

Construction of Biofloc ponds for Freshwater areas including inputs of Rs. 4 lakh / 0.1Ha

Biofloc Technology (BFT) is considered as new “blue revolution” since nutrients can be continuously recycled and reused in the culture medium, benefited by the minimum or zero-water exchange. BFT is an environment friendly aquaculture technique based on in-situ microorganism production. Biofloc is the suspended growth in ponds/tanks which is the aggregates of living and dead particulate organic matter, phytoplankton, bacteria and grazers of the bacteria. It is the utilization of microbial processes within the pond/tank itself to provide food resources for cultured organism while at the same time acts as a water treatment remedy. Thus, this system is also called as active suspension ponds or heterotrophic ponds or even green soup ponds.

- The principle of the technique is to maintain the higher C-N ratio by adding carbohydrate source and the water quality is improved through the production of high quality single cell microbial protein
- In such condition, heterotrophic microbial growth occurs which assimilates the nitrogenous waste that can be exploited by the cultured species as a feed and also works as bioreactor controlling of water quality.
- Immobilization of toxic nitrogen species occurs more rapidly in biofloc because of the growth rate and microbial production per unit substrate of heterotrophs are ten-times greater than that of the autotrophic nitrifying bacteria.
- This technology is based on the principle of flocculation within the system

Species suitable for Biofloc Culture

Biofloc system works best with species that are able to derive some nutritional benefits from the direct consumption of floc. Biofloc system is most suitable for species that can tolerate high solids concentration in water and are generally tolerant of poor water quality. Some of the species that are suitable for BFT are:

- Air breathing fish like Singhi (*Heteropneustes fossilis*), Magur (*Clarias batrachus*), Pabda (*Ompok pabda*), Anabas/Koi (*Anabas testudineus*), Pangasius (*Pangasius sp.*)
- Non air-breathing fishes like Common Carp (*Cyprinus carpio*), Rohu (*Labeo rohita*), Tilapia (*Oreochromis niloticus*), Milkfish (*Chanos chanos*)

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.

Project Location

Different districts in the State of WB .

Benefits from Implementation of Plan

- Eco-friendly culture system.
- It reduces environmental impact.
- Judicial use of land and water
- Limited or zero water exchange system
- Higher productivity (It enhances survival rate, growth performance, better feed conversion in the culture systems of fish).
- Higher bio-security.
- Reduces water pollution and mitigate the risk of introduction and spread of pathogens
- It reduces utilization of protein rich feed and cost of standard feed.
- It reduces the pressure on capture fisheries i.e., use of cheaper food fish and trash fish for fish feed formulation.

Implementation of Plan

The proposed “**Construction of Biofloc ponds for Freshwater areas including inputs of Rs. 4 lakh /0.1Ha**” 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).

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.

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

Sources of Finance:

The estimated project cost for **Construction of Biofloc ponds for Freshwater areas including inputs of Rs. 4 lakh /0.1Ha** one unit has been worked out as 14 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 Break up for Construction of Biofloc ponds for Freshwater areas including inputs of Rs. 4 lakh/0.1Ha

Capital Cost		
Sl. No	Component	Total (Rs in lakh)
1	Earth work excavation and construction of bund	0.5
2	Polyethylene lining	1.5
3	Inlet, outlet and central drainage system	0.5
4	PVC pipe fittings for air, water flow	0.5
5	Pump house-100sqf	1
6	Pumps-1 nos. 3 HP	0.3
7	Aerator-4 nos. @Rs.25,000	1
8	Air Blower	0.3
9	Aeration tubes	0.3
10	Generator set 10 KVA	2
11	Net, Imhoff cone, weighing balance, water testing kits and other accessories	0.3
12	Bio security Measure-Bird net, crab net	0.2
13	Electrification L.S.	0.5
14	Watchman shed-10sqf	1
15	Miscellaneous	0.1
	Total	10

Operational Cost		
Sl. No	Component	Total Amount (In Lakh)
1	Seed cost @ Rs.4/pc for 15000	0.6
2	Feed cost @ Rs.35/kg for 7 MT	2.45
3	Floc Preparation and Maintenance Cost	0.5

	Electricity and fuel etc.	0.45
	Total	4

Production		
1	Production @ 75 % survival @ Average body weight 0.5 kg/Fish	5625 Kg
2	Farm Gate Sale Price	RS. 120/Kg
3	Total sale proceeds of one crop	Rs. 675000

Economic feasibility		
Sl no.	Components	Amount (Rs in lakh)
1	Capital Cost	10
2	Operational Cost	4
3	Total project Cost	14
4	Gross income per crop	6.75
5	Gross income at the end of one crop after deducting the recurring cost for the 2nd crop	2.75
6	Gross income from the 2nd crop	6.75
7	Gross income at the end of 2nd crop	9.5
8	Depreciation/maintenance @ 10% of capital cost	1
9	Recurring cost for the next crop	4
10	Net profit at the end of 2nd crop	4.50

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

