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DEPARTMENT: MECHANICAL ENGINEERING

LEVEL: 200

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1. Prepare a business plan on a chosen agricultural enterprise.

ANSWER

Fish farming as well as other agricultural enterprise is an important aspect of the economy or the nation as a whole. Fish provides nutrients and micronutrients that are essential to physical development especially in children and are important part of a healthy diet. Globally, more than 250 million people depend directly on fisheries and aquaculture for their livelihoods and millions are employed in fishery. The very poor often rely on fishing as a primary source of income. Improving the productivity of fisheries and aquaculture is vital to reducing hunger and poverty for millions in the developing world. Also, productive fisheries and aquaculture improve food and nutrition security, increase income and improve livelihoods, promote economic growth and protect our environment and natural resources. Some economic importance of fish includes;

- **Food value:** 65% of the raw weight of fish is eaten compared with 50% of chicken and pigs and 40% of goat. The total estimated fish production of the world as at 2012 was 158 million.
- **Nutritive value:** Fish is highly nutritious. The protein content in fishes varies from 15-30% on wet weight basis and 60-80% on dry weight basis. The protein of fish is highly digestible and with well- balanced amino acids. Fishes are low in cholesterol and fat. It is also a good source of vitamins A, B and D and also offers a good source of calcium, iodine , fluorine , magnesium and zinc.

- **Medicinal value:** Fish is low in fat, high in protein and an excellent source of Omega-3 fatty acids. Regular consumption of fish can reduce the risk of various diseases and disorders.
- **Food supply for human**
- **For ornamental purposes**

A FEASIBILITY REPORT FOR THE DEVELOPMENT OF A FISHERY PLAN AT ATAN OFFOT, AKWA IBOM STATE, NIGERIA

INTRODUCTION/ EXECUTIVE SUMMARY

Okon's fishing industry and Aquaculture LLC is a world class and licensed Fish and Seafood Aquaculture Company that will be based in a riverine area in Atan Offot , Akwa Ibom State, Nigeria. We have carried out our detailed market research and feasibility studies. Our fish and seafood farm is going to be a standard fish and seafood farm hence will be involved in raising finfish(eg catfish), raising and harvesting shellfish(eg oysters), raising and harvesting ornamental fish(eg tropical fish), raising and harvesting aquaculture species to augment or replenish wild habitats, and raising and harvesting other aquaculture(example turtles).

PROJECT DESCRIPTION

The fishery plan is for the purpose of producing different types of fish and selling them.

The labour 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. The market existing in the area has not been exploited thus, the project market is therefore unlimited and all fish would be a ready market. The demand for fish exceeds the supply.

Required electric power would be supplied by a 6Kva generator. The electric supply would be used in pumping water from the borehole.

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

PROJECT LOCATION

A careful consideration has been given to the easy accessibility of sufficient quantity of water, easy accessibility to the site, proper climatic conditions, easy accessibility of production inputs, socio-economic aspects, marketing channels, among others. The project would be located on a 100 by 200m piece of land at Atan Offot near the stadium. Currently, there is no fish farm in the area and the main decision to locate the proposed fish farm at Atan Offot was based on the fact that the market for the product is large and can be profitable. Also, the cost of the land is considerably low because it is presently not used for any major economic venture.

PROJECT TECHNICAL FEASIBILITY

The project is technically feasible. The project would be in two distinct compartments (fish production and a hatching unit). The fish production section would be concerned with the production of table size fishes for consumption. The layout of the production would start with two production ponds measuring 25m² each. In the first year of operation, the ponds would be constructed and stocked. The two initial ponds would have a total fish density of 12,000 catfish fingerlings when stocked. In the second year, two additional production ponds measuring 25m² each would be constructed.

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 this section, the catfish would be artificially induced to spawn by hormonal treatment using pituitary hormone within the hatching units. In the hatchery, four female brood fish each weighing 500g ca produce 10% body weight of eggs. The rate of hatchability is estimated at 50% and the survival rate of fry to fingerling at 30% which means that the hatchery can produce 20,000 fingerlings from the 4 brood fishes which is sufficient to meet the fingerling requirements of the production ponds after the initial cropping.

PROJECT EXECUTION PLAN

Once the project is fully implanted, a total of 1 brooder and 2 nursery transition ponds would be constructed. The brooder ponds measure 4 by 4m and the nursery ponds measure 3 by 4m. four production ponds would also be constructed and stocked for the production ponds.

PROFITABILITY

Technical, scientific and financial based solutions will be employed to hedge against risks and safeguard profit.

PROJECT TIMELINE

The project will be completed within a year preferably June ,2015 to June, 2016 because land option and clearing is done during the dry season.

ECONOMIC/FINANCIAL PLAN

COST OF LAND AND FISH FARM INFRASTRUCTURE DEVELOPMENT

ACTIVITY	AMOUNT(=N=)
A. Cost of land and 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	2,000,000
Fencing of the farm	1,500,000
Fish shade building	500,000
Generation of power	100,000
Water pump	60,000
Borehole	1,000,000
2 800litre tanks	500,000
TOTAL	5,660,000
C. Fish production and hatchery materials	
Equipment(nets)	1,000,000
TOTAL	1,000,000
D. Salaries and wages of staff	

Farm supervisor	500,000
Farm assistants	280,000
Security	240,000
TOTAL	1,020,000
E. Variable inputs	
12,000 fingerlings	360,000
Feed	200,000
Organic fertilizer	15,000
Transportation	400,000
TOTAL	975,000
F. Other costs	
Fuel	50,000
Maintenance of pond	100,000
Maintenance of equipments	150,000
Stationery	30,000
TOTAL	330,000
GRAND TOTAL	12,085,000

OPERATIONAL COSTS

Includes the cost of the day to day management of the hatching, the wages and salaries of staff and procurements of the other operational inputs.

CONCLUSION

The project is technically feasible and commercially viable. It is therefore recommended for funding. The fish farm when in full operation would have tremendous economic and socio economic well-being of the people in Atan Offot. The fish farm would be a highly profitable project which would generate sufficient cash to sustain production from the second year.

