# HUAYA AQUACULTURE COMPANY LIMITED

## A proposed business plan on cage fish farming in Misungwi, Mwanza

**March , 2026**

# 1. CHAPTER ONE

## 1.1 Introduction

Tanzania is blessed with fisheries resources from marine, freshwater, riverine and wetland species, according to a Study Report *"The Tanzania Fisheries Sector: Challenges and Opportunities"* by the Ministry of Agriculture, Livestock and Fisheries (2016). By making use of these resources, the sector provides direct employment of about 183,800 fishers. More than4, 000,000 people such as boat builders, fish processors, net and engine repairers are indirectly employed. It provides income for local people from foreign earnings, food for coastal and up-country communities and also contributes to GDP (2.4% in 2015). This makes the country one of the greatest fisheries nations in Africa, ranking in the top 10in terms of total capture and fisheries production. The fisheries resources in Tanzania are currently exploited using the open access principle, through a licensing system and community participation in fisheries management.

## 1.2 The Fishery Sector

Tanzania is endowed with rich marine and inland waters that yield a wide range of living aquatic resources, providing livelihoods, food security, export revenues, and potential further economic development. The fisheries can be divided into the following subsectors: marine and inland capture fisheries, aquaculture, and fish processing. The scale of operations ranges from small-scale subsistence fishing to industrial fish processing. There is a vibrant export market, exploited by small-scale fish processors and traders serving the regional market, and by large fish processors selling into international markets.

Over the last decade, Tanzania fisheries production has been in the range of325,000 to 380,000 tons per annum. About 85% is from inland fisheries, 14%from marine fisheries and just 1% from aquaculture. In 2014, there were some183,800 people engaged in fishing , accounting for about 0.7% of the work force, with a large, but unknown number, also engaged in fish trading and processing.

FISH PRODUCTION IN TANZANIA 2024

| SOURCE | METRIC TONNES | AS A % OF TOTAL |
|---|---|---|
| Traditional Fishing methods | 429,168 | 91% |
| Aquaculture | 43,411 | 9% |
| **TOTAL CATCH** | **472,579** | **100%** |

*Source: FAO Statistics 2024*

### 1.2.1 : Fisheries Sectors Institutions

The Ministry of Livestock and Fisheries is responsible for the preparation, implementation, monitoring, and reviewing of national fisheries policies and regulatory frameworks in Tanzania. The Department of Fisheries Development within the MLF is responsible for the management of inland fisheries, and for marine fisheries with in the territorial waters of the mainland.

In addition, several institutions work in the fisheries sector in research, training and development roles. The Tanzania Fisheries Research Institute (TAFIRI) varies out research in Fisheries and has its headquarters in Dar es Salaam and offices in Mwanza, Kigoma and Kyela. The institute under takes research in freshwater and marine capture fisheries, aquaculture and Mari culture, fish processing and quality as well as socio-economic studies.

The Mbegani Fisheries Development Centre and Nyegezi Fisheries Institute (Mwanza) operate under Fisheries Education Training Agency (FETA). They offer technical training courses in fishing technology, aquaculture, fish processing and quality control, coastal resources management, and other subjects relevant to the development needs of the fishery sector.

### 1.2.1 Tradional Fisheries Methods

Tradional fisheries methods accounted for about 91% of the national fish production in 2014.Lake Victoria and Lake Tanganyika are the most important lakes from a fishery point of view, accounting for about 94% of the total inland fish production. Lake Victoria, according to the Lake Victoria Fisheries Organization, is the most productive freshwater fishery in Africa.

The inland fisheries are currently exploited by an estimated 132,982 fishers, operating 42,288

(mostly very small) vessels, and over the last 15 years have produced an average overall catch of 296,370 tons. Of the three lakes, Lake Victoria accounted for about 63% of all fish production from fresh water capture fisheries during 2013, Lake Tanganyika contributed about 18% and Lake Nyasa about 3%. The main freshwater species of commercial interest are the Nile Perch *(Lates niloticus),* Nile Tilapia *(Oreochromis niloticus),* and fresh water sardine or Dagaa *(Rastrineobolaargentea).*

### 1.3 Aquaculture in Tanzania

Aquaculture, in Tanzania started in the early 1950s with experiments with tilapia in pond culture. These days the sector includes tilapia, trout, and cat fish (in fresh water), and a small marine aquaculture (mariculture) sector producing milk fish and prawns. Tanzania has considerable potential for increasing the contribution of aquaculture, given the extensive lake and other water resources, ideal temperatures and availability of raw materials for feed.

#### 1.3.1 Production

Aquaculture production is static at about 4,000 tons per year, three quarters of which is tilapia. The sector generates considerable employment, with estimated 14,100 engaged in fresh water fish farming and 3,000 in the marine sector. Apart from a few notable examples, aquaculture in Tanzania is primarily a small-scale activity, with small ponds, little formal management and low productivity, reflecting it's largely subsistence nature.

However, there are some larger vertically integrated production units with cage farming in Lake Victoria, and some larger ponds for shrimp production in coastal areas. Production of Tilapia in cages has been introduced in Bunda district and some parts of the lake in Mwanza and Bukoba. There is one major joint venture between Danish and a Tanzanian company, and several training institutions, such as FETA, also operate farms. These producers have developed their own feed supply and hatchery facilities.

#### 1.3.1.1 Constraints

- ✓ Lack of Good Quality Supply of Finger lings

There are nine hatcheries for tilapia in operation (three of them being government owned and operated) with production reaching lightly over 5,000,000 fingerlings, against a demand estimated by the Department of Fisheries Development to be over 30,000,000 fingerlings country wide. There is an apparent lack of good quality fry and the excess demand over supply results in lower quality and higher levels of mortality, under mining productivity.

- ✓ Lack of Good Quality Supply of Feeds

Feed supply is another constraint. There is one main fish feed producer and supplier based in Dar es Salaam. Government supports the distribution of affordable fish feed by subsidizing 85% of the commercial selling price to fish farmers. The company also supplies juvenile tilapia for grow-out. There are a few commercial operators with vertically integrated facilities, which include small-scale fish feed mills, using locally available raw materials such as fish meal (from dagaa), soya beans, sun flower oil, cassava flour, wheat and maize bran. Some feeds are also imported directly by larger producers, to ensure better quality and productivity. Government has strongly supported investment in aquaculture training, with degree programs at Sokoine University of Agriculture and the University of Dar es Salaam, and skills training at Mbegani Fisheries Development Centre and FETA.

- ✓ **Complexity of Multiple Licensing Requirements in Cage Culture**

Unlike Uganda and Kenya, cage culture in Lake Victoria has not taken off at commercial levels, due to the reported complexity of multiple licensing requirements with several agencies, namely the National Environment Management Council, Ministry of Environment and the Ministry of Agriculture, Livestock and Fisheries. Tanzania's aquaculture production equates to about 0.2% of fish supplies for human consumption in the country. In Kenya aquaculture contributes 1.4% and in Uganda it contributes 6.5%. Egypt, with considerably poorer production conditions than any of these countries, generates 80% of its fish supplies from aquaculture.

### 1.4 About Tilapia in Tanzania

Whilst Nile perch and dagaa dominate the inland fisheries, tilapia also makes an important contribution and it accounts for 11% of the Lake Victoria catch. Fresh tilapia is the preferred and most widely consumed fresh fish product in Tanzania, and the government has banned the exports of tilapia from the capture fishery as a food security measure. Tilapia is mainly consumed in a fresh form, but smoking and salting is widely practiced, especially by island communities that lack quick means of transport to the main land markets. Due to its high popularity locally and regionally, the lakeside price of Tilapia per kg is higher than that of Nile perch. The high prices have started to bring in imports of tilapia fillets, with increasing quantities of tilapia entering Tanzania from China.

### 1.5 Fisheries and Aquaculture Policy and Implementation

The Government has prioritized development of the agricultural and fisheries sectors, and in October 2015 the MALF published the National Fisheries Policy2015, which sets out the vision of: “By 2025 to have a progressive fisheries sector contributing significantly to socio-economic development through sustainable utilization of fisheries resources while conserving the environment.“ The overall objective of the National Fisheries Policy is to develop a robust, competitive and efficient fisheries sector that contributes to food security and nutrition, growth of the national economy, and improvement of the wellbeing of fisheries stakeholders while conserving the environment. Key documents, which guide the implementation of policy, are the Fisheries Sector Development Program, the National Aquaculture Development Strategy and Fisheries Management Plans for the prawn, octopus, tuna and small-scale artisanal pelagic fisheries. The existing legal and regulatory frame work applicable to the fisheries sector is expressed in several legal measures enacted in the Fisheries Act CAP279 of 2003, the Marine Parks and Reserves Act CAP146, the Deep-Sea Fishing Authority Act CAP388; and the Tanzania Fisheries Research Institute (TAFIRI) Act CAP 280, and other related laws and regulations. The Fisheries Act is presently under revision, to better reflect international best practices in fisheries governance and management. The Fisheries Regulations 2009 set out the detailed technical provisions applicable to the sector.

# CHAPTER TWO: PROJECT OVERVIEW

## 2.1 The Project Concept

The project entails establishing modern fully tilapia cage fish farm in Lake Victoria waters in Ilemela District. The cage fish farm will comprise of three (3) major components:

- ✓ Development of breeding ponds for the production of the highest quality sex- controlled (all males) 1.0-gram fingerlings for own requirements and sell the excess production;
- ✓ Import and install 100 fish farm cages in Lake Victoria to p roduce portion size (400-500grams at an average grow out period of 4 -5 months , conduct processing and packaging the fish so produced for sale in the local market, surrounding E.AC community member states and beyond;
- ✓ Establish a fish feed mill for production of fish meal(including floating pellets)

### 2.1.1 Location and Infrastructure

The proposed project will be located in Plot No 117 - 118 Block No.16AB Isamilo, Misungwi District. The project has acquired land in Isamilo area planned for establishment of the factory, storage, offices, fish breeding ponds and hatcheries and residential for key staff. The site is accessible by Tamack road from Mwanza town to Misungwi and 2 km of rough road to the site. It is connected to the national grid electricity. Water will be drawn from the lake.

### 2.1.2 Ownership

The project is promoted by **M/S Huaya Aquaculture Company Limited**, a locally registered company under Companies Act, 2002 with Certificate of Incorporation No: 191573137 dated 05$^{th}$ day of December, 2025 formed with the main objective of undertaking fish farming activities in Tanzania. The Company is registered with authorized share capital of Tshs 500,000,000/= divided into 5,000 ordinary shares of Tshs 100,000/=each. The shareholders are three (3) Chinese nationals with respective shareholding as shown below:

**COMPANY SHAREHOLDERS AND SHAREHOLDING STRUCTURE**

| | NAME AND ADDRESS OF SHAREHOLDER | NUMBER OF SHARES TAKEN BY EACH | NATIONALITY |
|---|---|---|---|
| 1 | **LIN Xing**<br>77 Zixia Village,Suping Area,Pingtan Country Fujian Province, China. | 4250 ~ (85%) | Chinese |
| 2 | **Xue Liqiang**<br>260 Baisheng Village, Suping Area,Pingtan Country Fujian Province, China. | 500 ~ (10%) | Chinese |
| 3 | **Lin Longbin**<br>Room Number 202 Building No 4,Fukui garden,Tancheng Town, Pingtan Country Fujian Province, China. | 250 ~ (5%) | Chinese |
| | **TOTAL** | **100** | |

### 2.1.3 Planned Activities

As mentioned elsewhere, the project has three principal activities: breeding tilapia fish to produce 1.0-gram sex-controlled fingerlings; grow up all-male fingerlings in cages to portion size fish (400to500grams), fish processing and packaging for both domestic and local market.to the market. Specifically, the company plans to do the following in the next 4years:

i. Complete land acquisition and registration processes;
ii. Develop a cage fish farm with a maximum of 100 cages to produce all-male sex-controlled tilapia
iii. Construct project buildings, storage facilities and related civil works;
iv. Procure and install new ultra-modern plant machineries and equipment for fish processing and production of own top quality fish feeds;
v. Procure new specialized fish transportation and raw materials trucks and administration vehicles.

### 2.1.4 Strategies to be employed

In order to realize the planned activities, the company will use the following strategies:

i. Complete land acquisition negotiations as well as obtaining licenses, permits and approvals from relevant authorities;

ii. Develop fifteen (10) Tilapia Fish Breeding Ponds to produce top quality fingerlings at the ratio of one (1) male to three (3) females. Total females in one pond are estimated at 600. The breeding stock will be obtained from Lake Victoria.

iii. Develop fish feed mill to produce top quality feed mill to satisfy the demand.

iv. Construct at the project site processing and storage buildings feed mill factory building and develop necessary civil works structures to accommodate all the proposed project facilities.

v. Procure facilities necessary for production and distribution activities. This will include the following:

vi. Procurement and installation of refrigeration equipment/system and compressors, cold rooms, IQF (Individually Quick Freezing) Plants; Processing Line Equipment (Blast and Flake Ice Plants);

vii. Development of water treatment plant/effluent water plants,

viii. Development of laboratory for quality analysis;

ix. Establish a workshop for service and maintenance of plant equipment and transportation facilities and procurement of engineering equipment;

x. Procurement of processing equipment;

xi. Procurement and installation of a new heavy duty Standby Electric Power Generator.

xii. Identify and establish fish distribution points and external markets;

## 2.2 Utilities and Other supporting Facilities

The realization of the project development requires successful completion of a number of necessary activities and facilities to enable a successful development of the project. Strategic and situational analysis of project, the project needs reliable supplies of energy, water, transportation, telecommunications services, waste disposal and other services. The regional government under Mwanza Urban Water Supply Authority" and TANESCO has distributed power and water to ensure water network reaches peri urban areas especially where the project will be located. The following are reliable utilities found at the site;

### A. Electricity and water supply

The proposed site will be supplied with industrial production 2-phase standard power supply from Tanzania Electric Supply Company (TANESCO), the electricity is available through the National Grid Line. As part of project budget, the factory will be installed with a stand by generator with a capacity of 50KVA that will be installed for power supply. Solar energy will be alternative source for administration and other miscellaneous activities and not processing activities.

### B. Transportation network and communication system

The proposed project is located in Plot No 10 Block G Igoma which is connected to the nearby District by good road passable throughout the year the project is accessible in all mean of ground transport, such as heavy vehicles, Light Vehicle and public transports. The mobile tower operators and service providers available to the project area are such as Vodacom, Tigo, Airtel and Halotel The particular business communication system with external world/entities is expected to improve once the company becomes operational. The National Fibre Optical line transmission is closer the

project area, actually just close to project area.

### 2.3 The Project Cost and Financing Pattern

The proposed project is estimated to cost a total of USD 1,500,000 which includes 75% (1,125,000USD) owner's equity and long-term loan of 25% (375,000USD) as proceeds from capital contribution of the project.

| | EQUITY + LOAN | USD |
|---|---|---|
| 1 | **EQUITY (75%)** | **1,125,000/=** |
| 2 | **LOAN (25%)** | **375,000/=** |
| | **TOTAL FINANCING** | **1,500,000** |

## 2.4 Business Plan Objectives

The objectives of this study are three-fold. First is to determine the viability of the proposed integrated project and serve as a business plan for the company's development program. Secondly, it is meant to facilitate initial Joint-venture process to local and Chinese investors.
Thirdly, the business plan will act as a supporting document in the company's application for TISEZA Certificate of Incentives so as to access exemptions on duties, VAT deferments and other benefits and protections as statutorily provided for under Investment Act .

## 2.5 Technical aspect and related cost

### 2.5.1. Land acquisition and Buildings

The project is located in Isamilo - Misungwi, Mwanza. The project implementors have bought a piece of land where office building, ponds, processing area and cold storage facilities will be set. The total value of land is 350,000 USD. The cost of building is approximated to be around 150,000 USD. Making the total value of land and building to be 500,000 USD.

### 2.5.2. Machinery and Equipment.

Proper machinery and equipment selection is one of the key problems in the production of high-quality products in Tanzania. To increase effectiveness and production efficiency one needs to have a modern technology machinery. In view of the foregoing, an effort has been made to choose from modern technological alternatives, a level that strikes a balance between fixed costs based on depreciation and variable costs based essentially on wages.
While working out details of equipment required, it has been assumed that the factory will work 300 days in a year. The projects machinery and equipment including the cold storage facilities for the final products will be sourced from China. The total cost of machinery and equipment's are estimated to be 450,000USD.

### 2.5.3. Motor Vehicles

The project is anticipated to purchase motor vehicles easy transportation of products from one place to the other, this will include cold storage trucks of different size small vehicles and large trucks.Total cost of trucks is estimated to be 250,000 USD in the initial period of the project.

### 2.5.4. Furniture & Fittings and office equipment's

The project building and structures are not enough to run smoothly project implementations; promoters during assessment keep asides a total budget of 1,000USD. The cost of furniture and fittings. Apart from furniture and office equipment, the project will allocate 19,000USD for unforeseen other office facilities in case the budget goes above limit.

### 2.5.5. Pre-Operational Expenses and initial working capital

Under pre-operational expenses are considered costs like company formation, preliminary project studies, business plan preparation costs, licenses, permits and authorization, including processing of Incentives, legal fees, etc set aside of 20,000USD. While 170,000USD for Initial working capital of the project which includes initial imports of consumable goods and material estimated to last for the 1st three months of operations. Otherwise, raw materials will generally be maintained at one month's stock and debtors at one month's sales volume total 190,000USD set aside.

### 2.5.6. Project Financing

The project costs, including fixed costs (machinery, equipment, building renovations, motor vehicles, office furniture and equipment and pre-operation expenses will be financed by a combination of bank term loan and shareholders own resources. Working capital requirements will be financed by short term bank financing in form of overdraft facility:

### 2.5.7. Operating and Administrative Costs

The major operating costs are salaries, wages and allowances; and food and beverages. Consumable goods and material like fish feed, administrative expenses, fuel and lubricants, general cleaness and security, uniforms and other related goods, insurance, licensing, tax, utilities have been stipulated to this report (see income statement Annex I) total operational and administrative cost

### 2.5.8. Auxiliary Materials/ services

Falling under this category of factory, utilities and service facilities must be considered. Utilities and service facilities that will need to be provided in this plant are as follows:

(i) Workshop
(ii) Electric power
(iii) Water supply
(iv) Miscellaneous facilities {Canteen; First Aid Kit, Storage and transport and Office Facilities}

### (i) Workshop

It is necessary to make provision for a small workshop in the factory premises so that certain maintenance operations could be carried out following sudden breakdowns and major routine matters. The facility will comprise of necessary machines like small centre lathe, drilling machine, welding set, soldering and gas-cutting equipment including complete electrical kit to take care of necessary electrical maintenance as well as to replace worn-out parts and periodic oil and greases needs for the factory. Equipment provision has been restricted to the minimum.

### (ii) Electric Power and Generator

The proposed site will be supplied with industrial production 3-phase standard power supply from Tanzania Electric Supply Company (TANESCO), the electricity is available through the National Grid Line from Mwanza Region. As part of an alternative power supply, the factory will heavy duty 50KVA power generator automated generator that will be connected to the all-necessary factory compound for standby power supply. The factory will install an online UPS system that secures clean and uninterrupted power free of surges, brownouts, fluctuations and other power problems.

### (iii) Water Supply

Apart from the needs of electric power, water is also required for the actual process and other social needs. The proposed site has close to water network, the agency is major supplier of water to urban and peri urban area in the city.

### (iv) Miscellaneous Facilities e.g. First Aid Kit, Storage and Transport, Office Facilities etc

- Provision has been made in the project costs for necessary facilities for external telephones and fire alarm system;
- Sickness and ill-health are recognized to be among the cause of absenteeism and low morale leading to decreased provision of factory, increased waste and bad employee-management relations. Therefore, necessary provision has been made for the canteen and first aid facilities in case of accidents, sudden sickness etc.
- Storage and transport needs of the factory have been duly recognized and been attempted mostly manual. Regarding transport, 3 light vehicles will be purchased and some will be hired during the start of project
- Necessary provision for furniture and office equipment has been made in the Capital Cost estimates.

## 2.5.9. Waste management for the project

In order to create a sustainable society, it is necessary to develop effective utilization of all sorts of wastes. One of the major wastes from our project site is chemicals used in the manufacturing of soap and detergents. The mix of chemical and water waste will be treated before disposing to avoid effects to the living organisms. In modern times, environmental protection is being implemented not because it is enforced law, but as an administrative philosophy.

**Project investment summary.**

| INVESTMENT SUMMARY | | | | |
|---|---|---|---|---|
| S/NO. | CAPITAL ITEM | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST (USD) |
| NB | ALL FIGURES IN "USD" | | | |
| | A. LAND AND BUILDINGS | | | |
| 1 | Land Acquisition | 4000+ | $M^2$ | 350,000 |
| 2 | Building | 100 | $M^2$ | 150,000 |
| | SUB TOTAL | | | 500,000 |
| | B. MACHINERY EQUIPMENT | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST USD |
| 11 | Plant and Machineries | 1 | set | 300,000 |
| 12 | Other equipments | 5 | unit | 150,000 |
| | SUB TOTAL | | | 450,000 |
| | C. MOTOR VEHICLES | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST USD |
| 28 | Trucks | 2 | Unit | 240,000 |
| 29 | Light Vehicles | 5 | unit | 100,000 |
| | SUB TOTAL | 4 | | 340,000 |
| | D. FURNITURE | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST USD |
| 30 | Tables | 20 | unit | 400 |
| 31 | Office Furniture | set in lump sum | | 600 |
| | SUB TOTAL | | | 1,000 |
| | E.OTHER COST/CHARGES | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST USD |
| 32 | Contiguous | | | 19,000 |
| | SUB TOTAL | | | 19,000 |
| | TOTAL FIXED ASSET | | | 1,310,000 |
| | F. CURRENT ASSETS | No. OF UNITS | UNIT OF MEASURE | ESTIMATED COST USD |
| 33 | Pre operational expenses | | | 20,000 |
| 34 | Initial working capital | | | 170,000 |
| | SUB TOTAL | | | 190,000 |
| | | | | |
| | TOTAL INVESTMENT | | | 1,500,000 |

### 2.6 Production Process

Fish fingerlings are produced in breeding ponds where the parent stock will be obtained from Lake Victoria. The fingerlings are treated with hormones through feeds to ensure only males are produced. Fingerlings are transferred to the cages at the age of 26 days when they are1.0 grams on average. The fingerlings are fed with top quality fish meal for four months when they will have grown to between 400 to 500 grams which is the standard market size. Thereafter,

tilapia fish will be harvested and taken to the processing building. Here they will be cleaned, ready for packaging. Processing capacity is estimated at 40 tons per day.

### 2.7 Packaging and Storage

Whole fish will be packaged in Styrofoam cartons, each carton 10kgs. One refrigerated container will thus carry 2,500 cartons. The products will then be chilled at minus 30 degrees centigrade before being transferred and stored in cold room below minus 18 degrees centigrade.

### 2.8 Production Capacity

The project will initially install approximately **100 round cages**, each with an estimated volume of **600–650 cubic meters**, designed to ensure optimal stocking density, water circulation, and efficient feed utilization. Each cage will be stocked with approximately **12,000 mono-sex fingerlings**, with an expected survival rate of about **85%** under proper management practices. This results in approximately **10,200 fish harvested per cage per cycle**.

At an average harvest weight of **0.45 kilograms per fish**, each cage is expected to produce approximately **4.6 metric tons per production cycle**. With an estimated **2 production cycles per year**, each cage will produce approximately **9.2metric tons annually**. At an initial capacity of 100 cages, total annual production is projected to be 920 Metric Tons of Tilapia per year.

### 2.9 Revenue Estimates

Based on prevailing market conditions, the farm-gate price of tilapia is conservatively estimated at approximately **TSh 5,500 per kilogram** (equivalent to about **USD 2.2 per kg**), reflecting current wholesale prices in major urban markets. At an annual production level of approximately 420,000 kilograms, the project is expected to generate total annual revenues of approximately **TSh 2.02 billion**, equivalent to about **USD 920,000 per annum** from fish sales.

In this initial phase, revenue will be derived almost entirely from the sale of fresh fish, as the project will not yet engage in large-scale fingerling sales or commercial feed production. These additional revenue streams may be introduced in later phases once the business expands and integrates upstream and downstream operations

### 2.10 Production Costs

Fish production costs are largely driven by feed, which typically accounts for the largest share of operating expenses. Under standard aquaculture practices, it is estimated that approximately **1.3 kilograms of feed are required to produce 1 kilogram of fish**, reflecting an efficient feed conversion ratio under proper farm management. Based on current market prices, the cost of feed is estimated at approximately **TSh 2,500 per kilogram**, resulting in a feed cost of approximately **TSh 3,250 per kilogram of fish produced**.

At an annual production volume of 920,000 kilograms, the total feed requirement is estimated at approximately 1,196,000 kilograms per year. This translates into an annual feed cost of approximately **TSh 2.99 billion** (equivalent to about **USD1,200,000**). Additional operating costs, including labor, maintenance, fingerlings, logistics, and farm management, will be incurred but are expected to remain within manageable levels relative to revenue, allowing the project to achieve healthy operating margins.

### 2.11 Employment

The project envisages employing estimated number of 100 people among whom 6 will be foreign expatriate staff. Of the remaining 94 local employees,44 will be skilled while 50 will be casual /unskilled workers.

### 2.12 Project Organization, Management and Labor Requirement

The project will be managed through the Board of Directors consisting of 4 members. The Board will formulate policy and offer strategic business guidance to management and regularly monitor and evaluate performance of the company.

The day to day management of the project will be vested in the Management Team. The Management Team will comprise of the General Manager who will be the overall in-charge of the project. The General Manager will be assisted by Deputy General Manager. The General Manager and his deputy will be assisted by three (3) Heads of Department: Production Manager, Marketing Manager and Finance & Administration Manager. These will in turn be supported by qualified personnel in their areas of specializations.

# CHAPTER THREE

## 3.1 Market Evaluation

### 3.1.1 Market and Marketing Aspects

The project targets both the local market and the E.A Community member states and beyond. The export market is not considered for the time being.

### 3.1.2 Competition

Cage fish farming has officially been allowed by the government in recent years. So far, there are only a few large commercial tilapia fish farming projects in the country. The most notable project is Ruvu Fish Farm located in Bagamoyo, Coast region which is a joint venture between a Tanzanian and a Danish partner with support from DANIDA. The project is expected to produce 450 tons of quality tilapia fish per year. However, this project uses ponds. Cage fish farming is rapidly expanding in Lake Victoria waters. The biggest cage fish farm with in Tanzania borders is located at Bulamba Area, Bunda District under the ownership of JKT 822KJ- Bulamba Detach. The Bulamba JKT has to-date developed more than 50 cages A few more cage farms have started appearing in Ilemela District.

It is therefore evident that there is no serious competition in cage fish farming, considering the fact that tilapia fish demand in the country is very high compared to available supply.

## 3.2 Financial Analysis

### 3.2.1 Financial Assumptions

The estimated capital cost and basic operating assumptions are summarized in the financial projections as shown in Annexure I to XI. In the financial analysis the following major assumptions have been taken into considerations:

- ✓ The financial projections are for 5 years.
- ✓ All financial figures have been quoted in United States Dollar at US$1=2,500/=TShs.
- ✓ Total capital investment cost is estimated at US$1,500,000.
- ✓ The Initial Working Capital Requirements estimated at US$ 170,000) will be financed through bank
- ✓ Discounting rate has been assumed to be 8%.
- ✓ Depreciation of fixed assets and amortization of the pre-operational expenses/contingencies rates used are as shown in Appendix 3(Annual Depreciation and Amortization of Assets) and Annex I (Investment, Replacement and Depreciation Schedules).

- ✓ Project capacity utilization is estimated at 60% in the first year, rising to 65% in second year, reaching 70% in year three,75% in year four before stabilizing at 80% from year five onwards.
- ✓ Investment Costs are shown in Annex I (Investment, Replacement and Depreciation/ Amortization Schedules).
- ✓ Direct production costs shown in Appendix 2 (Operational Costs) and Annex 1V (Trading Account) are based on current rates.
- ✓ Salaries, Wages and Allowances have been based on the prevailing scales in the aquaculture industry in Tanzania. There is provision of 20% to cover company contribution to Social Security Fund (10%) and other Social Welfare Benefits (10%).
- ✓ Administrative/Overheads and farm/factory Overhead costs are based on the prevailing rates in the market and needs of the proposed project.

### 3.3 Major Operating Costs

Major production cost items are indicated in Appendix 2 (Operational Costs). Corporate Tax is fixed at 30% of taxable profits.

The project will be granted a Tanzania Investment Centre (TIC) Certificate of Incentives and therefore enjoy tax relief on both capital and deemed capital goods.

#### 3.3.1 Analysis of Financial Results

- ✓ The projected annual revenue from the aquaculture fish farming operation is estimated at approximately **USD 1,656,000 in the first year of operation**, excluding Value Added Tax (VAT). Revenue is expected to grow steadily at an average rate of **10% per annum**, driven by increased production efficiency and improved market penetration.
- ✓ The project is expected to generate a **net profit before tax of approximately USD 586,000 in the first year**, with profitability increasing progressively from Year 2 to Year 5 as operational efficiencies improve and economies of scale are realized.
- ✓ The **gross contribution margin** in the first year is estimated at approximately **35%**, reflecting a strong cost structure. This margin is expected to remain stable or improve slightly over time as feed efficiency and operational management improve.
- ✓ The **net profit after tax and financing costs** in the first year is projected at approximately **USD 340,000**, increasing steadily over the project life. In addition, the project will contribute to government revenue through corporate taxes estimated at approximately **USD 175,800 in the first year**, supporting national economic growth.
- ✓ Project sales are expected to grow at an average rate of **10% annually**, while operating expenses are projected to increase at approximately **10% per year**, reflecting scaling of operations and inflationary adjustments.
- ✓ The total estimated investment cost for the project is **USD 1.5 million**, financed through a combination of **80% equity (USD 1.2 million)** and **20% debt (USD 300,000–375,000**

**range depending on final structuring)**.

- ✓ The project demonstrates **strong liquidity**, with current assets increasing consistently over time, indicating the ability to meet short-term obligations and sustain operations effectively.
- ✓ The cash flow statement reflects a **positive and steadily increasing cash balance**, reaching approximately **USD 3.5 million by Year 6**, demonstrating strong operational performance and the project's capacity to service debt and generate surplus cash.
- ✓ The Discounted Cash Flow (DCF) analysis indicates a **Project IRR of approximately 18–20%** and an **Equity IRR of approximately 24–28%**, both of which exceed prevailing commercial lending rates, confirming strong financial viability.
- ✓ The **payback period is estimated at approximately 5.3 years**, reflecting the scale of the investment and stable cash generation profile.
- ✓ The **Return on Investment (ROI)** is estimated at approximately **22–25% in the first year**, increasing to above **30% by Year 5**, driven by improved efficiency and revenue growth.
    - o  Depreciation of fixed assets and amortization of pre-operational expenses have been appropriately accounted for in the financial projections, ensuring a realistic representation of asset utilization and profitability.
    - o Land: **5%**
    - o Civil works, structures and buildings: **5% (straight-line method)**
    - o Plant, machinery and technical equipment: **12.5% (straight-line method)**
    - o Motor vehicles: **20% (straight-line method)**
- ✓ For financial modeling purposes, an average **depreciation rate of 12.5% has been applied to the main production equipment**. The first-year depreciation value is estimated at **USD 120,000**, reflecting the gradual wear and tear of fixed assets over time.
- ✓ **Salaries and wages** have been estimated based on prevailing labor market rates within the aquaculture sector. An additional **20% provision has been included to cover statutory contributions**, including **NSSF contributions (10%) and other social welfare obligations (10%)**, which are incorporated in the total personnel cost as reflected in the income statement.

# CHAPTER FOUR: ENVIRONMENTAL ASPECTS

## 4.1 Introduction

The project activities involve installation of fish cages with in lake waters, production of fish meal, cleaning and packaging of whole fish before packaging and chilling /freezing the products ready for transportation in refrigerated trucks to both local and export points (airport/sea port). In the process, the company cooperates with various regulatory authorities, including Tanzania Fisheries Department, OSHA, MMC, TRA, CGL and NEMC. **Huaya Aquaculture Company Limited** will adhere to all regulations as appearing in The Fisheries Act (2003) and Fisheries Regulations (2003) which guides fish processors on the necessary the processors have to observe regarding environmental aspects before the processors can be granted fish processing and export license.

Generally, Tanzania has environmental regulations governing the industrial operations/ manufacturing activities etc. Never the less, each operator takes basic precautions to ensure that during operations, damage to environment is limited to the minimum possible level.

**Huaya Aquaculture Company Limited** will seek to obtain European Union Certification for the proposed processing plant before starting operations, and this will ensure a working quality control system in place. The HACCP System (Hazard Analysis & Critical Control Points) of quality control will give this factory a global competence. A working laboratory, an efficient training programme, good team work and support from the government authorities will help this industry to grow day-by-day. The company will implement all directives from the EU and therefore grant approval for export to all the EU countries and the global market in general including the Middle East and to the other member states of East Africa.

## 4.2 Project Activities

**The Project Activities:** involve collection, cleaning and packaging and chilling/freezing the products ready for transportation in refrigerated trucks to the local and export points (airport/ seaport. Processing begins with fish receiving and selection of ideal fish for processing. The only chemical applied during the processing is Chlorine used for cleansing purposes.

**Mode of Liquid Waste Disposal:** Recycled and treated waste water and the affluent disposed in underground tanks.

### 4.3 Work Health and Safety Policy

To ensure environmental aspects are fully accommodated in the planned project activities, the Company will establish its Environmental Management Plan which shows commitment of Management and Workers to health and safety, with aim store move or reduce risks to health, safety and welfare of all workers, contractors and visitors, and everyone else who maybe affected by the Company's business operations

### 4.4 Environmental Impact Screening

The nature of the project indicates that there are no major negative environmental effects of public concerns, except two minor ones:

#### 4.4.1 Air Pollution (Odour/Offensive Smell)

It has been noted that during processing fish, the processing maybe associated with release of offensive smell, and as a result, may disturb the surrounding community. However, the fish processing operations for **M/S Huaya Aquaculture Company Limited** will be conducted in an ultra-modern factory that will meet all the Fisheries Act (2009) and Fisheries Regulations (2009), and therefore processing will be carried out under very clean environment.This impact is therefore considered negative, cumulative, shorter man do flow significance.

#### 4.4.2 Land Contamination from Chemicals/Effluent

It is urged that improper management of effluent and other cleansing chemicals like chlorine spills may occur prom processing. This is also considered of low significance as all effluent water will be channeled to water treatment plant. Mitigation measures should be in place and other necessary precaution should be taken in order to avoid land pollution.

### 4.5 Risk Analysis

The major risk factor considered under this project is the possible breakdown of fish diseases. However, this is highly unlikely as Lake Victoria waters are very clean, almost pollution-free compared to similar water bodies. These can be major risk if there is the possibility of the increase of number of cage fish farmers around Misungwi district who may compete for lake space. However, this is also un likely to happen in a predictable future as commercial cage fish farming is relatively a young industry in the country.

### 4.6 Social, Economic and Developmental Benefits

The commercial cage fish farming activities generates a lot of developmental benefits, including but not limited to the following:

Establishing the proposed fish meal production facilities in Misungwi and production of 10,812 metric tons for sale will help ease the fish feed supply constraint which is hindering the growth of fish farming industry.

Supply of 10.88million good quality tilapia fish fingerlings will reduce the huge deficit currently experienced which stands at over 30 million compared to the available supply of 5 million fingerlings countrywide.

The good quality fingerlings sold to other farmers will further influence reduced mortality and improved productivity.

The project envisages employing estimated number of 100people.

Fish production is geared towards both local consumption and export to the neighboring countries and beyond. Therefore, the increased supply of tilapia fish per year will not only influence to regulate fish price but also, with the project fish price being half of the current market price means more local people will have access to nutrients available in tilapia fish.

Misungwi District Council will collect substantial revenue (levies/taxes) from fish farming and processing activities;

Revenue to the government Treasury and other organs in the form of taxes, fees and levies;

The project personnel will benefit from training on fish farming and processing skills.

## CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATION.

### 5.1 Conclusion.

Financial and economic analyses above reveal the following:

The project is financially viable, economically feasible and environmentally friendly as indicated by the projects' cost of production and profitability tables, cashflows and balance sheet.

The project envisages expansion of Tanzania's market share in the fish export industry and thus maximizing government revenue in form of various taxes; The project has a very short payback period of 1.30 years relative to its fixed capital investment of US$ 741,474.

The project will create employment opportunities, transfer of technology. It is geared to employ about 94 local employees, a significant number of which will be men.

The project will generate a considerable amount of foreign exchange through the sale of tilapia fish.

The project will have a huge impact in the economy of Mwanza region considering the amount of money that will be paid to workers per annum in form of salaries and wages

### 5.2 Recommendations.

In view of the above it is strongly recommended that the project be approved by Tanzania Investment Centre and be granted the TIC Certificate of Incentives with its associated privileges and benefits as provided for under Tanzania Investment Act,1997 to facilitate smooth implementation.

It is further recommended that TIC assist the investors to obtain a Letter of No Objection from the Ministry of Livestock and Fisheries and subsequent grant of Fish Processing and Export License as provided for under Section 6(d) of Tanzania Investment Act ,1997 which reads" *assist all investors….to obtain all necessary permits, licenses, approvals ,consents, authorizations ,registrations and other matters required by law for a person to setup and operate an investment, and to enable certificates issued by the Centre to have full effect"*.

# Financial Analysis And Projections

## ANNEX I – INCOME STATEMENT

| INCOME STATEMENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Annual Sales** | **Ye 0** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | |
| Average sales of Fish | 0 | 1,656,000 | 1,821,600 | 2,003,760 | 2,204,136 | 2,424,549.6 | |
| **Revenue from sales** | **0** | **1,656,000** | **1,821,600** | **2,003,760** | **2,204,136** | **2,424,549.6** | |
| Cost of food | 0 | 920,000 | 1,012,000 | 1,113,200 | 1,224,520 | 1,346,972 | |
| Additional costs | 0 | 150,000 | 165,000 | 181,500 | 199,650 | 219,615 | |
| Total Operational | | 1,070,000 | 1,177,000 | 1,294,700 | 1,424,170 | 1,566,587 | |
| **Profit before tax and interest** | **0** | **586,000** | **644,600** | **709,060** | **779,966** | **857,962.6** | |
| % Gross contribution | 0 | 21 | 22 | 23 | 24 | 25 | |
| Interest on loan 12% | 0 | 70,320 | 77,352 | 85,087.2 | 93,595.9 | 102,955.51 | |
| Net earnings before tax | 0 | 515,680 | 567,248 | 623,973 | 68,6370 | 755,007.09 | |
| Income tax (30%) | 0 | 154,704 | 170,174 | 187,192 | 205,911 | 226,502.13 | |
| **Net earning** | | **360,976** | **397,074** | **436,781** | **480,459** | **528,504.96** | |

## ANNEX II – CASH FLOW STATEMENT

| STATEMENT OF CASHFLOW | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Year** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Cash receipt from sales | | 1,656,000 | 1821600 | 2,003,760 | 2,204,136 | 2,424,549.6 | 2,667,004.6 |
| Cash paid to supplies and employeed | | 1,070,000 | 1,177,000 | 1,294,700 | 1,424,170 | 1,566,587 | 1,723,245.7 |
| **Cash generated from operations** | | **586,000** | **644,600** | **709,060** | **779,966** | **857,962.6** | **943,758.86** |
| Divident received | | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest received | | 0 | 0 | 0 | 0 | 0 | 0 |
| Tax paid | | 175,800 | 193,380 | 212,718 | 233,989.8 | 257,388.78 | 283,127.66 |
| Interest paid | | 70,320 | 77,352 | 85,087.2 | 93,595.92 | 102,955.512 | 113,251.06 |
| **Net cash flow from operating activities** | | **339,880** | **373,868** | **411,254.8** | **452,380.28** | **497,618.308** | **547,380.14** |
| CASHFLOW FROM INVESTING ACTIVITIES | | | | | | | |
| Replacement of Equipments | | 0 | 0 | 0 | 0 | 0 | 0 |
| Proceeds from sale of equipments | | 0 | 0 | 0 | 0 | 0 | 0 |
| Net cashflow from investing activities | | 0 | 0 | 0 | 0 | 0 | 0 |
| Proceeds from capital contributed | | 1125000 | | | | | |
| Proceeds from loan | | 375000 | | | | | |
| Payment of Loan | | 70,320 | 77,352 | 85,087.2 | 93,595.92 | 102,955.512 | 113,251.06 |
| **Net Cashflow from Financing Activities** | | **1,429,680** | **77,352** | **85,087.2** | **93,595.92** | **102,955.512** | **113,251.06** |
| NET INCREASE/DECREASE IN CASH | | 1,769,560 | 296516 | 326167 | 358784 | 394662 | 434129 |
| Cash at the beginning of the period | | 0 | 1,769,560 | 2,066,076 | 2,392,243 | 2,751,027 | 3,145,690 |
| Cash at the end of the period | | 1,769,560 | 2,066,076 | 2,392,243 | 2,751,027 | 3,145,689 | 3,579,819 |

## ANNEX III – BALANCE SHEET

| PROFORMA BALANCE SHEET | | | | | | |
|---|---|---|---|---|---|---|
| **ASSETS** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | |
| Current Assets | 190,000 | 209,000 | 229,900 | 252,890 | 278,179 | |
| Fixed Assets | 1,310,000 | 1,441,000 | 1,585,100 | 1,743,610 | 1,917,971 | |
| Depreciation | 163750 | 180,125 | 198,138 | 217,951 | 239,746 | |
| Net Fixed Asset | 1,310,000 | 1,277,250 | 1,386,963 | 1,525,659 | 1,678,225 | |
| **Total Assets** | **1,500,000** | **1,486,250** | **1,616,863** | **1,778,549** | **1,956,404** | |
| **EQUITY AND LIABILITIES** | | | | | | |
| Equity | 1,125,000 | 1,125,000 | 1,125,000 | 1,125,000 | 1,125,000 | |
| Reserves | 70,320 | 133,922 | 349,622 | 604,903 | 831,403 | |
| **Total own equity** | **1,195,320** | **1,258,922** | **1,474,621.7** | **1,729,903** | **1,956,403** | |
| Longterm Loan (Liability) | 304,680 | 227,328 | 142,240 | 48,644 | 0 | |
| Total Equity and Liabilities | 1,500,000 | 1,486,250 | 1,616,861.7 | 1,778,547 | 1,956,403 | |
| DEBIT/EQUITY RATIOS | 0.20312 | 0.152954079 | 0.087972892 | 0.027350416 | 0 | |
| Equity/ Total Assets | 0.79688 | 0.847045921 | 0.912026657 | 0.972648627 | 0.999999681 | |
| ROI | | | | | | |
| BREAK EVEN POINT | 695,520 | 765072 | 841,579 | 925737 | 1,018,310 | |
| BREAK EVEN RATIO | 42% | 42% | 42% | 42% | 42% | |
| EQUITY/TOTAL LIABILITIES | | | | | | |

ANNEX IV – LOAN PAYMENT SCHEDULES

| Loan Information and Payment Schedule | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| **Loan Data** | **All number in USD** | | **Loan Summary** | | |
| Original Principal | 375,000.00 | | Scheduled Payments | | 104.061.40 |
| Loan Term (Years) | 5.00 | | Scheduled number of payment | | 5.00 |
| Annual Interest Rate | 12% | | Actual number of payment | | 5.00 |
| Payments per Year | 1.00 | | Total Early Payment | | |
| Payment | 104,091.40 | | Total Interest | | 145,098.94 |
| | | | | | |
| **Year** | **Payment** | **Interest** | **Cumulative Interest** | **Principal** | **Balance** |
| - | | | | | 375,000.00 |
| 1.00 | $104,091.40 | 45,000.00 | 45,000.00 | 59,061.40 | 315,938.60 |
| 2.00 | 104,091.40 | 37,912.63 | 82,912.63 | 66,148.77 | 249,789.83 |
| 3.00 | 104,091.40 | 29,974.78 | 112,887.41 | 74086.62 | 175,703.21 |
| 4.00 | 104,091.40 | 21,084.39 | 133,971.80 | 82,977.01 | 92,726.20 |
| 5.00 | 104,091.40 | 11,127.14 | 145,098.94 | 92,934.26 | 0.00 |
| | | 81,234.89 | | | |

## ANNEX V- INTERNAL RATE OF RETURN

**IRR for the Project**

(all numbers in USD)

| | | |
|---|---|---|
| | Initial Investment | 500,000 |
| Year 1 | Additional Annual Net Profit | 203,212 |
| Year 2 | Additional Annual Net Profit | 234,002 |
| Year 3 | Additional Annual Net Profit | 266,269 |
| Year 4 | Additional Annual Net Profit | 300,733 |
| Year 5 | Additional Annual Net Profit | 362,785 |
| | **IRR (in 5 years)** | **13.59%** |
| | | |
| **The IRR above indicates that the expected return on the 500,000USD initial investment after 5 years is 13.5962%.** | | |

ANNEX VI - PAYBACK PERIOD

| Payback Period Analysis | | | | |
|---|---|---|---|---|
| | Year | Beginning Balance | Net Cash Flows | Ending Balance |
| Cost of investment | 0.00 | 1,500,000.00 | 0.00 | 1,500,000.00 |
| | 1.00 | 1,500,000.00 | 203,212.32 | 1,296,787.68 |
| | 2.00 | 1,296,787.68 | 234,002.45 | 1,062,785.22 |
| | 3.00 | 1,062,785.22 | 266,268.62 | 796,516.61 |
| | 4.00 | 796,516.61 | 300,733.10 | 495,783.51 |
| | 5.00 | 495,781.51 | 362,785.43 | 132,998.08 |
| **Payback Period =** | | **3.00** | **Years** | |