**AFE BABALOLA UNIVERSITY, ADO-EKITI**

**COLLEGE OF SCIENCES**

**DEPARTMENT OF BIOCHEMISTRY**

**A REPORT ON:**

**A FEASIBILITY STUDY ON YAM FARMING**

**DONE BY:**

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**COURSE:**

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# **CHAPTER 1: EXECUTIVE SUMMARY**

Nigeria is by far the world’s largest producer of yams, accounting for over 70–76 percent of the world production. According to the Food and Agriculture Organization report, in 1985, Nigeria produced 18.3 million tonnes of yam from 1.5 million hectares, representing 73.8 percent of total yam production in Africa.[1] According to 2008 figures, yam production in Nigeria has nearly doubled since 1985, with Nigeria producing 35.017 million metric tonnes with value equivalent of US$5.654 billion.[2][3] In perspective, the world's second and third largest producers of yams, Côte d'Ivoire and Ghana, only produced 6.9 and 4.8 million tonnes of yams in 2008 respectively. According to the International Institute of Tropical Agriculture, Nigeria accounted for about 70 percent of the world production amounting to 17 million tonnes from land area 2,837,000 hectares under yam cultivation.

The farmland production system in the Ekiti State consists of wetland (20% farms are under this category), upland (50% farms in this category) types and a combination of the two types (30% by the balance farms). A study carried out on the efficiency of the three systems to improve crop outputs to meet growing demands for this food crop, indicates that the "wetland yam based enterprises are the most economically efficient with mean economic efficiency of 0.80 followed by upland yam based enterprises with mean efficiency of 0.79."[6] The combination of wetland/upland yam based enterprises is assessed as the least economically efficient, with mean efficiency of 0.76. Hence, it has been recommended that more yams should be grown more on wetlands. Another recommendation made is to adopt the yam minisett technology developed by the International Institute for Tropical Agriculture (IITA) and the National Root Crops Research Institute (NRCRI)

Although it is grown widely in Nigeria, the area where it is grown most is the Benue State (land area of 802,295 km²) one of the states in Benue valley of Nigeria where the labour-intensive practices are still the norm and the land holdings are small. In this state especially among Tiv people, the size of the yam farm or the tonnage of yams produced becomes the social status of that farmer. Because of high level of yam production in the State of Benue, Benue State is crowned as the Nigerian Bread Basket. Yams are planted on mounds rather than flat slopes depending on the hydromorphic nature of the soils which are generally of loose soil suitable to grow roots and tuber crops.[1] While yam production issues have been stressed on agronomical practices, a research study carried out on the economic efficiency of this crop grown in this region with small farm holdings, which is labour-intensive, reveals that land, labour and material (fertilizers and chemicals), credit and extension services inputs have a significant bearing on the yield of yam in the region. The result of the random frontier indicated that farm size and volume of agrochemical used significantly influenced yam production. Age, education status of farmers and access to credit were the significant factors determining technical efficiency of the farmers in the study area. The study recommends capacity building for farmers on an appropriate combination of resources. Seeing this “Harban culture” project set to be commissioned by Mr Anyalechi David will proceed with the business plan that will be discussed in this feasibility report

**CHAPTER 2: INTRODUCTION**

In 2017, the idea of growing tuber crops in an unexploited space in a small village in a small village Mbaduku in Benue state Nigeria emerged to Mr David, the commissioner of the project. The farm is to be called the “Harban culture”. The main objective of this farm was to produce good marketable and healthy tuber crops. Although it basically begun with yam, in a long run, it intends to plant other crops and help feed our nation.

Tuber farming involves the growing of tubers for human beings; commercially it is sold in market for profit. Tuber farming began in several parts of the world more than ten thousand years ago. Initially humans could only grow tubers via manual labour, but as civilization came, livestock were domesticated and used to plough the farm, for tuber plantation. In the recent time, nearly all tuber farming processes are mechanised. In Nigeria, tuber farming is one of the easiest agricultural engagements a farmer can venture into and the demand for tubers is year round, creating a stable stream of income for the would be farmer.

The fact that most tubers are highly perishable was of course considered; therefore developing marketing strategies was put in place even before cultivating the crops. Once the market for the produce was well thought out and developed, proper field selection started, considering the field topography, soil type and water availability and quality, also the price of the land was crucial since it determines if the land would be bought or leased. Another factor we had to consider was the pests present in the area since played a role in deciding which crops could be cultivated and survive without suffering from countless attacks from pests. Research on the relevant government policies and implications regarding farming were also reviewed. Seeing that finding sponsors for the Harban culture was necessary, the enterprise sought for grants from government and other private bodies willing to offer; of course they will come to inspect the site based on the application. We have been waiting patiently for our application to be accepted

**GOALS**

To become one of the leading yam farms in Nigeria but also on the global stage by producing high quality and well refined products.

**CHAPTER 3: MARKET AND MARKETTING**

Harban culture started with yam, tuber farming can be very profitable if done the right way. Smart Nigerians can make millions of naira from yam farming for a size of land. yam farming can be very profitable if done the right way. Harvest starts from 6-12 months , the demand for yams are quite huge in Nigeria as they are used in preparing swallow and other types of food. Once the yams have been harvested, there should be a defined process to move the tuber to the market. A readily available market coupled with bountiful harvest is a perfect recipe for success in yam farming. According to statistics, yams are one of the most grown crops in Nigeria and they are needed in large scale both locally and globally making it a good business for one to venture into.

**MARKETING PLAN**

It is always better to sell yams to organized markets like ShopRite, hotels and vegetable shops, etc. a tuber of yam goes for #500. Seeing how competitive and hard to get a contract from such organized markets, selling to small markets around farm town or larger markets like aba market is a good start. Its only disadvantage is that the prices are unpredictable. Harban culture will of course experience peak and off peak times every year. Prices of fresh yams can vary from up to 500% in a year.

As farmers instead of supplying to others, selling our products should be considered. We could own a stand in the small town market for a start and later on own a retail store. Online stores are also a thing of the season and are also a very good marketing idea. Either way, whether we sell our product directly or through intermediaries the trick is to be providing the customers with eye catching products, as well making the products as available as you can, this will keep us ahead of our competitors.

harban culture will contribute to the daily sales of yam in the daily small markets. The enterprise is targeting retail shops like testimony plaza as well as major hotels in the environment like Eden hotels, Mobil guest house, Villa marina, etc. retail stores in the capital city Uyo are also in considered but there is a lot a lot of competition although locally in the town of Mbaduku there is no competition. To supersede our competitors, we intend to provide fresh newly harvested products and on time.

# **COMPETITOR ANALYSIS FOR HARBAN CULTURE**

People will buy from us because of the following reasons

1. The provision of high quality and purely processed cucumber
2. Unique and standard packaging
3. Excellent customer care services
4. Fair and lowest possible prices

# **CHAPTER 4: PROJECT ENGINEERING**

Soil test was carried out by a soil analyst on the land to be purchased; soil fertility, as well as its topography was considered (Flat farmland is better, sloppy land encourages erosion) the soil test revealed the pH of the soil, it also showed the level of nutrients in the soil. The soil test showed the level of nitrogen, potassium, phosphorus, calcium, magnesium, boron and other micro nutrients in the soil. This of course guided the farmer on the type of fertilizers to apply to his yam farm. Diseases in the soil and soil microbial count were also shown and Soluble, chloride free fertilizers like Potassium nitrate, Calcium nitrate, Monopotassium phosphate and microbial inoculants were purchased to be used. #200,000 was set aside for the drip irrigation of the cucumbers. With deep irrigation, water is saved and labour cost is reduced, fertigation is enabled and yield is significantly increased.

Harban culture intends to grow cucumbers under protected cultivation (Greenhouses, polytunnels or net houses) and in open fields. Since cucumber plants can only grow under tropical conditions, this will definitely increase its productivity.

# **CHAPTER 5: MATERIALS, PRODUCTION AND PLANTS**

COST FOR ONE ACRE OF CUCUMBER

|  |  |
| --- | --- |
| MATERIAL | RATE |
| Rent for one acre of land | #20,000 |
| Fertilizer | #200,000 |
| Manure | #20,000 |
| Pesticides | #20,000 |
| Hybrid seeds | #35,000 |
| Labour for 3 months | #120,000 |
| Drip irrigation | #200,000 |
| Knapsack sprayer | #5,000 |
| Staking | #30,000 |
| Soil test | #10,000 |
| Farm tools | #5,000 |
| TOTAL | 565,000 |
|  |  |

COST FOR POWER HOUSE

|  |  |
| --- | --- |
| MATERIALS | RATE |
| Structure | #1,500,000 |
| Tank (200liters) | #20,000 |
| Pumping machine (1hp) | #40,000 |
| PVC pipe | #2,000 |
| Timer and panel | #40,000 |
| Electrical wire and socket | #10,000 |
| Filter and knobs | #38,000 |

START UP EXPENSES

|  |  |
| --- | --- |
| START UP REQUIREMENTS | COST |
| Farm structures | #2,500,000 |
| Power house | #1,650,000 |
| Green house | #250,000 |
| Supplies | #545,000 |
| Transport | #60,000 |
| Miscellaneous | #250,000 |
| Rent for farm land | #20,000 |
| Total | #**5,275,000** |

**CHAPTER 6: LOCATION AND SITE**

Harban culture will be sited in Mbaduku, Vandekyia, Benue state. This location was chosen because the inhabitants of the land have a strong love and passion for farming, also the plantation of yams has been very successful in this area. Although there are various yam farmers in this area, there is little competition as none of them are large scale commercial farmers. The site also has good roads for accessibility and evacuation of farm produce minding the fact that cucumbers spoil within days. The topography of the farm was very ok ant the results of soil test were good. Climate of this area was also considered as well as the availability of water and electricity. Apart from all this positive features, the land is close to a well-known and popular local market.

# **CHAPTER 7: PROJECT IMPLEMENTATION**

After successfully becoming the most sort after and reliable distributors of cucumbers in the local markets hallelujah culture will proceed to partnering with hotels and restaurants in Lagos like Mr biggs Sweet sensation. By our fourth to fifth year, harban culture would have owned its own retail store, yet still supplying other stores, restaurant and hotels. We would also venture into planting and selling other tubers and own an online store through which orders could be placed and tubers would be delivered on the doorstep of our customers

For this to happen, we would be dependent on our existing local partners to keep purchasing our produce. Advertisement would be a very useful because to achieve all this goals, we would need profit. With the support of our partners, letters will be sent to major retail stores and hotels with our freshest irresistible products for evidence. Testimonies of our reliability could also be included. At this time we would have acquired a larger farmland owned by the enterprise and employed more labourers. Harban culture will also be open to training upcoming farmers, we would also apply to NYSC in the hope that we are inspiration enough to house the upcoming leaders of tomorrow and train them. A successful harban culture farmer who has been using harban culture products will be able to demonstrate our model to our partners. Our most enthusiastic farmers will hold field days at which all farmers and upcoming farmers in the community will be invited to.

**CHAPTER 8: FINANCIAL AND ECONOMIC EVALUATION**

It is assumed that one acre of land will yield 2500 tubers of 40kg (20 tonnes) of fresh yams after 10 months. In open Nigeria, fresh yams are sold in tubers. It sells for 600-900 depending on the season. Revenue in yam farming can vary a great deal YAM FARMING PROFIT ANALYSIS SCENERIO 1

|  |  |
| --- | --- |
| Revenue |  |
| 2500 tubers at #600 each | #1,500,000 |
| **COST** |  |
| Rent of one acre of land | #20,000 |
| Fertilizer | #100,000 |
| Manure | #20,000 |
| Pesticides | #20,000 |
| Hybrid seeds | #35,000 |
| Drip irrigation | #200,000 |
| Knapsack sprayer | #5,000 |
| Tools | #5,000 |
| Staking | ##30,000 |
| Soil test | #10,000 |
| TOTAL | 565,000 |

|  |  |
| --- | --- |
| **PROFIT** |  |
|  | 935,000 |

YAM FARMING ANALYSIS SCENERIO 2

|  |  |
| --- | --- |
| **REVENUE** |  |
| 2500 bags at #1200 each | #3,000,000 |
| **COST** |  |
| Rent of one acre of land | #20,000 |
| Fertilizer | #100,0000 |
| Manure | #20,000 |
| Pesticides | #20,000 |
| Hybrid seeds | #35,000 |
| Labour for 3 months | #120,000 |
| Drip irrigation | #200,000 |
| Knapsack sprayer | #5,000 |
| Farm tools | #5,000 |
| Staking | #30,000 |
| Soil test | #10,000 |
| TOTAL | #565,000 |
| **PROFIT** | #2,435,000 |

As shown in the table, when 2500 tubers are sold for 600, expected revenue is #1.5 million, when 2500 are is sold for 1200, expected revenue is #3 million.

**CHAPTER 9: PROJECT EVALUATION TECHNIQUES**

Harban culture intends to produce high quality and processed yam to our teeming customers here in Nigeria and beyond. Our aim as a business will be to ensure that we not only generate revenue but maximize profit as well and to this end, we intend to create multiple sources of income so as to have a solid bottom ground. We are in business to produce both food and raw materials for people and industries in commercial quantities. Our products and services are listed below:

1. Cultivation and sale of variety of cucumber (organic and non-organic)
2. Whole sale/ retail of cucumbers
3. Consultancy services
4. Distribution services
5. Export services

**OBJECTIVE FOR HARBAN CULTURE IN CUCUMBER FARMING**

1. To increase production efficiency by10% of a year
2. To maintain profit margins at 20-25% through close attention to expenses and cost of yam farming
3. To develop a product bases company whose goal is to exceed customers’ expectations
4. To develop a sustainable farm, surviving of its own cash flow

# **CHAPTER 10: CONCLUSION**

Yams are not only an excellent source of fiber but also high in potassium and manganese, which are important for supporting bone health, growth, metabolism, and heart function. These tubers also provide decent amounts of other micronutrients, such as copper and vitamin C.Copper is vital for red blood cell production and iron absorption, while vitamin C is a strong antioxidant that can boost your immune system. At Harban’s culture perfection is key.