

Cost of fabrication of a 5m x 5m square GI cage

Item	Cost
1 Class B 1.0" GI pipes (1 No.)	Rs. 10,000.00
2 Welding, Painting etc.	Rs. 8,000.00
3 Floats & Miscellaneous	Rs. 4,500.00
Total	Rs. 22,500.00



CMFRI has the expertise in designing and fabrication of state of the art GI cages and supports groups or entrepreneurs with technical support for fish farming in cages. Prospective farmers/ entrepreneurs may contact CMFRI for further details.

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Dismantling and Re-Assembling Type Cages for Open Water Aquaculture



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The Galvanized iron (GI) cage frames have been designed and fabricated by CMFRI as a cost-effective alternative for high density polyethylene (HDPE) cage frames. By this the cost has been reduced to one third or even less with high durability and life span with regular maintenance. Dismantling and re-assembling type cages have been proved successful in open water aquaculture at Cochin.

DESIGN DETAILS

The design of the dismantling type cage is almost similar to the standard design developed by CMFRI for open sea cages. Class B 1.0- 1.5" GI pipes were used for frame fabrication. The size and shape can vary according to the culture conditions.

The 6 m long GI pipes were bent and used for welding into round cages of 6 m diameter. For a 6 m diameter cage 10 Numbers of such pipes are used. Two base collars/ rings connected with horizontal, vertical and diagonal supports at stipulated intervals facilitate for net tying as well as service systems. The cage after fabrication was cut into three pieces so that it can be re-assembled and made to a single structure. The pieces thus cut were jointed by means of GI couplings placed inside and bolted. Highly lubricated nuts and bolts were used to enable them to be removed during dismantling of the frame after each culture operation, for

establishing at a different site or for repair and maintenance. One metre high hand rail allows free movement of the service persons on the base support collars.

The design innovation was made towards cost - effectiveness, easy maintenance, transportation and manoeuvring.

5 m x 5 m dismantling and re-assembling type GI cage was also designed and fabricated for fish culture in open waters at Cochin. For this design, bending of the pipes was not essential so that the GI pipes were welded in such a way with minimum joints. However, it was made in two pieces, so that assembling at site is made easy.

After tying the floats to the pieces, it was reassembled within the water itself. Lubricated nuts and bolts were fixed in such a way that it can be removed easily for regular maintenance after each culture operation.

ADVANTAGES

Dismantling and re-assembling type cages are sturdy and can withstand the weight of at least 10 persons standing on the frame without any movement to the structure as such. The cages are found to be highly durable and can be used for more than 10 years without getting damaged or broken. However, regular maintenance of the frame is essential.

Square cage has the additional advantage of lower fabrication cost since bending of the pipes is not needed.

GI cages are a boon to self help groups and farmer cooperatives, where the investment is the minimum and production expected is the maximum. These cages were found to withstand the heavy drag forces in open waters during monsoon season and floods. Durability and cost-effectiveness also adds up to the advantages. No structure damage was noticed in one year operation.

