DETAILED PROJECT REPORT

FOR

SETTING UP OF ORNAMENTAL FISH CULTURE FARM

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Ornamental Fish Culture Farm

ABBREVIATIONS

IRR	Internal Rate of Return
DSCR	Debt-Service coverage ratio
pH	pouvoirhydrogen
Ppm	Parts per million
%	Percentage
Sq.m	Square meter
Approx.	Approximate
p.a	per annum
GoI	Government of India
SC	Share Capital
S/Govt	State Government
Sub.	Subsidy
Agri.	Agricultural

1. INTRODUCTION :-

The culture of ornamental fishes is known as Aquariculture. Ornamental or aquarium fishes form an important commercial component of fisheries, providing for aesthetic requirements and upkeep of the environment. Little information exists that dates the origin of ornamental fish culture, but it can be assumed that it was developed in Chine, where the goldfish was cultured traditionally as ornamental fish (believed to have been somewhere in the year 2000 B.C). Modernaquarium keeping of fish began in 1805 with the first public display aquarium opened at Regent`s Park in England in 1853. One of the best facilities in this part of the world exists at Singapore that is located on the Sentosa Island. Initially called Oceanarium with room-sized aquaria is now totally renovated and designated the Corallium with a tunnel like facility where one moves on the horizontal escalator with all kinds of large marine fish around him. It is a sight to see and an experience in itself! This besides, there are many other marine organisms too that are all god for education. Some large public aquaria exist in Thailand too that are all good for education. Some large public aquaria exist in Thailand too. However, the aquarium at Honolulu (Hawaii) is another great attraction.

The growing interest in aquarium fishes has resulted in steady increase in aquarium fish trade globally. The trade with a turnover of US $5 Billion and an annual growth rate of 8% offers a lot of scope for development.

1.1 Indian Scenario

India`s contribution to the world trade in ornamental fish is an insignificant 1% while Singapore, Chine (Hong Kong), Malaysia, Srilanka, Japan and the Philippines occupy a position amongst the world`s top ten exporting countries. Indian waters can be considered a “JEWEL MINE” for traders and hobbyists of ornamental fish. In India, the total value of ornamental fish exported stand at about Rs.30 million (US $ 1.14 million), although the potential is very high. In the year 2004, India exported ornamental fishes to the tune of Rs. 100 million (US $ 2.2 million). The MPEDA has estimated that India has the potential to earn about US $5 billion as foreign exchange by export of ornamental fishes. Ornamental fish trade started in India in 1969 with export earning of US $ 0.04 million. It grew to worth US $0.12 million by 1989. Presently about 210 species of indigenous ornamental fishes are being exported to different countries.

About 80% of the world`s ornamental fishes that are traded come from the freshwater resources, 20% being the marine species whose contribution is increasing with advances in breeding and rearing technology. Presently, only 5% of the marine fish are being bred and 95% collected from the wild. Since most of the freshwater species

are bred and cultured, the overall contribution of the cultures species is 90%. Only 10% of the fish traded being collected from the wild. Over 500 species of ornamental fishes are available in Indian waters, about 300 in marine and over 200 in freshwaters, of the latter around 100 species each are known from the Western Ghats and the north eastern India. Amongst the marine ornamentals, 165 species belonging to 20 families have been intensively studied and found to hold a great promise for export. Of the fresh water ones, 53 species from north-eastern India have been designated to have a great potential for domestic and international trade that would help in the development of rural economy with special opportunities for the gender sensitive region with the matriarch system. The increasing demand and the lucrative trade that generates income, provides employment and diversifies aquaculture has opened up the flood gates of a booming business for the Indian small and large scale. The top ten groups of ornamental fishes are the tetra, guppy, goldfish, cat fish, molly, gourami, platy, loach, cichlid and the barb.

Table 1 : Geographical location of different ornamental species

Ornamental Species	**Approximate Number of Species**	**Principal Geographic Regions**
Fresh , Salt and Brackish Water Fishes	1539	South east Asia, Americas, Africa, Indonesia
Corals (hard and Soft)	102	Indo- Pacific, Caribbean, the Red Sea
Invertebrates, other (e.g. shrimps, crabs, snails, starfish)	293	Indo-Pacific, Caribbean, the Red Sea

Reference :Various Sources; Cato,J.C., and C.L.Brown 2003- Marine ornamental species :Collection, Culture and Conservation.

1.2 Ornamental fishes :

Ornamental fish farming or culture is the culture ofattractive, colourful fishes of various characteristics, which are rearedin a confined aquatic system. Farmers and hobbyists mainly grow these fishes. Ornamental fishes can also be called living jewels. There are over 30,000 fish species reported around the world, of this about 800belong to ornamental fishes. They include eight closely associated families specifically, Anabantidae, Callichthyidae, Characidae,Cichlidae, Cobitidae, Cyprinodontidae, Cyprinidae and Poeciliidae.

Aquarium fishes are mainly categorized into two groups namely, egglayers (oviparous) and live bearers. Majority of aquarium species areegg layers and generally

external fertilization occurs. According tothis, it is again categorized into the following types.

1. Egg scatter laying non-adhesive eggs.
2. Egg scatter laying adhesive eggs.
3. Egg buriers.
4. Mouth incubators.
5. nest-builders and.
6. egg-carriers.

2.3 Business Opportunity :

The demand of ornamental fishes is increasing remarkably due to their important role in the world trade for fish and fishery production. About 288 exotic varieties of ornamental fishes are popular in West Bengal. Singapore is considered to be a major supplier of ornamental fishes in the international market. Singapore exports about US$80 million of ornamental fishes annually.

The global aquarium fish trade, including accessories and fish feed, is estimated at U.S. $ 18-20 billion. India contributes 0.61 % by quantity and 12.42 % by value (U.S.$). Furtherthe export of ornamental fishes from India is worth only US$0.2 million, which is not sufficient with regard to the rising demand of these beautiful coloured species in the world ornamental fish market. This may be attributed to the lack of involvement of technical people in ornamental fish farming. A large number of very beautiful ornamental fish species are still neglected which are easily available in the natural waters of coastal Bay of Country. and its surrounding districts have emerged as promising breeding centres for ornamental fish where a considerable number of small fish farmers and amateurs are engaged in this trade.

The indigenous fish fauna of this state includes a wide variety of small fish, which though are unsuitable for conventional fish farming but could be gainfully utilized as ornamental fish for their attractive coloration and other features. These species are found in different qualities of water bodies, like deep perennial ponds, puddles, annual and seasonal ponds, paddy fields and bheries. Most of the fish species can tolerate variations in temperature, salinity, and pH.

The majority of the fish species of North East region of India as well as adjoining coastal area of nearby areas have high values because of their attractive coloration routine, graceful behaviour, peculiar body morphology, and endemicity. The significantstocks of the country’s decorative fish export are captive collection from N-E

countries comprising roughly 80 to 85 % of their total aquarium fish exchange of India. Aquarium fish is now a favourite interest and aquarium fish selling is a favourite commercial business inmost of the states in India.

Fig 1 : Market Share for the Import & Export of Ornamental fish in the World

1.3 Advantages of Ornamental Fish Farming :-

Various advantages enjoyed by have Ornamental fish farm are given below

1. It gives joy to young and old folks.
2. It allows relaxation of the mind and thus contributes to a healthy living.
3. Children get to know more about nature and use their time productively.
4. It generates a self-employment opportunity.

1.4 Cultural practices of Ornamental Fish Farming:-

Most frequent culturefacilities utilized for decorative fish are cement cisterns, glassaquaria, earthen ponds, earthen pots, etc. Three to four concretecisterns are sufficient for a small scale rearing unit of 3 meters x 2meters x 1meter and therefore are built above the floor level for simpledrainage. All glass aquaria are favoured for breeding purposes wheredrains and aerators can be utilized easily. Even, fish farmers withlittle earthen tanks may utilize them for rearing juveniles with all thefood fish. Marginal farmers even can use big earthen pots of 1.5 meterin diameter to the rearing of larvae and juveniles. Normally, rainwateris your best source of water for ornamental fish culture. If themunicipal distribution water is in use, before using, it is aerated fora few days for de-chlorination. The typical temperature of the rearingwater in the region

is 15°C to 28 °C and the water pH is slightlyalkaline. The majority of the species cultured favour soft to medium hard water.

1.4Feeding and Care required in Ornamental Fish Farming:

The small farmers can't afford different readymade packed fish food pellets orpurchasing of cyst drum, which is pricey. But, they've successfully substituted reduced cost alternative live feeds. Different homemade nourish like whole-wheat bread, vegetable peelings, and rice will also be fed. But most farms rely on Daphnia, Tubifex worms and mosquito larvae. The fish culturists can amass Daphnia in the neighboring ponds by sieving through the fine mesh in the early morning.

Tubifex worms and mosquito larvae are gathered in the sewer waterstations. Normally, the farmers dispense the feed once daily. Overfeeding is much more damaging than underfeeding since the surplusfeed destroys the water quality.

A beginner should start working on breeding of any live-bearer followedby goldfish or some other egg-layer species for getting familiar oracquainted with the procedures on how to handle and maintain brood fishand the youthful one. Good knowledge on the biology, feeding behaviour and ambient condition of the fish are all prerequisites for breeding.Live food like Tubifex worms, Moina, earthworms' etc. for brood-stockand larval phases need special attention. The creatures similarly needinfusoria, artemianaupli, planktons like rotifers and smaller daphniaduring the early phase. A unit for continuous production of live-food is, therefore essential for the effective maintenance of the unit. Inthe majority of cases, breeding is simple, but larval rearing mightrequire special care. As a supplementary feeding, the farmer couldprepare on-site pelleted feed by using local agro-produce.

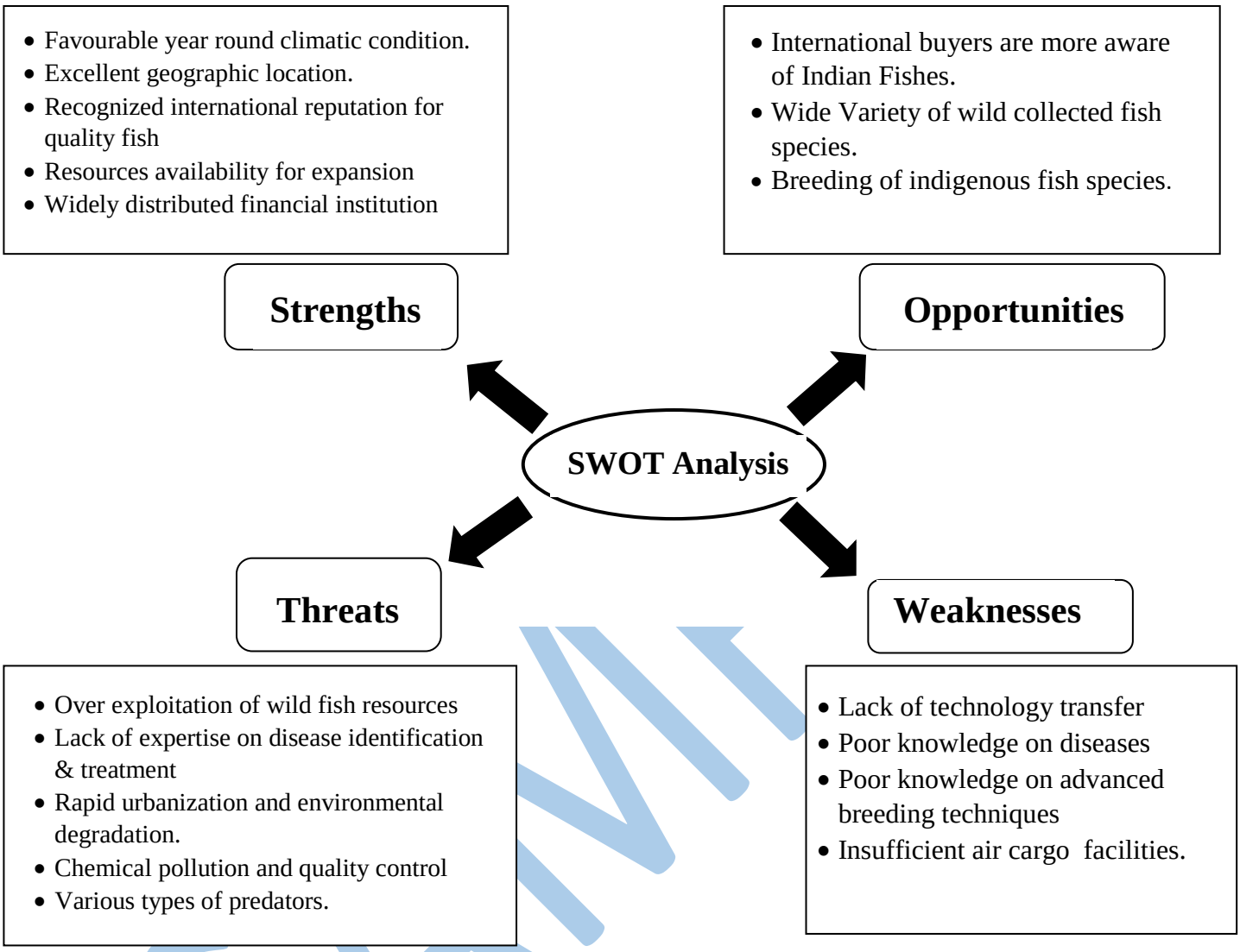
To avoidhealth-related problems, a proper water quality needs to be ensured byinstalling bio-filters. The ornamental fishes could be consumed atvarying periods of the year.

2. PROJECT AT A GLANCE :-

2.1 Goal / Purpose :-

The Aim of the project is the improve the socio and economic condition of the farmers in Agriculture-allied sectors as well as rural youth since it proves to be a Good Business opportunity for income generation, reducing unemployment by employing youth, Self sustainable, Environment friendly and cater to the needs of the poor.

2.2 SWOT Analysis :-



2.3 Design and Construction of farm Yard

The Ornamental Fishes are mainly sourced from developing countries in tropical and sub-tropical regions of the world. The Ornamental Fish Culture is a sub-sector of aquaculture and many technologies are being introduced from Ornamental Fish production.

USA is the World`s largest producer and importer of Ornamental Fishes and mostly those are sold in domestic markets. Singapore, Japan, Malaysia, Hong Kong, U.K,

Srilanka & Israel etc., are also headed the list.India has a wide range of both Freshwater and marine water species, which are getting ever-increasing popularity in Ornamental Fisheries Trade. Around 250 sp. of Fresh Water and 150 sp. of marine sp. Are valued to the Ornamental Fishery Trade. As per FAO`s report India is ranked 26th and export value is only 0.5% which is about 6.5crores or so.

Ornamental Fishes now are not only good-looking coloured fishes. Presently all types good-looking, ugly-looking and something different looking fishes are termed as Ornamental Fishes.

TYPES OF CULTURAL UNITS:-

1. Breeding & Rearing Unit.
2. Rearing Unit.
3. Natural collection & rearing unit.

TYPES OF TRADING UNITS:-

1. Self-Marketing.
2. Selling to Agents / Exporters.
3. Selling to hobby-centres.
4. Manufacture of Aquarium & Accessories.

Design & Construction Of Cultural Unit

With the advancement of cultural practice and people`s involvement, design and construction and Farm/Ponds Management have been important. Some of the types of cultural units are given below:-

1) Glass Aquarium (4`*1.5`*2`)
   a) Frame type
   b) All glass type
2) Mazla / earthern vats.
3) Earthern tanks / pits.
4) Cemented Cisterns.
5) Fibre (Poly-based)tanks.

For Breeding & Rearing Units:-

1) Deep Tube-well.
2) Pipe-lines.
3) Hatchery Shed.
4) Covers with nets.
5) Areater / Air pump.
6) Light arrangement.
7) Breeding & Rearing equipments.
8) Medicines.

Some Pond-Breeding Ornamental Fishes:-

1) Sword tails (Xiphophorus helleri)
    a) Single tail swords.
    b) Double tail swords.
2) Platies (Xiphophorus maculates)
3) Guppies (Poccilla reticulate)
4) Gouramies (O. Gouramy / Helostoma temminchi)
5) Fighters (Betta spleridens)
6) Angels (Pterophyllum scalare)
7) Tertras (Hyphessobrycon serape)
8) Barbs (Puntius tetrazona)
9) Gold Fishes (Carasius auratus)
10) Cichlids (Cichlasoma carpintus)
11) Mollics (Poecillia latipina).

2.4Commercially important indigenous species

The commercially important indigenous and non-indigenous species ofOrnamentalFish Farming are listed below:-

Scientific Name of species	Common Name of Species
Botialohachata	Reticulated loach
Brachydaniorerio	Zebrafish
Chandra nama	Glassfish
Colisachune	Honey gourami
Labeonandina	Pencil gold labeo
Lebeocalbasu	All black shark
Notopterusnotopterus	Black knife fish

Oreichthyscosuatis	Hi fin barb
Puntiusconchonius	Rosy barb
Puntiusdenisonii	Deninson, S-barb

Commercial types of exotic egg layers of species in Ornamental Fish Farming:-

Scientific Name of species	Common Name of Species
Astronotusocellatus	Oscar
Balantiocheilusmelanopterus	Bala shark / Silver Shark
Bettasplendens	Siamese Fighting Fish
Carassiusauratus	Goldfish
Cichlasomameeki	Firemouth Cichlid
Colisalalia	Dwarf gourami
Cyprinuscarpiovar koi	Koi carp
Helostomatemmincki	Kissing gourami
Labeobicolor	Red-Tailed Black Shark
Paracheirodonaxelrodi	Cardinal Tetra
Paracheirodoninnesi	Neon Tetra
Pterophyllumscalare	Angelfish
Rasbora heteromorphy	Rasbora, Harlequin Fish
Scleropagesformosus	Asian arowana
Symphysodon discus	Discus / Pompadour fish
Trichogastertrichopterus	Three spot gourami

Commercial varieties of exotic livebearers of species in OrnamentalFish Farming:-

Scientific Name of species	Common Name of Species
Poeciliareticulata	Guppy
Poecilliasphenops	Marble Molly
Poecilliavelifera	Sailfin Molly
Xiphophorushelleri	Swordtail
Xiphophorusmaculatus	Platy

2.5 **Water management in Ornamental Fish Farming:**

Ornamental fishproduction unit requires a higher degree of expertise for greater waterquality control as ornamental fish is very sensitive to poor waterquality conditions. Many decorative fishes will perish in situations inwhich more powerful food fish species may survive. As cosmetic fish arestored in tanks longer quantities than their meals fish counterparts,water quality is the most critical. Where large quantities of fish havebeen stored in smallish distances, the build-up of nitrogenous wastes,most

especially ammonia, requires the manufacturer to implement steps tohandle it correctly. Standard water exchange together with appropriateaeration overcomes this kind of difficulty in the tanks.

High levels of nitrate can be present in the water of wells contaminated from fertilizers, agricultural runoff or sewage. These nitrates are dangerous to human as well as livestock. Nitrates can be removed by reverse osmosis or specialized nitrates removing chemicals.

Fig 2: Water Management for ornamental fish farming

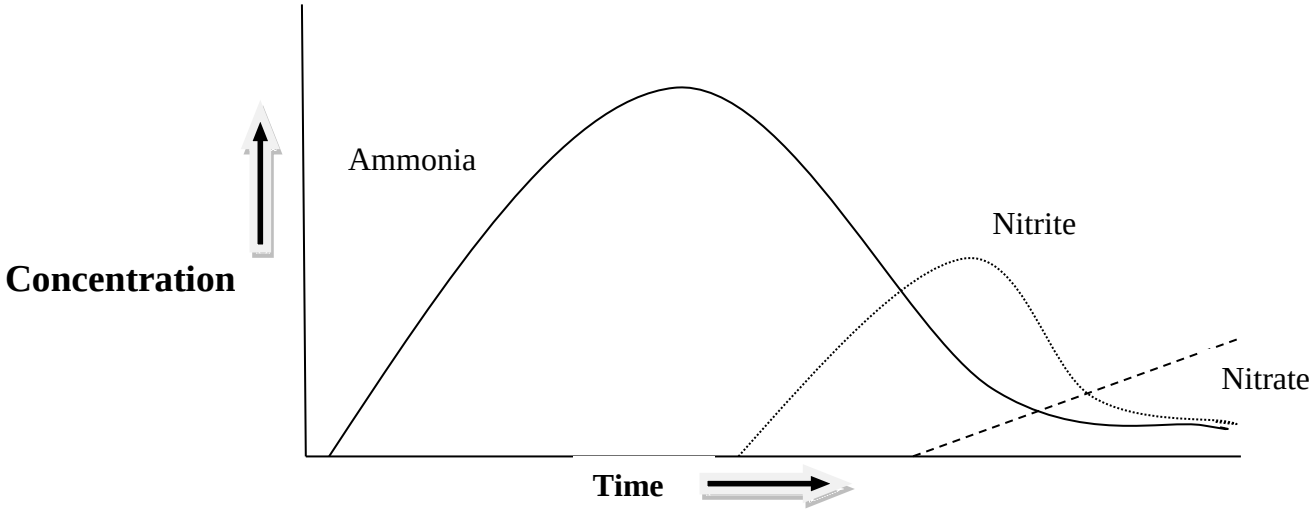


Table 2 :Optimum Water parameters for culture & breeding

Temperature	24 to 28 degrees C
pH	7.0 to 8.5
Carbon di-oxide	<10ppm
Alkalinity	75 to 120 ppm as CaCO3
Hardness	60to 100 ppm as CaCo3
Dissolved oxygen	6.0 to 8.0 pp,
Free Ammonia	<0.05ppm
Ionized Ammonia	<0.4 ppm

2.6 Health management of Ornamental Fish Farming:

Appropriate waterquality control in ornamental fish breeding and culture is the primarypreventive measures since they are very sensitive to temperature as wellaspH. The most common diseases of ornamental fishes are reported to bea white spot, mouth disease, tail and fin rot. Some of these easilyavailable and economic chemicals and

medicines may be used as preventive measures. The easily available chemicals and medicines for health management are typical salt @15-30 grams/Litre of water used as a bath treatment for 30 min as the disinfectant, methylene blue @ 2.5grams/Litre of water inserted in aquarium water for water purification and aluminium sulphate or potassium permanganate @ 0.5-1 gram/Litre ofwater used as bath therapy for 1 min as disinfectant.

3. PROJECT DETAILS :-

3.1Necessity for Formulation of A Model Project:-

From the fore-going exposures, it is evident that ornamental fish culture holds out very good prospect for a profitable economic activity where the traditional culture of these species has been in vogue based on practical knowledge of the trading communities.

The project is appended herein below for propagation among the interested entrepreneurs, a sizeable part of which may come from unemployed youth by forming them in cooperatives with adequate financial support from Financial Institution .

Since the fishes are very delicate, semi-intensive culture has to be adopted. In this method, the culture tanks should be stocked with fast growing species which are to be fed with artificial feeds and the tanks should be free of predators and parasites to the possible extents.

The proposed farm should have a combined setup of cemented cistern, glass aquarium and earthen gamla for the breeding and rearing of fishes. The cement cisterns of various sizes with inflow, outflow and sediment draining out facility are required. The supply of water to this system should preferably be of pure water. Pump is required to lift water for supply of the tanks. Apart from these, other items for proper breeding and rearing of fish like aeration equipments, different testing equipments, package materials for shipments etc., are required.

3.2 TECHNICAL DETAILS:-

A. Scheme for Ornamental Fish Culturing Unit

(Estimation for One Unit of Size Approximately 25 Sq.m.)

SNO	PARTICULARS OF COMPONENTS	AMOUNT
1	CAPITAL COST	52300.00
2	CULTURAL COST	
	a. For Hard Water	19800.00
	b. For Intermediate Water	22000.00
	c. For Soft Water	40700.00
3.	**TOTAL COST (CAPITAL + CULTURAL COST)**	
	a. For Hard Water	72100.00
	b. For Intermediate Water	74300.00
	c. For Soft Water	93000.00
4.	AVERAGE ANNUAL INCOME	
	a. For Hard Water	44000.00
	b. For Intermediate Water	48400.00
	c. For Soft Water	82500.00

B. Sample Cost of construction of ornamental fish farm for Individual units(unit size 25 sqm (approx.)

S NO.	NAME OF THE COMPONENTS	TOTAL COST
1.	Cost of construction of cement tanks 1000 Litre capacity @ 1.35 per litre	13500.00
2.	Cost of Shed covering the cement tanks @ Rs.700 per sq. M	17500.00
3.	Water supply arrangement with pump set	6500.00

4.	Valves and pipelines	2000.00
5.	Flooring	500.00
6.	Air blower	5000.00
7.	Aqua immersion heater (10 no's)	500.00
8.	Electrical fittings and connection	2000.00
9.	Overhead tank	1500.00
10.	Small glass Aquarium (5nos)	500.00
11.	Netting of tanks	500.00
12.	Hand nets	300.00
13.	Laboratory instruments	1000.00
14.	Water proof and fimgus proof chemicals	1000.00
	Total	**52300.00**

C. ECONOMICS FOR ORNAMENTAL FISH CULTURING UNIT:-

GROSS INCOME	AMOUNT
a. For Hard Water	44000.00
b. For Intermediate Water	48400.00
c. For Soft Water	82500.00

(i) FOR HARD WATER

a. Cultural Cost 19800.00

b. Repayment of Loan by Equitable instalment10300.00

c. Interest on loan @ 10.25 % p.a7390.25

Total37490.25

d. Net Profit (Gross Income – Expenditure) 6509.75

(ii) FOR INTERMEDIATE WATER

a. Cultural Cost 22000.00

b. Repayment of Loan by Equitable instalment10614.28

c. Interest on loan @ 10.25 % p.a 7615.75

Total 40230.03

d. Net Profit (Gross Income – Expenditure) 8169.97

(iii) FOR SOFT WATER

a. Cultural Cost 40700.00

b. Repayment of Loan by Equitable instalment13285.71

c. Interest on loan @ 10.25 % p.a9532.50

Total63518.21

d. Net Profit (Gross Income – Expenditure)18981.79

3.3COMPONENT WISE PROJECT COST:-

S.No.	COMPONENT	NO OF UNITS	UNIT COST (Amt in Rs.)	TOTAL COST (Amt in lakhs)
1	Capital Cost of the Project	100	52300.00	52.30
2	Cultural Cost of the project			
	a. For Hard water	30	19800.00	5.94
	b. For Intermediate Water	30	22000.00	6.60
	c. For Soft Water	40	40700.00	16.28
	Sub- Total	100		28.82
3.	Contingencies (5% of 1 & 2)			4.06
	TOTAL			85.18

3.4. PROJECT PERIOD:-

The Project for the construction 100 units of ornamental fish culture is estimated to be completed within two years from the date of sanction.

5 Risk Assessment:-

Risk	Particular	Mitigates
Performance Risk	Ensured	Excellent support from Farmers and the people are well acquainted with the practice already.
Marketing Risk	Ornamental fish Sale / Export	Good marketing channel. Value added products proposed
Regulatory Risk	Conversion / clearance / tariff order	No problem as various governmental agencies have already expressed their willingness for necessary support
Financial Risk	Financial viability of the project	Satisfactory DSCR. Equity Participation.

Monitoring

After completion of the project implementation, a committee consisting of 3 senior officers of the society will be constituted to look after the progress.

Environment & socio-economic value:

The socio-economic benefits arising out of this project for the local populace will include creation of direct and indirect jobs and rise in the income levels of the Farmers which are in Agri-allied business and rural youth, associated with the project.

6. CONCLUSION :-

Culture and breeding of ornamental fishes can be a promising alternative for many individuals as well as unemployed youths. It requires little space and less initial investment than most other forms of aquaculture. For decorative fish farming, only a clear understanding of habits and biology of these fishes is required. It may be practiced even in urban areas with little alteration of backyard or roof of a house. As less manpower is needed, the women or the elders can run little home aquarium units and improve their social and economic upliftment. There are many Ornamental FishFarming Training centres in metro cities. For a better understanding of this business, it is very important to get this training.

The profit of ornamental breeding and rearing unit depends upon the carrying capacity, candidate species, management practices and infrastructure. The marginal farmers that breed or rear the fish need to sell them earlier due to the absence of proper equipment and get less profit. It is better to rear the fish to an optimum size and get more profits rather going for large scale.

Over all, the project is well conceived and conceptualized, with sound commercial viability. The expected financial returns are quite satisfactory. The project is being implemented by promoters having requisite background and experience and with proposed employment of experienced professionals, experts and consultants. All perceived risks have adequate safe guards. The project is recommended for equity participation and lending by financial institutions.

Annexures - 1

REPAYMENT SCHEDULE OVER A PERIOD OF 8 YEARS

YEAR OF PAYMENT	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR
TOTAL LOAN	59,63,000	59,63,000.00	51,11,142.86	42,59,285.72	34,07,428.58	25,55,571.44	17,03,714.3	8,51,857.16
PRINCIPAL AMOUNT	nil	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.16
INTEREST (@10.25%)	nil	6,11,207.50	5,23,892.14	4,36,576.79	3,49,261.43	2,61,946.07	1,74,630.72	87,315.36
TOTAL PAYMENT / YEAR	nil	14,63,064.64	13,75,749.28	12,88,433.93	12,01,118.57	11,13,803.21	10,23,487.85	9,39,172.52
BALANCE	59,63,000	51,11,142.86	42,59,285.72	34,07,428.58	25,55,571.44	17,03,714.3	8,51,857.16	0

Annexure - 2

BALANCE SHEET AS AT THE TIME OF IMPLEMENTATION

LIABILITIES	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR
Members share	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Own contribution	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL @ A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROFIT & LOSS A/C								
As per last a/c	0.00	0.00	6,11,207.50	11,35,099.64	15,71,676.43	19,20,937.86	21,82,883.93	23,57,514.65
Add : During the year	0.00	6,11,207.50	5,23,892.14	4,36,576.79	3,49,261.43	2,61,946.07	1,74,630.72	87,315.36
Less : Divident	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL @ B	0.00	6,11,207.50	11,35,099.64	15,71,676.43	19,20,937.86	21,82,883.93	23,57,514.65	24,44,830.01
Subsidy	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00
TOTAL @ C	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00	17,04,000.00
LOAN FROM NCDC								
As per last a/c	0.00	59,63,000.00	51,11,142.86	42,59,285.72	34,07,428.58	25,55,571.44	17,03,714.3	8,51,857.16
Add : During the year	59,63,000.00	59,63,000.00	51,11,142.86	42,59,285.72	34,07,428.58	25,55,571.44	17,03,714.3	8,51,857.16
Less : PRINCIPAL	0.00	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.14	8,51,857.16
TOTAL @ D	59,63,000	51,11,142.86	42,59,285.72	34,07,428.58	25,55,571.44	17,03,714.3	8,51,857.16	0

Annexure - 3

CALCULATION OF PAY BACK PERIOD AND LOAN INSTALMENTS

(Rs. in lakh)

Parameters	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR
Estimated Capital Requirements	28.82	28.82	28.82	28.82	28.82	28.82	28.82	28.82
Estimated Annual Turnover	54.19	54.04	54.19	53.11	54.19	54.19	54.19	53.19
Profit Before Tax	33.66	33.66	33.66	33.66	33.66	33.66	33.66	33.66
Accumulated Net Surplus	4.84	4.84	4.84	4.84	4.84	4.84	4.84	4.84
Employment potential (Nos.)	100	100	100	100	100	100	100	100
Payback Period	8 years							
DSCR	1.53	1.35	1.76	1.93	2.32	2.19	2.05	2.44
Avg. DSCR	1.78							
IRR	30%							

Annexure - 4

CALCULATION OF ECONOMICS & DSCR

(Rs. in lakh)

Particulars	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR
Ann. Surplus	3.19	4.04	4.81	4.19	5.21	2.23	2.42	2.59
Depreciation	1000	860	740	640	556	379	274	198
Annual Interest @10.25%	0.00	6.11	5.23	4.36	3.49	2.61	1.74	0.87
Net surplus	1.20	2.80	3.40	3.80	4.04	3.00	2.45	2.44
Ann. Repayment of principal	8.51	8.51	8.51	8.51	8.51	8.51	8.51	8.51
DSCR	1.53	1.35	1.76	1.93	2.32	2.19	2.05	2.44

Annexure - 5

CALCULATION OF INTERNAL RATE OF RETURN (IRR)

(Rs. in lakh)

	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR
SURPLUS	3.19	4.04	4.81	4.19	5.21	4.23	4.21	3.19
DIS @20%	0.833	0.694	0.579	0.482	0.40	0.38	0.311	0.294
NPW@20%	2.66	2.80	2.78	2.02	2.08	1.61	1.31	0.94
DIS@30%	0.769	0.591	0.455	0.350	0.275	0.215	0.171	0.145
NPW@30%	2.453	2.387	2.188	1.466	1.433	0.909	0.720	0.462
DIS@40%	0.714	0.510	0.364	0.260	0.190	0.165	0.121	0.103
NPW@40%	2.278	2.060	1.751	1.089	0.990	0.698	0.509	0.329