

PROJECT PROPOSAL

FISH FARMING AND DEVELOPMENT

Request For A Capacity Less Cost Effective Fish Farming
Project in Lake of Kamaran Island, Hodeidah City, Yemen
2022



Fish Farming I – Pond

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BACKGROUND AND JUSTIFICATION

Kamaran Island is the largest Yemeni island in the Red Sea. The 108 km² island is 18 km long and 7 km wide and is strategically located at the southern end of the Red Sea. The coastal waters of Kamaran Island \ are also characterized by their high level of primary and secondary production, making them an important feeding and nursery ground for marine species. The Yemeni marine fisheries, especially on Kamaran Island, have been subjected to overfishing by commercial fishing vessels. Therefore, we seek to implement this project in order to protect marine natural resources and restore their habitats. It is also a means of increasing the economic returns from fisheries agriculture.

After making thorough research and through consultative meetings with the people in the area, We identified fish farming in **lake of Kamaran Island** (large lake 500m² size) as main aspect that can help to reducing hunger and poverty in the developing world. It benefits; both the rural and urban poor.

Lake (Pond)

The fish farming will be in large lake 500m² size.

Irrigation

A pond requires water. The easiest method to fill a pond with water in the Kamaran district, Hodeidah city, Yemen is via shallow-boring up to 150 feet. The Department of Fishery Ministry provides complimentary boring facilities for projects in Hodeidah city because of the poverty level of the people in the region. A boring machine as well as a 5-kva generator is provided by the Fishery Ministry. Stakeholders are required to supply the diesel required to run the generator, which the stakeholders have agreed to do at their own cost.

Fingerlings Fish

The initial fingerlings fish to start the fish farming venture. 5,000 baby fish which are between 15 and 30 days old, and which should be measured at 1 kg. for every 100 fish, for them to be considered healthy. Six types of local



fish will be farming, namely, Shrimps (*Penaeus semisulcatus* and *Metapenaeus monoceros*), cuttlefish (*Sepia pharaonis*), commercial fish (*Mugil cephalus* (Mullet), *Lethrinus lentjanobia* and Cobia (*Rachycentron canadum*)).



Penaeus semisulcatus



Metapenaeus monoceros



Sepia pharaonis



Mugil cephalus



Lethrinus lentjanobia



Cobia (Rachycentron canadum)

Implementation

With the critical mass pre-requisites fulfilled, the actual fish farming will include cultivating baby fish in the smaller pond for usually three months after which they are transferred to the bigger pond. Not all fish are expected to grow to the desired transfer size, and therefore only the fish that are big enough will be transferred from the smaller pond to the bigger pond. Smaller fish are left to feed more and grow bigger in the smaller pond. After approximately another three months in the bigger pond, the fish can be caught and sold. In essence, on the average, a fish farming lifecycle lasts six months in terms of aquaculture.

PROJECT OBJECTIVES



1. The objective of the project is to assess the economic and technical feasibility of implementing low cost/low pressure micro fishing technique in Yemen on a pilot basis in selected water-deficit areas and to introduce the concept of “Kit” to the fishing agriculture sector in Yemen. The project will demonstrate and promote appropriate low cost/low pressure micro fishing techniques, provide training to technicians and fishing on the new techniques, assess their feasibility, and draw lessons and recommendations for long term:

Objectives of the project are:

- Selected number of tools are installed on a selected number of fish landing sites according to the number of people living in the area;
- Selected number of technicians is trained on low cost/low pressure good fishing techniques;
- The performance of the new techniques for one season is monitored; and conclusions and recommendation are drawn on the feasibility of implementation and the possibility of extrapolation to other fishing landing sites.

PROJECT OUTPUTS

1. The expected outputs from this project will be:

First Objective:

- Implement and demonstrate low cost/low fish farming techniques at the local fish farmers' level.
- Plastic water fibred boats;
- water engines to help in the transportation of the personnel who will teach people on the different Islands on the good fish farming methods; and fish farm teaching materials for use by extension workers and fish farmers developed.

Second Objective:

- Train selected fish farmers and technicians/officers from the Local Fisheries Office (LFO) of the Ministry of Agriculture, Fisheries and Animal Husbandry on the techniques, methods and implementation of low cost fish farming methods and systems.
- Thirty or more fish farmers and LFO technicians/officers trained on low cost/low
- fish farming techniques and its use; and
- Technical and general supporting role to fish farming strengthened.

Third Objective:

- Assess economic and technical feasibility of implementing low cost/low fish farming systems.



- Low cost/low fish farming performance monitored for one fish and techniques
- water Landing Site in the area;
- Conclusions on the technical and economic feasibility of low cost fish farming techniques drawn;

Fourth Objective:

- Define a framework of better fish farming methodology development in Yemen especially on island Bahara our major area of concern.

WORK PLAN

- The project will cover several areas (fish landing sites on island Kamaran be undertaken in collaboration with the District Fisheries Office (LFO) of the Ministry of Fisheries within a total duration of 10 months. A detailed work plan with the details of each activity listed below will be prepared at the beginning of the project. **Months 1 to 3.**
- Identify Area counterparts and assign Project Coordinator.
- First visit by Project Manager and the District Fisheries Office and the Project

Technical Consultant.

- Identify field sites where good fish farming techniques could be first implemented.
- Purchase material and equipment required for demonstrating in the low cost fish farming methods. As most were stipulated in the Project Outputs.
- Organize a local workshop in collaboration with the Ministry of Fishery to explain low cost fish farming methods and systems.
- Second visit by the project manager to attend the workshop and prepare setting up one low cost fish farming methodology system at a LFO Research Station.
- Set up and establish one low cost fish farming methodology system at a LFO Research Station. **Months 4 to 6.**
- Third visit by the project manager to supervise setting up systems on sites.
- Set up and establish low cost fish farming project methodology systems on selected sites within the Kamaran island. The approach to be taken would vary according to the local conditions of each site and more than one option or combination of systems could apply.
- Preparation of extension material in collaboration with local counterparts for use by extension officers and fish farmers.
- Fourth visit of the project manager to participate in the preparation of the training activities and the field day.
- Second visit of the Good fish farming methodology Technical Consultant to

- participate in the preparation of the training activities and the field day.
- Identify training needs and organize training of selected staff and fish farmers on low cost fish farming methodology techniques.
 - Conduct Fish Farmers Field Day at the LFO Research Station for other fish farmers to observe the methodology system. **Months 7 to 10**
 - Review the progress of the site methodology systems to sustain the progress of the project.
 - Analyse finding and results and draw preliminary conclusions.
 - Fifth visit of project manager to participate in the preparation and attending the end of project workshop.
 - Third visit of the good Fish Farming Methodology Technical Consultant to participate in the end of project workshop.
 - Organize end of project workshop.
 - Prepare final report and submit terminal statement.
 - Prepare the strategic guidelines for the development of good Fish Farming Methodology Systems in Yemen.

CAPACITY BUILDING COMPONENTS

1. The capacity building effort in this project is demonstrated by the enhancement of the human resource capabilities through the training of staff and fish farmers on appropriate low cost good fish farming methodology techniques.

The training activities include:

- Introductory workshop to explain low cost fish farming methodology techniques.
- In country training on low cost fish farming methodology techniques for national staff and selected fish farmers who will later become trainers for other fish farmers in their own communities.
- Field days for all fish farmers and demonstrations at the Marine Research Authority for interested fish farmers.
- End of project workshop to share findings and results of the project and to draw recommendations.

DISTRICT FISHERIES OFFICE INPUT

Personnel services:

- Consultant-Project Manager with expertise in water resources management and low cost good fish farming methodology development for four months and five missions to island Kamaran.
- Consultant-for technical assistance on Affordable Low cost fish farming Techniques one month and half and three missions to Yemen.



Materials and supplies:

- Materials and supplies of three water fiber Boats.
- Materials and supplies for in workshops.

General operating expenses:

- Costs related to project operation (telephone, fax, photocopying, etc.)
- Reproduction of reports and terminal statement preparation.

Training:

- Cost of One Day Introductory Training Workshop for fish farmers and staff.
- Cost of Workshop for fish farmers, LFO staff, and fish agricultural extension officers.
- Costs for an additional training workshop that may be requested during the Implementation of the project.

Support cost:

- Direct operating costs at the headquarter related to the implementation of the project.

TIMEFRAME

2022	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.
Skill Development Training									
Fish Farming	1.								
Accounting & Management	1.								
Leadership	1.								
Land Rental									
Ponds Preparation									
Manual Labor									
Excavator									
Irrigation	2.								
Shed									
Baby Fish Introduction		3.							



1st inter-pond fish transfer					4.				
1st batch of fish ready for sale								5.	
Inter-pond fish transfer									...
Fish ready for sale									...
Monitoring & Evaluation									...

Milestones:

1. Skill development training complete.
2. Pond ready for introduction of baby fish.
3. Introduction of 1st batch of baby fish.
4. 1st transfer of fish from small pond to big pond.
5. 1st batch of fish ready for sale

PROJECT BUDGET

Input Description	Amount (USD)
Personnel services	7,900
Consultant – Project Manager	5,400
Consultant – technical Support	8,000
Project Coordinator	500
Travel	3,300
Project Manager	1,200
Consultant – Technical Assistant	500
Training	3,200
Training Budget	2,200
Equipment	2,460
Expendable Equipment	1,380
Non – Expendable Equipment	1,080
Materials and supplies	3,800
General Operating Expenses	2,000



Support Costs	5,200
Grand Total	48,120

Monitoring & Evaluation

Monitoring will be performed via regular visits by project coordinator. Passbooks at the working level and spreadsheets at the official level will continue to collect data which can be analyzed on demand. A fish farming expert from the Department of Fishery will also aid us in the monitoring with visits as required. Evaluation checkpoints will be at the initial three-month and six-month stages, in addition to the milestone dates as listed on the timeline. The size and health of the fish will be the main indicators.

Risk Analysis

Fish farming in the region of Kamaran is a relatively low risk venture because it has been tried and tested in the city of Aden ago. The general population would rather be engaged in fish farming as opposed to land farming because of fish farming's better rate of return. However, because of high investment, it is more difficult for the average local to get into efficient fish farming, and therefore is relatively lower risk.

General risk remains in terms of force majeure and/or political disturbances, both of which reigned in 2015, first with the war and then the unofficial blockade, but apart from that, no major risk is at play.

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