A FEASIBILITY STUDY BUSINESS PLAN

ON

FISH FARM

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**INTRODUCTION / EXECUTIVE SUMMARY**

Nigeria like most of the developing countries suffers from protein deficiency in the diet of the people. This problem is becoming more and more acute with the increase in population. Increase in fish production through Aquaculture could be an important source of animal protein. The successful implementation of an aquaculture project depends upon a number of parameters, such as proper selection of site, soil and water quality, project management on scientific lines etc. The present report has been prepared keeping all these parameters in view.

**Purpose**

The purpose of the study is to assess the viability of the establishment of a fish farm at Ibeshe town in Igbogbo-Baiyeku Local Council Development Area in Ikorodu, Lagos state. Nigeria

**Project description**

The fish farm project is for the purpose of producing fish (catfish) for sale. The project would be located at Ibeshe town in Ikorodu, Lagos and would produce fish and fingerlings.

The labor required would be available, particularly the unskilled, which are readily available in the project area. Manual construction would be adopted for the construction of the fishponds because of the economic advantages. There is abundant unskilled manpower in the project environment. The market existing in the area, surrounding the project has not been exploited. The project market is therefore unlimited and all fish produced would be a ready market. The demand for fish exceeds the supply.

Required electric power would be supplied by a 5 KVA generator. The electric supply would be used in pumping water from the borehole.

The project is financially viable and at the envisaged scope of operation (5 years). A short term loan of N 13,500,000 (Thirteen million five hundred thousand Naira), is to be raised. From the second year, the project would generate sufficient cash to sustain production. The loan would be defrayed in the third year of the project.

The project is socio-economically viable. It would create employment and has no discernible hazardous impact on the environment.

There would be no difficulty in the introduction of the technology to be adopted for the project. The manager of the project will be some adequately trained personnel with skills in fish farming.

The projections for the project take care of bills payable from the first year and even at that the profit would be high.

**PROJECT BACKGROUND AND CONCEPT**

Ibeshe is a town in Igbogbo-Baiyeku Local Council Development Area. Igbogbo-Baiyeku Local Council Development Area was created October, 2003 along with other 37 LCDAs and was carved out of Ikorodu Local Government during the administration of Senator Bola Ahmed Tinubu, Former Governor of Lagos State.

Igbogbo-Baiyeku Local Council Development Area has about 70 local areas spread among 5 Wards (CI, C2, C3, C4 and C5) and has a land area 77.62 SQ KM with a vast expanse coastal line and water spaces. Igbogbo Bayeku Local Council Development Area is located at Igbogbo Township. The good people of Igbogbo-Baiyeku LCDA are predominately into farming, fishing and trading.

However, due to various activities which are carried out in the river, its quality has declined over the years and this has resulted in a drop in fishing activities. The river is a source of water supply to several car wash services which carry out their business by the river, releasing detergents and other potentially hazardous substances into the river. The physicochemical characteristics of the river are not conducive for breeding of aquatic organisms. As a result, fish production in the river has dropped and fishing in the river has declined as catch per unit effort is reduced. In order to meet up with demand in the community, fish traders purchase fish from other towns and markets as there is no fish farm in the area.

**Fish market**

The fish farm proposed is expected to supply fish to Ibeshe and its neighboring communities at affordable prices. The town is located in a state with a population of over 20million people. The demand for fish in both towns and cities is huge and some of the fish from the farms can be transported to these places for sale to increase the market for the product.

**Project location**

Prior to the determination of site suitability, a careful consideration has been given to the easy accessibility of sufficient quantity of water, easy accessibility to the site, proper climatic conditions, easy availability of production inputs, socio-economic aspects, marketing channels etc. The project would be located on a 100 x 200m piece of land at Ibeshe town close to the Ibeshe River the water table at this location would be higher and make it easier to drill a borehole. Presently, there is no fish farm in the area and the main decision to locate the proposed fish farm at Ibeshe was based on the fact that the market for the product is large and can be profitable. The cost of the land is considerably low because it is presently not used for any major economic venture.

**PROJECT TECHNICAL FEASIBILITY**

The project would be in two separate compartments: Fish production unit and a hatching unit. The fish production section would be concerned with the production of table size fish for consumption. The layout of production would start with 2 production ponds measuring 25m2 each. In the 1st year of operation, the ponds would be constructed and stocked. The two ponds would have a stocking density of 6,000 catfish fingerlings each, per culture period. The 2 initial production ponds would therefore have total fish density of 12,000 catfish fingerlings when fully stocked. It is expected that total yield would be increased per unit of production. In the second year, 2 additional production ponds measuring 25m2 each would be constructed.

The bio-technical feasibility of the selected species is given as follows:

The catfish belongs to the family Clarinda. This family is divided into two genera: Claries and Heterobranchus. Claries have 8 major species while the latter has 3 species in the southern zone of Nigeria. The former has a single rayed dorsal fin extending almost to the tail; the latter has a rayed dorsal and adipose fin. The Claries family would be used for the project because they feed on wide variety of food ranging from weeds and planktons to insect larvae, snails crustaceans, worms and shellfish. When catfish are stocked at the stocking rates described; with proper feeding, they can grow to an average of 1000 g in a year. The hatchery section starts in the second year of production. At this time, all the fingerlings required for the production ponds would be supplied from the hatchery. In the hatchery, catfish would be artificially induced to spawn by hormonal treatment using pituitary hormone within the hatching units. Catfish matures after 7-10 months at a weight of 200- 500 g. However, spawning would not take place since the final stimulation associated with the rise in water levels and the inundation of marginal areas would not occur. In the hatchery, four female brood fish each weighing 500 g can produce 10% body weight of eggs. The rate of hatchability is estimated at 50% and the survival rate of fry to fingerling at 30%. This means that the hatchery can produce 20,000 fingerlings from the 4 brood fishes, sufficient to meet the fingerling requirements of the production ponds after the initial cropping.

**Project execution plan**

When the project is fully implemented, a total of 1 brooder pond and 2 nursery transition ponds would be constructed. The brooder ponds measure 4×4 m (16 m2) and the nursery/transition ponds measure 3×4 m (12m2). 4 production ponds would also be constructed and stocked for the production ponds, measure 5×5 m (25 m2).

**Risks /challenges**

Power -Ibeshe town is located in a rural area and the supply of power to the area is poor. For the project to be successful, it would rely largely on power supply from the generator which could increase the operational cost.

Water - During the dry season, the water table in the area drops to a low level. This would put a lot of stress on the pumping machine and could result in frequent break downs which would increase the operational cost of the project.

Security -There are security challenges in the area which may result in loses if not properly managed. However, this can be managed by using locals who are conversant with the environment as security personnel.

**ECONOMIC /FINANCIAL PLAN**

Cost of land and fish farm infrastructure development

Activity

Amount (=N=)

A. Cost of land and land development

Land acquisition

2,000,000

Survey of land

100,000

Pond construction

1,000,000

Total

3,100,000

B. Fish farm infrastructure development

Cost of farm house / office

2,000,000

Fencing of the farm

1,500,000

Fish shade building

500,000

Generation of power (5 KVA)

100,000

Water pump

60,000

Bore hole

1,000,000

2 800Litre tanks

500,000

Total

5,660,000

C. Fish production and hatchery materials

Equipment (Nets, water analysis kit etc)

1,000,000

Total

1,000,000

D. Salaries and wages of staff

Project /farm supervisor

600,000

2 Farm assistants

480,000

Security

240,000

Total

1,320,000

E. Variable inputs

12,000 Fingerlings

360,000

Feed

400,000

Organic fertilizer

20,000

Other chemicals

20,000

Transportation

500,000

Total

1,300,000

F. Other operational costs

Fuel

Maintenance on pond

100,000

Maintenance on equipment

200,000

Stationery

50,000

Total

350,000

Grand total

12,730,000

**Operational costs**

The operational costs for the fish farm include the cost of the day-to-day management of the hatching, the wages and salaries of staff and procurement of other operational inputs. The purchases for all the materials making up the hatchery equipment will be made from Ikeja and transported to the project site.

**Salaries and wages**

The estimated total annual expenditure on wages and salaries is estimates at =N=1,320,000.

**Variable costs**

The total variable costs of the project amount to =N=1,300,000 for procurement of fish fingerlings, feed ingredients, inorganic fertilizer, inorganic fertilizer and other chemicals.

**Amortization of cost**

All of the capital expenditure would be made in the 1st year of implementation of the project. Already, land acquisition, land surveying and fish designing have been completed. It shows that the 1st year of the project, a total expenditure of (=N=12,730,000) would be made to take care of the operating costs of the project. A total of =N=2,970,000 would be needed for the operational expenditure of the project. After that, the project would be capable of generating sufficient funds to take care of all the operational expenditures.

**ESTIMATED REVENUE**

For the purpose of this feasibility report, the revenue expected is restricted to the operation of the production ponds. It is however necessary to mention that the hatchery ponds would produce the fingerlings required for the production ponds after the 1st year of operation. The production ponds when fully stocked would have a total fish density of 12,000 fingerlings, making provision for mortality at 50% mature fishes. The fish harvested would be 6,000 kg. It is expected that catfish would sell for =N=900 per kg. Sales and total estimated revenue for the 1st year of production would therefore, is =N=5,400,000. With a modest estimated annual increase in the prices of fish of 10%, the estimated revenue accruing from the project for the first 5 years would be as shown in

Year

Income (=N=)

1

5,400,000

2

5,940,000

3

6,534,000

4

7,187,400

5

7,906,140

The Farm /project supervisor would be trained in fisheries and have acquired skills to provide technical and specialized leadership needed for the management of the fishponds. He would be personally responsible for the day to day running of the fish farm. The positions of the farm assistants would be occupied by men/women who have acquired some form of formal or informal experience in fish farm management. It is also expected that they would be trained practically on the job.

**CONCLUSION**

The fish farm, when in full operation would have tremendous economic and socio economic well-being of the people in in Igbogbo-Baiyeku Local Council Development Area and the entire Ikorodu zone. Fish has become a very scarce commodity because of the ecological changes due to changes in climate. The scarcity has also made fish very expensive and unaffordable to majority of the population in the area. This has resulted in serious deficiency in the intake of protein by the people in the area. The prices of fish produced in the farm would be cheap relative to the present supply. This can aid the increased intake of protein by majority of the people as it would be affordable and accessible. The project would provide direct employment for people for this operation. This is a significant contribution to the economic well-being of the people and social improvement of the project environment. The fish farm would be a highly profitable project which would generate sufficient cash to sustain production from the second year. The profits from the project would be able to repay the loan and interest within the first five years.