This project is the outcome of a group efforts to whom credit and technical responsibility goes. This project is based on an assignment which was given to course participants and supervised by Dr. Abdel Rahman El Gamal as a part of “Fish Culture Development Training course”. This annual course is organized by the Egyptian International Centre for Agriculture (EICA). The Name and some photos of the team members are shown in subsequent slides.
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• ECONOMICS
CEO
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Jordan

Management Manager
Mr. Alfred Seasal
(Sierra Leone)

Operation Manager
Mr. Adibi Rahiman
(Malaysia)

Development Manager
Mr. Divity Venuc Popal
(India)

Fish Farm Manager
Mr. Aung Zaw Win
(Myanmar)

Financial Manager
Mr. Kaunding Krubally
(Gambia)

Hatchery Manager
Mr. Sola Simmalavong
(Laos)

Marketing Manager
Mr. Frederick Kajwara
(Uganda)
JAWS COOPERATION
PROJECT OBJECTIVES

• To facilitate opportunities for self-employment for members.
• To enhance the livelihood of agricultural farmers.
• To provide technical support to fish farmers on fish marketing.
PROJECT LOCATION

• Andhra Pradesh, India

Freshwater semi-intensive fish culture (10 ha)

Reasons for choosing this location:

• Freshwater fish culture is well-developed at this area (100,000 ha)

• 40% of Indian freshwater fish is produced in this area

• Large market demand
INDIA

INDIA
States and Union Territories

OUR FUTURE PROJECT

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PROJECT JUSTIFICATION

- Black cotton fertile land is available.
- Water required is abundant.
- Land cost is very low.
- Infrastructure facilities are available.
- The mixed culture of major carps has stabilized with maximum production.
- Available financial support from the government and banks.
- Construction and operational cost is low.
- Available skilled labour.
- Good opportunity for domestic and export markets.
REASONS FOR SELECTION OF SPECIES

- Species: *Catla catla, Labeo rohita, Cyprinus carpio*.
- Maximum utilization of natural food as well as supplementary feed.
- No competition among selected species on natural food.
- Fish seed are readily available.
- Efficient feed conversion ratio.
- Good domestic urban and export value.
- Biologically feasible, economically viable and socially acceptable.
POLY Culture Species

Catla catla

Labeo rohita

Cyprinus carpio
CULTURE TYPES

- Medium input (semi-intensive) mixed culture.
- Stocking rate 16500 - 17500/ha.
- Use of organic and inorganic manures.
- Applies supplementary feeding.
- Anticipated fish production is 7500-9500 kg/ha.
PRODUCTION INPUTS

- Fish seed/ha: *catla* 12,000, *rohu* 5,300, *C. carpio* 1,000
- Fertilisers/ha: cattle dung 7.5 tons, chicken manure 1.0 ton
- Lime 1.0 ton/ha, urea 200 kg, single super phosphate 750 kg/ha.
- Feed/ha: oil cake 4.0 tons, rice bran 9.0 tons.
- Source of fish seed: 1st year outside source, 2nd year from own farm.
PROJECT ACTIVITIES

• Survey, site selection and planning.
• Permission and funds mobilization.
• Supervision of construction of fish farm.
• Fish farm management.
• Fish marketing.

Notes:
• Proper planning is important for project success.
• Planning should consider available production and human resources.
SITE SELECTION

Site selection includes:

- Study ecological and physico-chemical nature of water and possible seasonal variation.
- Source and availability of water.
- Maximum and minimum water level in the surrounding area at the time of flood and drought.
- Study the status and/or possible water pollution.
SOIL

- To study soil nature and texture.
- Soil characters:
  a. Soil pH 6.5 – 7.5
  b. Soil nitrogen 50 – 75 mg/100g soil
  c. phosphorus 3 – 6 mg/100g soil
  d. Organic carbon (%) 1.5-2.5
WEATHER CONDITION

- Study following parameters:
  - Temperature
  - Rainfall
  - Evaporation rate
  - Wind force
  - Photoperiod

- Study natural calamities
  - Cyclone
  - Flood
  - Drought
INFRASTRUCTURE FACILITIES (Related to the project)

Including

- Electricity
- Transport
- Communication
- Cold storage
- Ice plant
- Feed industry
- Marketing
- Support from government & research centre
CREDIT FACILITIES

- Self-contribution: US$ 20,000
- Bank credit: US$ 80,000
- Subsidy: US$ 10,000

Total: US$ 110,000
CONSTRUCTION OF FISH FARM

- Layout
- Design
- 10 grow-out ponds (1 ha each)
- 4 rearing ponds (a total of 0.96 ha)
- Office building
- Laboratory
CONSTRUCTION OF CULTURE POND

- Rectangular with trenches
- Bottom – slopping to drainage site
- Sluice opposite & screened
- Arrangement to drainage
POND PREPARATION

Includes:

• Eradication of unwanted organisms
• Drying & plowing
• Liming
• Manuring
• Filling of water
POND PREPARATION

DRIED POND

LIMING
POND FERTILIZATION

- Cattle dung: 1000-1500 kg/ha
- Dried chicken manure: 250-400 kg/ha
- Single Superphosphate: 75 kg/ha
- Urea: 25 kg/ha
- Ratio N:P: 2:1 to 4:1
- C:N: 10:1 to 20:1
WATER MANAGEMENT

Criteria to be watched and considered:

- pH 7.5 – 8.5
- Temperature 27°C – 32°C
- Dissolved oxygen < 5 mg/l
- Secchi disc visibility 25 – 30 cm
- Total alkalinity 80 – 150 mg/l
- Total inorganic nitrogen 0.5 – 1.0 mg/l
- Phosphorus 0.2 – 0.3 mg/l
- Ammonia 0.01ppm
- Visibility brown or light green
MANAGEMENT OF WATER QUALITY

Situation and actions taken:

- Low pH → Liming
- High pH → Agriculture gypsum (CaSO₄)
- Morning & Cloudy weather → Aeration
- Increase D.O, thin algal bloom & reduce ammonia or H₂S → Water exchange
PADDLE WHEEL AERATORS
SUPPLEMENTARY FEEDING

- Rice bran & oil cake
- According body weight (3-5%)
- In winter feed percentage is reduced
FISH SAMPLING

- Through netting
- Monthly intervals
- Checking health condition & fish growth
HEALTH MANAGEMENT

Consider the followings:

• Host
• Pathogen
• Environment
• Prevention is better than cure
• Proper management needed
HARVESTING

• Partial harvesting
• Starvation before harvest
• Complete harvesting
• Marketing
### ANNUAL ACTIVITIES CHART

#### YEAR: 2007

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PROJECT ECONOMICS

Capital investment

- Cost of land $32,000
- Pond construction $23,000
- Farm structures $13,000
- Farm equipment $11,000

- Total $79,000
Recurrent expenditure

- Yearlings and transport $1,700
- Manures $1,700
- Feeds $18,000
- Salary $1,600
- Wages $2,000
- Harvesting charges $1,000
- Others $5,000

Total $31,000
ECONOMIC INDICATORS

Revenue of fish sale
• 90 tons ($1.11/kg) $ 100,000

Expenditures
• Recurring expenditure $ 31,000
• 1/3 of capital investment $ 36,200
• Total $ 67,200

Net profit after recurring expt. and 1/3 capital amount repayment $ 32,800