

## **Plant /storage of minimum 50-ton capacity**

The fishery resources are spread across the state from the Bay of Bengal in the south focusing on the marine sector to the north in the cold-water areas at the base of Himalayas. It shares only 7.45% of the total inland and 1.95% of the marine fishery resources, but contributes about 12.58% (2nd) of total fish production, 15.51 % (2nd) of inland fish production, and 38% (highest) of the fish seed production in the country. During the last seven years fish production has increased by about 11% (17.95 lakh MT in 2020-21). In spite of that per capita demand-supply gap can't be fulfilled because of post harvest losses which accounts a considerable amount in this sector. Further, the quality of sizeable quantity of produces also deteriorates at the moment it reaches the consumer. Introduction of Cold storage / Cold room facility will help them in removing the risk of distress sale and simultaneously will ensure better returns. The first cold store in India was reported to have been established in Calcutta in 1892. However significant progress in the expansion of the cold storage industry has been made only after independence. But it has not been reflected as per necessity in fisheries sector.

West Bengal, being a coastal state, faces natural calamity like flood and hurricanes every year; which leads to a huge loss in aquaculture sector. If the cold storage facility can be initiated in this state, the crop can be harvested before the calamity and preserved/ stored in the cold storage. Poor farmers can be facilitated through this process. Even after a huge catch, if the supply is more than the demand, product can be stored and sell later as per market demand. The demand for frozen goods is increasing day by day, leading to an expansion of the cold storage market. The cold storage sector in Fishery is opening various business opportunities and this will generate employment opportunities.



*The picture is indicative only*

**Name of Scheme**

"Plant/Storage Minimum of 50T Storage capacity" under INFRASTRUCTURE AND POST-HARVEST MANAGEMENT of beneficiary oriented activities under centrally sponsored components of the Government.

**Objectives**

- The objective of the Scheme of establishment of the Cold Storage is to create facilities for the Fish Farmers and entrepreneurs to store their surplus production in the Cold Storage so that they do not have to make distress selling and get good market price by reaching to the profitable market.
- To minimize post-harvest losses, improve quality and safety of fish products
- To maintain a stable market in terms of price and demand-supply chain
- To afford better prices to the sellers/ fishermen
- To establish the cold chain with additional employment generation
- To minimize the losses due to lack in post harvest facilities.
- Improvements in the fish preservation facilities to make the fish available almost round the year.
- To increase earnings of fish farmers / vendors/ retailers from fish products.
- To increase the income and to strengthen the financial status of the fishermen

**Name of the Component**

1. Direct Cooling Ice Block Plant with a building having warehouse or storage capacity of 10 tones
2. Installation of Ice Plant machineries.
3. The detailed break up and specification is mentioned in TFR/ Detailed estimate

**Project Location**

Different districts in the State of WB.

**Expenditure on the scheme**

The estimated project cost of one unit of Plant/ storage of minimum 50-ton capacity has been worked out as 150.0 lakh as per the Governmental guidelines.

**Benefits from Implementation of Plan**

- Improve the market supply-demand chain
- Income of fishermen would increase by 20-25% .
- Long term preservation without quality deterioration
- Increase the possibility of hygienic marketing and shelf life of perishable fish products.
- Hike of income so as Socio-economic upliftment of fishers

**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

**Technical requirements**

Criteria for selection of Cold storage site

The site for location of the cold storage has to be selected carefully taking into consideration the following factors:

- Nearness to Landing Centre of market or processing centre is of paramount importance for getting frozen products in adequate quantities.
- Uninterrupted power supply.
- Easy accessibility for free flow of raw material and finished product.
- Adequate supply of fresh water.
- Availability of skilled and unskilled labor
- Once fish is frozen, it must be stored at a constant temperature of  $-23^{\circ}\text{C}$  ( $-10^{\circ}\text{F}$ ) or below in order to maintain a long shelf life and ensure quality. A large portion of fresh fish is water. Because the water in fish contains many dissolved substances, it does not uniformly freeze at the freezing point of pure water. Instead, the free water in fish freezes over a wide range of temperature, beginning at approximately  $-2^{\circ}\text{C}$  ( $28^{\circ}\text{F}$ ). The amount of remaining free water decreases until the product reaches a temperature of approximately  $-40^{\circ}\text{C}$ . Fish held below that temperature and packaged so as not to allow water loss through sublimation can be stored for an indefinite period. Unfortunately, there are relatively few commercial freezers capable of storing fish at  $-40^{\circ}$  because of the tremendous variation in energy costs. Fish are therefore normally stored at  $-18$  to  $-29^{\circ}\text{C}$  ( $0$  to  $-20^{\circ}\text{F}$ ), resulting in a variable shelf life ranging from a few weeks to almost one year.

**Implementation of Plan**

The proposed "Plant/Storage Minimum of 50T Storage capacity" 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 subsidy will be limited to 40% of the project cost for general category beneficiaries and 60% of the project cost for Scheduled Castes(SCs), Scheduled Tribes(ST) and women.

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

**Sources of Finance**

The estimated project cost of one unit of Plant/storage of minimum 50-ton capacity has been worked out as Rs. 150.0 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												
Release of subsidy												
Construction of Building and Procurement of machineries												
Trail Run												

**Estimate for construction of 50 ton cold storage**

The main costs involved are preparation of the site, construction of the building, engine room equipment, machinery, electrical installation, other equipment and services. These costs will depend to a great extent on the location of the site. The cost of construction of 50 MT including land cost and machinery and other equipment works out to Rs.150 lakh, The costs as shown are average indicative costs.

The cold storage operations are not very labour intensive. Product transport and stacking inside the cold store is done mechanically using equipments such as trucks and stackers. Manual labour is required only for loading and unloading. The main costs for operating a cold store include labour and refrigeration energy. The cost of labor is dependent on specific business operations, but generally more labor is required as inventory increases. Banks sanctioning term loan for setting up the unit should also make arrangements for availability of working capital loan to enable the borrower to run the unit smoothly. Working capital requirements of the requirements of cold store of 50 MT capacities is given below:

### Detailed estimate

General abstract of cost for the work construction of Cold Store Fish Cold Storage size 50 ton with Blast Room 79'-4" x 27'-4"=2168.08 sqf. Say 2200 sqf (As per Annex-A)			
Particulars	Nos	Amount	Remarks
Construction	Rs.	2405795=00	
Carriage of Material	Rs.	438048=00	
<b>Total</b>	Rs.	<b>28,43,843=00</b>	

Project Cost			
S.No.	Particulars	Cost (Rs In Lakh)	
		Unit	Cost
A	Land development & construction work	2200Sqft	25.00
1	Cost of Plants & machinery including Cold Room Sandwich PUF panels, Door & Refrigeration Unit & One unit 2 ton Blast Freezer		50.00
2	Pallets,	6250 Pcs @ Rs.300/-	18.75
3	Racks	250 @ Rs. 2000/-	5.00
4	Generator		15.00
5	Outreach Vehicle		35.00
6	Miscellaneous		1.25
	<b>Total</b>		<b>150.00</b>

### Manpower requirements of cold storages

Particulars	50 MT		
	Nos	Salary per Month	Total Annual Salary
Manager	1	12,000	1,44,000
Casual Laborers	3	24,000	2,88,000
<b>Total</b>			<b>4,32,000</b>

Working capital requirements for cold store of 50 MT capacities is given in the following table:

Particulars	Cost Per Annum (Rs In Lakh)
Electricity	8.68
Salary & Wages	4.32
Repair & Maintenance	2.50
Miscellaneous	1.50
<b>Total</b>	<b>17.00</b>

### Total Fixed & Operational Cost Required

Particulars	Amount (Rs. In Lakh)
Project Cost	150.00
Working Capital (for 03 Months)	4.25
<b>Total Capital Required</b>	<b>154.25</b>

### Economics of 50 MT fish cold storage

Sl no.	Particulars	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
A	Capacity utilisation	50%	90%	90%	90%	90%	90%
B	Revenue	13.00	25.00	25.00	25.00	25.00	25.00
C	Cost of Production						
1	Electricity Charges	4.34	8.68	8.68	8.68	8.68	8.68
2	Salaries & Wages	2.16	4.32	4.32	4.32	4.32	4.32
3	Repair & Maint	1.25	2.50	2.50	2.50	2.50	2.50
4	Misc	0.75	1.50	1.50	1.50	1.50	1.50
5	Total Cost	8.50	17.00	17.00	17.00	17.00	17.00
D	Profit before Tax & depreciation	4.50	8.00	8.00	8.00	8.00	8.00

**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

