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Course: AFE 202

Course Title: Food Production and Health Awareness

A FEASIBILITY REPORT / BUSINESS PLAN FOR THE DEVELOPMENT OF A SIX HUNDRED HECTARE PALM PLANTATION AND ESTABLISHMENT OF 50 TONNES PER DAY CAPACITY PALM OIL EXTRACTION PLANT AT UBA FARMS BY KALU AGRIBUSINESS VENTURES AND CONSULTANCY

CONFIDENTIALITY AGREEMENT

Executive Summary/ Project Description

This feasibility plan inspects the achievability of and indeed economic viability of the development a 600-hectare palm plantation and the erection of a palm oil extraction plant in Umuahia, Abia State by the Umuahia thrift and credit corporate society. The Plantation will deliver about 1,500 tonnes of palm kernel in a production cycle. The Palm oil extraction plant will process about 5,250 tonnes of palm kernel which can be used as kernel cake in the animal industry it can also be processed into delicious and fresh palm oil for cooking or, in the manufacture of soap or for pharmaceutical purposes. 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-East with Abia and Imo as lead makers. Nigeria imports huge amount of palm oil and its subsidiaries to supplement shortage domestically.

The project proposed would create economic opportunities, have a positive effect on individuals, help foreign exchange as well as contribute economically to the development of the country. The whole palm oil to be prepared will be sourced locally through direct production, contract farming in Abia state and purchase from smallholder farmers in other processing areas. The project will make markets accessible, improve the pay of farmers, provide shelter for farmers during work and contribute significantly to food security. It will also create adequate returns for sponsors and investors.

Sponsorship

The project is sponsored by Kalu-Umeh David, an Electrical Engineer. Kalu-Umeh David is empowering smallholder farmers in Umuahia through the Umuahia thrift and credit society. He has had a passion for agriculture since he was a child and wants to promote the productivity of farmers in his native state. Kalu Agribusiness Ventures & Consultancy will be responsible for the management of the project as well as being a consultant to the farmers on problems they might encounter

Management

The management of the project will consist of a democratically elected Board of Directors at the pinnacle of the structure of the organisation. 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.

The Managing Director/President 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.

Technical Assistance

The organisation has working relationship with NASC (National Agricultural Seed Council) through an executed MoU (Memorandum of Understanding). NASC is responsible for registering and licensing seed companies. 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 cooperative will also seek grant from United State Africa Development Foundation (USADF). 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.

The organisation has a healthy relationship with Abia State Government, Abia State Ministry of Agriculture, Farmers' 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 has very good relationships with and linkages to industry players in the project area who will offtake products through a purchase and sale contract agreement. They include Obu farms, Okwara & sons mills, Chukwudi's animal care, Chukwuka"s poultry farm. The palm oil can be sold to pharmaceutical companies and cafeterias as well as 'garri' processing factories

Market and Sales

Market orientation: domestic; South East, Nigeria

Market Share: 5% niche market in South East Nigeria

Users of Products: edible oil for human, kernel cake for the livestock industry, cosmetics industries in South East, pharmaceutical companies

Competition analysis

Akwa-Ibom produces the most palm oil other states that produce palm oil include Abia, Rivers, Edo, Imo, Ondo, Bayelsa, Cross-River and Delta. The nine states mentioned above are the states that produce palm oil. The only places where significant production takes place is in South East, Nigeria. Based on this above analysis, competition in terms of production in South-South, Nigeria is non- existent compared to the demand for produce in the South-East.

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 high demand for palm and palm derivatives in the South-Eastern part of Nigeria. The condition of infrastructure though average still supports processing, production and trade within Nigeria.

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)

Technical Feasibility

The projects (production of palm kernel and palm oil extraction) are technically feasible. In terms of technology, palm oil is produced by pressing the pulp of the fruit which is pre-sterilized. Afterwards, the resulting palm oil is processed in a centrifuge to separate water and other unnecessary inclusions. Before that the oil should be preheated to 100 degrees.

The oil goes through five (5) stages of refining:

1. Getting rid of mechanical impurities.
2. The stage of hydration. The phospholipids are extracted during this process.
3. Getting rid of the free fatty acids and neutralization process.
4. Whitening(bleaching).
5. Deodorization.

On the palm oil production, we have specialists in mechanization, irrigation, farm management, crop production, weed science, market development, agric extension and economics and accounting as part of our management team. We also have specialists in

quality control as part of our management team. The state of infrastructure around the organisation and in Abia is adequate and suitable for the location of the farm/firm for efficient production, processing and marketing. Raw materials will be made and sourced locally.

The major competitors in the South East are Okomu Oil Palm Compny Plc. Okomu have an installed capacity of 5000 tonnes per day in Abia, Imo, Akwa-Ibom and Delta. Our organisation will target a market niche and penetrate through cooperative societies to make our brand and product favourable. From our analysis, combining production and processing will give us a competitive edge.

We are using the best international practices for our project, sustainable production and care for the environment. Although some degree of deforestation will occur, the EIA (Environmental Impact Assessment) report shows little or no damage to the environment as it relates to the issue of climate change. Organic fertilizer will be substituted for chemical fertilizer within four years of farm operations. Crude tools should be phased out within five years of farm operations.

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 1and a half years preferably between October, 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	₦	K
Land Clearing	1 Hectare	250,000	00
Cross cutting	1 Hectare	50,000	00
Rome ploughing	1 Hectare	50,000	00
Sub total	1 Hectare	350,000	00
Total	600 Hectare	210,000,000	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	14,867,825	00
Sub soiler	1	Blu-Jet Sub Tiller	14,000	5,180,000	00
Palm sickle cutter	1	Wuhan Acme Agro-Tech co. Ltd.	540.5	199,985	00
Tripper	1	7CX-8T	10,000	3,700,000	00
Combine Harvester	1	AW-85GR	23,000	8,510,000	00
Boom sprayer	1	3W-1000L-18	7,500	2,775,000	00
Front loader	1	TZ10D	7,000	2,590,000	00
Sub total			121,925	45,152,510	00

(C) Vehicle

Type	Model	QTY	₦	K
Pick-up Truck	HILUX	2	47,722,600	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	20,000	00
Harrowing/Ha	15,000	00
Total	35,000	00
For 600Ha	**21,000,000**	**00**
Mechanization and storage	105,000	00
For 600Ha	**63,000,000**	**00**
Input / Ha	95,000	00
For 600Ha	**57,000,000**	**00**
Area yield insurance	15,00	00
Produce aggregation	7,000	00
Geo Spatial Service	5,000	00
Sub Total	27,000	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 (cost per Hectare)	267,404	25
For 600Ha	**160,442,400**	**00**
Irrigation cost for 600Ha **(excluding fixed cost)**	**30,500,120**	**00**

Amortization

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

Amortization(2nd Cycle)

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

REVENUE

Yield per hectare 50 tonnes@ ₦130,000 per tonne	
	₦ K
Revenue per hectare	420,000 : 00
For 600 Ha	**252,000,000 : 00**
Revenue for 600Ha (without amortization)	**91,557,600 : 00**
Net revenue with amortization (600ha clearing)	**71,757,600 : 00**
2nd Production Cycle	
Net revenue for 600 Ha(without amortization)	**51,9579,600 : 00**
Net revenue with amortization(600ha clearing)	**40,557,600**
Annual Net revenue (1^{st}+2^{nd} Cycle)	112,315,200

Currency conversion rate: ₦370.00 to 1USD

Funding Mechanism

Kalu-Umeh David will provide 600Ha of cleared farmland in Abia state and lease it to members of the thrift and credit cooperative society. Kalu-Umeh David will also lease 10,000MT capacity silo as equity contribution

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