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DEPARTMENT:Medical Laboratory Science

COURSE: AFE 202

COURSE TITLE: Food Production and Health Awareness

**A FEASIBILITY REPORT / BUSINESS PLAN FOR THE DEVELOPMENT OF A FIVE HUNDRED HECTARE COCOA PLANTATION AND ESTABLISHMENT OF 50**

**TONNES PER DAY CAPACITY COCOA EXTRACTION PLANT AT UBAH FARMS BY BENIGN AGRIBUSINESS VENTURES**

**Executive Summary/ Project Description**

This feasibility plan reviews the economic viability of the development a 500-hectare palm plantation and the erection of a palm oil extraction plant in Ughelli, Delta State by the Ughelli thrift and credit society. The Plantation will deliver about 20000 tonnes of Cocoa in a production cycle. The cocoa extraction plant will process about 5,250 tonnes of palm kernel which can may be used in cakes, creams, drinks, toppings and cookies.Besides its use as a food, by use of the scientific process it has been determined that cocoa is beneficial for health. Cocoa has nearly twice the anti-cancer [antioxidants](/wiki/Antioxidant" \o "Antioxidant) of red [wine](/wiki/Wine" \o "Wine), and up to three times those found in [green tea](/wiki/Green_tea" \o "Green tea).

There is high local interest for these items on account of our tremendous populace and creation limitations prompting deficiency of the ware. Processing is done mostly in the South with Delta and cross rivers as makers.

Sponsorship

The project is sponsored by Kanuhor Uvwremu Benign ,a medical laboratory scientist,who has had a passion for agriculture since she was a child and wants to promote the productivity of farmers in her native state.

**Management**

I will ensure the actual budget is being monitored to show that the actual result reflects the expected result as contained in the blueprint project plan .

The Managing Director shall be responsible for the co-ordination of the day to day management of the cooperative business. He is answerable to the Board of Directors; he will deploy the resources of the organisation to reach the aims of the organisation. He must have good knowledge of business and its risks in order to manage funds effectively and make profit.

The management of the project will consist of a Board of Directors. This will be made up of shareholders and member of the cooperative who have stake in the continuity, growth and profitability of the business as well as distinguished agribusiness professionals of proven honesty and vast knowledge or education in the project area. The main aim of the board will be to give tactical management and plans that will ensure longevity of the organization. The board will ensure that the organization is in line with the rules and regulations set by the authorities.

Technical Assistance

The organisation has a healthy relationship with Delta State Government, Delta State Ministry of Agriculture, Farmers5 Union, Agric Cooperatives, marketers and individual farmers. The organisation will get technical support from this relationship in the area of production through contract farming or out grower scheme. The Organisation also has a good understanding with BOA (Bank of Agriculture) and we are offering jobs to the best local farmers in the company as well as monetary rewards.

The organisation will fund the processing factory and access finance for the palm oil extraction equipment from BOI (Bank of Industry) at the rate of 5%. The organisation has relationship with high profile commercial banks and will approach one for loan to clear the land which will be rented to members of the cooperative

Market and Sales

Market orientation: domestic; South East, Nigeria ,Europe is an interesting market for cocoa since it is a very diverse market. It is also the world's largest chocolate manufacturer and exporter market.

Market Share: 5% niche market in South East Nigeria

The major states that produce cocoa are [Ondo](/wiki/Ondo_State" \o "Ondo State), [Cross River](/wiki/Cross_River_State" \o "Cross River State), [Ogun](/wiki/Ogun_State" \o "Ogun State), [Akwa Ibom](/wiki/Akwa-Ibom_State" \o "Akwa-Ibom State), [Ekiti](/wiki/Ekiti_State" \o "Ekiti State), [Delta](/wiki/Delta_State" \o "Delta State), [Osun](/wiki/Osun_State" \o "Osun State)and [Oyo](/wiki/Oyo_State" \o "Oyo State).

Tariff and Import Restriction

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

**Profitability**

Physical, chemical, biological, weather and environmental factors such as temperature, sunlight, water, air, soil conditions, varieties of seed, pests, variety of fertilizer, diseases, price fluctuations and other risks e.g. invasion of unwanted animals e.g. sheep, cattle etc. However, technical, scientific and financial based solutions will be employed to hedge against risks and safeguard profit. Irrigation would be performed twice to ensure production during the dry season i.e. (two cycle of production in a year)

**PROCESS OF COCOA EXTRACTION**

Step #1: Plucking and opening the Pods

Cocoa beans grow in pods that sprout off of the trunk and branches of cocoa trees. The pods are about the size of a football. The pods start out green and turn orange when they're ripe. When the pods are ripe, harvesters travel through the cocoa orchards with machetes and hack the pods gently off of the trees.

Machines could damage the tree or the clusters of flowers and pods that grow from the trunk, so workers must be harvest the pods by hand, using short, hooked blades mounted on long poles to reach the highest fruit.  
  
After the cocoa pods are collected into baskets ,the pods are taken to a processing house. Here they are split open and the cocoa beans are removed. Pods can contain upwards of 50 cocoa beans each. Fresh cocoa beans are not brown at all, they do not taste at all like the sweet chocolate they will eventually produce.

Step #2: Fermenting the cocoa seeds

Now the beans undergo the fermentation processing. They are either placed in large, shallow, heated trays or covered with large banana leaves. If the climate is right, they may be simply heated by the sun. Workers come along periodically and stir them up so that all of the beans come out equally fermented. During fermentation is when the beans turn brown. This process may take five or eight days.

Step #3: Drying the cocoa seeds

After fermentation, the cocoa seeds must be dried before they can be scooped into sacks and shipped to chocolate manufacturers. Farmers simply spread the fermented seeds on trays and leave them in the sun to dry. The drying process usually takes about a week and results in seeds that are about half of their original weight.

Government Support and Regulation

The project is in line with the economic diversification objective of the government. It also supports foreign exchange and reduction of import. It creates economic opportunities, market access, improved income for farmers and supports the food security objective of government.The project will benefit from fund government gives to the agriculture sector. The project will also benefit from the favourable policy of zero duty for agricultural and equipment import. Restriction of forex for all food products will also widen market opportunity. The project will contribute significantly to employment, increase in output, stability in price and stable exchange rate.

**Project Timeline**

The project will be completed within land a half years preferably between September, 2019 to March, 2021 because land clearing is mostly done in the dry season.

**Estimated Project Costs and Revenue**

Fixed Cost

Land Clearing

|  |  |  |  |
| --- | --- | --- | --- |
| Activity | Quantity | 封 | K |
| Land Clearing | 1 Hectare | 200,000 | 00 |
| Cross cutting | 1 Hectare | 50,000 | 00 |
| Rome ploughing | 1 Hectare | 50,000 | 00 |
| Sub total | 1 Hectare | 300,000 | 00 |
| Total | 500 Hectare | 150,000,000 | 00 |

(B) Equipment

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | QT | MODEL | USD |  | K |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Y |  |  |  |  |
| Tractor | 1 | Mahindra eMax  20S HST Cab  Tractor | 19,810 | 7,329,700 | 00 |
| Disc harrow | 1 | 2017 case ih true  tandem | 40,075 | 14,800,800 | 00 |
| Sub soiler | 1 | Blu-Jet Sub Tiller | 14,000 | 5,180,000 | 00 |
| Cocoa bean processing machine | 1 | Wuhan Acme  Agro-Tech co.  Ltd. | 16,000 | 6,241,094 | 00 |
| Tripper | 1 | 7CX-8T | 10,000 | 3,700,000 | 00 |
| Combine Harvester | 1 | AW-85GR | 23,000 | 8,500,000 | 00 |
| Boom sprayer | 1 | 3W-1000L-18 | 7,500 | 2,775,000 | 00 |
| Front loader | 1 | TZ10D | 7,000 | 2,590,000 | 00 |
| Total |  |  | 121,925 | 51,117,984 | 00 |
|  |  |  |  |  |  |

(C) Vehicle

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type | Model | QTY |  | K |
| Pick-up Truck | HILUX | 2 | 50,722,600 | 00 |

(D) Irrigation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type | QTY | Model | USD |  | K |
| Hose Reel | 1 | 140 - | 28,186 | 10,428,820 | 00 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | 440MT |  |  |  |
| water | 200litres |  |  | 300,000 | 00 |
| Total |  |  |  | 10,728,820 | 00 |

Operating Cost

|  |  |  |
| --- | --- | --- |
| Working Capital |  |  |
|  |  | K |
| Ploughing/Ha | 30,000 | 00 |
| Harrowing/Ha | 20,000 | 00 |
| Total | 50,000 | 00 |
| **For 600Ha** | **21,000,000** | **00** |
| Mechanization and storage | 105,000 | 00 |
| **For 600Ha** | **63,000,000** | **00** |
| Input / Ha | 100,000 | 00 |
| **For 600Ha** | **57,000,000** | **00** |
| Area yield insurance | 20,000 | 00 |
| Produce aggregation | 7,000 | 00 |
| Geo Spatial Service | 5,000 | 00 |
| Sub Total | 32,000 | 00 |

|  |  |  |
| --- | --- | --- |
| **For 600 Ha** | **16,200,000** | **00** |
| Interest per hectare | 30,000 | 75 |
| **For 600 Ha** | **18,000,000** | **00** |
| Total cost per hectare | 292,000 | 00 |
| **For 600 Ha** | **175,200,000** | **00** |
| Loan principal and interest | 267,404 | 25 |
| (cost per Hectare) |  |  |
| **For 600Ha** | **160,442,400** | **00** |
| **Irrigation cost for 600Ha**  **(excluding fixed cost)** | **30,500,120** | **00** |

Amortization

|  |  |  |
| --- | --- | --- |
|  |  | K |
| Land clearing amortization | 33,000 | 00 |
| (per hectare) |  |  |
| **Land clearing** | **19,800,000** | **00** |
| **amortization (600hectare)** |  |  |

Amortization(2nd Cycle)

|  |  |  |
| --- | --- | --- |
|  |  | K |
| Land clearing amortization | 19,000 | 00 |
| (per hectare) |  |  |
| **Land clearing** | **11,400,000** | **00** |
| **amortization (600hectare)** |  |  |

REVENUE

|  |  |  |
| --- | --- | --- |
| Yield per hectare 50 tonnes@ 封 130,000 per tonne | | |
|  |  | K |
| Revenue per hectare | 420,000 | 00 |
| **For 600 Ha** | **252,000,000** | **: 00** |
| **Revenue for 600Ha (without** | **91,557,600** | **: 00** |
| **amortization)** |  |  |
| **Net revenue with amortization (600ha** | **71,800,600** | **: 00** |
| **clearing)** |  |  |
| 2nd Production Cycle |  | |
| **Net revenue for 600 Ha(without** | **51,579,600** | **: 00** |
| **amortization)** |  |  |
| **Net revenue with amortization(600ha** | **40,557,600** |  |
| **clearing)** |  |  |
| Annual Net revenue (1st+2nd Cycle) | 112,358,200 | |

Funding Mechanism

-Kanuhor Uvwremu Benign will provide 500H of cleared farmland in Delta state and lease it to members of the thrift and credit cooperative society.

-Equity investor to provide equity for equipment and vehicles purchase.

-Where possible equity investor to provide equity for working capital or otherwise secure loan at the rate of 9% through government intervention window at the Bank of Agriculture, Bank of Industry and Commercial banks.

Conclusion

This is a technically feasible and commercially viable project. It is therefore recommended for funding so implementation can take place.