Fisheries
Experiential Learning Programme for B.F.Sc. Programme
Module I - Production of Ornamental Fish

1. **Name of the experiential learning unit proposed:** Production of ornamental fish

2. **Scope:**
   Ornamental fish production is one of the sunrise sectors growing at an annual rate of 14%. Currently about 280 exotic species and about 100 indigenous species of ornamental fish are being produced and traded. India’s share in ornamental fish export is only 1% of the total traded value of 6 billion US$ per annum. Tremendous scope exists for production and domestic trade as well as export of ornamental fish. The Marine Products Export Development Authority (MPEDA) is promoting setting up of breeding units of ornamental fish on a large scale by providing short term training and subsidies to the prospective entrepreneurs.

   Therefore training through experiential learning needs to be imparted to the graduates of Fisheries Science who can set up enterprises in ornamental fish production trade.

3. **Objectives:**
   - To understand need assessment for production of different varieties of ornamental fishes.
   - To provide learning experience in ornamental fish production at commercial level
   - To develop skills in dealing with customers.

4. **Justification for skill learning and employment**
   Ornamental fish production as well as carp seed production is specialized activities requiring knowledge about production systems merchandizing and setting up production units as well as following correct procedures. The experimental learning will help them acquire their skills and knowledge which will boost their confidence and make them competent to undertake production of ornamental fish and carp seeds on their own providing self employment. The skill and knowledge so acquired will also help them to gain employment in private sector as well as it will give them competence to act as consultants for setting up ornamental fish production units and carp seed production units.

5. **Activity component**
   a. Survey
   b. Selection of species
   c. Production plan business plan
   d. Production
   e. Marketing
   f. Economic analysis
6. **Project development**

- Survey of varieties of ornamental fish with greatest scope of marketing to be undertaken
- Based on survey results best candidate species to be selected eg: gold fish, angels etc and quantities to be produced to be decided.
- Business and production plan needs to be developed
- The chosen species need to be produced with necessary quality control measures
- The products need to be marketed
- Economic analysis of the production and business carried out need to be undertaken
- Report should be written and submitted

7. **Distribution of credits**

<table>
<thead>
<tr>
<th></th>
<th>Orientation, survey and project planning</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Production and Marketing of ornamental fish</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Economic analysis and report writing</td>
<td>2</td>
</tr>
</tbody>
</table>

8. **Duration**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Orientation/ Lectures</td>
<td>4 days</td>
</tr>
<tr>
<td>Survey, business plans and production plans</td>
<td>18 days</td>
</tr>
<tr>
<td>Production and Marketing</td>
<td>150 days</td>
</tr>
<tr>
<td>Report writing</td>
<td>6 days</td>
</tr>
<tr>
<td>Examination/viva voce/presentation</td>
<td>2 days</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>180 days</strong></td>
</tr>
</tbody>
</table>

9. **Production plan**

- Production of gold fish: Live bearers and koi carp
- Procurement of brood stock and materials
- Breeding
- Marketing

10. **Production (Activity wise)**

- Procurement of broodstock
- Broodstock conditioning
- Breeding
- Rearing
- Packing and marketing
- Economic analysis

11. **Marketing strategy**

- Retail sale at college
Sale to local retail outlets

12. Risk assessment
- Disease and mortality
- Water quality management
- Market risk (Demand and price fluctuations)
- Competition from other producers

13. Infrastructure
I. Civil works
- Renovation of earthen ponds, cement tanks, hatcheries
- Construction of new rearing ponds/cement cisterns
- Construction of shed for housing breeding aquaria and FRP tanks
- Construction and setting up of retail unit in the College main campus

Budget
Non Recurring (Infrastructure)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of ponds, earthen and cement tanks, drainage and water supply and laboratories</td>
<td>20 lakhs</td>
</tr>
<tr>
<td>Shed for housing aquaria</td>
<td>10 lakhs</td>
</tr>
<tr>
<td>Aquaria (breeding/fry rearing)</td>
<td>6 lakhs</td>
</tr>
<tr>
<td>Construction of retail unit</td>
<td>5 lakhs</td>
</tr>
<tr>
<td>Laboratory equipment (water analysis, glass wares, nets, aerators and filters etc)</td>
<td>4 lakhs</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45 lakhs</strong></td>
</tr>
</tbody>
</table>

Revolving fund to meet Recurring expenses: Rs. 5.00 lakhs

14. Support for guest faculty
Guest faculty to deliver lectures on:
- Preparing business plan
- Project preparation
- Production and marketing
- Government schemes to promote ornamental fish production

15. Training needs
Training faculty in ornamental fish production

Economics of ornamental fish production

A. Economics for rearing live bearers (Guppies, mollies, platies and sword tail)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brood stock 4,000 females and 1,000 males @INR 5/fish</td>
<td>25,000</td>
</tr>
<tr>
<td>Feed 600 kg @INR 35/kg</td>
<td>21,000</td>
</tr>
<tr>
<td>Labour cost INR 5,000/month for 6 months</td>
<td>30,000</td>
</tr>
<tr>
<td>Nets/breeding baskets etc (Manures/fertilizers/chemicals)</td>
<td>10,000</td>
</tr>
<tr>
<td>Manures, fertilizers and chemicals</td>
<td>10,000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>4000</td>
</tr>
</tbody>
</table>
Total 100000
Gross income by sale of 3,20,000 fish @INR 2/fish (@40 nos/female/cycle from 2 cycles, 8000 females) 6,40,000

B. Economics of goldfish production

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brood stock 200 females and 400 males @INR 50/fish</td>
</tr>
<tr>
<td>2</td>
<td>Feed 2000 kg @INR 35/kg</td>
</tr>
<tr>
<td>3</td>
<td>Labour cost INR 10,000/month for 6 months</td>
</tr>
<tr>
<td>4</td>
<td>Nets/breeding baskets etc( Manures/fertilizers/chemicals)</td>
</tr>
<tr>
<td>5</td>
<td>Manures, fertilizers and chemicals</td>
</tr>
<tr>
<td>6</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

Gross income by sale of 2,00,000 fish @INR 5/fish (@1000 nos/female, 200 females) 10,00,000

C. Economics of koi carp production

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brood stock 50 females and 100 males @INR 200/fish</td>
</tr>
<tr>
<td>2</td>
<td>Feed 3000 kg @INR 35/kg</td>
</tr>
<tr>
<td>3</td>
<td>Labour cost INR 10,000/month for 6 months</td>
</tr>
<tr>
<td>4</td>
<td>Nets/breeding baskets etc( Manures/fertilizers/chemicals)</td>
</tr>
<tr>
<td>5</td>
<td>Manures, fertilizers and chemicals</td>
</tr>
<tr>
<td>6</td>
<td>Miscellaneous</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

Gross income by sale of 1,50,000 fish @INR 7.50/fish (@3000 nos/female, 50 females) 11,25,000

### NET PROFIT

#### A. COSTS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Recurring costs</td>
</tr>
<tr>
<td>2</td>
<td>Depreciation @10% on fixed capital</td>
</tr>
<tr>
<td>3</td>
<td>Interest on fixed capital @ 15%</td>
</tr>
<tr>
<td><strong>Total costs</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### B. GROSS INCOME

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>From the sale of live bearers</td>
</tr>
<tr>
<td>2</td>
<td>From the Sale of goldfish</td>
</tr>
<tr>
<td>3</td>
<td>From the sale of koi carp</td>
</tr>
<tr>
<td><strong>Total gross income</strong></td>
<td></td>
</tr>
</tbody>
</table>

#### C. NET PROFIT (A-B) FOR 6 MONTHS 9,70,000

D. NET INCOME PER STUDENT PER MONTH (10 students/6 months): 16,000/-

16. Public private organization and possible cooperation
✓ State Fisheries Department
✓ MPEDA
✓ Local ornamental fish farm

17. Product, production, marketing and related legal aspects
✓ Introduction and spread of disease and parasites
✓ Ethical treatment to fish
✓ Environmental pollution from farm effluents

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MODULE - II

1. Name of the experiential learning unit proposed: *Aquafarming*

2. Scope and Objectives
   - To experience aquaculture activity.
   - To build confidence to become an entrepreneur in aquaculture
   - To acquire skills in feed manufacture, rearing and production of fish
   - To acquire skills in marketing and market analysis

3. Activity components:
   1. Project planning
   2. Site selection
   3. Breeding
   4. Nursery management
   5. Grow out pond management
   6. Seed stocking and Pond management
   7. Sampling of organism for growth and health check-up
   8. Harvesting
   9. Marketing
   10. Risk assessment
   11. Economics

4. Project development
   The farming plan for the carps in the farm area will be finalized with the input-output options. The raw materials required for the project will be listed for the procurement. Preliminary checklist will be prepared by the students for getting ready with the farming.

5. Activity wise distribution of credits

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Activity</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Preparation of Project plan</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Site selection as per layout of farm</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Pond preparation</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>Seed stocking</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Pond management (fortnightly data)</td>
<td>8</td>
</tr>
<tr>
<td>6.</td>
<td>Harvesting and Marketing</td>
<td>2</td>
</tr>
<tr>
<td>7.</td>
<td>Documentation and Report</td>
<td>2</td>
</tr>
</tbody>
</table>
6. Duration
1. Orientation - 3 days
2. Site selection - 7 days
3. Pond preparation - 10 days
4. Seed Production/ Purchase of seeds - 20 days
5. Management of production ponds - 120 days
6. Harvesting and Marketing - 7 days
7. Documentation and report writing - 10 days
8. Oral Examination - 3 days

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Total 180 days

7. Faculty responsibilities :
- Orientation – introduction, objectives.
- Supervision of production.
- Sourcing of raw materials (Seed, Feed and other raw materials)
- Mentoring, assessment and evaluation
- Supervision of pond management
- Supervision of harvesting and marketing

8. Production Plan
- Individual students/ Group of students will make production plan.

9. Production (Activity-wise)
Production:
- Day to day management of aqua farm
- Disease incidence
- Growth factors

10. Harvesting and marketing strategy/Plan including product sale
- Marketing Harvesting: One harvesting or multiple harvesting will be done
- Sales outlet at college/university premises.
- Selling in the local market
- Sending product to places where the best price can be obtained

11. Risk assessment :
- Disease problems may result in loss of fish
- Poaching
- Price fluctuation
12. Support for guest faculty
  Guest faculty is required to deliver lectures on different aspects of aquafarming
  some aqua farmers will be invited for this purpose. TA/DA and honorarium would
  be paid to them as per University rules.

20. Training and management:
  1. Autonomy in the operation of the farm
  2. Labour issues (engagement / disengagement) will be finalised in situ
  3. Fixing of price of the product based on the demand and supply
  4. Emergency situation may be handled by the farm manager
  5. Financial powers should be raised at each level
  6. Flood situation, climate calamities if any should be given exemption
  7. Profit should be considered for assessment of faculty
  8. Experiential learning should be given sufficient weightage
  9. Land in water resources- rich region is a must (which is excluded from the
     present
     project proposal)

21. Suggestions for objective evaluation
  The students will be evaluated regularly throughout the process by the Unit
  Manager. The following is the breakup of marks for evaluation of students through
  internal and external methods. Internal evaluation will be done by the respective
  Unit Managers while external evaluation team consists of HOD and other identified
  Entrepreneur. With a weightage of 10 marks for each credit, student will be
  evaluated for 200 marks for 20 (0+20) credits.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Description</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project Planning</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Site selection</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Pond preparation</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Seed stocking</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>Pound management Harvesting &amp; marketing</td>
<td>80</td>
</tr>
<tr>
<td>6</td>
<td>Student performance (Class assessment, regularity etc)</td>
<td>30</td>
</tr>
<tr>
<td>7</td>
<td>Report writing &amp; records</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Presentation (External) &amp; Viva voce</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>200</td>
</tr>
</tbody>
</table>
## ESTIMATES OF AQUA FARMING MODULE

### Assumptions
- **PRODUCT**: Carps
- **UNIT SIZE**: 6 ha
- **BUDGET**: Rs. 85.00 lakhs
- **Output level**: 4 tonnes / year
- **Production period**: 6 months

<table>
<thead>
<tr>
<th>S.N</th>
<th>Item</th>
<th>Units</th>
<th>Total cost (Rs.lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Capital Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cost of pond construction</td>
<td>6 ha water spread</td>
<td>15.00</td>
</tr>
<tr>
<td>5</td>
<td>Power generator + room for genset with all required accessories like cables, switches, etc.</td>
<td></td>
<td>6.00</td>
</tr>
<tr>
<td>8</td>
<td>Feed mill (farm mix feed 500 kg/day)</td>
<td>1</td>
<td>20.00</td>
</tr>
<tr>
<td>9</td>
<td>Motors, pumps, valves and pipes</td>
<td></td>
<td>10.00</td>
</tr>
<tr>
<td>10</td>
<td>Lab equipments (pH meter, DO meter, Conductivity meter, utilities, etc)</td>
<td>1</td>
<td>01.00</td>
</tr>
<tr>
<td>11</td>
<td>Net materials (drag net, scoop net, plankton net, hapas, etc)</td>
<td></td>
<td>05.00</td>
</tr>
<tr>
<td></td>
<td><strong>Sub-Total</strong></td>
<td></td>
<td><strong>57.00</strong></td>
</tr>
<tr>
<td>B</td>
<td>Variable Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Cost of brooders for the hatchery (2000 kg)</td>
<td>2000 kg</td>
<td>3.00</td>
</tr>
<tr>
<td>2</td>
<td>Feed ingredients</td>
<td>150 tonnes</td>
<td>7.50</td>
</tr>
<tr>
<td>3.</td>
<td>Manures and fertilizers</td>
<td>---</td>
<td>0.50</td>
</tr>
<tr>
<td>4</td>
<td>Power</td>
<td></td>
<td>2.00</td>
</tr>
<tr>
<td>5</td>
<td>Fuel</td>
<td>-----</td>
<td>4.00</td>
</tr>
<tr>
<td>6</td>
<td>Transport</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>7</td>
<td>Labour charges</td>
<td>--</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td><strong>Sub-Total</strong></td>
<td></td>
<td><strong>28.00</strong></td>
</tr>
</tbody>
</table>

### Income
- 1. App. 1.3 tons /ha/4 months X 12 ha = 15.6 tons
- 2. Sale price ---- Rs.25,000 / ton X 15.6 tons

**Total Income** 3.90

### Gross Profit (Total income – Total cost before depreciation and interest)

**F. Benefit-Cost Ratio**
Experiential Learning Programme for B.F.Sc.  
Module - III

Name of the experimental learning unit proposed: Fish Post Harvest Technology  
Product: Convenience/ Value added fish products

Objectives:
- To impart hands on training to undergraduate (BFSc) students in Post-harvest Technology of seafood to develop entrepreneurial skills
- To generate technically skilled man power to work in seafood processing industries
- To impart knowledge on export management, seafood quality control, etc.
- To acquire skills in market survey and analysis
- To acquire skills on the preparation of value added fish products
- To acquire skills on solving practical problems
- To acquire skill in operation and maintenance of equipment and to deal with trouble shooting situations
- To develop skill in dealing with customers
- To instill competence and confidence among the graduates for self employment in vocations of their choice in the seafood processing sector, and to generate employment for others.

5. Activity components
   a. Project development
   b. Market/ consumer need assessment
   c. Sourcing of raw material, Ingredients, additives, packaging material
   d. Costing/ pricing of products
   e. Launching of the product
   f. Scale up
   g. Monitoring of product life cycle
   h. Feedback from the market
   i. Attending customer complaints and expectations

6. Project development
   a. Survey
      Survey will be carried out in markets and retail stores situated in different locations for availability of raw materials and fishery products and customers preference of the fish products
      A questionnaire will be developed to understand the customer profile which includes demographic profile buying behavior of the customers.

   b. Types of products
Products will be selected on the basis of consumer’s preference

c. Trade related requirements
Products will be prepared in compliance with national and international standards

d. Orientation about funding agencies - NABARD, ATMA, Banks, RKVY, etc
These help in the feasibility of submitting proper project proposal in establishing the enterprise.

f. Project development, the details of production flow is shown in item 4
  - Selection of suitable product variety
  - Developing product concept
  - Prototype
  - Cost estimation
  - Quality analysis

7. Distribution of credits activity-wise
Orientation, survey, training, production of prototype obtaining orders, project cost and presentation and review proposals  
Production and marketing
17
Documentation and report writing
1

20 credits

8. Duration
Orientation - 2 days
Survey and training - 17 days
Production of prototype - 10 days
Obtaining orders -
Project report and presentation
Review of proposals
Production and marketing - 143 days
Documentation and report writing - 5 days
Oral examination - 2 days

Total 180 days

9. Faculty responsibility
- Orientation – Introduction, objectives
- Supervision of assessment
- Sourcing of raw materials
- Monitoring, assessment and evaluation
- Supervision of project proposal
- Assessing questionnaire
- Arranging for guest facility
- Purchase of raw material
- Supervision of production and marketing

14. Production plan
   A. Frozen product/ Chilled products
      - Raw material
      - Preprocessing based on the type of product (fish, crustaceans, cephalopods, etc)
      - Processing – Freezing/ Chilling
      - Packing
      - Storage
      - Labeling
      - Marketing

   B. Traditional products
      - Raw material
      - Preprocessing
      - Processing (salting, drying, smoking, marinating, pickling, etc)
      - Packing
      - Storage
      - Labeling
      - Marketing

   C. Canned products/ Retort pouch packing/ Cook-Chill products
      - Raw material
      - Beheading/ peeling/shucking
      - Washing
      - Size cutting
      - Brining
      - Precooking/blanching
      - Cooling /draining
      - Filling in cans/ pouch
      - Exhausting
      - Seaming/ Sealing
      - Retorting (121°C)
      - Cooling
      - Storage at room temperature
      - Marketing

   D. Value added products
      - Raw material
      - Preprocessing – r\dressing, deboning, mincing)
      - Forming
      - Battering
      - Breading
      - Frying
15. Production activity-wise

**Assumptions**

- **Product**: Canned, frozen, dried and value added fish products
- **Unit size**: 5 tonnes of fish per month (200 Kg/day for 25 days a month)
- **Budget**: Rs. 50 lakhs (40 lakh capital lost + 10 lakh working cost)
- **Output level**: 2 tonnes of finished product per month by 10 students
- **Production period**: 143 days (7 day/week)

16. Marketing strategy/plan including product sale

**Marketing**
- Sales point at college/university premises in an outlet/mobile vending
- Local state co-operative societies
- Hostels of local colleges and Restaurants, shopping malls etc
- Weekend markets in street markets and local market

17. Risk factor

- The production period should be planned in peak fishing season – October to March as there will be continuous supply of raw material
- The fish and ingredient costs may vary from time to time

18. Infrastructure

<table>
<thead>
<tr>
<th>Capital Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact plate freezer</td>
</tr>
<tr>
<td>Air blast freezer</td>
</tr>
<tr>
<td>Baby boiler</td>
</tr>
<tr>
<td>Over pressure retort</td>
</tr>
<tr>
<td>Vacuum sealer</td>
</tr>
<tr>
<td>Generator 50 KV</td>
</tr>
<tr>
<td>Balance, Processing Tables, Knives, Trays, etc</td>
</tr>
<tr>
<td>Civil work (processing hall, lab, storage, etc), Existing hall to be upgraded</td>
</tr>
<tr>
<td><strong>Total Rs. 60.00 lakh</strong></td>
</tr>
</tbody>
</table>

13. **Revolving fund to meet Recurring expenditure: Rs. 10.00 lakhs**

20. Support for Guest faculty required, if any (give details with justification)

Guest lecture will be arranged from industry, research and Government establishment to appraise the students about standards, laws and legal aspects of marketing.

21. **Training needs**

As new machineries are installed in the unit, hands on training is required for the operation of machineries
22. Economics
Gross turnover, net profit, and profit sharing among students, faculty and institution

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Item</th>
<th>Units</th>
<th>Total cost (Rs.lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Capital Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Contact plate freezer</td>
<td>1</td>
<td>20.0</td>
</tr>
<tr>
<td>2</td>
<td>Air blast freezer</td>
<td>1</td>
<td>15.0</td>
</tr>
<tr>
<td>3</td>
<td>Baby boiler</td>
<td>1</td>
<td>1.5</td>
</tr>
<tr>
<td>4</td>
<td>Over pressure retort</td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td>5</td>
<td>Vacuum sealer</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>6</td>
<td>Generator 50 KVA</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>7</td>
<td>Civil works</td>
<td>LS</td>
<td>22.00</td>
</tr>
<tr>
<td>8</td>
<td>Balance, tables, knives insulated boxes, crates, carts etc</td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td><strong>Sub-Total</strong></td>
<td></td>
<td><strong>70.00</strong></td>
</tr>
</tbody>
</table>

| C     | Income                                  |       |                      |
| 1     | 2 tonnes of finished product per month | Rs.600/kg | 12.00                |
|       | **Total Income**                        |       | **12.00**            |

| D     | Net Income (C-B) per month              |       | 2.00                 |
|       | Shared by 10 students and the institution |   |                      |

25. Product, production and marketing related legal aspects

- Proper labels on products
- Adhesion to environmental compliance
- Proper disposal of waste recycle/ reuse strategies

Specification:
1. A experiential learning unit to utilize 5 tonNes of fish per month of 25 working days (200Kgs of fish per day for 10 students). The average yield of finished product is taken as 40%. The species preferred are low value marine fish (Pire perch, croaker, ribbon fish, lizz and fish, oil sardines, Mackerel, Lactarius etc). The inland species are carp, pangasous, Milk fish, Mrigel and Rohu.
2. Production: 2 tonnes of finished product per month. This is based on that about 200Kgs of fishes can be handled per day by 10 students. A higher productions is possible depending on the species, size of fish and type of product (headon, headless, gibbed, fillets, steaker etc)