



National Fisheries Development Board

Guidelines for Mariculture

1.0 Introduction

World aquaculture production (food fish and aquatic plants) has grown significantly during the past half-a-century. FAO statistics shows that from a production of about 1 million tonnes in the early 1950s, the world aquaculture production in 2004 was reported to have risen to 59.4 million tonnes, with a value of US\$ 70.3 billion. Of this, mariculture is reported to account for 36% of the total quantity and 33.6% of the total value of aquaculture production. The potentially cultivable candidate species in India include about 20 species of finfishes, 29 crustaceans, 17 molluscs, 7 seaweeds and many other species of ornamental and therapeutic value.

2.0 Objectives of the scheme

- To supplement the marine fish production through:
 - i. production of fin fish seed by diversification of shrimp hatcheries
 - ii. open sea cage culture.
 - iii. Diversified mariculture through molluscan farming
- Popularization of concept of the cage culture through setting of model demonstration and units and imparting training to the traditional fishermen

3.0 Components of Assistance

The NFDB will assist the following components:

- i) Production of finfish seed in shrimp hatcheries
- ii) Setting up of open sea cage culture
- iii) Demonstration of model sea cage culture to traditional fishermen
- iv) Marine ornamental fish culture
- v) Molluscan farming including pearl culture

3.1 Production of finfish seed from shrimp hatcheries

In view of the need for diversification of the shrimp hatcheries, the scheme provides for production of finfish seed.

3.1.1. Eligibility criteria

- Individuals/Organizations with the ownership of shrimp/scampi hatcheries located in coastal areas where the water resource is suitable for marine finfish seed production and clear title of land where the hatchery is situated.
- Commitment of entrepreneur to bear 80% of the cost towards diversification.
- Prospective entrepreneur should have received training, preferably in finfish hatchery operations

3.1.2 Type of Assistance

The cost for development of shrimp hatchery includes repair/renovation/modification of the existing structures, additional tanks/facilities for live feed culture, larval rearing, etc., and tentative unit cost and economics are indicated in Annexure-I. The assistance from NFDB will be to the tune of 20% of the cost of diversification, as a back-ended subsidy.

3.2 Setting up of open sea cage culture

In view of the potential for open sea cage culture at several locations along the Indian coastline and the scheme provides for the activity.

3.2.1 Eligibility criteria

- Entrepreneurs/Companies with a previous record of undertaking large-scale aquaculture operations and having adequate on-shore facilities for seed rearing.
- Sea going fishermen by forming into groups and operating the scheme through Fisheries federations/ corporations.
- Availability of necessary clearances for undertaking the cage culture activity in the coastal areas.
- Commitment of state fisheries Federations/ corporations, entrepreneur to bear 80% of the cost

3.2.2 Type of Assistance

The unit cost of a modern fish net cage system includes the cost of net material, HDPE frames, floats, anchors and establishment of on-shore facilities and the tentative unit cost and economics, for both large scale and small scale operations are indicated in Annexures II & III. The companies willing to set up open sea cage culture in a big way shall be supported by NFDB through equity participation @ 20% of the investments.

3.3 Demonstration of model cage culture to traditional fishermen

In order to train fishers in cage farming, it is proposed to set up model cage demonstration farms, with a battery of cage units. Each unit would consist of HDPE framed cage with nylon net enclosures of different mesh sizes. High value fish seed will be stocked in these cages and reared for 6–8 months, when they reach marketable size. This would form a production cum demonstration facility, where in the fisherman co-operatives/SHGs will be beneficiaries.

3.3.1 Eligibility criteria

(i) For setting up demonstration farms

The following criteria shall be applicable for the selection of organization/agency for setting up demonstration farms:

- ICAR Research Institutes/State Fisheries Departments/ state Fisheries Federations/Corporations, Fisheries Colleges, with adequate facilities and background in coastal aquaculture and mariculture
- Possessing adequate manpower and expertise to conduct frontline demonstration to traditional fishermen

(ii) Selection of farmers/fisherman for receiving the demonstration

The following criteria shall be applicable for the selection of farmer/fisherman for receiving the demonstration:

- Should be a fisherman with fishing/fish farming as the major occupation
- Should be sponsored by State Government/Fishermen Co-operatives/ SHGs/Fisheries Development Agencies
- Priority should be given for fishermen affected by Marine Protected Areas/natural calamities.

3.3.2 Type of Assistance

The duration of each demonstration/training will be for a total of 10 days in three spells, for a batch of about 25 trainees. The details of the assistance for training are given in Annexure-IV.

3.4 Marine ornamental fish culture

In recent years, a lucrative marine ornamental fish trade has emerged at an international level and the trade is getting expanded annually. It is a low volume high value enterprise and a long term sustainable trade of marine ornamentals could be developed only hatchery-produced fish.

3.4.1 Eligibility Criteria

For establishment of two demonstration hatcheries, Agencies with expertise for ornamental fish seed production technologies would be considered and fishermen familiar with marine ornamental fishes would be given preference for training.

3.4.2 Type of Assistance

The components of one unit of marine ornamental fish hatchery include sea water intake system, filtration system, FRP tanks, Live feed culture system and the costs for operation and demonstration are indicated in Annexure-V.

As regards Training component, the assistance for a standard training period of ten days is as indicated in Annexure-IV.

3.5 Mussel Farming

Maritime states along the west coast of India have extensive estuaries, which open to the Arabian Sea. Based on the hydrographic condition, in most estuaries, two phases *viz.*, a marine phase during December to May, and a brackish water phase during June to November have been observed. It is during the marine phase that the ecosystem becomes conducive for mussel culture. During 2005-06, the estimated farmed mussel production in the country was about 10,060 tonnes. The NFDB envisages promotion of mussel farming in the maritime states of India through development fund assistance.

3.5.1 Eligibility Criteria

The criteria for selection of farmers/ fishers for grants for estuarine/ open-sea mussel farming are as follows:

- Proximity of fishers/ farmers homestead to an estuarine water body with marine conditions during summer months/ Proximity of fishers/ farmers homestead to calm seas
- Proximity to sea where seed mussels will be available during post-monsoon months
- Necessary clearances for undertaking mussel farming in coastal waters

3.5.2 Type of Assistance

The components of one mussel farming unit include rack / raft holding mussel ropes with semi-automatic seeder, de-clumper and post-harvest and depuration facilities and the costs for operation and demonstration are indicated in Annexures-VI and VII.

The NFDB assistance would be for Training and Demonstration in the pattern indicated in Annexure-IV.

3.6 Edible Oyster Farming

Farming of edible oyster (*Crassostrea madrasensis*) is being undertaken by small scale farmers in shallow estuaries, bays and backwaters in a big way. In the adopted rack and ren method, a series of vertical poles are driven into the bottom in rows, on top of which horizontal bars are placed. Spat collection is done either from the wild or produced in hatcheries, on suitable cultch materials. Spat collectors consist of clean oyster shells (5-6 Nos.) suspended on a 3 mm nylon rope at spaced intervals of 15-20 cm and suspended from racks, close to natural oyster beds. Spat collection and further rearing is carried out at the same farm site and harvestable size of 80 mm is reached in 8-10 months. Harvesting is done manually with a production rate of 8-10 tonnes/ha. Oyster shells are also in demand by local cement and lime industry and culture production has increased to 800 tonnes in the year 2000.

3.6.1 Eligibility Criteria

The criteria for selection of farmers/ fishers for grants for mussel farming are as follows:

- Proximity of fishers/ farmers homestead to an estuarine water body with marine conditions during summer months
- Willingness of the entrepreneur to take up oyster farming
- Necessary clearances for undertaking oyster farming in coastal waters

3.6.2 Type of Assistance

The components of one Unit include rack and ren unit holding oyster rens with post-harvest and depuration facilities and the costs for operation and demonstration are indicated in Annexure-VIII. The NFDB assistance would be for Training and Demonstration in the pattern indicated in Annexure-IV.

3.7 Mabe Pearl Production

A mabe pearl is a dome shaped or image pearl produced by placing a hemisphere or miniature image against the side of the oyster shell interior. These miniature images can be made into pendants, eardrops and rings. A fine quality mabe pearl of 10 mm size can fetch more than US\$ 100 in international markets and an average of Rs. 1,000 in local markets. The advantage of Indian marine Mabe over the ones produced in freshwater mussels is the short gestation period, apart from the superior quality of the nacre of Indian marine pearl oysters, *Pinctada fucata*.

3.7.1 Eligibility Criteria

The following criteria will be used to select farmers/ fishers for grants for mabe pearl production:

- Proximity of fishers/ farmers to calm seas

- Proximity to sea where pearl oysters (*Pinctada fucata/ P. margaritifera*) will be available

3.7.2 Type of Assistance

Components of one unit includes cages and rafts for holding oysters in the open sea. The NFDB assistance would be for Training and Demonstration in the pattern indicated in Annexure-IV.

4.0 Submission of Proposals

The proposals shall be submitted in the following forms:

- (i) **Form - MC - I:** Finfish seed production from shrimp hatcheries.
- (ii) **Form – MC - II:** Proposal for setting up open sea cage culture.
- (iii) **Form – MC - III:** Proposal for setting up demonstration farm for sea cage culture for traditional fishermen.
- (iv) **Form–MC- IV:** Application for training for sea cage culture/marine ornamental fish culture/mussel farming/edible oyster farming/made pearl production/ and other finfish/shell fish of commercial importance.

Application forms at Sl. Nos. (i) to (iii) above shall be filled up by the applicant and countersigned by the Implementing Agency. However, the application form at Sl. No. (iv) prescribed for training and demonstration shall be filled up by the Implementing Agency and submitted to the NFDB for consideration.

5.0 Release of funds

Generally, the funds shall be released in two equal installments for activities relating to production of finfish seed from shrimp hatcheries, setting up of sea cage culture and setting up demonstration farm for open sea cage culture and providing demonstration to fisherman. The first installment shall be released on approval of the proposal by the NFDB (and after 50% of the investment has been made by the entrepreneur in case of setting up of open sea cage culture farms) and the second installment shall be released at the beginning of the seed production activity (in case of hatcheries) / entrepreneur investing the remaining 50% of his share (open sea cage culture) and on receipt of the utilization certificate from the Implementing Agency for the first installment. All subsidy installments shall be deposited in the bank account of the farmer.

The funds for Training and Demonstration shall be released in a single installment, on approval of the proposal by the NFDB.

6.0 Submission of Utilization Certificate

The Implementing Agencies shall submit utilization certificates in respect of the funds released to them by the Board. Such certificates shall be submitted in **Form MC- V** on half-yearly basis *i.e.* during July and January of each year. The utilization certificates can also be submitted in between if activities for which funds were released earlier have been

completed and the next installment of subsidy is required to complete the remaining works by the farmer.

7.0 Monitoring and Evaluation

A dedicated Monitoring and Evaluation (M & E) Cell shall be set up at NFDB Headquarters to periodically monitor and evaluate the progress of activities implemented under the NFDB funding. A project monitoring committee comprising of experts in the subject matter, as well as finance and representatives of the Financing Organizations may also be constituted to periodically review the progress of the activities including the achievements related to physical, financial and production targets.

Annexure-I

Production of finfish seed from shrimp hatcheries

Tentative unit cost and economics for production of 1million finfish seed

Development of broodstock facility	:	Rs.15 lakhs
Cost of repair/renovation/modification of existing structures and cost of additional facilities For larval rearing	:	Rs. 25 lakhs
Cost of repair/renovation/modification of existing structures and cost of additional tanks for live feed production	:	Rs. 10 lakhs
Cost of repair/renovation/modification of existing structures and cost of additional tanks	:	Rs.20 lakhs
Operational costs per year	:	Rs. 30 lakhs
Depreciation @20%	:	Rs.14 lakhs
<hr/>		
Total	:	Rs.44 lakhs
Sale of 1 million finfish seed @ Rs.5/seed	:	Rs.50 lakhs
Profit per year	:	6 lakhs

Tentative Unit Cost and economics for Setting up of open sea cage culture

Sl. No	Items	Apprx. Cost/ crop (Rs. in lakh)				
		I	II	III	IV	V
CAPITAL INVESTMENT						
1	Fixed assets Onshore facility ; floating cages (Apprx.12 meter dia;10 Nos) + working hut, motorized boats and other equipments	60.0	--	--	--	--
COST OF PRODUCTION						
2	Depreciation on fixed assets (~10%)	6.0	6.0	6.0	6.0	6.0
3	Manpower (1 manager @ Rs. 45000 per month) + (2 farm hands @ Rs. 20000 per month) + bonus	10.0	11.0	12.0	13.0	14.0
4	Fuel maintenance and miscellaneous	10.0	11.0	12.0	13.0	14.0
5	Onshore facility working charges (Lab works, water, electricity, communication, watch & ward etc.)	3.0	3.0	3.0	4.0	4.0
6	Fry (20-25g size) (@ mean price of Rs.5/- : sea bass or grouper) (total 1,00,000 seed for 10 cages)	5.0	10.0	10.0	11.0	11.0
7	Feed (trash fish @ Rs. 5000/tonne; minimum of 6 tonnes required for producing 1 tonne fish)	18.0	36.0	36.0	36.0	36.0
8	Harvesting and transporting	2.0	4.0	4.0	5.0	5.0
9	Miscellaneous expenditure	2.0	2.0	2.0	3.0	3.0
10	Interest on borrowed money(~@8% per annum) (100 lakhs borrowed)	8.0	7.0	6.0	5.0	4.0
11	Total cost of production (2+3+4+5+6+7+8+9+10)	64.0	90.0	91.0	96.0	97.0
	Annual production (t) * (expected about 60 tonnes; at 80% survival and mean of 0.6 kg per fish)	60 tonnes	120 tonnes	120 tonnes	120 tonnes	120 tonnes
12	Unit cost of production per tonne (6/7)	1.067	0.75	0.76	0.80	0.81
Financial analysis						
13	Sale price (@Rs.100/ kg)	100/kg	110/kg	120/kg	130/kg	140/kg
14	Revenue from sales	60.0	132.0	144.0	156.0	168.0
15	Profit over cost of production (14-11)	-4.0	47.0	57.0	65.0	75.0
16	Repayment of loan	0	25.0	25.0	25.0	25.0
17	Net profit	-4.0	22.0	32.0	40.0	50.0

Annexure-III

Tentative Unit Cost and economics for setting up of open sea cage culture in one cage for fisherman household/ SHGs

Sl. No	Items	Aprrx. Cost/ crop (Rs. in lakh)				
		I	II	III	IV	V
CAPITAL INVESTMENT						
1	Fixed assets Onshore facility ; floating cages (Aprrx. 12 meter dia; 1 No. only)	6.0	--	--	--	--
COST OF PRODUCTION						
2	Depreciation on fixed assets (~10%)	0.6	0.6	0.6	0.6	0.6
3	Fry (20-25g size) (@ mean price of Rs.5/- : sea bass or grouper) (total 10,000 seed per cage)	0.5	1.0	1.0	1.1	1.1
4	Feed (trash fish @ Rs. 5000/tonne; minimum of 6 tonnes required for producing 1 tonne fish)	1.8	3.6	3.6	3.6	3.6
5	Harvesting and transporting	0.25	0.50	0.50	0.50	0.50
6	Miscellaneous expenditure	0.20	0.20	0.20	0.30	0.30
7	Interest on borrowed money(~@8% per annum) (10 lakhs borrowed)	0.8	0.7	0.6	0.5	0.4
8	Total cost of production (2+3+4+5+6+7)	10.15	6.6	6.5	6.6	6.5
9	Annual production (t) * (expected about 60 tonnes; at 80% survival and mean of 0.6 kg per fish)	6 tonnes	12 tonnes	12 tonnes	12 tonnes	12 tonnes
10	Unit cost of production per tonne (6/7)	1.69	0.55	0.54	0.55	0.54
Financial Analysis						
13	Sale price (@Rs.100/ kg)	100/kg	110/kg	120/kg	130/kg	140/kg
14	Revenue from sales	6.0	13.2	14.4	15.6	16.8
15	Profit over cost of production (14-11)	-4.15	6.6	7.9	9.0	10.3
16	Repayment of loan	0	2.5	2.5	2.5	2.5
17	Net profit	-4.15	4.1	5.4	6.5	7.8

Summary of the Norms for Assistance towards Training

Sl. No	Item	Activities	Unit Cost	Subsidy	Remarks
1.0	Training and Demonstration	<ul style="list-style-type: none"> (i) Assistance to farmers for participation in 10 days training programme (batch of 25 – 30). (ii) Honorarium to Resource Persons. (iii) Assistance to implementing agency for training and demonstration. 	<ul style="list-style-type: none"> (i) Daily allowance of Rs 125/ day /trainee and reimbursement of actual to and fro travel, subject to a maximum of Rs 500 per trainee. (ii) Honorarium of Rs 1250 and actual to and fro travel expenses, subject to a maximum of Rs 1000. (iii) Rs 75/ trainee/ day to the Implementing Agency towards identification, mobilization of beneficiaries, supply of training material, etc. (iv) Development of demonstration unit @ Rs 1 00 000/- (one time grant) to the Implementing Agency to conduct regular training/ demonstration activities. (v) In absence of own facility, grant of Rs 50 000/- shall be available to the State Government to lease private unit and its development for conduct of training/ demonstration, etc. (vi) In the absence of (iv) and (v) above, Rs 5 000/- per training program for hiring suitable facility from private farmer. (vii) ICAR Fisheries Institutes/ Colleges of Fisheries under State Agriculture Universities/ Other Agencies using their own facilities will get a lump sum amount of Rs 5 000/- per training programme for this purpose. 		

Tentative Unit cost and economics for production of marine ornamental fish

Cost (Rs. lakhs)		
Capital Cost		
1.	Fixed Assets	
	Sea water intake , sedimentation, filtration system	25
	Blower +generator	5
	Air conditioner	1
	Broodstock development facilities (25 pair) and cost of broodstock	10
	Live feed culture facilities	5
	Larval rearing facilities	5
	Nursery grow out facilities	10
	Total Capital costs (A)	61
2.	Operational costs (B)	10
3.	Depreciation (@ 20% of the fixed Capital cost) (C)	12.2
	Total (B+C)	22.2
	Total Cost of Production (A+B+C)	83.2
4.	Annual Production (Nos.)	
	At survival (minimum 50%): Production : @300 seeds/ Month/Pair	
	Total No. of seeds produced per month/30 pair: 9000	
	Total No. of seeds produced per year/25 pair: 1,08000	
	Total No. of seeds produced per year (Round off) :100000 seeds	
5.	Financial analysis	
	Sale Price @Rs.50/seed	
	Revenue from sale	50
	Gross Return (D)	50
	Production cost less depreciation	{(D)- (B+C)} 27.8
	Gross Cash Return	(E) 27.8
	Pay out period (A/D)	1.22

Annexure- VI

Tentative cost benefit of Mussel Farming – Rack Culture
Rack size 30m x 20m (1200 ropes of 1 m)

A. Initial Expenditure**I Farming**

1. Bamboo poles of 4m length 160 nos @ Rs. 110/-	17,600.00	
2. Bamboo poles of 5m length 110 nos @ Rs. 125/-	13,750.00	
3. Seeding rope 18mm (1500m), 300kg @ Rs. 125/-	37,500.00	
4. Rope for lashing, tying the seeded rope; 4mm, 20 kg	2,650.00	
5. Semi automated seeder	5,000.00	76,500.00

II. Post Harvest

6. De clumper	8,000.00	
7. Plastic creates for depuration, (30 nos @ Rs.400/-)	12,000.00	
8. Aluminium vessels for heat shucking	10,000.00	
9. FRP tank, 2 ton for chlorination	12,000.00	
10. FRP tank, 1 ton for depuration 2 nos	12,000.00	
1. 1HP pump, hose & accessories	10,000.00	64,000.00

B. Capital Cost

Depreciation @ 50% for item 1 – 5	38,250.00	
Depreciation @ 20% for item 6 - 11	12,800.00	51,050.00

C Recurring Cost

1. Cotton netting (250mtr @ Rs.15/mtr)	3,750.00	
2. Twine	100.00	
3. Cost of seed (1800 kg @ Rs.6/kg)	10,800.00	
4. Charge for seeding (30 man days @ Rs.200/head)	6,000.00	
5. Hire charge of canoe	2,500.00	
6. Charge for harvesting, de clumping and cleaning	10,000.00	
7. Labour for depuration	3,000.00	
8. Plastic wares	4,000.00	
9. Marketing	5,000.00	
10. Miscellaneous	3,800.00	48,950.00

Expenditure Total (B + C) 1,00,000.00

D Income

Production of mussel 12000 kg	
Heat shucked meat (20%) 2400 kg	
Selling price Rs.80/kg	1,92,000.00

E Net Income

92,000.00

Tentative cost benefit of Mussel Farming – Raft method in Open Sea Multiple (12)
Units of 5m x 5m Rafts (300 sq. m)
(600 ropes of 4m)

A. Initial Investment**I. Farming**

1. Bamboo poles of 5m length 240 nos @ Rs. 125/-	30,000.00	
2. Empty oil barrels of 200 lt capacity, 60 nos @ Rs.500/-	30,000.00	
3. Cast iron anchors of 30kg, 26 nos @ Rs.40/-	31,200.00	
4. 18mm nylon rope for anchorage, 240 kg @ Rs.125/-	30,000.00	
5. 4 mm nylon rope for lashing, 60 kg @ Rs.125/-	7,500.00	
6. Rope for seeding 600 ropes of 4m; 480 kg @ Rs.125/-	60,000.00	
7. Semi automated seeder	5,000.00	1,93,700.00

II. Post Harvest

8. De clumper	8,000.00	
9. Semi automated seeder	5,000.00	
10. FRP tank of 2 ton capacity, 2 nos @ Rs.12,000/-	24,000.00	
11. FRP tank of 1 ton capacity 3 nos	18,000.00	
12. HP pump with hose & accessories	10,000.00	
13. Plastic crates for depuration	12,000.00	
14. Aluminium vessels for heat shucking	10,000.00	87,000.00

B. Capital Cost

Depreciation @ 50% for item 1 – 7	96,850.00	
Depreciation @ 20% for item 8 - 14	17,400.00	1,14,250.00

C. Recurring Cost

1. Cotton netting (600mtr @ Rs.15/mtr)	9,000.00	
2. Labour for raft fabrication and mooring	24,000.00	
3. Cost of mussel seed (4200 kg @ Rs.6/kg)	25,200.00	
4. Seeding Charge (50 man days @ Rs.200/head)	10,000.00	
5. Canoe hire charge 250 @ Rs.30/-	7,500.00	
6. Harvesting and transportation	15,000.00	
7. Labour for depuration	20,000.00	
8. Labour for heat shucking	20,000.00	
9. De clumping and washing	10,000.00	
10. Miscellaneous	10,000.00	1,50,700.00

Expenditure Total (B + C) 2,60,950.00

D. Income

Production of mussel 24000 kg	
Heat shucked meat (20%) 4800 kg	
Selling price Rs.80/kg	3,84,000.00

E. Net Income

92,000.00

Annexure- VIII

**Tentative cost benefit of Rack culture for Edible Oyster
300 sq. m. area**

Sl. No.	Particulars	Amount	Total
1	Capital Cost		
	a. Bamboo/casuarina pole (500 nos @ Rs.100/-)	50,000.00	
	b. Nylon rope 4mm (180 kg @ Rs.140/-)	25,200.00	
		75,200.00	
	Less: Depreciation @ 50%	37,600.00	
			37,600.00
2	Running Cost		
	a. Empty cleaned oyster shell (30,000 @ Rs. 0.15/-)	4,500.00	
	b. Labour for making rack (6,000 @ Rs. 0.50/-)	3,000.00	
	c. Rack construction	5,000.00	
	d. Harvesting	5,000.00	
	e. Cleaning the harvested oyster 3,000 ton	12,000.00	
	f. Heat shucking	54,000.00	
	g. Marketing exp. @ Rs.2/kg for 2,500	5,000.00	88,500.00
	Total Expenditure		1,26,100.00
	Sale proceeds: Meat @ 80/kg		2,00,000.00
	Net profit		73,900.00

Proposal for taking up Finfish Seed Production in Shrimp Hatcheries

Sl. No	Particulars sought from the applicant	Information furnished by the applicant
(1)	(2)	(3)
1.0	Name and address of the applicant/ firm/ association/ Self Help Group (IN BLOCK LETTERS):	
2.0	Address for communication	
	Telephone:	
	Fax:	
	Mobile:	
	E-mail:	
3.0	Details of land where the shrimp hatchery is located which is proposed to be upgraded to a finfish hatchery:	
	a) State:	
	b) District:	
	c) Taluk/ Mandal:	
	d) Revenue Village:	
	e) Survey No.:	
	f) Whether located in the permitted zone as per the CRZ Act:	
	g) Ownership (whether freehold or on lease):	
	h) If on lease, duration of lease:	
	i) Total land area of the existing shrimp hatchery (in ha):	
	j) Capacity of the shrimp hatchery:	
	k) No. of tanks with tonnage:	
	l) Water holding capacity:	
	m) Other amenities available:	
n) Water intake and filtration system:		
o) Drainage water treatment facility:		
p) Live feed culture facility:		
q) Laboratory facility for disease diagnosis and water quality analysis:		
4.0	Details of the proposed marine finfish hatchery	
	a) Extent of additional area available for upgrading to finfish seed production:	
	b) Numbers and size of brood stock tanks:	
	c) Numbers and size of hatching tanks:	
	d) Numbers and size of live feed tanks:	

(1)	(2)	(3)
	e) Numbers and size of nursery tanks: f) Details of aeration facility: g) Drainage water treatment facility: h) Technology to be adopted (imported/indigenous): i) Production capacity (in million fry per production cycle): j) Number of seed production cycles proposed per year: k) Facilities, if any for nursery rearing. If so, capacity of the nurseries: l) Source and quality of water: m) Source of brood stock: n) Details of the proposed construction works in the hatchery. (Design details/engineering works to be submitted): o) Details of feed for brood stock and fry; and feed storage facility: p) Live feed culture facility: q) Laboratory facility for disease diagnosis and water quality analysis:	
5.0	Details on tie up with the Bank for availing institutional finance:	
6.0	Arrangement for seed money (please furnish documentary proof, such as statement of Bank account, etc.):	
7.0	Whether the applicant is in default of payment to any Financial Institution/ State Government for loan/ assistance availed earlier. If yes, please provide the details and the reasons for default:	
8.0	Experience of the applicant in operation of hatcheries and details of training(s) undergone so far:	
9.0	Details regarding economics of operation:	
10.0	Marketing tie up:	
11.0	Expected date of operation of the hatchery and tentative schedule of activities such as distribution and marketing of seed and transport arrangements, etc:	
12.0	Number of existing finfish hatcheries set up within a radius of 50 kms of the proposed hatchery and their production capacities:	
13.0	Source and number of workers employed for construction as well as day-today hatchery operations: (man days per year):	

Declaration by the Applicant

I/We.....son/daughter/wife
of.....residing
at.....

hereby declare that the information furnished above is true to the best of my/ our knowledge and belief. I am/ we are fully aware that if it is found that the information furnished by me/ we is false or there is any kind of deviation/ violation of the conditions under which assistance is provided to me by the NFDB, any action as deemed fit for violation of this condition may be taken against me/ us.

Date:

Place:
(s)

Signature of the Applicant

Countersigned by the Implementing Agency

Date:

Place:

**Signature and seal of the authorized
representative of the Implementing
Agency**

FORM – MC-II

Proposal for setting up open sea cage culture

Sl. No	Particulars sought from the applicant	Information furnished by the applicant
(1)	(2)	(3)
1.0	Name and address of the company/ firm (IN BLOCK LETTERS):	
2.0	Address for communication Telephone Fax Mobile: E-mail:	
3.0	Details of the area where sea cage culture activity is proposed to be taken up:	
	a) State:	
	b) District:	
	c) Taluk/ Mandal:	
	d) Near by Revenue Village:	
	e) Latitude and longitude :	
	f) Details of lease:	
	g) Duration of lease:	
	h) Total farm area (in ha):	
	i) Details of the proposed construction works of cage farms. (Design details/engineering works to be submitted):	
	j) Number of cage units:	
	k) Dimensions of each cage:	
	l) Maximum fish holding capacity in each cage:	
	m) Details of other structures including floats, anchors, watch towers, light-buoys:	
	n) Details of mechanized/motorized crafts for transporting men and material to and fro:	
4.0	On-shore facilities for the cage farm: Details of the area where the on-shore facility is proposed to be taken up	
	a) State:	
	b) District:	
	c) Taluk/ Mandal:	
	d) Near by Revenue Village:	
	e) Survey Number :	
	f) Whether located in the permitted zone as per the CRZ Act:	
	g) Ownership (whether free hold or open lease):	
	h) If on lease, details and duration of lease:	

(1)	(2)	(3)
	i) Details of the proposed construction works of on-shore facility. (Design details/engineering works to be certified and approved by the Competent Authority): j) Species and source of fry: k) Details of the holding facility for the seed (fry to fingerling): l) Number and dimensions of fry rearing tanks: m) Water intake and treatment facility: n) Source and quality of water: o) Drainage water treatment facility: p) Details of feed to be used for fry: q) Storage facility for feed (for rearing and seed cultured fish): r) Frozen / Chilled storage facility for harvested fish: s) Details of mechanized/motorized crafts for transporting men and material to and fro: t) On-shore laboratory for monitoring water quality parameters and disease diagnosis in the cage farm site: u) Communication facility (wireless/mobile) between on-shore and sea cage facilities:	
5.0	Whether the assistance for the sea cage culture has been sought under any other scheme of the Central/State Government? If so, please provide the details:	
6.0	Whether the Company/Firm is in default of payment to any financial institution/State Government for loan/assistance availed earlier. If yes, please provide the details and the reasons for default:	
7.0	Estimates regarding input cost: a) Species to be cage cultured: b) Stocking density (please specify the stage of stocking – fry/fingerling) – numbers per cubic meter of cage: c) Cost of seed (Rs. per thousand): d) Source of procurement: e) Transportation cost (Rs. Per thousand): f) Details of feed to be used, its quantity and cost: g) Source of procurement of feed: h) Transportation cost of feed from on-shore facility to the cage culture site: i) Number of culture cycles per year: j) Salaries/wages: k) Harvesting cost: l) Operational cost for the on-shore facility:	

(1)	(2)	(3)
8.0	Experience of the applicant in the cage culture and details of training(s) undergone so far:	
9.0	Details regarding economics of operation:	
10.0	Whether any financial tie up has been made for availing Bank loan, if so please provide the details:	
11.0	Expected date of operation of the farm and tentative schedule of activities:	
12.0	Marketing tie up:	
13.0	Source and number of labour employed for construction as well as day-to-day culture operations (man days per year):	

Declaration by the Authorized Signatory of the Company/Firm

I/We.....son/daughter/wife
of.....residing
at.....hereby declare
that the information furnished above is true to the best of my/ our knowledge and belief. I
am/ we are fully aware that if it is found that the information furnished by me/ we is false or
there is any kind of deviation/ violation of the conditions under which assistance is provided
to me by the NFDB, any action as deemed fit for violation of this condition may be taken
against me/ us.

Date:

Place:
(s)

Signature of the applicant

Countersigned by the Implementing Agency

Date:

Place:

**Signature and seal of the authorized
representative of the Implementing
Agency**

Proposal for setting up sea cage culture for fishermen

Sl. No	Particulars sought from the applicant	Information furnished by the applicant
(1)	(2)	(3)
1.0	Name and address of the Implementing Agency (IN BLOCK LETTERS):	
2.0	Address for communication Telephone: Fax: Mobile: E-mail:	
3.0	Facilities available/proposed for the demonstration	
4.0	Details of the area where sea cage demonstration activity is proposed to be taken up:	
	a) State:	
	b) District:	
	c) Taluk/ Mandal:	
	d) Near by Revenue Village:	
	e) Latitude and longitude :	
	f) Details of lease:	
	g) Duration of lease:	
	h) Total farm area (in ha):	
	i) Details of the proposed construction works of demonstration cage farms. (Design details/engineering works to be submitted):	
	j) Number of demonstration cage units:	
	k) Dimensions of each demonstration cage:	
	l) Maximum fish holding capacity in each demonstration cage:	
	m) Details of other structures including floats, anchors, watch towers, light-buoys:	
	n) Details of mechanized/motorized crafts for transporting men and material to and fro:	
5.0	On-shore facilities for the demonstration cage farm: Details of the area where the on-shore facility is proposed to be taken up	
	a) State:	
	b) District:	
	c) Taluk/ Mandal:	
	d) Near by Revenue Village:	
	e) Survey Number :	
	f) Whether located in the permitted zone as per the CRZ Act:	
	g) Ownership (whether free hold or open lease):	
	h) If on lease, details and duration of lease:	

(1)	(2)	(3)
	i) Details of the proposed construction works of on-shore demonstration facility. (Design details/engineering works to be certified and approved by the Competent Authority):	
	j) Species and source of fry:	
	k) Details of the holding facility for the seed (fry to fingerling):	
	l) Number and dimensions of fry rearing tanks:	
	m) Water intake and treatment facility:	
	n) Source and quality of water:	
	o) Drainage water treatment facility:	
	p) Details of feed to be used for fry:	
	q) Storage facility for feed (for rearing seed and cultured fish):	
	r) Frozen / Chilled storage facility for harvested fish:	
	s) Instruction room facility:	
	t) Details of mechanized/motorized crafts for transporting men and material to and fro:	
	u) On-shore laboratory for monitoring water quality parameters and disease diagnosis in the cage farm site:	
	v) Communication facility (wireless/mobile) between on-shore and sea cage demonstration facilities:	
6.0	Number of persons to be trained in sea cage culture per training programme	
7.0	Whether the assistance for the sea cage demonstration facility has been sought under any other scheme of the Central/State Government? If so, please provide the details:	
8.0	Estimates regarding input cost:	
	a) Species to be cage cultured for demonstration:	
	b) Stocking density (please specify the stage of stocking – fry/fingerling) – numbers per cubic meter of cage:	
	c) Cost of seed (Rs. per thousand):	
	d) Source of procurement:	
	e) Transportation cost (Rs. per thousand):	
	f) Details of feed to be used, its quantity and cost:	
	g) Source of procurement of feed:	
	h) Transportation cost of feed from on-shore facility to the cage culture site:	
	i) Number of culture cycles per year:	
	j) Salaries/wages:	

(1)	(2)	(3)	
	k) Harvesting cost:		
	l) Operational cost for the on-shore facility:		
9.0	Experience of the organization in the cage culture:		
10.0	Details regarding economics of operation:		
11.0	Expected date of operation of the demonstration sea cage culture farm and tentative schedule of activities:		
12.0	Marketing tie up:		
13.0	Source and number of labour employed for construction as well as day-to-day culture operations (man days per year):		
14.0	Financial Implications for demonstration:		
	Item	Number	Amount
	Training		
	i. Assistance to fishermen @ Rs 125/ day for a total duration of 10 days (in 3 spells):		
	ii. Reimbursement of to and fro travel expenses to fishermen (3 spells):		
	iii. Assistance to implementing agency @ Rs 75/ trainee/ day:		
	iv. Honorarium to resource persons and reimbursement of to and fro travel expenses as per their entitlement:		
	Total		

Declaration by the Authorized Signatory of the Organization/Firm

I/We.....son/daughter/wife of.....residing at.....hereby declare that the information furnished above is true to the best of my/ our knowledge and belief. I am/ we are fully aware that if it is found that the information furnished by me/ we is false or there is any kind of deviation/ violation of the conditions under which assistance is provided to me by the NFDB, any action as deemed fit for violation of this condition may be taken against me/ us.

Date:

Place:

Signature of the applicant (s)

Countersigned by the Implementing Agency

Date:

Place:

Signature and seal of the authorized representative of the Implementing Agency

FORM – MC-IV

Proposal for Training in Sea Cage Culture/ Marine Ornamental Fish Culture/Mussel Farming/Edible Oyster Farming/Mabe Pearl Production

Sl. No	Particulars sought from the Trainee	Information furnished by the Trainee			
(1)	(2)	(3)			
1.0	Name and postal address of the Trainee:				
2.0	Location of the Trainee:	District	Block	Panchayat	Village
3.0	Age and Date of Birth:				
4.0	Sex:				
5.0	Voter's ID Card No.:				
6.0	Occupation:				
7.0	Annual Income:				
8.0	Whether belong to SC/ST/OBC				
9.0	Whether a member of Fishermen Co-operative Society/SHG. If so; <ul style="list-style-type: none"> • Name & Address of the Fishermen Co-operative Society/SHG: • Member Since When: • Membership ID No.: 				
10.0	Has any previous experience in aquaculture, if so, specify details:				
11.0	Distance from the location of the training site:				
12.0	How this training programme to be made use:				
13.0	Signature of the Applicant:				
To be forwarded by the Sponsoring/Nominating Agency					
14.0	Recommendation of the Agency : <ul style="list-style-type: none"> • Whether after training the agency would take up cage culture in co-operative/SHG mode: 				
15.0	Name and Signature of the Authorized Signatory of the Nominating Agency:				
16.0	Financial Implications:				
	Item	Number		Amount	
	a) Training				
	(i) Assistance to farmer @ Rs 125/ day for 10 days:				
	(ii) Reimbursement of to and fro travel expenses to farmer:				
	(iv) Honorarium to resource persons and reimbursement of to and fro travel expenses:				
	(iii) Assistance to implementing agency @ Rs 75/ trainee/ day:				
	Total				
10.0	Technical capabilities of resource persons to be engaged in training:				
11.0	Any other details in support of the proposal				

Declaration by the Applicant

I/We.....son/daughter/wife
of.....residing
at.....hereby declare
that the information furnished above is true to the best of my/ our knowledge and belief.
I am/ we are fully aware that if it is found that the information furnished by me/ we is
false or there is any kind of deviation/ violation of the conditions under which assistance
is provided to me by the NFDB, any action as deemed fit for violation of this condition
may be taken against me/ us.

Date:

Place:
(s)

Signature of the Applicant

Countersigned by the Nominating/Sponsoring Agency

Date:

Place:

**Signature and seal of the authorized
Representative of the Nominating/
Sponsoring Agency**



National Fisheries Development Board

Form for Submission of Utilization Certificate

Sl. No	Letter No and date	Amount

Certified that out of Rs. _____ sanctioned during the year _____ in favour of _____ under the National Fisheries Development Board's Letter No given in the margin and Rs. _____ on account of unspent balance of the previous sanction, a sum of Rs. _____ has been utilized for the purpose of _____ for which it was sanctioned and that the balance of Rs. _____ remains unutilized. The same will be adjusted towards the next instalment payable during the period _____.

Physical progress:

Certified that I have satisfied myself that the conditions on which the funds were sanctioned by the National Fisheries Development Board have been duly fulfilled/ are being fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Date:

Place:

Signature and seal of the authorized representative of the Implementing Agency