DEMONSTRATION IN ASSAM STATE
FUNDED BY NFDB, HYDERABAD**





SONITPUR

**SEED PRODUCTION AND GROW-OUT CULTURE OF INDIGENOUS CAT FISH,
MAGUR
THROUGH TRAINING AND DEMONSTRATION IN ASSAM. STATE
FUNDED BY NFDB, HYDERABAD**



Inauguration of fish feed mill plant at KVK,Karda,Maharashtra on 21-4-2010 by Dr. A.S. Ninawe, Vice Chancellor, Maharashtra Animal and Fishery Science University,Nagpur



Feed Mill Operators Training programme at KVK,Karda, Maharashtra

Training to fishery officials

- 1273. fishery professionals have been trained on scientific management practices, governance, marketing, harbour management, extension management, cooperatives management, brood stock improvement, cage culture, mud crab culture, shrimp farming, fish packaging etc.





Thank you

