सत्यमेव जयते

MISSION
ORNAMENTAL FISHERIES

Action Plan

Partnering In Blue Economy

DEPARTMENT OF ANIMAL HUSBANDRY, DAIRYING & FISHERIES
MINISTRY OF AGRICULTURE & FARMERS WELFARE
GOVERNMENT OF INDIA
April 2017

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GOVERNMENT OF INDIA
April 2017

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RADHA MOHAN SINGH

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सत्यमेव जयते

कृषि एवं किसान कल्याण मंत्री
भारत सरकार
MINISTER OF AGRICULTURE
& FARMERS WELFARE
GOVERNMENT OF INDIA

21 JUL 2017

MESSAGE

India is blessed with vast diversified natural aquatic resources in both Inland and marine sector. Around 750 species of attractive ornamental significance are available in the country. The concerted efforts in view of the tremendous existing potential will leverage socio-economic development of the people involved in this activity as well as trade. It can also generate enormous foreign exchange earnings through value addition and exports.

The ornamental fish industry in India is small but vibrant, with potential for growth. The low production cost and high returns within a short span of time and the ever growing demand, both in domestic and international markets are the major attractions. Thrust areas have been identified for holistic development of all segments for enhancing ornamental fisheries production through cluster-based farming as well as conservation of natural resources.

The formulation of detailed Action Plan "Mission Ornamental Fisheries Development 2020" by the Department is a sincere efforts to bring together all the stakeholders of the sector needed to promote ornamental fisheries sector. I believe implementation of this Action Plan will boost the employment opportunities for the rural and peri-urban population, especially women and unemployed youth as part-time activities.

I would like to extend my warmest greetings to the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare for their unrelenting efforts for overall development of fishery sector with special focus on Ornamental Fishery segment to achieve the objectives to strengthen the blue economy.

Radha Mohan Singh

(RADHA MOHAN SINGH)

कृष्णा राज
KRISHNA RAJ

सत्यमेव जयते

कृषि एवं किसान कल्याण राज्य मंत्री
भारत सरकार
MINISTER OF STATE FOR
AGRICULTURE & FARMERS WELFARE
GOVERNMENT OF INDIA

दिनांक 17 नवम्बर, 2017

संदेश

सजावटी मत्स्यन मात्स्यिकी का एक उप-क्षेत्र है जो प्रजनन, पालन और ताजाजल तथा समुद्री जल दोनों की रंगीन मछलियों के विपणन का कार्य करता है। भारत समृद्ध संसाधनों तथा नदियों, धाराओं लैगून और भूंगा चट्टानों से मुक्त है जो सजावटी मछलियों की अत्यधिक आकर्षक और विविध प्रजातियों से भरी पडी हैं। इस विभाग ने धारणीयता समेत ध्यान देने के लिए महत्वपूर्ण क्षेत्रों की पहचान करते हुए सजावटी मात्स्यिकी को बढ़ावा देने के लिए एक कार्य योजना प्रारंभ की है।

लाखों लोगों को आजीविका प्रदान करने के अलावा, यह क्षेत्र विदेशी निर्यात-आय के माध्यम से देश की अर्थव्यवस्था में महत्वपूर्ण योगदान भी देता है। इस विस्तृत विविध को उद्यमी कौशल का उन्नयन करने के माध्यम से विशेषरूप से प्रजनन और पालन में वैज्ञानिक तकनीकों का प्रसार करते हुए समग्र रूप में विकसित करने की आवश्यकता है।

मैं पशुपालन डेयरी और मत्स्यपालन विभाग कृषि और किसान कल्याण के अधिकारियों को उनके कठिन परिश्रम हेतु आशावादी परिणाम के साथ इस कार्यक्रम को सफलता पूर्वक प्रारंभ करने के लिए अपनी शुभकामनांए देती हूँ।

(कृष्णा राज)

देवेन्द्र चौधरी
Devendra Chaudhry, IAS
सचिव
SECRETARY

सत्यमेव जयते

भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
पशुपालन, डेयरी एवं मत्स्यपालन विभाग
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Krishi Bhawan, New Delhi-110001

Dated 07th July, 2017

MESSAGE

Recreational fisheries in the country carry an estimated value of Rs. 300 crore per year in domestic market. However, the potential for domestic trade is about Rs 1500 crore. The ornamental fisheries sector can support the livelihood of 1.5 lakh rural women and youth if the existing potential is utilised to its optimum level.

In view of the current status and potential of ornamental fisheries trade, it is felt that to promote development of technologies for breeding new species of ornamental value and also increasing their production, it is necessary to provide appropriate support for capital and other inputs, up gradation of and validation of technology, development of skills through institutional support to the sector.

With the introduction of "Blue Revolution" from the year 2016-17, the Department of Animal Husbandry, Dairying and Fisheries, has envisaged a pilot project on ornamental fisheries, where in the action plan for implementation has been outlined for holistic development of this sector in identified nine potential states (Assam, West Bengal, Bihar, Odisha, Tamil Nadu, Kerala, Karnataka, Gujarat and Maharashtra) to focus on the growth of this sector.

I believe, with the implementation Mission Ornamental Fisheries Development: 2020, there will quantum jump in ornamental fisheries segment to facilitate desired progress in the future.

(Devendra Chaudhry)

संयुक्त सचिव
भारत सरकार
कृषि एवं किसान कल्याण मंत्रालय
पशुपालन, डेयरी और मत्स्य पालन विभाग
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Joint Secretary
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Ministry of Agriculture & Farmers Welfare
Department of Animal Husbandry, Diarying & Fisheries
Krishi Bhawan, New Delhi-110001

MESSAGE

Recognizing the potential and scope of ornamental fisheries, the Government of India has envisaged a program to unlock the potential of this sector through a special drive by launching an exclusive pilot scheme for the ornamental fisheries with a total outlay of about Rs. 61 crore. The pilot project on ornamental fisheries shall be implemented by the identified States/UTs under the supervision of the National Fisheries Development Board (NFDB)- Hyderabad. The broad funding patterns proposed under the pilot project are in line with the provisions outlined under CSS Blue Revolution: Integrated Development and Management of Fisheries. The financial resources required for the implementation of the proposed pilot project shall be mobilized through dovetailing of funds under other schemes of Government of India in a convergence mode, wherever feasible.

For intensive development, a total of 9 potential States have been identified, *viz.*, Assam, Bihar, West Bengal, Odisha, Maharashtra, Gujarat, Karnataka, Tamil Nadu and Kerala. Further, the impetus will be on ornamental fishery activities found to be more prevalent in particular State. The major objectives of the pilot project are: (i) to promote culture of preferred species with cluster-based approach, (ii) to augment ornamental fisheries trade and export earnings, (iii) to create employment opportunities for the rural & peri-urban population and to use modern technologies and innovations to make ornamental fisheries a thriving activity

About 400 species of marine ornamental fishes and 375 freshwater ornamental varieties are available in various parts of our country. The domestic trade of ornamental fish is mainly dominated by production and marketing of low value ornamental fish *viz.*, Gold fish, Koi carp (golden, milky), Sharks (tiger, albino), Gouramy (blue, golden), Angels (black, tiger, golden), Barbs (rosy, tiger, tin foil), live bearers (Mollies, Sword tails, Guppy, Platies) etc. The retail prices for these fishes vary around INR 15 - 50 each. It is estimated that the total value of domestic aquarium trade is about Rs.300 crore annually which support about 50,000 households directly or indirectly in semi-urban and rural areas.

The sustainable growth in this segment is possible through captive breeding to ensure a constant supply of hatchery-bred young ones to the global markets round the year. Further, community based ornamental aquaculture has a direct effect on conservation and also on sustainable livelihoods of the rural people.

Culture and breeding of ornamental fishes can also be a promising alternative livelihood for women and unemployed youths. The women can run small home aquarium units and improve their social and economic status. It can contribute to the livelihood security of rural women and augment national income in a more socially equitable way. Development of ornamental fish sector should be viewed in a holistic manner with development of associated activities like aquarium fabrication, accessories manufacturing, live feed culture and culture of aquatic plants.

I believe consistent efforts by the Government and all stakeholders' involved in this sector will certainly help in promoting ornamental fisheries sector in the country.

(Aditya Kumar Joshi)

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Preamble

Ornamental fish keeping and its propagation has been an interesting activity for many, which provide not only aesthetic pleasure but also belief to be financial openings. The growing interest in ornamental fishes has resulted in steady increase in its trade globally. The overall trade including non-exported products, wages and retail sales including accessories and fish feed is around US$ 15 billion.

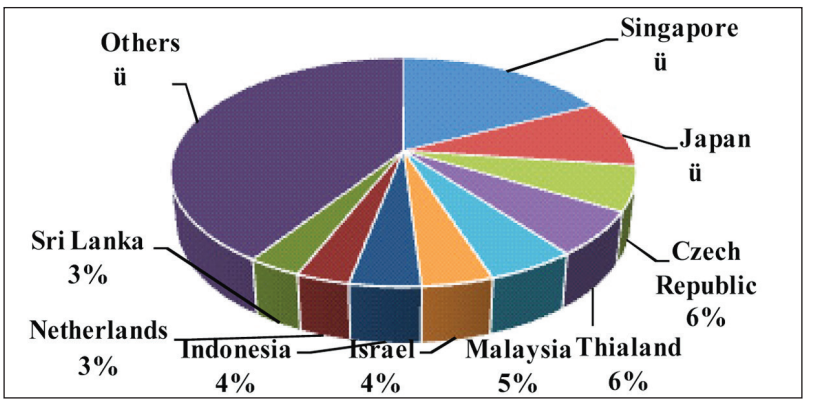


Figure-1 Market Share of Major Exporters of Ornamental Fish (FAO, 2012)

The global trade in exports of ornamental fishes has increased at an average of 14 percent per year since 1985 (FAO, 2013).The major ornamental fish producing countries are mostly from Asia and Europe.

The top exporting countries during 2011 - 2012 was Singapore followed by Japan, Czech Republic, Thailand, Malaysia, Israel, Indonesia, Netherlands and Sri Lanka. The countries of Asian Sub-Continent contribute about 56% to global ornamental fish export. However, contribution of India in global trade remains below 1% (US$ 1.16 million) of the total. India has been exporting some unique varieties of wild caught ornamental fish to many developed countries of the world since 1969. In India, about 80% of the ornamental fish come from fresh waters, but they are mostly exotic species. Among the fresh water fishes, 98% are cultured and only 2% are captured from wild. The captive breeding of ornamental fishes can open up new avenues and lead to the supply of hatchery bred young ones to the global markets throughout the year. Further, community based ornamental aquaculture has the effect of direct conservation benefits and sustainable livelihood to the rural people. In addition, this system will help in enhancing the foreign exchange earnings through hatchery bred indigenous freshwater and marine ornamental fish export. Development of ornamental fish sector should be viewed in a holistic manner with development of associated activities like aquarium fabrication, accessories manufacturing, live feed culture and culture of aquatic plants.

1. Ornamental Fisheries Resources in India

India possesses rich resources *viz.*, rivers, streams, the lagoons and coral reefs that are abound with highly attractive and varied species of ornamental fishes. The variety of micro-habitats, high diversity of biotic and abiotic components and the suitable climatic condition have made the region as one of the world's

richest repository of ichthyo-faunal resources especially the ornamental fish. Around 2500 species have been reported worldwide from various aquatic environments. Indian waters possess a rich diversity of ornamental fish, with over 195 indigenous varieties reported from NE region and Western Ghats, and nearly 400 species from marine ecosystems. The major fish exported from India are of wild varieties collected from rivers of the Northeast and Southern States that contributes about 85% to the total export of all types of ornamental fish from country (**Annexure-I**).

The entire Northeast India comprising the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim is endowed with a vast expanse of freshwater in form of streams, rivers, lakes and floodplain wetlands including the mighty Brahmaputra. The region is one of the highest precipitated zones in the world. The variety of micro-habitats, high diversity of biotic and abiotic components and the suitable climatic condition have made the region as one of the world's richest repositories of ichthyo-faunal resources. It is a well-recognized fact that there has been drastic reduction in abundance of the freshwater fishes in this region due to destruction of the habitat, overexploitation and other anthropogenic effects. The wild ornamental fish are typically collected in remote fishing sites using artisanal fishing methods consisting of small dragnet, dip nets, and a variety of small traps. Some collectors even use toxic substances such as rotenone in freshwater rivers and streams. The greatest losses of wild-caught ornamental fish occur during the handling period between capture, local transport and export. Large scale promotion of ornamental fish culture in the region can be one of the solutions to this problem.

On the other hand, the Western Ghats of India is one of the 34 - Biodiversities 'hotspot' areas of the World. Among the total freshwater fishes reported from the Western Ghats, 40 are considered ornamental fishes of which 37 are endemic to the Western Ghats.

Brackish water ornamental fishes such as *Monodactylus argentus, M. sebae* and *Scatophagus argus* are common in Indian waters and they could be collected, reproduced cultured and traded. The brackishwater Pearl-spot (*Etroplus suratensis*) Orange Chromide (*Etroplus maculates*) and brackish water Indian glass fish *Ambassis* sp. have been successfully bred in low saline fish ponds.

Marine ornamental fish and invertebrates are widely collected from the coral reef habitats throughout the Indo-Pacific region, but the exact number of species that are currently available in the trade is still difficult to estimate due to the unorganized, multifaceted and fragmented supply system. Potential marine ornamental fish species resources are clown fish, damsel fish, moorish idol, lion fish, parrot fishes, boxfishes or trunk fishes, marine angels, butterfly fish, cleaner wrasse, cardinal fishes, surgent fishes/unicon fish, hawk fishes, bat fishes, puffer fishes, trigger fish, rabbit fish, squirrelfish, scorpion fish, blennies fish, sand smelt fish and seahorses (**Annexure-II**). Very little works have been made on the acclimatization and culture of marine ornamental fishes in captivity in India.

1.1 Ornamental Fish Culture in India

There is no comprehensive list which provides the number of ornamental fish breeders in India, Chennai, Kolkata, Mumbai, and Kochi are known to have established business sites of ornamental fish trade. Of late,

Bangalore is also emerging as an important center in this business. Most ornamental fish trade from these centers is of mixed type of freshwater and marine fishes. In Kolkata, ornamental fish farms are located in North and South 24 Parganas, Nadia, Hooghly and Howrah districts. In Tamil Nadu, Kolathur village near Chennai is famous for ornamental fish production as cottage industry while in Kerala the activity is mainly concentrated in Ernakulam, and Trissur Districts. During recent times the ornamental fish production activity has been expanded to others States like Madhya Pradesh & Rajasthan, Uttarakhand, Punjab and Himachal Pradesh.

Majority of the entrepreneurs in India bred exotic fishes and very less percentage of the breeders dealt with indigenous, marine and brackish water fish breeding. Goldfish was seen to be the highest consumer preferred variety and hence, its breeding dominated the Indian breeding sector. In Karnataka, the main varieties bred are butter species like Guppy, Molly, Platty, Sword Tail *etc.* In Maharashtra, the preferred varieties are Oscar, Flower Horn, Tetras, Discus and Cichlids. Almost all of the cultured based ornamental fish in India comes from the backyard breeding and rearing units. But due to the lack of adequate infrastructure and key inputs like appropriate feed, quality brood stock *etc.* these breeding units are not in a position to produce varieties which are in demand in the international market.

1.2 Trade of Ornamental Fish

The ornamental fish sector is an extensive and global component of fisheries trade, aquaculture and development. The unit value of ornamental fish is higher than the food fish. Hence this sector offers good opportunity for rural and semi-urban households to augment their income and link them to the domestic and International trade.

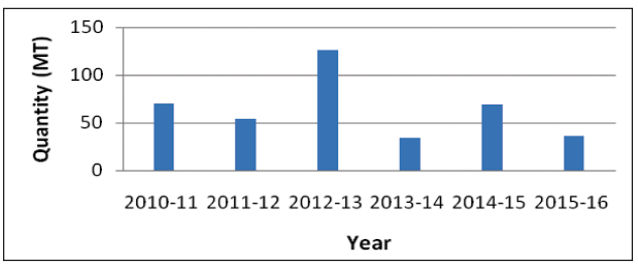


Figure-2 Quantity-wise Ornamental Fish Export from India during 2010-2016

It is estimated that total value of domestic aquarium trade is about Rs. 300 crore annually and supporting about 50,000 households directly or indirectly in semi-urban and rural areas. The domestic trade of ornamental fish is mainly dominated by production and marketing of low value ornamental fish *viz.,* gold fish, koi carps (golden, milky), sharks (tiger, albino), gouramy (Blue, golden), angels (black, tiger, golden), barbs (rosy, tiger, tin foil), live bearers (mollies, sword tails, guppy, platies), *etc.*, and the retail price for these fishes were around INR 15 - 50 each. Varieties of gold fish, koi carps (golden, milky), sharks (silver, red-tail, rainbow), gouramy (pearl, giant), silver dollars, fire mouths, feather fish, shrimps, etc., and the market retail price which includes INR.50-200 each. Marine ornamental fish, red devils, green terror, horns,

varieties of discuss, parrot fish, texas, flower horns, Oscars etc., and the market retail price which includes INR 200-2000 each. Flower horns, Arowana, marine ornamental fish, butterfly fish, discuss, etc., and the market retail price which includes above INR. 2000 each (**Annexure-III**).

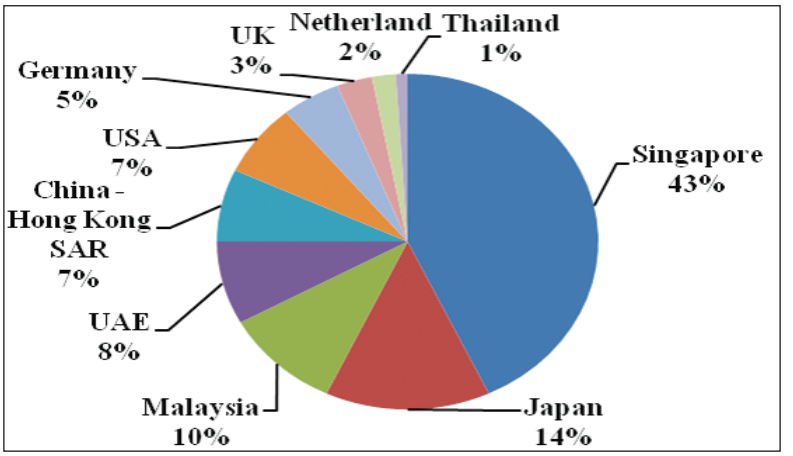


Figure-3 Major Destinations for India's Ornamental Fish Export during 2003-2009

In export front, India's share in global ornamental fish trade is negligible and at present the ornamental fish export from India contributes only 0.32% to the total world export. The major destination of Indian ornamental fishes during 2003 to 2009 are Singapore followed by Japan, Malaysia, United Arab Emirate China-Hong Kong, USA, Germany, United Kingdom, Netherlands & Thailand. The major fish exported from India are of wild varieties collected from rivers of the Northeast and Southern States that contributes about 85% to the total export of all types of ornamental fish from country. Port-wise study conducted by Dominic *et. al.,* 2013 shows that majority of the export (quantity) during the period 2004 to 2011 was from Chennai followed by Kolkata, Mumbai and Kochi , contributing 38.18%, 18.78%, 14.34% and 14.14% respectively followed by Mangalore, Trivandrum, Delhi and Calicut. The growth of **domestic aquarium trade** is shown in **Annexure-IV**.

2. SWOT Analysis for Ornamental Fisheries Sector in the Country

The existing scenario of ornamental fish trade in the country has triggered a cyclic relationship in between the number of hobbyists and the producers & traders of inputs which includes ornamental fish, aquarium accessories, other decorative items *etc.*, the ornamental fish industry is passing through a phase of transition. SWOT analysis for the ornamental fisheries of India is as follows:

2.1 Strength

- A varied climatic conditions that have around 300 - 500 species of ornamental significance.
- Resource 'Hotspots in India are:
  - ➢ For Freshwater Species

- Eastern & Western Himalayas
- Western Ghats
- Natural Lakes such as Kolleru, Chilka and Loktak *etc.*

➢ For Marine Species (Coral reef areas):

- Gulf of Kutch
- Island Regions such as Lakshadweep and A& N
- Gulf of Mannar
- Sunderbern Regions

2.2 Weakness

- Non-availability of breeding techniques for indigenous ornamental species.
- No expertise in captive breeding of marine ornamental fish species.
- Lack of species-specific techniques for collection of targeted species from wild.
- Rampant bio-piracy of ornamental fish from wild.
- Lack of a certification mechanism.
- Lack of awareness for sustainability.

2.3 Opportunities

- Good domestic market exists and it is growing over the years.
- Rich biodiversity resources.
- Good market linkages and institutional support.
- Capitalizing the untapped area of captive breeding of marine ornamental fish.

2.4. Threats

- By utilizing our Indigenous ornamental fish as raw material and sale at higher prices after value addition.
- Use of destructive methods while collecting from wild.
- Natural stock depletion.
- Degradation of Coral Ecosystem which is the natural habitat of marine ornamental fishes.
- Alien species introduction.
-

3. Key Points

The National Fisheries Development Board (NFDB) in the past provided financial assistance for establishment of backyard rearing units, medium scale rearing units, integrated (breeding-cum-rearing) units, aquarium fabrication units and ornamental fish markets to the tune of Rs. 35.91 crore towards development of ornamental fisheries in the country (**Annexure-V**).

3.1 Constraints and issues identified on Ornamental Fisheries

During the National Consultations on Ornamental Fisheries at various levels, a set of constraints and issues were identified under each major area of Ornamental Fisheries.

3.1.1 Breeding, Seed Production and Culture

- Economically viable standardized breeding and seed production protocols of high value indigenous ornamental fish
- Establishment of ornamental brood bank for quality seed
- Cost effective good quality feed for brooders, larvae and grower
- Skill development and Entrepreneurship
- Strengthening of R&D institutions

3.1.2 Employment, Income Generation and Women Empowerment

- Suitable production modules for small scale, medium scale and large scale ventures.
- Strengthening of Infrastructure related to production, logistics and marketing.
- Diversification on production, quality seed and continued supply is needed.
- Formation of SHGs are key for developing the backyards.
- Forward and backward linkages for the sector to grow.

3.1.3 Conservation issues *viz-a-viz* for Domestic and International Trade

- Proper identification of commercially important species
- Categorization of threat criteria of target species using the IUCN criteria
- Conscious wild collection of species to avoid Stock depletion for sustainability
- Use of species specific collection methods to avoid mortality of non-targeted species

3.1.4 Best Management Practices and Code of Conduct

- Voluntary acceptance of Code of Conduct is required at the retailer's level
- Skill development is the most important part of the existing retailers
- Accreditation, BMP (Best Management Practice) and CoC (Code of Conduct) may be Voluntary and Certification should be Mandatory

3.1.5 Regulatory Processes: Certification, Quarantine and Quality Control *etc.*

- MPEDA has the policy for Green Certification of Freshwater Ornamental fishes, the same needs to be developed for Marine fishes also
- Implementation of the Quarantine for Ornamental aquaculture
- Quality control aspect should be prioritized
- DNA bar-coding of all ornamental fishes

3.1.6 Orientation towards Export Market

- Non Acceptance of live fish cargo and High freight cost
- Problems in obtaining Health Certificate for export
- Importing regulations of the importing countries
- Quarantine certification
- Non availability of export grade fishes in high season

4. Action Plan

The key factors for success in commercialization of ornamental fish farming are cluster/group approach in farming with wide species variability, production scale, quality, price competitiveness, limiting the middlemen to possible extent in the marketing and overcoming the supply delivery limitations. Recognizing the potential and possibilities, Government of India has envisaged a program to unlock the country's ornamental fisheries sector through implementing different activities in this sector. Implementation of Ornamental Fisheries on pilot basis, in its scope and reach, focuses mainly on creating an enabling environment for a sustainable and holistic development and management of ornamental fisheries for the socio-economic benefit & development of ornamental fisheries in India. Thrust areas have been identified for enhancing ornamental fisheries production through farming and conservation of natural resources, both inland and marine, through habitat restoration and creating awareness amongst the stakeholders.

4.1 Objectives: to Unfold the Growth

- To streamline the ornamental fishery sector so as to make it as an organized segment.
- Augmentation of fish farmers and ornapreneurs. Increase in the income of the Ornapreneurs and fish farmers through different activities in this sector. To create employment opportunity to the rural & urban population.
- To augment ornamental fisheries traders & export earnings.
- Technology transfer and its adoption to make ornamental fisheries a thriving activity.
- To create infrastructure facilities for production and trade of ornamental fisheries.
- Judicious utilization of natural resources and significant increase in ornamental fish production and trade by 2020.
- To encourage the women self-help groups, unemployed youth, SC/ST for ornamental Fisheries.

4.2 Implementation Strategy: to Unlock the Scenario

The implementation strategy for the development of ornamental fisheries in the country has been developed with strong focus on the management and conservation of the ornamental resources. The implementation strategy should include following steps.

- Interaction with the States / UTs and other stakeholders.
- Identification of potential states for the development of ornamental fisheries.
- Identifying thrust areas for each potential State.
- Project appraisal, approval, implementation, monitoring and evaluation through professionally qualified manpower.
- Monitoring and evaluation of the approval projects.
- Group formation, cluster-based development.
- Capacity Building through Training & Demonstration.
- Identifying a Mentor institute for each State for technical backup and hand holding support.

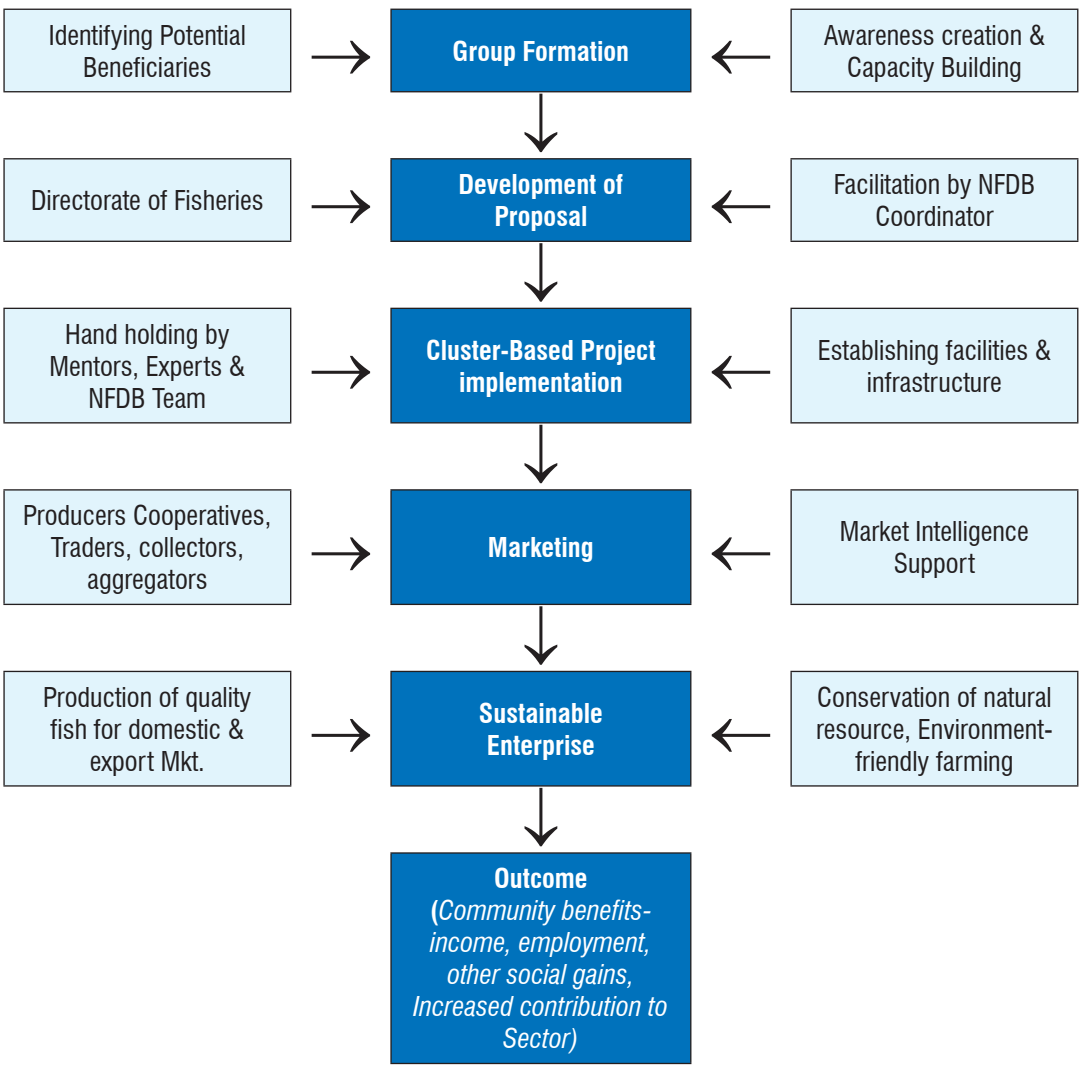


Figure-4 Flow chart of the work plan of the project

5. Identification of Potential States

For the purpose of implementation of the pilot project, a total of 9 potential states have been identified (**Annexure- IX & X**). The identified states and tentative activities proposed are as below:

- Assam – (Thrust on breeding of Indigenous Freshwater species).
- West Bengal - (Thrust on commercial production of freshwater ornamental species (exotic breeds) for domestic market, Breed improvement programme, brood bank for Freshwater ornamental fish).
- Odisha - (Thrust on production).
- Maharashtra – (Thrust on production).
- Gujarat– (Thrust on production).
- Karnataka – (Thrust on Production).
- Tamil Nadu – (Thrust on marine ornamental fish breeding and rearing, brood bank for marine ornamental fish).
- Kerala – (Thrust on Freshwater, Brackish water and Marine Ornamental fish production).
- Bihar - (Thrust on production).

6. Classification of Activities

All the activities for development of Ornamental fisheries under the mission are classified into four major groups. The details of the schemes proposed are provided in the **Annexure-VI**. Each group includes several activities.

Group A:

Activities related to production of ornamental fish (Setting up of production units including renovation.

Group B:

Activities related to Aquarium Fabrication, trade and marketing.

Group C:

Activities for promotion of ornamental fisheries sector through demonstration, establishment of public aquariums and organizing aquaria shows.

Group D:

Skill development and capacity building Programmes.

6.1 Freshwater Ornamental Fish Culture

Freshwater ornamental fishes are mainly grouped into two categories, *viz.,* Oviparous (egg - layers) and Viviparous (live-bearers). Further, the freshwater ornamental fish varieties can be broadly grouped into Tropical and Cold water species also. Management of these two categories are different in nature. According to water tolerance fishes are hard water tolerant, soft water tolerant species and those with wider tolerance.

The common varieties of fishes and the details of grouping are provided in **Annexure-VII**. Under the pilot project, a total of 350 units have been proposed for the production of good quality ornamental fishes, out of which 175 units have been proposed for the backyard rearing units, 56 units proposed for the medium scale unit and 45 units proposed for the integrated ornamental fish unit **(Annexure-XIII).**

6.2 Marine Ornamental Fish Culture

Currently the marine ornamental fish trade relies solely on wild catch which is not desirable for the sustainable development of the sector. To reduce the dependence on wild catch from seas, emphasis must be given on captive breeding and rearing of marine ornamental fishes. The technology of breeding and larval rearing has now been developed for certain species by research institutes like CMFRI. CMFRI's research center at Vizhinjam has already launched extensive research into captive breeding and rearing of many marine ornamental fish species. These technologies can be taken up for wider dissemination among the coastal communities under this mission. Three activities can be taken up for the development of marine ornamental Fisheries, Establishment of Integrated hatchery for production of seed of marine ornamental fishes, Backyard grow-out units (cluster-based) for seed rearing, Marine Ornamental Fish Demonstration Unit.

Best way to boost the trade is developing captive breeding and rearing units for marine ornamental species. However, the problem for establishment of more marine ornamental fish hatchery is non-availability of brood Fish. Therefore, 9 marine integrated units are proposed. Accordingly, 42 backyard grow-out/ rearing units are proposed, so that the backyard grow-out/ rearing units can rear the produced marine ornamental fish at a better way. And 3 demonstration units have been proposed for the marine ornamental fish development **(Annexure-XIV).**

6.3 Aquarium Fabrication-cum-Retail Unit

An estimate made by MPEDA shows that there are one million fish hobbyists in India. The total value of domestic aquarium trade could be estimated on total number of retail aquarium outlets in the country which is about 5000. Accordingly, the total value of domestic aquarium trade could be about Rs.300 crore with an average annual turnover of Rs.6.00 lakh of each shop. The total revenue at an aquarium shop is received from sale of fish, fish feeds, aquarium & aquarium accessories and aquarium servicing. The sale of fish contributes only 20% to the total sales whereas fish feed, accessories and servicing contributes about 6%, 11% and 63% respectively. The accessories and equipments play an important role for making and shining of the aquariums. The accessories like underground filter filtrates the water and submerge the unwanted materials to the pebbles of the aquarium. The aerators/water forms supply aerobic oxygen to dissolve oxygen which is required for fish. Similarly, toys, decorative stones, background posters etc., make the aquarium to look attractive. A total of 88 units have been proposed under the pilot project. The beneficiaries will be trained up to fabricate demand based aquariums, how to keep fish and the transportation of fish also so that an aquarium hobbyist can gather the basic knowledge from the entrepreneur **(Annexure-XVI).**

6.4 Promoting Ornamental Fisheries

There is a need to establish demo units in public places like hospitals, educational institutions, railway stations, Government offices etc. Since the demand has to come from the new generations, the pilot project starts with introducing aquarium units in educational institutions and Govt. offices. Therefore, 800 units have been proposed for this pilot project. Aquariums are great tools for connecting the public with aquatic life and inspire people of all ages to take care of the aquatic species. A public aquarium is the aquatic counterpart of a zoo, which houses living aquatic animal and plant specimens for public viewing. Though there are few **public aquariums** are set up in India (**Annexure-VIII**), still there is a need for setting up public aquarium to create awareness regarding ornamental fishes. A total of 03 nos., of public aquariums have been proposed under the pilot project for creating general awareness about the fishes and other aquatic animals of ornamental use.

6.5 Capacity Building Programme on Ornamental Fisheries

As this sector is presently lacking the skilled manpower, there would be a need to augment the capacity through training and demonstrations. Thus, creating a cadre of trainers in this sector assumes special significance. The modules for training have to be worked out keeping in view the specific needs of the sector. Secondly, the modules will have to provide for practical orientation to the contents so that the trainees will utilize the learning in their farms. Therefore, 40 training cum skill development programmes have been proposed for this pilot project (**Annexure-XVII)**.

6.6 Establishment of Wholesale Ornamental Fish Markets

The wholesale ornamental fish outlets are important links in the entire domestic marketing system. It is only through wholesale markets, fish is traded to retail outlets and aquarium shops. Despite having tremendous growth potential, the ornamental fish sector in India remains untapped mainly due to lack of systematic marketing, poor infrastructure (essential for transportation of live fishes) and lack of access to market information. The most prevailing marketing channel of ornamental fish are: Producer/ Collectors - unregistered small traders - wholesalers-retailers in various states. Marketing arrangements showed that retailers enjoyed the lion's share of profit, followed by the wholesalers, unorganized traders, collectors and a meager share of was realized by the producers. This pattern of profit-sharing indicates that the benefit of this industry is distributed unequally, depriving the farmers or collectors heavily. This could be improved by establishing Ornamental wholesale Retail Fish Markets. Therefore, 03 wholesale ornamental fish markets have been proposed for three potential metro cities in this pilot project.

6.7 Establishment of Ornamental Fish Broodbank

Although there is a huge production of the exotic ornamental fish in the country, the trading of such species is mainly restricted in the domestic markets due to their poor quality. Therefore, region wise establishment of indigenous and exotic ornamental fish broodbank is very essential where the breeders can purchase very good quality brood fish for breeding. The main objective to establish broodbanks are:

(i) To make available of quality brood fish for fresh water indigenous and exotic ornamental fish species to produce quality ornamental fish seed.

(ii) Training and demonstration unit for maintenance of quality ornamental fish brood bank.

(iii) To build confidence amongst the fish breeders.

Therefore, 04 Nos. ornamental fish broodbanks are proposed under this pilot project for establishment of broodbank facilities to develop of broodstock and supply it to the beneficiaries or entrepreneurs (**Annexure-XVIII)**.

Figure-5 Ornamental Fish Market, Galiff Street, Kolkatta, WB

6.8 Promoting National/International Aquaria Shows

Promotion is an element that informs marketing of a product, its merits and characteristics thus positioning it in the market place. Ornamental Fisheries and aquarium industry has gained prominence in domestic and international trade and plays a significant role in the economy of developing countries. However, the business in this sector in India is still un-organized, mainly due to lack of systematic marketing and lack of access to market information. There is need to take initiatives at several steps to popularize this important area of employment generation. Aquaria show is one such initiative that offers a unique platform for all the stakeholders to showcase their products to the leading fish importers/exporters across the world and to facilitate business tie-ups.

Organizing aquaria shows will expose the ornamental fish growers to use the latest technologies in the sector across the globe. Special technical sessions by the expert's will enhance their knowledge on latest developments in the field.

Therefore, 01 nos. of aquaria trade shows have been proposed under the pilot project for promotion of ornamental Fisheries sector **(Annexure- XV-A, XV-B).**

6.9 Ornamental Aquatic Plant Unit

Hundreds of fascinating and attractive plants are grown in aquaria for beauty and to maintain the quality of water. Further, increase in the installation of backyard ornamental fishponds has created a need to supply aquatic plants that the homeowner can use decoratively in and around their ornamental fish ponds and aquariums. In addition, aquatic plants provide food, shade, shelter and breeding places for many life forms including fish. There are many varieties of ornamental aquatic plants and the market for these is growing steadily. Some of the commonly occurring species in India are *Nymphaea nouchali, Nymphaea pubescence, Myriophyllum oliganthum, Nymphoides indica, Nymphoides crystatum, Bacopam onnieri, Limnophila heterophylla, Limnophila repens, Utricularia aurea, Utricularia exoleata, Alternanthera philoxeroides, Hydrilla verticillata, Vallisneria natans, Eichhornia crassipes, Hygroryza aristata, Najas graminea, Marsilea quadrifolia* and *Ceratopteris thalictroides*.

High demand, mainly from the developed countries, for aquatic plants have spawned large industries in both developed and developing countries. Shipment data of aquatic live plants suggests that India too is exporting a large number of aquatic plants to international markets. Therefore, 16 nos., of backyard ornamental aquatic plant units have been proposed under the pilot project for promotion of ornamental fisheries sector (**Annexure-XIX)**.

7. Mode of Implementation

The pilot project on ornamental fisheries shall be implemented by the NFDB through State / UTs Fisheries Departments.

7.1 Time-frame

It is estimated that implementation of proposed pilot project on ornamental fisheries requires a minimum time frame of one year. It is therefore proposed to take up implementation of this activities envisaged in pilot project soon after approval of the pilot project.

7.2 Estimated Cost

The cost of the pilot project is estimated at Rs. 6188.99 lakh. And the item / component-wise details are furnished at abstract cost estimate (**Annexure- XI**).

7.3 Implementing Agencies

(i) Cooperative Societies, Central & State/UT level Cooperative Federations/bodies

(ii) Ornamental Fish producers and marketing groups/associations

(iii) Entrepreneurs/Companies, Public Private Partnership (PPP) and SPVs

(iv) Central and State owned organizations, Boards and Panchayati Raj Institutions (PRIs).

7.4 Pattern of Central Financial Assistance

The broad funding patterns proposed under the mission on ornamental fisheries are in line with the funding patterns under CSS Blue Revolution: Integrated development and Management of Fisheries **(Annexure-XII**). The details are as below:

(i) 50% of the project / unit cost for general states, leaving rest to the State agencies/organizations, corporations, federations, boards, Fishers cooperatives, private entrepreneurs, individual beneficiaries etc.

(ii) 80% of the project / units cost for North-Eastern/Hilly States leaving the rest to State agencies/ organization, cooperatives, individual beneficiaries, etc.

(iii) 100% of the projects/units cost directly implemented by the Government of India through its institutes/organizations and Union Territories

Note: 100% of the project/unit cost will be provided for the activity of establishment of aquariums in Schools, Colleges and Government offices.

7.5 Financial Resources

The proposed pilot project on development of ornamental fisheries shall form one of the components of the CSS on "Blue Revolution: Integrated Development and Management of Fisheries" under Innovative activities. Financial resources required to meet the central liability towards implementation of the proposed pilot project on development of ornamental fisheries shall also be mobilized through dovetailing of funds under other schemes implemented in the GOI, in a convergence mode wherever feasible (**Annexure-XX)**.

Annexure-I

Major Indigenous Freshwater Ornamental Fishes and their Price Per Piece

Sl. No.	Species	Trade Name	FOB (US$)
1	*Channa micropeltes*	Snake head	5
2	*Puntius denisonii*	Red line torpedo fish	5
3	*Channa gachua*	Brown Snake head	4
4	*Barilius canarensis*	Jerdon'sbaril	3.5
5	*Channa striatus*	Snake head	3
6	*Gonoproktopterus curmuca*	Redtail silver shark	3
7	*Gonproktopterus thomassi*	Nilgiri shark	3
8	*Horabagrus brachysoma*	Yellow catfish	3
9	*Horabagrus nigricolaris*	White collared imperial	2.5
10	*Puntius arulius*	Aruli barb	2.25
11	*Gonoproktopterus amphibius*	Scarlet banded barb	1.6
12	*Lates calcarifer*	Giant sea perch	1.5
13	*Wallago attu*	Killer catfish	1.2
14	*Nemacheilus striangularis*	Zodiac leach	0.8
15	*Puntius filamentosus*	Indian tiger barb	0.8
16	*Puntius mahecola*	Malini's barb	0.8
17	*Channamarulius*	Peacock snake head	0.75
18	*Pangasiuspangasius*	-	0.7
19	*Channa orientalis*	Snake head	0.6
20	*Barilius bakeri*	Blue spotedhilltrout	0.5
21	*Xenetodon cancila*	Pipe fish	0.5
22	*Amblypharyngodon mola*	Brass fish	0.4
23	*Macrognathus aral*	Spiny eel	0.4
24	*Notopterus notopterus*	Grey feather back	0.4
25	*Etroplus suratensis*	Pearl spot	0.35
26	*Garra (gotyla) gotyla*	-	0.3
27	*Nandus nandus*	Leaf fish	0.3

Sl. No.	Species	Trade Name	FOB (US$)
28	*Ompok bimaculatus*	-	0.3
29	*Puntius bimaculatus*	Two spot barb	0.3
30	*Macropodus cupanus*	SpfretailParadise fish	0.29
31	*Aplocheilus lineatus*	Striped panchax	0.25
32	*Danio malabaricus*	Malabar danio	0.25
33	*Anabas testudineus*	Climbing perch	0.2
34	*Etroplus maculatus*	Orangachromide	0.2
35	*Mystus vittatus*	Striped loach	0.2
36	*Puntius sophore*	Soft fin swamp barb	0.2
37	*Chela dadyburjori*	Burjor's Brilliance	0.17
38	*Puntius fasciatus*	Melan barb	0.16
39	*Eleotris fusca*	Bicolor goby	0.15
40	*Aplocheilus blocki*	-	0.14
41	*Mastacembelus armatus*	Marble spiny eel	0.12
42	*Puntius ticto*	Tic tac toe barb	0.12
43	*Puntius vittatus*	Silver barb	0.12
44	*Barilius barna*	Silver hill trout	0.1
45	*Tetraodon travancoricus*	Puffer	0.1
46	*Rasbora daniconius*	Slender rasbora	0.09
47	*Chanda ranga*	High fin glass fish	0.08
48	*Esomus danricus*	Flying barb	0.05
49	*Aplocheilus panchax*	Red panchax	0.04
50	*Lepiodcephalus thermalis*	Loach	0.04
51	*Oryzias melastigma*	Blue eyes	0.04

*Data Source: Department of Aquatic Biology & Fisheries, University of Kerala Journal, 2012

Annexure-II

Major Indigenous Marine Ornamental Fishes and their Price Per Piece

Sl. No.	Species	Trade Name	European Price (US$)
1	*Pomacanthus imperator*	Emperor angel fish	114.9
2	*Gymnothorax sp.*	Moray eels	106
3	*Narcine timlei*	Black spotted numb fish	100
4	*Pomacanthus semicirculatus*	Blue angel fish	99.99
5	*Heniochus acuminatus*	Pennet coral fish	75
6	*Arothron* sp.	Puffer fish	64.9
7	*Thalassoma lunare*	Moon wrasse	64.9
8	*Cephalopholis sp.*	Coral-cod	60
9	*Zanclusc ornutus*	Moorish idol	57.5
10	*Chelonodon patoca*	Milkspotted puffer	50
11	*Chaetodon collare*	Redtail butterfly fish	47.5
12	*Diodon hystrix*	Porcupine Fish	39.99
13	*Pterois sp.*	Lion fish	39
14	*Epinephelus* sp.	Grouper	35
15	*Scarus ghobban*	Parrot fish	35
16	*Chaetodon vagabondus*	Vagabond butterflyfish	34
17	*Chaetodon auriga*	Threadfin butterflyfish	33.5
18	*Acanthurus nigrofuscus*	Brown surgeonfish	32.9
19	*Lutjanus sp.*	Snapper	30
20	*Siganus sp.*	Rabbit fish	30
21	*Cantherhines pardalis*	Honeycomb file fish	25
22	*Platax teira*	Long fin bat fish	24.5
23	*Plectorhinchus gibbosus*	Harry hotlips	24.5
24	*Therapon sp.*	Croaker	22
25	*Ostracion cubicus*	Yellow box fish	21.9
26	*Sargacentron rubrum*	Soldier fish	21.9
27	*Odonus niger*	Trigger fish	20.5
28	*Amphirion sp.*	Clown Fish	20.05
29	*Myripristis murdjan*	Pinecone soldier fish	17
30	*Canthigaster bennetti*	Mooitoble	16.99
31	*Halichoeres* sp.	Wrasse	15
32	*Platax orbicularis*	Orbicular batfish	15
33	*Plotosus lineatus*	Striped eel catfish	15
34	*Chromis viridis*	Damsel fish	10.05
35	*Apogon* sp.	Cardinal fish	10
36	*Pomacentrus caeruleus*	Blue damsel	8.9
37	*Abudefduf saxatilis*	Sergeant major	6.9

Data Source: Department of Aquatic Biology & Fisheries, University of Kerala Journal, 2012

Annexure-III

List of Exotic Ornamental Fishes Traded in Domestic Market along with their Price Per Piece

Sl. No.	Common Name	Scientific Name	Price Range (Rs)*
1	Tinfoil Barb	*Puntius schwanenfeldi*	15-50
2	Tiger Barb	*Puntius tetrazona*	15-50
3	Black Ruby Barb	*Puntius nigrofasiatus*	15-50
4	Clown Barb	*Barbodes everetti*	15-50
5	Long fin Rosy Barb	*Barbus conchonius*	15-50
6	Fliament Barb	*Barbus conchonius*	50-200
7	Scissor tail Rasbora	*Rasbora trilineata*	15-50
8	Yellow tail Rasbora	*Rasbora dusonensis*	15-50
9	Red tail Rasbora	*Rasbora borapetensis*	15-50
10	Dwarf Rasbora	*Rasbora maculata*	15-50
11	Harlequin Rasbora	*Rasbora heteromorpha*	15-50
12	Green Line Rasbora	*Rasbora beauforti*	15-50
13	Slender Gold Rasbora	*Rasbora einthovenii*	15-50
14	Golden Line Rasbora	*Rasbora agilis*	15-50
15	Zebra Barb	*Rasborapauciperforata*	15-50
16	Red tail Black Shark	*Labeo bicolor*	50-200
17	Rainbow Shark	*Labeo erythrurus*	50-200
18	Albino Rainbow Shark	*Labeo frenatus*	50-200
19	Black Shark	*Labeo chrysophekadion*	50-200
20	Silver Shark	*Balantiocheilosmelanopterus*	50-200
21	Blood Parrot Cichlids	*Cichlasoma synspilum*	200-2000
22	Texas Cichlid	*Cichlasoma carpinte*	200-2000
23	Emerald Cichlid/Parrot Fish	*Cichlasoma temporalis*	200-2000
24	Convict Cichlid	*Cichlasoma nigrofaciatum*	200-2000
25	Trout Cichlid	*Cichlasoma citrinellum*	200-2000
26	Peacock bass	*Cichlasoma ocellaris*	200-2000
27	Fire mouth cichlid	*Cichlasoma meeki*	200-2000
28	Red terror	*Cichlasoma festae*	200-2000
29	Green terror	*Aequidens rivulatus*	200-2000
30	Dwarf Cichlid	*Apistogramma luelingi*	200-2000
31	Flower horn	*Amphilophus labiatus*	200-2000
32	Pearl Gourami	*Trichogaster leeri*	50-200
33	Moonlight Gourami	*Trichogaster microlepis*	50-200
34	Blue Gourami	*Trichogaster trichopterus*	50-200
35	Dwarf Gourami	*Trichogaster lalius*	50-200
36	Thick-lipped Gourami	*Trichogaster labiosa*	50-200
37	Snake Skin Gourami	*Trichogaster pectoralis*	50-200
38	Giant Gourami	*Osphronemus goramy*	50-200
39	Gold fish	*Carassius auratus*	15-50
40	Red Oranda	*Carassius auratus*	15-50
41	Red Cap Oranda	*Carassius auratus*	15-50
42	Blue Oranda	*Carassius auratus*	15-50
43	Red Ryukins	*Carassius auratus*	15-50
44	Red & White Ryukins	*Carassius auratus*	15-50
45	Celestial Gold	*Carassius auratus*	15-50
46	Pearl Scale Gold	*Carassius auratus*	15-50

*Prices varies based on size, coloration, quality ,seasons and market

Annexure-IV

Potential of Domestic Aquarium Trade

Number of Urban house-holds (millions)	78.86
Estimated No. of Hobbyist considering 5% of Urban House-holds will be keeping an aquarium (millions)	3.94
Required Number of Aquarium Shops @ average one shop for 200 Urban house-holds	19700
Existing Number of Aquarium Shops	5000
Present value of domestic aquarium trade@ Rs. 6 lakh annually per shop (Rs. crore)	300
Future Value of Domestic Aquarium Trade @ Rs. 6 lakh annually per shop (Rs. crore)	1200

Source: BMP for Freshwater Ornamental Fish production, NFDB publication (2016)

Annexure-V

State-wise details of the NFDB funding for Ornamental Fisheries

(Rs. in Lakh)

Sl. No.	State / UT	Amount	Sl. No.	State / UT	Amount
1	Andhra Pradesh	96.25	11	Odisha	42.00
2	Assam	93.58	12	Pondicherry	1.60
3	Bihar	8.00	13	Punjab	21.00
4	Gujarat	7.00	14	Sikkim	13.50
5	Himachal Pradesh	12.00	15	Tamil Nadu	387.75
6	Jammu & Kashmir	13.50	16	Telangana	15.35
7	Karnataka	245.50	17	Uttar Pradesh	21.35
8	Kerala	1028.82	18	West Bengal	1440.30
9	Lakshadweep	80.30	**Total**		**3590.85**

Annexure-VI

Summary of Activities & their Unit Cost arrived under the Pilot Project

Sl. No.	Name of the Scheme	Unit Cost / Unit
1	**Production of Ornamental Fish / Aquatic Plants**	
1.1	Backyard Rearing Unit(Freshwater ornamental fish)	Rs.3.00 lakh
1.2	Medium Scale Rearing Unit (Freshwater ornamental fish)	Rs.8.00 lakh
1.3	Integrated Ornamental Fish Unit(Freshwater ornamental fish)	Rs.25.00 lakh
1.4	Backyard Rearing Unit (Marine ornamental fish)	Rs.3.00 lakh
1.5	Integrated Ornamental Fish Unit (Marine ornamental fish)	Rs.30.00 lakh
1.6	Marine Ornamental Fish Demonstration Unit	Rs. 90.00 lakh
1.7	Establishment of Freshwater Ornamental Fish Broodbank	Rs. 100.00 lakh
1.8	Backyard Ornamental Aquatic Plant Unit	1.50 lakh
1.9	Input Cost for Ornamental Fish/Aquatic Plants Unit	
1.9.1	Backyard Rearing Unit (Freshwater ornamental fish)	0.40 lakh
1.9.2	Medium Scale Rearing Unit(Freshwater ornamental fish)	1.20 lakh
1.9.3	Integrated Ornamental Fish Unit(Freshwater ornamental fish)	2.00 lakh
1.9.4	Freshwater Ornamental Fish Broodbank	32.00 lakh
1.9.5	Backyard Rearing Unit (Marine ornamental fish)	0.25 lakh
1.9.6	Integrated Ornamental Fish Unit (Marine ornamental fish)	2.00 lakh
1.9.7	Marine Ornamental Fish Demonstration Unit	22.75 lakh
1.9.8	Backyard Ornamental Aquatic Plant	0.35 lakh
1.10	Renovation of existing ornamental fish units	
1.10.1	Backyard Rearing Unit(Freshwater ornamental fish)	1.50 lakh
1.10.2	Medium Scale Rearing Unit (Freshwater ornamental fish)	4.00 lakh
1.10.3	Integrated Ornamental Fish Unit(Freshwater ornamental fish)	12.50 lakh
1.10.4	Establishment of Freshwater Ornamental Fish Broodbank	50.00 lakh
1.10.5	Backyard Rearing Unit (Marine ornamental fish)	1.50 lakh
1.10.6	Integrated Ornamental Fish Unit (Marine ornamental fish)	15.00 lakh
1.10.7	Marine Ornamental Fish Demonstration Unit	45.00 lakh
1.10.8	Backyard Ornamental Aquatic Plant	0.75 lakh

Sl. No.	Name of the Scheme	Unit Cost / Unit
2	**Aquarium Fabrication, accessories, Trade & Marketing**	
2.1	Aquarium Fabrication cum Retail Unit	Rs. 3.00 lakh
2.1.1	Input cost for Aquarium Fabrication cum Retail Unit	1.00 lakh
2.2	Establishment of Ornamental Wholesale Markets	Rs. 100.00 lakh
3	**Promotion of Ornamental fish activities**	
3.1	Establishment of Aquarium Units in Schools/ Colleges/ Govt. offices	
3.1.1	Small Size Aquarium- 48"x 18"x 24" (8 mm tempered Clear Glass)	Rs.0.12 lakh
3.1.2	Large Size Aquarium - 120"x 24" x 36" (12 mm tempered Clear Glass)	Rs.0.55 lakh
3.1.3	Input Costs for maintenance of Aquariums in Schools and Colleges/ Govt. offices (one time grant, both for medium and large size aquarium)	Rs.0.06 lakh/ year
3.2	Promoting Ornamental Public Aquariums	
3.2.1	Area of 2000 Sq.Mtrs	Rs.75.00 lakh
3.2.2	Area of 4000 Sq.Mtrs	Rs.200.00 lakh
3.3	Promoting National/International Aquaria Shows on Ornamental Fisheries	Rs.75.00 lakh
4	**Skill Development and Capacity Building**	
4.1	Capacity Building Programmes on Ornamental fisheries (training , skill development, exposure visits and demonstration)	Rs. 2.50 lakh

*The detailed Guidelines on the above Schemes proposed under this Pilot Project on Ornamental Fisheries are given at Annexure XX

Annexure-VII

List of Indigenous Ornamental Fish Species Bred Successfully in Captivity

Sl. No.	Scientific Name	Common Name	Distribution
Freshwater Ornamental Fishes			
1	*Pethia conchonius*	Indian Rosy Barb	All over India
2	*Puntius sarana*	Olive Barb	All over India
3	*Amblypharyngodon mola*	Mola	NER, Odisha and West Bengal
4	*Botia dario*	Bengal Loach	NER and Northern Hill States
5	*Chitala chitala*	Chitala	All over India
6	*Labeo dero*	Dero	NER and Northern Hill States
7	*Mastacembelus armatus*	Eel	All over India
8	*Ompok bimaculatus*	Buter Fish	All over India
9	*Puntius arulius*	Shining barb	NER
10	*Puntius denisonii*	Miss Kerala	Western Ghats
11	*Tor Putitora*	Mahaseer	NER and Northern Hill States
12	*Macroganathus aculeuts*	Eel	NER
13	*Badis badis*	Dwarf Chameleon	NER
14	*Devario aequipinnatus*	Giant danio	West Bengal ,NER and Northern Hill States
Marine Ornamental Fish			
1	*Amphiprion percula*	Orange clown	Andaman & Nicobar Islands
2	*A. ocellaris*	False clown	Andaman & Nicobar Islands
3	*A. sebae*	Sebae Clown	Gulf of Mannar and Andaman & Nicobar Islands
4	*A. nigripes*	Blackfinned clownfish	Lakshadweep Islands
5	*Premnas biaculeatus*	Maroon clown	Gulf of Mannar, A&N Islands, Lakshadweep Islands
6	*A. perideraion*	Skunk clown	Gulf of Mannar, A&N Islands
7	*A. frenatus*	Tomato clown	Gulf of Mannar, A&N Islands
8	*A. ephippium*	Fire clown	Gulf of Mannar, A&N Islands, Lakshadweep Islands
9	*A. clarckii*	Yellowtail clownfish	Lakshadweep Islands, Gulf of Kutch
10	*Pomacentrus cearuleus*	Blue damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
11	*Pomacentrus pavo*	Peacock damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
12	*Dascyllus trimaculatus*	Three spot damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
13	*Dascyllus aruanus*	*Dascyllusaruanus*	Gulf of Mannar, A&N Islands, Lakshadweep Islands
14	*Chromis viridis*	Bluegreen damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
15	*Neopomacentrusnemurus*	Yellowtail damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
16	*Neopomacentrus cyanomos*	Filamentous tail damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands
17	*Chrysiptera cyanea*	Sapphiredevil damsel	Gulf of Mannar, A&N Islands, Lakshadweep Islands

Annexure-VIII

List of Public Aquariums in India

Sl. No.	Name of Public Aquarium	State
1	Bagh-e-Bahu Aquarium	Jammu and Kashmir
2	Bangalore Aquarium	Karnataka
3	Calcutta Aquarium	West Bengal
4	Central Institute of Freshwater Aquaculture (CIFA) Aquarium	Odisha
5	Dr. A. M. Michael Aquarium, KUFOS	Kerala
6	District Tourism Promotion Council (DTPC) Aquarium	Kerala
7	Jagdish Chandra Bose Aquarium	Gujarat
8	Jawahar Aquarium	Uttarakhand
9	Kankaria Aquarium	Gujarat
10	Kollam Aquarium	Kerala
11	Lal Bagh aquarium	Karnataka
12	MachhliGhar	Madhya Pradesh
13	MARC Aquarium	West Bengal
14	Marine Biological Research Station	Maharashtra
15	Marine Life Aquarium	Tamil Nadu
16	Matsyadarsini Aquarium	Andhra Pradesh
17	Nandankanan Zoo Aquarium	Odisha
18	Sanjay Gandhi JaivikUdyan	Bihar
19	Star aquarium	Kerala
20	Taraporewala Aquarium	Maharashtra
21	Travancore Royal Aquarium	Kerala
22	ICAR-NBFGR Ganga Aquarium	Uttar Pradesh
23	Varkala Aquarium	Kerala
24	Awareness Center	Himachal Pradesh

Annexure-IX

State-wise Allocation of Scheme under Pilot Project on Ornamental Fisheries in Physical Terms

(in Nos.)

Sl. No.	Activities	States									Total
		AS	WB	OD	KL	TN	KR	MH	GJ	BH	
1	Freshwater Backyard Rearing Unit	15	30	15	25	15	25	25	15	10	175
2	Freshwater Medium Scale Rearing Unit	4	8	5	6	10	6	7	5	5	56
3	Freshwater Integrated Ornamental Fish Unit	4	9	5	5	5	5	5	4	3	45
4	Marine Backyard Rearing Unit		2	5	10	10	5	5	5		42
5	Marine Integrated Ornamental Fish Unit		1	1	2	2	1	1	1		9
6	Marine Demonstration unit			1		1			1		3
7	Aquarium Fabrication cum Retail Unit	5	14	7	12	12	10	11	7	10	88
8	Establishment of Aquarium Units in Schools/Colleges / Govt. offices	100	75	100	75	75	100	75	100	100	800
9	Capacity Building Programmes	5	3	5	3	5	5	4	5	5	40
10	Establishment of Ornamental Wholesale Market										3
11	Establishment of Freshwater Ornamental Fish Brood bank										4
12	Promoting National/ International Aquaria Shows										1
13	Establishment of Public Aquariums										3
15	Backyard Ornamental Aquatic Plant Unit	2	2	1	2	2	2	2	2	1	16
	Total										**1285**

AS - Assam
WB - West Bengal
OR - Odisha
KL - Kerala
TN - Tamil Naidu
KR - Karnataka
MH - Maharashtra
GJ - Gujarat
BH - Bihar

Annexure-X

Potential States identified under Pilot Project on Ornamental Fisheries

Sl. No.	Name of the State	Potential Districts/Block	Targeted Species
1	Assam	-	North-Eastern Species (5-10 Species) Freshwater ornamental Fish Species
2	Odisha	Puri, Cuttak, Jaspur, Khurda, Nayagarh, Devpgarh, Kendrapada and Anugur) and two more districts (Balasore & Bhadrak)	13 species Both Freshwater and Marine ornamental Fish Species
3	Tamil Nadu	Ramanathapuram and Other districts	Both Freshwater and Marine ornamental Fish Species
4	Maharashtra	Ratnagiri, Sindhudurgh, Raigad and other districts	Both Freshwater and Marine ornamental Fish Species
5	Karnataka	Banagalore Rural, Chickballapur, Shimoga and Dakshina Kannada	Both Freshwater and Marine ornamental Fish Species
6	Gujarat	Ahmadabad, Rajkot, Baroda, Surat &Navsari, Ukai (near Surat)	Both Freshwater and Marine ornamental Fish Species
7	Kerala		Freshwater, Brackish water, marine ornamental fish species
8	West Bengal		Freshwater Ornamental Fish species
9	Bihar		Freshwater Ornamental Fish species

Annexure-XI

Summary of the Estimated Cost of Pilot Project on Ornamental Fisheries

(Rs. Lakh)

Sl. No.	Name of the Scheme	No. of Units	Capital Cost/Unit	Operational Cost/Unit	Cost / Unit	Total Investment
1	2	3	4	5	(4+5)	(Col. 3x Col.4)*
1	**Group A: Production of Ornamental Fish / Aquatic Plants**					
1.1	Backyard Rearing Unit (Freshwater ornamental fish)	175	3	0.8	3.8	525
1.2	Medium Scale Rearing Unit (Freshwater ornamental fish)	56	8	1.78	9.78	448
1.3	Integrated Ornamental Fish Unit (Freshwater ornamental fish)	45	25	2.99	27.99	1125
1.4	Backyard Rearing Unit (Marine ornamental fish)	42	3	0.6	3.6	126
1.5	Integrated Ornamental Fish Unit (Marine ornamental fish)	9	30	3	33	270
1.6	Marine Ornamental Fish Demonstration Unit	3	90	27	117	270
1.7	Establishment of Freshwater Ornamental Fish Broodbank	4	100	36.24	136.24	400
1.8	Backyard Ornamental Aquatic Plant Unit	16	1.5	0.78	2.28	24
1.9	**Input Cost for Ornamental Fish/Aquatic Plants Unit**					
1.9.1	Backyard Rearing Unit (Freshwater ornamental fish)	175		0.4	0.4	70
1.9.2	Medium Scale Rearing Unit (Freshwater ornamental fish)	56		1.2	1.2	67.2
1.9.3	Integrated Ornamental Fish Unit (Freshwater ornamental fish)	45		2	2	90
1.9.4	Freshwater Ornamental Fish Broodbank	4		32	32	128
1.9.5	Backyard Rearing Unit (Marine ornamental fish)	42		0.25	0.25	10.5
1.9.6	Integrated Ornamental Fish Unit (Marine ornamental fish)	9		2	2	18
1.9.7	Marine Ornamental Fish Demonstration Unit	3		22.75	22.75	68.25
1.9.8	Backyard Ornamental Aquatic Plant	16		0.35	0.35	5.6
1.1	**Renovation of existing ornamental fish units**					
1.10.1	Backyard Rearing Unit (Freshwater ornamental fish)	100	1.5		1.5	150
1.10.2	Medium Scale Rearing Unit (Freshwater ornamental fish)	50	4		4	200
1.10.3	Integrated Ornamental Fish Unit (Freshwater ornamental fish)	30	12.5		12.5	375
	Sub Total Group A					**4370.55**

Sl. No.	Name of the Scheme	No. of Units	Capital Cost/Unit	Operational Cost/Unit	Cost / Unit	Total Investment
1	2	3	4	5	(4+5)	(Col. 3x Col.4)*
2	**Group B: Fabrication of Aquarium, accessories, Trade & Marketing**					
2.1	Aquarium Fabrication cum Retail Unit	88	3	1.4	4.4	264
2.1.1	Input cost for Aquarium Fabrication cum Retail Unit	88		1	1	88
2.2	Establishment of Ornamental Wholesale Markets	3	100		100	300
	Sub Total Group B					**652**
3	**Group C: Promotion of Ornamental fish activities**					
3.1	Establishment of Aquarium Units in Schools/ Colleges/ Govt. offices					
3.1.1	Small Size Aquarium- 48"x 18"x 24" (8 mm tempered Clear Glass)	400	0.12		0.12	48
3.1.2	Large Size Aquarium - 120"x 24" x 36" (12 mm tempered Clear Glass)	400	0.55		0.55	220
3.1.3	Input Costs for maintenance of Aquariums in Schools and Colleges/ Govt. offices (one time grant, both for medium and large size aquarium)	800		0.06	0.06	48
3.2	Promoting Ornamental Public Aquariums					
3.2.1	Area of 2000 Sq.Mtrs	2	75		75	150
3.2.2	Area of 4000 Sq.Mtrs	1	200		200	200
3.3	Promoting National/International Aquaria Shows on Ornamental Fisheries	1	75		75	75
	Sub Total Group C					**741**
4	**Group D: Skill Development and Capacity Building**					
4.1	Capacity Building Programmes on Ornamental fisheries (training, skill development and demonstration)	40	2.5		2.5	100
	Sub Total Group D					**100**
5	**E: Manpower to implement the schemes in each state (@ 3.84lakh/person/year)**	**8**				**30.72**
	Total Cost (A+B+C+D+E)					**5894.27**
6	**Administrative Cost (5%)**					**294.7135**
	Grand Total					**6188.9835**

*In case of the activities related to input cost, the total investment is calculated as Col. 3 x Col. 5

Annexure- XII

Indicative Cost of Freshwater Ornamental Fish Culture

Sl. No.	Item	Description	Backyard Unit (Rs)	Medium scale Unit (Rs)	Integrated Unit (Rs)
A	**Capital Cost**				
A1	Cement tanks	Cement tank including storage tanks	120000	200000	360000
A2	Shed cost	Structure with cemented, brick wall, asbestos/ metal/ RCC and Plastic greenhouse with roll up sides, heat and ventilation in hilly areas		103000	700000
A3	Live feed facility and feed maker	Cement Tanks/ FRP Tanks, Glass tanks for stock culture		65000	105000
A4	Glass tanks	Aquarium tanks including stand	40000	100000	450000
A5	Water supply items	Water line pipes, Motor & Pumps, hose & its fitting	20000	20000	80000
A6	Electrical items	Wiring material, lightings and its fixtures, submersible heaters etc.	40000	150000	300000
A7	Water treatment equipments	Biological filters, carbon filters, RO units etc	20000	150000	305000
A8	Life saving equipments	Oxygen cylinder, Aerator, compressor/Air blower, shade nets, Netting for each tanks, Hand nets, Packing Machine etc.	60000	12000	200000
Total Capital Cost			**300000**	**800000**	**2500000**
B	**Operational Cost**				
B1	Brood stock fish		12000	35250	75000
B2	Feed		9375	50600	68000
B3	Labour Cost	@ Rs.200 per person x 180 days	36000	36000	60000
B4	Power & Fuel		6250	20650	31000
B5	Packing & Transport		9375	15500	50000
B6	Miscellaneous	Medicine, stock solutions for live feed culture etc.	7000	20000	15000
Total Operational Cost			**80000**	**178000**	**299000**
Total Cost (A+B)			**380000**	**978000**	**2799000**

Annexure- XIII

Indicative Cost of Marine Ornamental Fish Culture

Sl. No.	Item	Description	Backyard Unit (Rs)	Integrated Unit (Rs)
A	**Capital Cost**			
A1	Cement tanks	Cement tank including storage tanks and other tanks	120000	1055000
A2	Shed cost	Structure with cemented, brick wall, asbestos/ metal/ RCC		900000
A3	Live feed facilityand feed maker	Cement Tanks/ FRP Tanks, Glass tanks for stock culture		310000
A4	Glass tanks	Aquarium tanks including stand	50000	55000
A5	Water supply items	Water line pipes, Motor & Pumps, hose &its fitting	30000	80000
A6	Electrical items	Wiring material, lightings and its fixtures, submersible heaters etc.	40000	300000
A7	Water treatment equipments	Biological filters, carbon filters, RO units etc	20000	200000
A8	Life saving equipments	Oxygen cylinder, Aerator, compressor/ Air blower, shade nets, Netting for each tanks, Hand nets, Packing Machine etc.	40000	100000
Total Capital Cost			**300000**	**3000000**
B	**Operational Cost**			
B1	Brood stock fish		4000	70000
B2	Feed		5000	68000
B3	Labor Cost	@ Rs.200 per person x 180 days	36000	60000
B4	Power & Fuel		7000	30000
B5	Packing & Transport		2000	22000
B6	Miscellaneous	Medicine, stock solutions for live feed culture etc.	5000	50000
Total Operational Cost			59000	300000
Total Cost (A+B)			**359000**	**3300000**

Annexure-XIV

Indicative Cost of Marine Ornamental Fish Demonstration Unit

Sl. No.	Item	Cost (Rs.)
A.	**Capital Cost**	
	Fixed Assets	
A1	Hatchery complex, sea water intake, filtration (sand, cartridge and U.V), circulation & flow through systems, Laboratory, Packing House, etc.,	2900000
A2	Blowers and mini generator	800000
A3	Brood stock development facility (FRP tanks in different capacity and separate filtration (UV, Canister & Biological) units	2000000
A4	Live feed stock culture facility and feed maker	600000
A5	Larval rearing facility	700000
A6	Grow out facility	650000
A7	Contingency (including fuel for generator & E.B bill)	400000
A8	PVC pipes & Fittings	50000
A9	Filter media	50000
A10	Electrical Inputs & fitting	450000
	Water Quality test Kit	200000
A11	Aerator	100000
A12	Net and other accessories	100000
Total Capital Cost		**9000000**
B	**Operational Cost**	
B1	Feed ingredients	1076000
B2	Brood Stock Cost (Indigenous and exotic species)	500000
B3	Packaging and delivery	500000
B4	Medication	200000
B5	Filter repairs	100000
B6	Labour 3 staff (180 X 3 nos. X 200)	128000
B7	Farm Manager(@ 10000 rs / month)	120000
B8	Electricity expenses (@ 5000 rs / month)	40000
B9	Water supply (@ 3000 rs / month)	36000
Total Operational Cost		**2700000**
Total Project Cost (A+B)		**11700000**

Annexure-XV-A

Capital and Operational Cost of Promoting Ornamental Public Aquarium (2000 sq. m Area)

Sl. No.	Particulars	Description	Total cost (in Rs.)
A. Capital Cost			
1.	Land & Site Development		350000
2.	Building & Sheds	(a) Construction of Aquaria House /Building for housing the Aquariums (b) Office Room, Ticket Counter and Refreshment Room (c) Toilet, Septic Tank & Fittings	3000000
3.	Aquarium Unit	(a) Pond (Indoor & outdoor) (b) Glass/Acrylic Tanks (c) Decorative stones (Pebbles, gravels etc.) (d) Wall Frame for the Glass Aquaria (e) Acclimatization Unit	1600000
4.	Life supporting systems	(a) Aeration Unit (Hi Blower air pumps, Air Regulator, Power Filter, External filters, Air Stone, Flexible Pipe For Aeration Unit etc.,) (b)Oxygen cylinder, regulator etc., (c) Skimmers (d) Thermostats (e) Multi-parameter water testing equipment (f) Hand nets (scoop net, plankton nets), feeding trays, breeding baskets (g) Feeders	800000
5.	Electrical items and their Installation	(a) Ceiling fans , Air conditions, Exhaust fans (b) Blowers, Heat pillars etc. (c) Lightning's and its fixture (d) Generator (e) Fire safety equipments	800000
6.	Water Supply items & Plumbing	(a) Overhead Tank (b) Deep Tube well (c) Pump Set (d) Pump House (e) Piping	400000
7.	Aquatic live animals & Aquatic Plants	Including freshwater & marine fishes, shrimps, crabs, turtles etc.	300000
8.	Utilities	Including furniture's and their fixtures, Computers, Printer & Web Camera, Phone & Fax, Display Units, Sign Boards etc.	100000

Sl. No.	Particulars	Description	Total cost (in Rs.)
7.	Consultancy charges for designing and other Preliminary & Preoperative Expenses		50000
8.	Miscellaneous expenses	(medicines, feed, salt etc)	100000
	Total		**7500000**
B. Operational Cost			
1.	Salary for Staff	Staff of 6 people including Manager, Technician, Staff for maintenance, Security, sale Counter and other works	1000000
2.	Training of Maintenance Personnel		50000
3.	Operating Expenses	Electricity, Fuel charges	100000
4.	Maintenance charges		100000
5.	Additional Stock of Aquatic animals & Plants	To replenish the aquariums in case of any mortalities of existing stock	100000
Total			**1350000**
Grand Total (A + B)			**8850000**

Annexure-XV-B

Capital and Operational Cost of Promoting Ornamental Public Aquarium (4000 sq. m Area)

Sl. No.	Particulars	Description	Total cost (In Rs.)
A. Capital Cost			
1.	Land & Site Development		500000
2.	Building & Sheds	(a) Construction of Aquaria House /Building for housing the Aquariums (b) Office Room, Ticket Counter and Refreshment Room (c) Toilet, Septic Tank & Fittings	6500000
3.	Aquarium Unit	(a) Pond (Indoor & outdoor) (b) Glass/Acrylic Tanks (c) Decorative stones (Pebbles, gravels etc.) (d) Wall Frame for the Glass Aquaria (e) Acclimatization Unit	5000000
4.	Life supporting systems	(a) Aeration Unit (Hi Blower air pumps, Air Regulator, Power Filter, External filters, Air Stone, Flexible Pipe For Aeration Unit etc.,) (b)Oxygen cylinder, regulator etc., (c) Skimmers (d) Thermostats (e) Multi-parameter water testing equipment (f) Hand nets (scoop net, plankton nets), feeding trays, breeding baskets (g) Feeders	1700000
5.	Electrical items and their Installation	(a) Ceiling fans, Air conditions, Exhaust fans (b) Blowers, Heat pillars etc. (c) Lightning's and its fixture (d) Generator (e) Fire safety equipments	1500000
6.	Water Supply items & Plumbing	(a) Overhead Tank (b) Deep Tube well (c) Pump Set (d)Pump House (e)Piping	1000000
7.	Aquatic live animals & Aquatic Plants	Including freshwater & marine fishes, shrimps, crabs, turtles etc.	3000000

Sl. No.	Particulars	Description	Total cost (In Rs.)
8.	Utilities	Including furniture's and their fixtures, Computers, Printer & Web Camera, Phone & Fax, Display Units, Sign Boards etc.	300000
9.	Consultancy charges for designing and other Preliminary & Preoperative Expenses		200000
10.	Miscellaneous expenses	(medicines, feed, salt, etc.)	300000
Total			**20000000**
B. Operational Cost			
1.	1.Salary for Staff	Staff of 12 people including Manager, Technician, Staff for maintenance, Security, sale Counter and other works	2000000
2.	2. Training of Maintenance Personnel		100000
3.	3. Operating Expenses	Electricity, Fuel charges	300000
4.	4. Maintenance charges		300000
5.	5. Additional Stock of Aquatic animals & Plants	To replenish the aquariums in case of any mortalities of existing stock	500000
Total			**3200000**
Grand Total (A + B)			**23200000**

Annexure-XVI

Indicative Cost of Aquarium Fabrication-cum-Retail Unit

Sl. No.	Item	Cost (Rs.)
A. Capital Cost		
	Machinery & Equipments	
A1	Silicon Guns	3000
A2	Glass grinders	4500
A3	Glass cutting & measuring equipments	4500
A4	FRP water storage tank (5000 liters)	12000
A5	Electric equipments with its fixture	30000
A6	Water supply items	20000
A5	Glass Quarantine tanks	20000
A5	Furniture and Fixture	118000
A6	Racks for keeping Aquariums	40000
A7	Showcase	38000
A8	Oxygen cylinder, pipes, regulator etc.	10000
Total Capital Cost		300000
B. Operational Cost		
B1	Glass	21000
B2	Silicone sealant	3000
B3	Toys	3600
B4	Plastic plants	7200
B5	Aquarium hood	18000
B6	Aquarium pump	9000
B7	Background posters	9000
B8	Submersible water filter	5400
B9	Gravel	11200
B10	Aerator	2700
B11	Pipe, T, Regulator	2700
B12	Ornamental fish	4500
B13	Thermocol	2200
B14	Rent for workspace	2400
B15	Electricity expenses	600
B16	Labour Cost (Rs.200 per person x 180 days)	36000
B17	Miscellaneous	1000
B18	Feed	500
Total Operational Cost		**140000**
Total Cost Involvement (A+B)		**440000**

Annexure- XVII

Capacity Building Programme on Ornamental Fisheries (Training & Skill Development)

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Condition
1	Dearness Allowances	Rs.500/trainee/day	As per the actual Unit Cost with a ceiling of Rs.2.00 lakh/ programme for 3 days and Rs.2.50 lakh/ programme for 5 days	(i)Training, Skill development & Capacity building programmes for fish farmers & fishers and other stakeholders shall be carried through State Governments, UTs, Central Government Organizations/ Institutions such as KVKs, ICAR institutes, ATMAs, ATARIs, Universities, fisheries federations, corporations, etc. (ii) The training batch shall not be more than 20-30 trainees per batch (iii) Training organization shall submit self contained proposals indicating, details of trainees, training course, venue, infrastructure facilities available for the purpose, duration of the training programme, availability of boarding and lodging facilities, details of resource persons, anticipated outputs etc. (iv) Preferably, the trainees shall be identified by the respective State Government/UTs. The Central Government shall also identify the trainees in consultation (if need be) with the concerned State Governments/UTs.
2	Travel allowances to trainees & Resource person	Actual to and Fro fare of restricting to 2nd class railway fare.		
3	Accommodation	As per actual with a ceiling of Rs.600/- per trainee per day.		
4	Distribution of training Kit (Pad, Pen, Folder, Study material : Rs.200/- per trainee per programme)	As per actual with a ceiling of Rs.10,000/- per training programme for batch of 20-30 trainees.		
5	Food, tea snacks, refreshment to participants/ trainees during training classes etc: (Rs.300/- per trainee per day)	As per actual with a ceiling of Rs.15,000/- per day for a batch of 20-30 trainees.		
6	Demonstration/ Local field visit (Rs.200 per training per programme)	As per actual with a ceiling of Rs.10,000/- per day for a batch of 20-30 trainees.		
7	Miscellaneous expenses including honorarium to the resource person	As per actual with a ceiling of Rs.10,000/- per training programme of a batch of 20-30 trainees		

Annexure- XVIII

Capital and Operational Cost of Freshwater Ornamental Fish Brood Bank (1 ha Water Area)

Item	Specification	Cost (Rs. Lakhs)
A. Capital Cost		
Construction of laboratory	Includes packaging house	25.00
Rearing tanks	Includes quarantine	8.00
Excavation of earthen ponds		8.00
Pump set		5.00
Bore well/water supply system		2.00
Live feed culture facility and feed maker		15.00
Glass tanks		5.00
Plastic Vats		6.00
Biological, physical& chemical filters		4.00
Accessories/substrate for Pond		5.00
Air Pump		1.00
Re-circulatory pump		0.50
PVC pipes & fittings		1.00
Filter media		0.50
Electrical inputs & fitting		5.00
Water Quality test Kit	Digital kits	3.00
Aerator	Paddle wheeled	1.00
Generator Set		4.00
Net and other accessories		1.00
Total Capital Cost		**100.00**
B. Operational Cost		
Feed ingredients		15.00
Cost of brood stock	Indigenous & exotic species	10.00
Packaging and delivery		5.00
Medication		2.00
Filter repairs		1.00
Labour 3 staff	180 X 3 nos. X 200	1.08
Farm Manager	(@ 10000 rs / month)	1.20
Electricity expenses	(@ 5000 rs / month)	0.60
Water supply	(@ 3000 rs / month)	0.36
Total Operational Cost		**36.24**
Total Cost (A+B)		**136.24**

Annexure-XIX

Capital and Operational Cost of Aquatic Plant Nursery

Item	Description	Cost (Rs)
A. Capital Cost		
Land Clearing and preparation		5000
Hoop/Green House	Including Head House (forstorage of pots, soil, fertilizer, etc. as well as aplace to propagate plants, pack for shipping, and work on other tasks.)	35000
Raceways		35000
Water storage tanks		5000
Pots and Trays		10000
Water supply and its hose		10000
Drip irrigation material		5000
Electrical items	Pumps, electrical wiring, generator, exhaust etc	40000
Misc. tools and equipment		5000
Total Capital Cost		**150000**
B. Operational Cost		
Starter plants		15000
Fertilizer and Chemicals		5000
Labour Cost (Rs.200 per person x 180 days)		36000
Power & Fuel		6250
Rubber lining for raceway (EDPM)		9375
Miscellaneous (medicine etc.)		6250
Total Operational Cost		**77875**
Total Cost (A+B)		**227875**

Annexure- XX

Schemes for Development of Ornamental Fisheries

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1	**Group A: Production of Ornamental Fish / Aquatic Plants**			
1.1	Backyard rearing unit (freshwater ornamental fish)	Rs.3.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.1.50 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.2.40 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.3.00 lakh/unit	(i) Members of women SHGs / fisherwomen cooperatives and any household/ individual those who have own house with a minimum area of 300 sq ft vacant land with adequate water facility for setting up of ornamental fish production unit. (ii) Members of women SHGs/ fisherwomen cooperatives and any household those who have vacant land of minimum 300 sqft with adequate water facility on lease for a minimum of 7 years period adjacent to their house for setting up of backyard ornamental fish rearing unit. (iii) The unit shall comprise of shed and rearing / culture tanks for ornamental fish. *Minimum Requirements:* cement tanks of 18000 litre (at least 6 nos.) and glass tanks of 900 litre (6 nos.) (iv) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions, specifications and cost estimate for shed/tanks etc in the DPR. No funds shall be provided for the land. (v) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations (vi) The Unit cost includes capital, operational and maintenance costs on one time basis.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.2	Medium Scale rearing Unit (freshwater ornamental fish)	Rs.8.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.4.00 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.6.40 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.8.00 lakh/unit	(i) Members of women SHGs / fisherwomen cooperatives and any household/ individual those who have own house with a minimum area of 150 Sq.mts vacant land with adequate water facility for setting up of ornamental fish production unit. (ii) Members of women SHGs/ fisherwomen cooperatives and any household those who have vacant land of minimum 150 Sq.mts with adequate water facility on lease for a minimum of 7 years period adjacent to their house for setting up of backyard ornamental fish rearing unit. (iii) The unit shall comprise of shed, breeding, rearing and culture tanks for ornamental fish/aquatic plants. (iv) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions, specifications and cost estimate for shed / tanks etc in the DPR. No funds shall be provided for the land. (v) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations (vi) The unit cost includes capital, operational and maintenance costs on one time basis.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.3	Integrated Ornamental fish Unit (Freshwater, Breeding and rearing)	Rs.25.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.12.50 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.20.00 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.25.00 lakh/unit	(i) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions etc in the DPR. No funds shall be provided for the land. (ii) The project proposals from the individual beneficiaries having owned a minimum land area of 500 Sq. mts with water facility on lease for a period of 7 years shall be routed through the concerned State/ UT Government with proper recommendations. (iii) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations (iv) Fish unit shall include shed, breeding tanks, nursery tanks, rearing tanks, live feed culture, small laboratory, water & electric supply, required infrastructure facilities etc. The unit shall have a minimum capacity of 1 lakh fry/year and should be managed by the required qualified technical staff. (v) Post construction operation, management and maintenance of the units shall be carried out in a satisfactory manner by the beneficiaries at their own costs. (vi) Beneficiary organizations shall ensure supply of seed produced from the central assisted units to farmers at affordable/ reasonable price.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.4	Backyard rearing unit (Marine ornamental fish)	Rs.3.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.1.50 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.2.40 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.3.00 lakh/unit	(i) Members of women SHGs / fisherwomen cooperatives and any household/ individual those who have own house with a minimum area of 300 Sq.fts vacant land with adequate water facility for setting up of ornamental fish production unit. (ii) Members of women SHGs/ fisherwomen cooperatives and any household those who have vacant land of minimum 300 Sq.fts with adequate water facility on lease for a minimum of 7 years period adjacent to their house for setting up of backyard ornamental fish rearing unit. (iii) The unit shall comprise of shed and rearing / culture tanks for ornamental fish. (iv) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions, specifications and cost estimate for shed/tanks etc in the DPR. No funds shall be provided for the land. (v) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations (vi) The Unit cost includes capital, operational and maintenance costs on one time basis.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.5	Integrated Ornamental Fish unit (Marine ornamental fish, breeding and rearing)	Rs.30.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.15.00 lakh/unit (b) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.30.00 lakh/unit	(i) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions etc in the DPR. No funds shall be provided for the land. (ii) The project proposals from the individual beneficiaries having owned a minimum land area of 500 Sq. mts with water facility on lease for a period of 7 years shall be routed through the concerned State/ UT Government with proper recommendations. (iii) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations (iv) Fish unit shall include shed, seawater intake, breeding tanks, nursery tanks, rearing tanks, live feed culture, small laboratory, water & power facilities, required infrastructure facilities etc. The unit shall have a minimum capacity of 1 lakh fry/year and should be managed by the required qualified technical staff. (v) Post construction operation, management and maintenance of the units shall be carried out in a satisfactory manner by the beneficiaries at their own costs. (vi) Beneficiary organizations shall ensure supply of seed produced from the central assisted units to farmers at affordable/ reasonable price.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.6	Marine Ornamental Fish Demonstration Unit	Rs.90.00 Lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.45.00 lakh/unit (b) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.90.00 lakh/unit	(i) Beneficiaries shall submit self contained Detailed Project Report (DPR) with full justification & Technical details. (ii) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions (wherever required) etc in the DPR. No funds shall be provided for the land. The minimum area of the unit should be 1500 Sq.mts. (iii) The Project Proposals of Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations. (iv) The unit shall include shed, sea water intake, sedimentation, filtration system, broodstock development facilities, breeding tanks, nursery tanks, rearing tanks, live feed culture, small laboratory, water & electric supply, required infrastructure & training facilities etc. The fish unit shall have a minimum capacity of 1 lakh fry/year and should be managed by the required qualified technical staff. The unit shall serve as demonstration center for the people engaged in breeding and rearing of ornamental fish. (v) The unit shall produce both the breeder seed and general seed for rearing. Post construction operation, management and maintenance of the demonstration unit shall be carried out in a satisfactory manner by the beneficiaries at their own costs. (vii) Beneficiary organizations shall ensure supply of seed produced from the central assisted unit to farmers at affordable/ reasonable price.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.7	Establishment of Freshwater Ornamental Fish brood bank	As per actual with a ceiling of Rs.100.00 lakh for a brood bank of 1 ha area	(a) For General States: 50% of the unit cost with a ceiling of Rs.50.00 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.80.00 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.100.00 lakh/unit	(i) implementing Agency shall submit self contained Detailed project Report (DPR) with full justification & Technical details. (ii)Implementing Agency shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions etc in the DPR. No funds shall be provided for the land. (iii) The post-construction operational, management and maintenance costs of the brood bank facility shall be carried out in a satisfactory manner by the Implementing Agency at their own costs shall be borne by the beneficiaries. (iv) The project proposals of cooperatives/collectives/ entrepreneurs shall be routed through the concerned State/UT Government with proper justification and recommendations. (v) Cost estimates shall be based on the latest SoRs admissible in the project area and prevailing market rates.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.8	Backyard Ornamental Aquatic Plant unit	As per actual cost subject to a ceiling of Rs. 1.50 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Members of women SHGs / fisherwomen cooperatives and any household/ individual those who have own house with a minimum area of 400 Sq.ft vacant land with adequate water facility for setting up of ornamental fish production unit. (ii) Members of women SHGs/ fisherwomen cooperatives and any household those who have vacant land of minimum 400 Sq.ft with adequate water facility on lease for a minimum of 7 years period adjacent to their house for setting up of backyard ornamental aquatic plant unit. (iii) The unit shall comprise of shed and raceways for ornamental aquatic plant unit. (iv) Beneficiary shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions, specifications and cost estimate for shed/Raceways etc in the DPR. No funds shall be provided for the land. (v) Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.9	Input Cost for Ornamental Fish / Aquatic Plant Units ***(One-time grant)***			
1.9.1	Backyard rearing unit (freshwater ornamental fish)	As per actual cost subject to a ceiling of Rs. 0.40 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.1 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture
1.9.2	Medium Scale rearing Unit (freshwater ornamental fish)	As per actual cost subject to a ceiling of Rs. 1.20 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.2 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.9.3	Integrated Ornamental fish Unit (Freshwater, Breeding and rearing)	As per actual cost subject to a ceiling of Rs. 2.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.3 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture
1.9.4	Establishment of Freshwater Ornamental Fish brood bank	As per actual cost subject to a ceiling of Rs. 32.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.7 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.9.5	Backyard rearing unit (Marine ornamental fish)	As per actual cost subject to a ceiling of Rs. 0.25 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.4 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture
1.9.6	Integrated Ornamental Fish unit (Marine ornamental fish, breeding and rearing)	As per actual cost subject to a ceiling of Rs. 2.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.5 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.9.7	Marine Ornamental Fish Demonstration Unit	As per actual cost subject to a ceiling of Rs. 22.75 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.6 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of Fish seed / broodstock, feed, disease prevention measures, Transportation charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture
1.9.8	Backyard Ornamental Aquatic Plant unit	As per actual cost subject to a ceiling of Rs. 0.35 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.1.8 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii)The input cost includes cost of feed, disease prevention measures, charges, Stock solutions for live feed etc. (iii) Assistance for input cost shall be released only after the units are ready for culture

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.10	Renovation of existing ornamental fish units			
1.10.1	Backyard rearing unit (freshwater ornamental fish)	As per actual cost subject to a ceiling of Rs. 1.50 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items , Electrical items , life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.10.2	Medium Scale rearing Unit (freshwater ornamental fish)	As per actual cost subject to a ceiling of Rs. 4.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.
1.10.3	Integrated Ornamental fish Unit (Freshwater, Breeding and rearing)	As per actual cost subject to a ceiling of Rs. 12.50 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.10.4	Establishment of Freshwater Ornamental Fish brood bank	As per actual cost subject to a ceiling of Rs. 50.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.
1.10.5	Backyard rearing unit (Marine ornamental fish)	As per actual cost subject to a ceiling of Rs. 1.50 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.10.6	Integrated Ornamental Fish unit (Marine ornamental fish, breeding and rearing)	As per actual cost subject to a ceiling of Rs. 15.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.
1.10.7	Marine Ornamental Fish Demonstration Unit	As per actual cost subject to a ceiling of Rs. 45.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
1.10.8	Backyard Ornamental Aquatic Plant unit	As per actual cost subject to a ceiling of Rs.0.75 lakh/unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) Beneficiaries shall provide documentary evidence on ownership of the existing units, financial resources along with necessary clearances/ permissions (if any required) etc. in the DPR. (ii) Renovation/repair of existing units and strengthening of cement tanks, Glass tanks, Water supply items, Electrical items, life saving equipments, other related civil works etc. may be considered for funding only after 5 years on one time basis. (iii) Assistance shall be restricted to one unit for individual beneficiary. (iv) The project proposals (except for central Govt organizations/instates) shall be routed through the concerned State/UT Government with proper recommendations.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
2	**Group B: Aquarium Fabrication, Accessories, Trade & Marketing**			
2.1	Aquarium Fabrication cum Retail Units	Rs.3.00 lakh/unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.1.50 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.2.40 lakh/unit/year for Private Schools & Colleges (c) For Central Govt. /Government/ Govt. recognized/ Govt. aided Schools and colleges and UTs: 100% of the unit cost with a ceiling of Rs.3.00 lakh/unit	(i) Beneficiary shall provide documentary evidence of availability of requisite land (Wherever required) free from all encumbrances and financial resources, necessary clearances/ permissions etc in the DPR. No funds shall be provided for the land. (ii) Cost estimate for establishment of aquarium fabrication cum retail unit for Ornamental fish shall be based on the latest SoRs admissible. The minimum area of the unit should be 150 Sq.ft (iii)The beneficiary shall submit self contained proposals together with documentary evidences in respect of (i) to (iii) above. (iv) The proposal shall be routed through the concerned State Governments/UTs with clear recommendation (v) The unit shall include Machinery & Equipments, Furniture and Fixture, Iron Racks for keeping aquariums, loading & unloading facility, Packing and transportation facility, water & electric supply, required infrastructure facilities etc. (vi) Post construction operation, management and maintenance of the units shall be carried out in a satisfactory manner by the beneficiaries at their own costs. (vii) Priority shall be given to the beneficiaries at district head quarter Level.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
2.1.1	Input assistance for Aquarium Fabrication cum Retail Unit ***one time grant***	As per actual cost subject to a ceiling of Rs. 1.00 lakh/ unit	(a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided for the units mentioned at S.No.2.1 above with the ceiling indicated therein. (ii) Beneficiaries shall be provided assistance for input costs for the initial crop only in the newly constructed/ renovated units. (iii) Assistance for input cost shall be released only after the units are ready for culture
2.2	Establishment of Wholesale Markets for Ornamental fish and accessories including allied infrastructure	Rs.100.00 lakh for a market having 10 wholesale outlets	(a) For General States: 50% of the unit cost with a ceiling of Rs.50.00 lakh/unit (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.80.00 lakh/unit (c) For Central Govt. Organizations / Agencies / Institutes / including ICAR institutes and UTs: 100% of the unit cost with a ceiling of Rs.100.00 lakh/unit	(i) Implementing Agency shall provide documentary evidence of availability of requisite land free from all encumbrances and financial resources, necessary clearances/ permissions etc in the DPR. No funds shall be provided for the land. (ii) The Implementing Agency shall complete the planning, design of the market facilities and cost estimates etc. through professionals in the subject. (iii) Cost estimates shall be based on the latest SoRs admisible in the project area and prevailing market rates. (iv) The post-construction operational and maintenance costs of the infrastructure facility shall be borne by the beneficiaries. (v) The Implementing Agency shall submit self contained proposals together with documentary evidences in respect of (i) to (iv) (vi) The Proposals shall be routed through the concerned State Governments/ UTs with clear recommendation.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
3	**Group C: Promotion of Ornamental Fish Activities**			
3.1	Establishment of Aquarium Units in Schools / Colleges / Govt. offices			
3.1.1	Small Size Aquarium- 48"x 18"x 24" (8 mm tempered Clear Glass)	As per actual cost subject to a ceiling of Rs.0.12 lakh/Unit	100% of the project/unit cost	(i) Beneficiary school / college / Govt. office shall provide all the requisite documents (Application form, Quotation/ Invoice for aquarium unit) duly forwarded by the Principal of the School / College& head of / Govt. office. (ii) School / college should furnish the details viz., total No. of students, No. of faculty, No. of science / Biology teachers, details of the coordinater. (iii) Maximum of 5 nos. of Aquarium Units for each School& Colleges and Govt. offices is admissible. (iv) The maintenance of the units shall be carried out in a satisfactory manner by the schools / colleges.
3.1.2	Large Size Aquarium – minimum size: 120"x 24" x 36" (12m mm tempered Clear Glass) The actual size may vary as per the requirement.	As per actual cost subject to a ceiling of Rs.0.55 lakh/unit	100% of the project/unit cost	(i) Beneficiary school / college / Govt. office shall provide all the requisite documents (Application form, Quotation/ Invoice for aquarium unit) duly forwarded by the Principal of the School / College& head of / Govt. office. (ii) School / college should furnish the details viz., total No. of students, No. of faculty, No. of science / Biology teachers, details of the coordinator. (iii) Maximum of 5 nos. of Aquarium Units for each School& Colleges and Govt. offices is admissible. (iv) The maintenance of the units shall be carried out in a satisfactory manner by the schools / colleges.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
3.1.3	(C) Input Costs for maintenance of Aquariums in Schools and Colleges (***one time grant***)	As per actual cost subject to a ceiling of Rs.0.06 lakh/ unit/year (both for medium and large size aquariums)	a) For General States: 50% of the unit cost. (b) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost. (c)100% assistance to the projects directly implemented by the Government of India through its institutes/ organizations including ICAR institutes and UTs.	(i) This input cost shall be provided one time for the aquarium Units mentioned at S.No.3.1.1 to 3.1.2 with the ceiling indicated therein.
3.2	**Establishment of Public Aquariums**			
3.2.1	Minimum area of 2000 Sq.Mts	As per actual with a ceiling of Rs.75.00 Lakh / Unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.37.50 lakh/unit (b) For UTs/ Central Govt. Institutes/organizations including (c) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.60.00 lakh/unit (d) For UTs/ Central Govt. Institutes/organizations including ICAR institutes : 100% of the unit cost subject to a ceiling of Rs. 75.0 lakh/Unit	(i) Implementing Agency shall submit self contained Detailed Project Report (DPR) with full justification & Technical details. (ii) Implementing Agency shall provide documentary evidence of availability of requisite land free from all encumbrances, financial resources, necessaryclearances/ permissions (wherever required) etc in the DPR. No funds shall be provided for the land. (iii) The Project Proposals of Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations. (iv) The public aquarium will house the aquarium units comprising of big glass tanks, ponds, and a retail outlet for the sale of ornamental fishes

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
3.2.2	(ii) Minimum area of 4000 Sq.Mts	As per actual with a ceiling of Rs.200.00 Lakh / Unit	(a) For General States: 50% of the unit cost with a ceiling of Rs.100.00 lakh/unit (b) For UTs/ Central Govt. Institutes/organisations including (c) For North-Eastern, Hilly States and Himalayan States: 80% of the unit cost with a ceiling of Rs.160.00 lakh/unit (d) For UTs/ Central Govt. Institutes/organisations including ICAR institutes : 100% of the unit cost subject to a ceiling of Rs. 200.0 lakh/Unit	(i) Implementing Agency shall submit self contained Detailed Project Report (DPR) with full justification & Technical details. (ii) Implementing Agency shall provide documentary evidence of availability of requisite land free from all encumbrances, financial resources, necessary clearances/ permissions (wherever required) etc in the DPR. No funds shall be provided for the land. (iii) The Project Proposals of Fisher cooperatives/collectives shall be eligible for central financial assistance and should route their proposals through concerned State/ UT Government with proper recommendations. (iv) The public aquarium will house the aquarium units comprising of big glass tanks, ponds, and a retail outlet for the sale of ornamental fishes.
3.3	**Promoting National / International Aquaria Shows on Ornamental Fisheries**			
	a) Publicity, Advertisement, Tender notices & Road Show	As per actual with a ceiling of Rs.7.00 lakh per programme	As per the actual Unit Cost with a ceiling of Rs.75.00 lakh/ programme for 3-5 days	i)The Aquaria shows is for ornamental fish breeders & traders and other stakeholders shall be carried through NFDB in coordination with the State Governments, UTs, Central Government Organizations/ Institutions such as KVKs, ICAR institutes, ATMAs, ATARIs, Universities, fisheries federations, corporations, etc. (ii) The Aquaria shows should be arranged regionally covering all the States/UT's in order to promote the activity at broad level.

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
	b) Publication of distribution material, Souvenir etc.	As per actual with a ceiling of Rs.8.00 lakh per programme		(iii) The duration of aquaria shows should be 3-5 days. (iv) Stalls should be exhibited during the shows. (v) Seminars, lectures, Presentations should be arranged during the aquaria shows on the development of ornamental fisheries. (vi) Buyer-seller meet should be arranged for the ornamental fish breeders and accessories sellers to promote the trade during the aquaria shows.
	c) Communication & Postage	As per actual with a ceiling of Rs.0.50 lakh per programme		
	d) Event Management (dome, pavilion, stall, stage, hanger, photography, video recording, LCD displays, arrangements at registration counters, installation of aids in technical hall etc.	As per actual with a ceiling of Rs.30.00 lakh per programme		
	e) Aquarium Tank	As per actual with a ceiling of Rs.3.00 lakh per programme		

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
	f) Administrative expense	As per actual with a ceiling of Rs.3.00 lakh per programme		
	g) Accommodation, Food & Conveyance (including TA, DA & Honorarium expenses for Resource Persons, Progressive Farmers etc.)	As per actual with a ceiling of Rs.12.00 lakh per programme		
	h) Cultural Programmes	As per actual with a ceiling of Rs. 2.00 lakh per programme		
	i) Electricity & Water Supply	As per actual with a ceiling of Rs.5.00 lakh per programme		
	j) Pipe Line for water supply	As per actual with a ceiling of Rs.0.50 lakh per programme		
	k) Ground levelling & cleaning	As per actual with a ceiling of Rs.0.50 lakh per programme		

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
	l) Competition, Prizes & Awards	As per actual with a ceiling of Rs.1.50 lakh per programme		
	m) Miscellaneous/ unforeseen expenses	As per actual with a ceiling of Rs.2.00 lakh per programme		
4	**Group D: Skill Development and Capacity Building**			
4.1	Capacity Building Programmes (Awareness, Training, Skill Development and Demonstration) on Ornamental Fisheries for farmers and other stakeholders.			
	(a) Dearness Allowances	Rs.500/trainee/day	As per the actual Unit Cost with a ceiling of Rs.2.00 lakh/ programme for 3 days and Rs.2.50 lakh/ programme for 5 days	(i) Training, Skill development & Capacity building programmes for fish farmers & fishers and other stakeholders shall be carried through State Governments, UTs, Central Government Organizations/ Institutions such as KVKs, ICAR institutes, ATMAs, ATARIs, Universities, fisheries federations, corporations, etc. (ii) The training batch shall not be more than 20-30 trainees per batch. (iii) Training organization shall submit self contained proposals indicating, details of trainees, training course, venue, infrastructure facilities available for the purpose, duration of the training programme, availability of boarding and lodging facilities, details of resource persons, anticipated outputs etc.
	(b) Travel allowances to trainees & Resource person	Actual to and Fro fare of restricting to 2nd class railway fare.		
	(c) Accommodation	As per actual with a ceiling of Rs.600/- per trainee per day.		
	(d) Distribution of training Kit (Pad, Pen, Folder, Study material: Rs.200/- per trainee per programme)	As per actual with a ceiling of Rs.10,000/- per training programme for batch of 20-30 trainees.		

Sl. No.	Component	Unit Cost	Central Financial Assistance	Terms and Conditions
	(e) Food, tea snacks, refreshment to participants/ trainees during training classes etc: (Rs.300/- per trainee per day)	As per actual with a ceiling of Rs.15,000/- per day for a batch of 20-30 trainees.		(iv) Preferably, the trainees shall be identified by the respective State Government/UTs. The Central Government shall also identify the trainees in consultation (if need be) with the concerned State Governments/UTs.
	(f) Demonstration/ Local field visit (Rs.200 per training per programme)	As per actual with a ceiling of Rs.10,000/- per day for a batch of 20-30 trainees.		
	(g) Miscellaneous expenses including honorarium to the resource person	As per actual with a ceiling of Rs.10,000/- per training programme of a batch of 20-30 trainees		

Puntius arulius

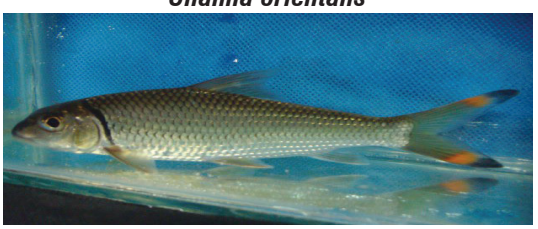
Puntius filamentosus

Aplocheilus panchax

Amblypharyngodon mola

Channa orientalis

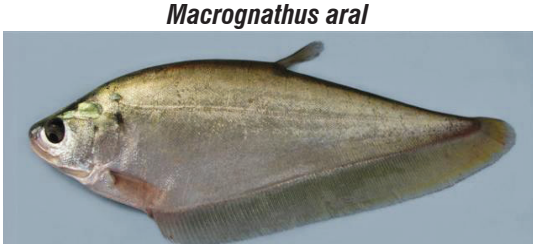
Garra gotyla gotyla



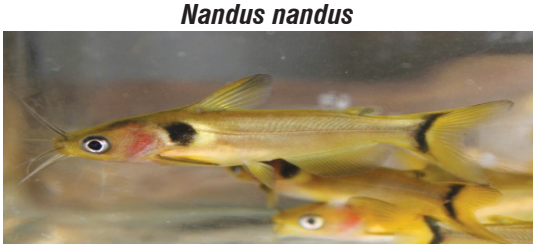
Gonoproktopterus curmuca

Macrognathus aral

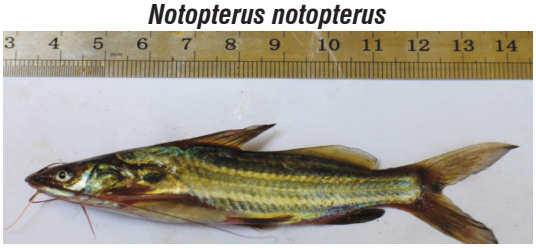
Nandus nandus



Notopterus notopterus



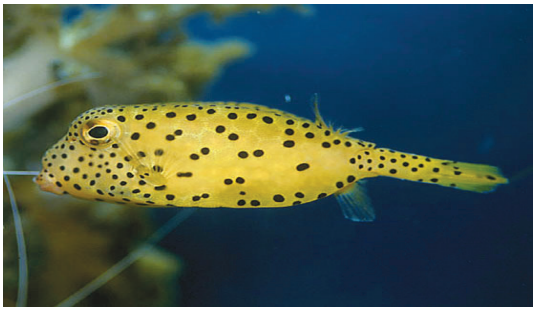
Horabagrus brachysoma



Mystus vittatus

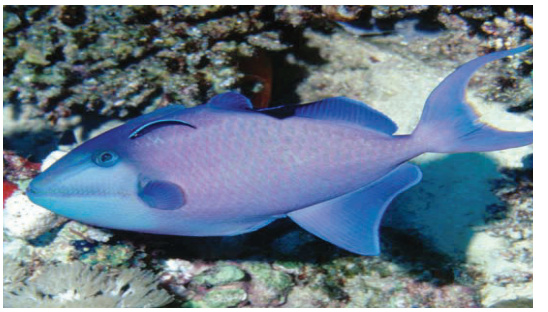
Plate-1 Indigenous Freshwater Ornamental Fishes

Pomacentrus caeruleus

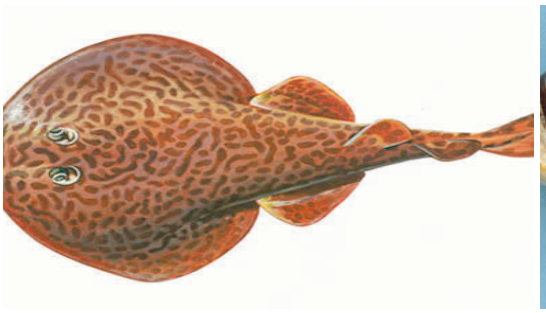


Ostracion cubicus

Scarus ghobban



Odonus niger



Narcinetim lei

Chelonodon patoca

Thalassomalun are

Abudefdufs axatilis

Plate-2 Indigenous Marine Ornamental Fishes

Notes

Notes

National Fisheries Development Board

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