

**Cost and Return Analysis for one unit net cage (5m x 10m x 2.5m)
in one cycle culture period**

Development Cost:

25 pcs	Full Length size Bamboos	3,000.00
1 roll	P.E. net #17	4,500.00
50 mtrs	P.E. rope #16	500.00
1 roll	P.E. rope #10	450.00
1 roll	P.E. rope #8	400.00
5 spolls	Nylon twine #16	225.00
10 kgs	Monoline Tenacity #200lbs	3,000.00
2 kgs	Lead sinker #7	300.00
Labor cost for construction of 1 unit cage		5,000.00

Sub-total PhP 17,375.00

Production Inputs:

1,500 pcs Tilapia fingerlings #14	750.00
20 bags Feeds @ 780.00/bag	15,600.00
Caretaker's wage @ 1,000.00/month	5,000.00

Sub-total PhP 21,350.00

GRAND TOTAL (Investment Cost) PhP 38,725.00

Gross Income = 375 kgs @ P 90.00/kg PhP 33,750.00
Less: Production Cost

1,500 pcs Tilapia fingerlings	750.00
20 bags Feeds @ P780.00/bag	15,600.00
Marketing Expenses (2% of sales)	675.00

Sub-Total PhP 17,025.00

Fixed Cost:

Depreciation (2 yrs)	PhP 4,343.75
Repair and maintenance (2% of Development cost)	347.50
Caretaker's wage	5,000.00

Sub-Total PhP 9,691.25

TOTAL COST PhP 26,716.25
NET INCOME/CYCLE PhP 7,033.75

Return on Investment:

$$\text{ROI} = \frac{\text{Net Income (one cycle only)}}{\text{Total Project Cost}} \times 100$$

$$\text{ROI} = \frac{7,033.75}{26,716.25} \times 100$$

$$\text{ROI} = 26.33\%$$

Tilapia Fish Cage CULTURE



Republic of the Philippines
Department of Agriculture
BUREAU OF FISHERIES AND AQUATIC RESOURCES
Cordillera Administrative Region

BPI Compound, Guisad, Baguio City 2600
Telefax: (074) 443-7616 | 445-8499 Email: bfarcar@yahoo.com
Website: <http://car.bfar.da.gov.ph>

TILAPIA PRODUCTION IN CAGES

Fish cage culture is growing tilapia in cages made of nylon and bamboo or steel frame that are floated, submerged or fixed at the bottom. It utilizes bodies of water such as dams, reservoirs, rivers, SWIP and lakes. This system is now being practiced in Cordillera.



Advantages of Tilapia Cage Culture

- Easy handling, inventory and harvest of fish
- Efficient control of fish competitors
- Effective use of fish feeds
- Reduced Mortality
- Higher stocking rate and production per unit area/ volume
- Less manpower requirement and Minimum supervision
- Transferable to sites with better environmental conditions
- Allows the use of existing bodies of water for aquaculture

Criteria for Site Selection

1. Water depth - Site should have enough water depth of at least two meters between the net and lake or river base.
2. Water quality - Site must be free or far from sources of water pollutants.
3. Shelter - Sheltered area is preferred for tilapia cage culture which will protect the structure from strong winds.
4. Current - Water should flow sufficiently to have good water exchange for the replenishment of oxygen and removal of waste metabolites.
5. Services and Security - Site should be accessible to the sources of stocks, feeds, labor and other production supplies. Proximity to the market should also be considered.

Types of fish cage

- A. Fixed type** - anchored to the bottom by full length bamboos
- B. Floating type** - anchored to bamboos, Styrofoams, drums or PVC pipes

Fish cage specification

Rectangular, square, circular. Size depends on the area / farmers choice and financial capacity. However, the smaller the size the easier the management.

Cage construction

1. Construct a rectangular bamboo or steel cage framework which can be divided into smaller compartments depending on the desired size.
2. Bamboos can both serve as framework and floaters. For steel frameworks, plastic drum

floaters can be used.

3. Install mooring lines and anchors which are strong enough to keep the cage structure in place during changes in water current and depth.

4. Nursery hapa can be temporarily placed inside grow-out cages until stocks reach the suitable sizes for grow-out.

Cage Culture Systems

- **Extensive**-Depends largely on the natural productivity of the lake or reservoir or natural food brought in by water inflow.
- **Semi-Intensive**-In this system natural productivity of the area is enhanced with the application of fertilizers. Stocks can also be supplemented with locally available agricultural by products like rice bran and commercial feeds.
- **Intensive**-This is based on the high input-high based systems where stocks depend largely on complete and commercially available feed. The system also requires high investment and adequate managerial skills.

Cage Culture Management

Tilapia fingerlings	Stocks should be of good quality, no diseases and deformities.
Transport	Prior to transport, fingerlings are pre-conditioned in hapas or tanks. There should be less or no feeding a day before transport to clear their digestive tracts and minimize fouling of transport system. Fingerlings are packed in oxygenated plastic bags with water and should be transported early in the morning or late in the afternoon where temperature is lower.
Stocking	Float bags with fingerlings inside the cage for about 15-20 minutes to approximate the temperature of water inside the bag to that of the new environment. Open the transport bag and allow the fingerlings to go out. Stocking should be done early in the morning or late in the afternoon.
Feeding	Stocks are fed 4-5 hours from stocking when they have recovered after transport. For semi-intensive cultures, feed tilapia fingerlings or juveniles at 5-6% of their body weight 3-4 times a day with floating feeds.
Maintenance	Always check nets for damages to prevent escape of stocks. Excessive growth of algae may impair water circulation thus cleaning or change of nets is required.
Harvesting	Harvest stocks preferably if the prevailing prices in the market is higher. Live fish usually commands higher prices than dead fish.