

1. Establishment of Medium RAS (with 6 tank of minimum 30m³/tank capacity 10ton/crop)/ Biofloc culture system (25 tanks of 4m dia and 1.m high)

During the last seven years fish production has increased by about 11% (17.95 lakh MT in 2020-21). It has also been realized that due to increased pressure on water resources by upcoming urbanization, habitat destruction, industries and shortage in natural fish resources etc. need to look for the alternative ways fish production is the need of time. One of the most effective ways to increase the fish production is by promoting culture system like RAS. The State Government has realized that to cope up the increasing demand of fish in the state as well as in neighbor state it has start work for the alternative ways of fish production & fish culture systems. Individually few advanced fish farmers have started fish production through RAS technology but it needs Government intervention.

This scheme will reduce the dependency on ground water which is in alarming condition in several district of the state. This scheme will increase productivity and create employment generation in rural educated youth and develop entrepreneurship approach as well.

Re-circulatory aquaculture systems are indoor tank-based technology driven culture base systems in which fish are grown at high density under controlled environmental conditions. Generally, farmers adopt a more intensive approach (higher densities and more rigorous management) than other aquaculture production systems. Closed-system aquaculture presents a new and expanding commercial opportunity. They are closed loop facilities that retain and treat the water within the system. In a RAS, water flows from a fish tank through a treatment process and is then returned to the tank, hence the term recirculatory aquaculture systems. RAS can be designed to be very environmentally sustainable, using 90% less water than other aquaculture systems. RAS can reduce the discharge of waste, the need for antibiotics or chemicals used to combat disease and fish and parasite escapes. Due to increased pressure on water resources by upcoming urbanization, habitat destruction, industries & shortage in natural resources of fish etc. need to look for the alternative ways fish production is the need of time. One of the most effective ways to increase the fish production is by promoting culture system like RAS.

Name of Scheme

“Establishment of Medium RAS (with 6 tank of minimum 30m³/tank capacity 10ton/crop)/Biofloc culture system(25 tanks of 4m dia and 1.m high” - Beneficiary Oriented Scheme– Technology Infusion & Adaptation Project Location - All the district in West Bengal

Name of the Component

Establishment of medium RAS:

- Civil Work: Construction of Shed, Culture Tanks, Sump Tanks & construction related to other accessories & boring pump.

- Setting of Filters & other Accessories: Setting of the all filters like slow sand filter, Drum filter, Biological filter & UV filter

Objectives

- To provide the new opportunities to fish farmer to enhance their economic status by the use of technology
- To get High output from a limited area with a high fish density ranging up to 50-150kg/m³ under perfect condition.
- To make complete environmental control to maximize fish growth year-round.
- To provide flexibility to specific site production facilities near large markets.
- To promote Complete and convenient harvesting
- To achieve the quick and effective disease control.
- To get independence from a land based large water source.

Targeted Species of the Project:

Pangus, Monosex tilapia, Koi etc. species.

Project Location

Different districts in the State of WB.

Eligible Beneficiary

All Fishers, Fish farmers, Fish workers and Fish vendors, Fisheries Development corporations, Self Help Groups (SHGs)/Joint Liability Groups (JLGs) in fisheries sector, Fisheries cooperatives, Entrepreneurs and private firms, Fish Farmers Producer Organizations/Companies (FFPO), SCs/STs/Women/Differently abled persons.

Justification of the Scheme

To fulfill the quality fish requirement of the growing aquaculture sector in the State and also for the country. This scheme will contribute in horizontal expansion of crop area which will lead to increased production of fish.

Selection procedure of beneficiary

At the district level, the proposal placed before the DLC shall approve the list of screened beneficiaries.

Implementation of Plan

The proposed “*Establishment of Medium RAS (with 6 tank of minimum 30m³/tank capacity 10ton/crop)/Biofloc culture system (25 tanks of 4m dia and 1.m*” is a beneficiary-oriented scheme. After the due approval of schemes by the Government, the schemes will be implemented through District Fisheries Officers by the beneficiary under the technical guidance of Block Fishery Extension Officers (FEO).

Benefits from Implementation of Plan:

It will enhance the production of fish with technology infusion.

- It will be prominent way for the fish culture in upcoming years when shortage in natural aquaculture system with lack of rainfall will be realized.
- It will work as alternative way for the fish production in decreasing natural water resources area.
- It will work as tool to enhance the production of fish in urban & semi-urban area of the state.
- It could be used as specific site production near the larger market area.
- It will help to get High output from a limited area with a high fish density ranging up to 50-150kg/m³ under perfect condition.
- It will enhance the economic status of fish farmers by providing them new sales & marketing opportunities

Government Assistance

The total admissible Government Share against the scheme will be limited to:

- 40% of the project cost for general category beneficiaries and
- 60% of the project cost for weaker sections like Scheduled Castes (SCs), Scheduled Tribes (STs) and women.

Beneficiary contribution can either be self-financed or bank loan or both.

Sources of Finance:

The estimated project cost of Medium RAS with Tanks for one unit has been worked out as 25 lakh as per the Governmental guidelines.

Time line for Project Implementation

Activity	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
Submitting DPR												
Approval of DPR												
Beneficiary selection and approval												
Purchase of unit												
Physical verification												
Release of subsidy												
Assessment and evaluation												

Cost Estimates

Sl. No	Fixed Capital Cost	Rate	Cost
1	Construction of tanks of size -6m x 6 m x 1.5 m with capacity of 48 cum each - Total 6 Nos	509000	509000
	drainage, shallow bore-well and motor	246800	246800
2	Construction of shed-20m X 15 m-for the above 6 tanks= 300 sqm with foundation	320000	320000
3	Construction of Store & Office room - 20sqm	200000	200000
4	Bio Filters -Civil work	75000	75000
5	Cost of Pumps & Filter materials	50000	50000
6	DG set -Power Generator	100000	100000
7	Electrification	50000	50000
8	Water supply	25000	25000
9	Water quality testing equipment	10000	10000
	Total	1585800	1585800

Operational cost

Details with Expenditure	
Capacity of each tank	45 cum
Total numbers of tank	6
Seed	100 Fish per cubic meter
Total fish Seed requirement (3-4 gm)	28800 nos
Total Seed Cost (01 crop) Fish seed cost @ Rs 4.00/Pc	Rs. 115200
Total Seed cost for 02 Crops	Rs. 230400
Total Feed Requirement (1 crop)	17780 Kg
Total Feed Cost for 01 Crops	Rs. 560670
Total Feed Cost for 02 Crops	Rs. 1121340
Fuel Charges	Rs. 100000
Labour Charges	Rs. 100000
Equipment Cost	Rs. 28330
Maintenance Cost	Rs. 10000
Total for 2 crop	Rs. 1828400
Working Capital required for 06 Months	Rs. 914200

Note: The prices of the above-mentioned items are indicative only. The actual prices of the items may vary as per the local marketing conditions. The govt. subsidy will be given to a beneficiary with or without institutional finance. However, for subsidy calculation purposes the amount will be restricted as per the guideline of the Government Details of Feed

requirement

Sl No.	Fish Size	Protein %	Feed Size	FCR	Quantity (Kg)	Rate (Rs./Kg)	Amount (Rs.)
1	4-15 gm	38	1 mm	1:1.00	324	55	17820
2	15-30 gm	36	1.5m m	1:1.2	621	40	24840
3	30-50 gm	32	2 mm	1:1.2	810	36	29160
4	50-100 gm	30	3 mm	1:1.2	2025	34	68850
5	100-500 gm	28	4 mm	1:1.2	14000	30	420000
Total					17780		560670

Economics

Sl. no.	Details	Unit
1	Total production with Survival of 80 % @ average body weight 0.5 Kg	11520 Kg
2	Sales rate @ Rs. 100/Kg	Rs. 1152000
3	Sales from 2 crop	Rs.2304000
4	Total operational Expenditure (2 crops)	Rs.1828400
5	Net Income	Rs. 475600

Financial Analysis

Particulars	Amount (Rs)
Project Cost	25 lakh
Capital Cost	15.858 lakh
Recurring Cost (Working Capital)	9.142 lakh
Net Income	4.756 lakh
BCR	> 2