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### Course: food production and health

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FEASIBILITY STUDY ON PALM OIL PRODUCTION

INTRODUCTION
Feasibility study is an assessment of the practicality of a proposed business.

Palm oil is a yellow butter-like oil derived from the fruit of the oil palm and used as an edible fat and by manufacturing industries in household products like candles, pharmaceutical products, confectioneries, cosmetics etc.

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Signature:

Name:

Date:

**CONTENTS OF A FEASIBILITY REPORT**

1. Executive Summary/ Brief Description of the Project
2. Sponsorship, Management and Technical Assistance
3. Market and Sales
4. Technical Feasibility, Resources and Environment
5. Government Support and Regulation
6. Timelines of Projects
7. Estimated Project Cost and Revenue
8. Funding Mechanism
9. Conclusion

**Executive Summary/ Project Description**

This business plan examines the feasibility of and indeed economic viability of the development of a 400hectares palm oil plantation and the establishment of an oil mill in lagos by the otedola foundation. The farm will produce about 400tonnes of palm oil per day in a production cycle.

The proposed project will create economic opportunities, impact positively on the people and help conserve scarce foreign exchange. Using state of the art equipment in extracting palm oil from the palm kernel fruit which will be bought locally and internationally our products will be produced in the best of hygienic environment and conditions. This would create job opportunities for famers in this community and easy avalibity of the produce to this community.

**Sponsorship**

The project is sponsored by **Femi Otedola**  who is a Nigerian businessman, philanthropist, and former chairman of [Forte Oil PLC](https://en.m.wikipedia.org/wiki/Forte_Oil_PLC), an importer of fuel products. Otedola is the founder of Zenon Petroleum and Gas Ltd, and the owner of a number of other businesses across shipping, real estate and finance. He has recently invested in power generation as part of the liberalisation of the sector in Nigeria. He is strong supporter of agricultural infrastructure.

**Management**

**The management will consist of well qualified personnel in agriculture and palm oil sector, To manage the harvesting of oil palm fruit bunches that are already ready to be harvested various methods are used.** The prime objective of the board will be to give strategic directions and policies that will ensure long term success of the organization. The board will ensure that the organization complied with all standards set by regulatory authorities.

The Managing Director/President shall be responsible for the co-ordination of the day to day management of the cooperative business. He is accountable to the Board of Directors; he will mobilize organization resources to achieve set goals. He will manage business risks and focus on wealth creation.

TECHNICAL FEASIBILITY:

This assessment is based on the design system requirements. It is to determine whether the company has or could afford the technical expertise to handle completion of the project.

This part must consider the following:

The part of the business being examined

The human and economic factor involved or available

The possible solutions to the problem

The concern is whether the proposal is both technically feasible.

This has to be accompanied with relevant technical drawings, maps, designs etc. displayed.

The cost implications will only be highlighted but must be built into the financial aspect of the feasibility study.

The processing procedures such as:

The Palm Fruit Processing Stages

The following stages in palm oil making using the old pattern include the following:

The first stage: Bunch Reception: the palm will be cut from the tree in bunches .

The second stage: Threshing: cut it from the bunk and after few days it will be selected.

The third stage: Sterilization: cook the selected with an industrial pot/kettle for sterilization.

The fourth stage: fruit digestion and pulp pressing.

The fifth stage: Oil clarification (sieving).

**Market and Sales**

Market orientation: domestic; South West & South East, Nigeria

Market Share: 5% niche market in South West, South East Nigeria

Users of Products: quality palm oil for human

**Competition analysis**

This should form an important consideration of any palm oil business. Knowing your competition will enable the business put in the best strategy to effectively compete. This Therefore is a necessary ingredient that determines the profitability of the business. Nigeria is a country where this product (palm oil) is used in every community. Knowing the marketing strategies to use in reaching out to consumers from all parts of the country is therefore very necessary. Other competitors exist, knowing the areas of their weakness, will be of immense benefit to the business.

**Tariff and Import Restriction**

Forex restriction on food importation and zero duty on imported agricultural equipment will favour the project under consideration.

**Market Potential**

There is strong demand for palm oil all over the country, **Palm oil demand** continues to grow because it is the most versatile of all vegetable **oils**. This is because **palm**, **palm** kernel **oil** can be processed to form a wide range of products with different melting points, consistencies and characteristics.

**Profitability**

Weather, biological, chemical, physical and environmental factors such as temperature, sunlight, water, air, soil conditions, varieties of seed, pests, diseases, price fluctuations and other risks e.g. cow invading the farm could affect yield and profitability. However, technical, scientific and financial based solutions will be employed to hedge against risks and safeguard profit. Irrigation option will be factored in to ensure two cycle of production in a year.

**Government Support and Regulation**

This aspect is to determine whether the proposed system conflicts with legal requirements of the business/project. It must comply with the local protection, regulations and if the proposed venture is acceptable in accordance to the laws of the land.
This will highlight the relevant regulatory bodies and laws, patent rights and other intellectual property laws involved. It will also show the cost implications if there are needs for franchise, business registration etc.

**Project Timeline**

The project will be completed within 6months preferably between November, 2019 to April, 2020 because land clearing is mostly done in the dry season.

**7.0 Estimated Project Costs and Revenue**

**Fixed Cost**

1. **Land Clearing**

Beginning oil palm plantations is good begins with the selection of appropriate land or soil, to determine the potential of land that can be developed to obtain the proper management of oil palm fruit productivity and quality good will [1]. Type of soil on land that is planted affect the production of fresh fruit bunches. Approximately 60% of the area of oil palm plantations in Indonesia located on dry land is the limiting sour lowest pH and low availability of weather. Therefore the behaviour of fertilization is needed to reach 60% of the cost of maintenance of oil palm plantations. Most of the good land used for oil palm plantations is dominated by soil types and terric typic helosaprists halosaprists have a high nutrient to low pH.

|  |  |  |  |
| --- | --- | --- | --- |
| **Activity** | **QTY** | **₦** | **K** |
| Land Clearing | 1Hectare | 230,000 | 00 |
| Cross cutting | 1Hectare | 20,000 | 00 |
| Rome ploughing | 1Hectare | 50,000 | 00 |
| **Sub total** | 1Hectare | **300,000** | **00** |
| **Total** | 400 Hectare | **120,000,000** | **00** |

1. **Equipment**

|  |  |  |
| --- | --- | --- |
| **Actvity**  | **Quantity**  | **#** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Palm oil plant production line includes:  | Thresher, Boiler, and kettle, Digester, fibre separator, pressure. |  6 per equipment  | #800,000 |
|  | Palm kernel crusher |  | **7** | **50,000** |
|  | Palm kernel nut crusher and seprator |  | **4** | **80,000** |
|  | Electricity  |  |  | **100000** |
|  | Storage tank |  | **5** | **500** |
|  | Over head water tank, water pump |  | **8 each** | **70,000** |
|  |  |  |  |  |

**NEEDED TOOLS i**

|  |  |  |  |
| --- | --- | --- | --- |
| **1** | **Iron bucket** | **5** | **#4000** |
| **2** | **Wheel barrow** | **4** | **2000** |
| **3** | **Machete**  | **8** | **5000** |
| **4** | **Sharpening file** | **2** | **2000** |

**(C) Vehicle**

**Type Model QTY ₦ K**

|  |  |  |  |
| --- | --- | --- | --- |
|  **Pick up Truck**  |  **HILUX**  | **2** | **30,000,000 : 00** |
| **Carts** | **Manual**  | **5** | **30,000** |
| **car for admin** | **Toyota** | **1** | **400000** |

1. **Packaging requirements**

|  |  |  |
| --- | --- | --- |
| **Sack bags** | **30** | **#5000** |
| **5kg Gallons** | **60** | **200000** |
| **20kg Gallons** | **40** | **29000** |
| **25kg Gallons** | **50** | **67000** |
| **Drums( for tons)** | **20** | **21000** |
| **Labels ( printed)** | **5** | **680** |

**Operating Cost**

|  |  |  |
| --- | --- | --- |
| **Working Capital** |  |  |
|  |  **₦**  | **K** |
| Ploughing/Ha |  15,000  | 00 |
| Harrowing/Ha  |  10,000  | 00 |
| Sub total  |  25,000 | 00 |
| **For 600 Ha** |  **10,000,000**  |  **00** |
| Mechanization and storage |  105,000  |  00 |
| **For 400Ha** |  **42,000,000** |  **00** |
| Input / Ha  |  91,825 |  00 |
| **For 400Ha** |  **36,730,000** |  **00** |
| Area yield insurance |  13,500 |  00 |
| Produce aggregation |  5,500 | 00 |
| Geo Spatial Service |  4,500 |  00 |
| Sub total  |  23,500 |  00 |
| **For 400Ha** |  **9,400,000** |  **00**  |
| Interest per hectare |  22,079 |  25 |
| **For 400Ha** |  **8,831,700**  |  **00**  |
| Total cost per hectare |  245,325 |  00 |
| **Total cost for 400Ha** |  **98,130,000**  | **00** |
| Loan principal and interest (cost per Hectare) |  267,404 | 25 |
| **Total for 400Ha** |  **106,961,700** |  **00**  |
| **Irrigation cost for 400Ha (excluding fixed cost)** |  **24,018,120** | **00** |

**Amortization**

 **₦ K**

|  |  |
| --- | --- |
| **Land clearing amortization (per hectare)** |  **30,000 : 00**  |
| **Land clearing amortization (400hectare)**  |  **12,000,000 : 00** |

**Funding mechanism**

 **This table shows 35,000,000 is needed for this plan.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year 1** | **Year 2** | **Year 3** | **Year4** | **Year 5** | **Total** |
| **Equitable distribution**  | **1.00** |  |  |  | **1.00** |
| **Investors family** | **7.60** |  |  |  | **7.60** |
| **Mr. Otedola** | **4.50** | **3.00** | **3.00** | **3.00** | **16.50** |
| **Other sources**  | **3.00** | **3.00** | **3.00** | **9.90** |  |
| **Total financing**  | **16.1** |  |  |  | **3.50** |

The Otedola foundation will provide 6000Ha of cleared farm land at lagos state which would be used for this project. Otedola foundation will also lease 6,000 Mt of milling machine for the production of the palm oil.

**Conclusion**

Management of oil palm plantations have been started from plantation clearing, seeding, planting to harvesting. Indicators used in the management of the estate is the selection of land, planting materials, technical management, management during harvesting, and caring environment. If dilakuukan management and well-executed that recommended the appropriate mechanism will increase the productivity of fresh fruit bunches (FFB), the efficiency of work and financing.