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**MATRIC NO: 18/LAW01/157**

**ASSIGNMENT TITLE: ASSIGNMENT ON FOOD PRODUCTION AND HEALTH**

**COURSE TITLE/CODE: (AFE 202)**

**A FEASIBILITY REPORT/BUSINESS PLAN FOR THE DEVEOPMENT OF A MAIZE (CORN) FARMING INDUSTRY PROJECT PLAN BY CARDIFF MAIZE FARMS, INC.**

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**EXECUTIVE SUMMARY/ PROJECT DESCRIPTION**

In south-western Nigeria, the norm has time immemorial been to wait for the rain every year; hence, the overdependence on rain by the farmers (in the region) for agricultural purposes. This is largely due to the abundant rainfall usually experienced in the region between April and September annually. This in turn subsequently leads to scarcity of common staples (like maize) during the dry season (i.e. October to April).  All year round cropping of maize will definitely not be a bad idea.

An undeniable and obvious fact is the scarcity of maize (usually complete disappearance) during the dry season in Nigeria where it is not just processed and consumed as main food but as appetizer or dessert. The reason is that no farmer is ready to scoop water from the river or to delve into modern irrigation given the stress and the cost respectively. Tapping into this business opportunity therefore seems innovative but not without serious financial commitment and relentless effort on the part of the management. A drip irrigation system is needed to achieve this on (a given land, say) 2.5 acre of land.

Pragmatic and cautious analysis have shown that there is huge returns on investment and profit is certain with hard work, zeal, dedication, financial discipline, managerial competence garnered from experience, good market demand for maize during dry season.

The analysis of the present market situation shows that the maize products can survive any existing or unforeseen competition. More so, financial analysis shows that the proposed project is not only profitable, but also viable, feasible and sustainable.

Finally, careful assessment of the environmental and organizational factors using SWOT analysis reveals a project that has a promising future and a high propensity of success.

**SPONSORSHIP**

Cardiff Maize Farm, Inc. is a family business that is owned by Mr. Ken Cardiff and his immediate family members. The farm cum business will be fully and single handedly financed by Kent Bloomberg and his immediate family members. Its also private in the commercial farming business for the purpose of maximizing profits hence we have decided to explore all the available opportunities within the industry to achieve our corporate goals and objectives.

In essence we are not going to rely only on the sale of our farm produce to generate income for the business. Below are the sources we intend exploring to generate income for Cardiff Maize Farms, Inc.

* Cultivating of various species of maize (both organic and non-organic)
* Standard Food processing plant.

 **MANAGEMENT**

**Management Structure**

To start with, a competent farm manager should suffix for the achievement of the business targets and objectives. The owner (if not the manager) should be frequently updated by the manager through phone calls, SMS, WhatsApp, and/or e-mails on any development that might surface during the production or marketing phase. All necessary production and accounting/financial records should be properly kept for checks and balances, proper documentation and to achieve a holistic managerial success.

At Cardiff Maize farms, Inc., we will ensure that we hire people that are qualified, hardworking, dedicated, customer centric and ready to work to help us build a prosperous business that will benefit all the stake holders (Owners, workforce, and customers).

In view of the above Cardiff Maize farms, Inc. Have decided to hire qualified and competent hands to occupy the following positions;

- Chief Operating Officer

- General Farm Manager

- Administration/Accountant

- Maize Cultivation Manager/supervisor

- Maize Processing and Packaging Plant Manager

- Sales and Marketing Executive

- Field Employees

- Front Desk Officer.

**Technical Assistance**

For many farmers in Nigeria, dry season is a threat; however, with respect to this business idea, it’s indeed an opportunity to make substantial profit through efficient market penetration and effective market dominance. In order to achieve this, a drip irrigation system would be adopted.

Water should be pumped on daily basis into the reservoir sitting on scaffolding using the generator to power it. The available land may have been abandoned for many months or years, hence, needs to be cleared and ridged in preparation for planting. Drought tolerant maize variety seeds could be sourced from International Institute of Tropical Agriculture (IITA) Ibadan during the dry season, for optimum performance and high yield. Two weeks after germination, *super gro* with DDVP insecticides should be duly applied on the sprouting seedlings for maximum yield and protection against insect pests respectively. Exactly 6 Weeks After Planting (WAP), weeding of the whole maize plot should be carried out to prevent competition with the maize stands. And by 10 WAP, harvesting should be gradually initiated up till the harvesting of the last maize cob on the plot, and this should be done within a period of 2-3 weeks to prevent quality loss *in situ* on the plot.

The main objective is to maximize profit by taking advantage of other farmer’s weaknesses in the dry season and satisfying the salivating needs of the targeted customers.

**Marketing Strategy**

An effective production can be inefficient when there is a lax in marketing. A good production technique without sound marketing strategies is indeed a work in vain. Even though, there is a ready-made demand for fresh *maize* in the market, more still needs to be done to ensure rapid distribution and profitable sale of the maize.

Experts have postulated that with the increasing Nigerian population, the demand of maize as food will increase. The increasing price of food items in Nigeria at the moment, is generally becoming a blessing for existing farmers and prospective ones alike. Worthy of emphasis at this juncture is that, it is no more news that the Nigerian government is currently implementing strategies to reduce its dependency on crude oil, and its paying special attention to the agriculture sector.

It is imperative that before setting up a maize farm, the prospective farmer should identify his market *ab initio.* The farmer has to determine:

* whether to use middlemen or retailers;
* whether to sell in bloc (of items) or to sell in unit packs;
* whether to give it a befitting package or not;
* whether to sell raw or sell processed (after adding value it);
* whether to sell at farm gate price or at prevailing market price, etc.

The most important thing is for the farmer to make a choice of decisions that will give optimal results given the resources available to the farmer.

Meanwhile, high market demand for this common (but scarce during dry season) staple food paves way for a deep penetration into the market and consequently a firm grip of market dominance. With a well calculated approach, the brand will be sought out for during glut (usually experienced during the rainy season) because the farmer has been there for them during the dry season.

**Competition Analysis**

The truth is that, it is easier to find entrepreneurs flocking towards an industry that is known to generate consistent income which is why there are more commercial farmers in the United States of America and of course in most parts of the world.

As a matter of fact, entrepreneurs are encouraged by the government to embrace commercial farming. This is so because part of the success of any nation is her ability to cultivate her own food and also export foods to other nations of the world.

Cardiff Maize Farms, Inc. is fully aware that there are competitions when it comes to selling commercial farm produce including corn all over the globe, which is why we decided to carry out thorough research so as to know how to take advantage of the available market in Nigeria and in other parts of the world.

We have done our homework and we have been able to highlight some factors that will give us competitive advantage in the marketplace; some of the factors are effective and reliable maize farming processes that can help us sell our produce at competitive prices, good network and excellent relationship management.

Another competitive advantage that we are bringing to the industry is the fact that we have designed our business in such a way that we will operate an all – round standard commercial maize farm that will also include a corn processing plant. With this, we will be able to take advantage of all the available opportunities within the industry.

Lastly, our employees will be well taken care of, and their welfare package will be among the best within our category (start – ups commercial maize farms) in the industry meaning that they will be more than willing to build the business with us, help deliver our set goals and achieve all our aims and objectives.

**Tariff and Import Restriction**

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

**Government support and regulation**

The project conform with the economic diversification objective of the government. It also supports foreign exchange and import reduction conservation of government. It creates economic opportunities, market access, improved income for farmers and support food security objectives of government. The project will benefit from the government intervention fund in 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, output increase, stable price and stable exchange rate.

**Project Timeline**

The project will be completed within a year preferably between June 2020 to June 2021, because land clearing is mostly done in the dry season.

**Estimated Project Cost and Revenue**

**FINANCIAL ANALYSIS**

**Cost-Returns Analysis**

The following table summarizes all the costs that would be involved in executing this project.

Table 1: Fixed and Variable Costs

|  |
| --- |
| **FIXED COST                                                   N                   N** |
| Drip irrigation system | 800,000 |  |
| Borehole | 500,000 |  |
| **Total Fixed Cost** | **1,300,000** |  |
|  |  | **1,300,000** |
| **VARIABLE COSTS** |  |  |
| **INPUTS** |  |  |
| 6 bags of fertilizer | 33, 000 |  |
| 5L super gro | 5,000 |  |
| 3L of insecticides | 4,500 |  |
| 3 bags of drought tolerant maize seeds | 30,000 |  |
| Fuel (3L/day for 75 days) | 32,625 |  |
| **LABOUR** |  |  |
| Land clearing | 80,000 |  |
| Ridge making | 100,000 |  |
| Weeding | 30,000 |  |
| 1 Farm manager (3 months) | 60,000 |  |
| 1 Farm assistant (3 months) | 30,000 |  |
| Miscellaneous | 10,000 |  |
| **Total Variable Cost** | **415,125** |  |
|  |  | **415,125** |
| **TOTAL COSTS** |  | **1,715,125** |

**P.S.: It’s assumed that the investor already has a 2.5 acres of land i.e. 1 ha; and that he also has a generator that can power a 1hp submersible pumping machine.**

RETURNS

A standard and recommended spacing for sole maize cultivation is 7.5cm X 2.5cm ≡ 0.75m X 0.25m.

And 2.5ac = 1ha ≡ 10,000m2

No. of stands/ha = 10,000m2 / (0.75 X 0.25) m2

= 10,000m2 / (0.1875) m2= **53,333 stands/ha**

Hence, 53,333 stands of maize are expected on the 2.5 ac. land.

**Assuming, the maize variety seed produces 1 cob per plant (which in most cases is 2 cobs per plant);** therefore, the yield in 1ha of sole maize plantation will be 53,333 cobs.

Meanwhile, during the dry season, maize cobs will be sold per unit of 3

Making a total of 53,333 /3 = 17,777 units.

And each unit will be sold at N100.

Therefore, the expected Total Revenue accruable from 1ha sole maize plantation ***in dry season*** is minimum of:

(17,777 X 100) = N 1,777,700.

Meanwhile, during the rain season, maize cobs will be sold per unit of 5

Making a total of 53,333 / 5  =  10,666 units

Therefore, the expected Total Revenue accruable from 1ha sole maize plantation ***in rainy season*** is:

53,333/ 5  =  10,666 X N100 = N1,066,600

Hence, in a planting year, the total (17,777 + 10,666 = 28,443) units will be sold.

**Profit and Break-Even Point**

Total Revenue for dry season = N 1,777,700

Total Revenue for rainy season = N1, 066,600

And Total Variable Cost is: N415,125

Gross Margin (dry season) = TR – TVC = N (1,777,700 – 415,125)

= N 1,362,575

Gross Margin (rainy season) = TR – TVC = N (1,066,600– 415,125)

= N 651,475

Meanwhile, table 2 shows the estimated seasonal sales, seasonal cash flows, and the annual cash flows.

Table 2: Estimated Cash Flow for the First 5 Years

|  |  |  |  |
| --- | --- | --- | --- |
| **YEAR** | **SEASONS** | **CASH FLOW PER SEASON** | **ANNUAL CASH FLOW** |
| **1** | Dry Season | 1,362,575 |  |
|  | Rainy Season | 651,475 | **2,014,050** |
| **2** | Dry Season | 1,362,575 |  |
|  | Rainy Season | 651,475 | **2,014,050** |
| **3** | Dry Season | 1,362,575 |  |
|  | Rainy Season | 651,475 | **2,014,050** |
| **4** | Dry Season | 1,362,575 |  |
|  | Rainy Season | 651,475 | **2,014,050** |
| **5** | Dry Season | 1,362,575 |  |
|  | Rainy Season | 651,475 | **2,014,050** |

**BREAK-EVEN POINT**

Since the Total Variable Cost = N 415,125;

Unit Variable Cost =   TVC / No. of units

=     415,125 / 28,443

=  N14.6  ≈  N15

And a unit goes for N100 per unit;

Therefore, Contribution = unit price (P) – unit variable cost (VC) = N100 – N15 = N85

BEP =   Total Cost / Contribution

=  N 1,715,125 **/** N 85

=  20177.9 ≈  20,178

This implies that as soon as 20,178 units are sold, profit will start trickling in from any further sales. In other words, proceeds, starting from the sale of the remaining 8,265 units (i.e. 28,443 – 20,178) in the first year of production, imply profit.

**Feasibility and Viability Analysis**

The financial viability was performed using the Net Present Value (NPV), Internal Rate of Return (IRR), Return per Capital Invested and Benefit-Cost ratio. Using Microsoft Excel package, Fig. 1 shows the Net Present Value (NPV) and the Internal Rate of Return (IRR). Given the positive NPV, the project can therefore be accepted as viable. We will also accept the feasibility and sustainability of the proposed *all year round maize project* given the fact that IRR (i.e. the rate at which Net Present Value equals zero) is greater than the assumed market interest rate (i.e. 115% > 25%). It therefore implies that if the *maize project* is established with an initial outlay of  ₦ 1,715,125 on a loan of the said amount, entrepreneur should be expecting ₦ 2,844,300 in twelve months time because the rate of return on investment (which is 115%) is greater than the assumed interest rate on loan (which is 25%).

Given that the *status quo* (of labour and other input materials) remains in the next 5 years, the NPV and IRR are analyzed as follows:

Table 3: MS-Excel worksheet showing estimated NPV and IRR

|  |  |  |
| --- | --- | --- |
|  | **ESTIMATED NPV AND IRR OF THE ALL YEAR ROUND MAIZE PRODUCTION PROJECT** |  |
|  | **YEARS** | **ANNUAL CASH FLOWS** | **YEARS** | **ANNUAL CASH FLOWS** |  |
|  | Year1 | 2014050 |  |  | Initial Outlay | -1715125 |  |
|  | Year2 | 2014050 |  | Year1 |  | 2014050 |  |
|  | Year3 | 2014050 |  | Year2 |  | 2014050 |  |
|  | Year4 | 2014050 |  | Year3 |  | 2014050 |  |
|  | Year5 | 2014050 |  | Year4 |  | 2014050 |  |
|  | Total Present Value | NGN 5,416,344.38 |  | Year5 |  | 2014050 |  |
|  | Initial Outlay | -1715125 |  |  | **IRR** | **115%** |  |
|  | **NPV** | **NGN 3,701,219.38** |  |  |  |  |  |

Return per capital invested= Net income / Gross return

= (**2,014,050 – 1,715,125) / 2,014,050**

= ₦ 298,925 / ₦ 2,014,050

= 0.148 ≈    0.15

The return per capital invested was found to be 0.15. This means that for every naira invested in the *maize project*, a 15K gain will be realized. The Benefit-Cost Ratio was also estimated.

Benefit-Cost Ratio (BCR) = Benefit / Cost

=       ₦ **2,014,050**  / ₦ **1,715,125**

= 1.17

Indeed, *the maize production project* can be adjudged to be a viable venture since the Benefit-Cost Ratio is greater 1.

**Funding Mechanism**

These are the areas where we intend sourcing for fund for Cardiff Maize Frams, Inc

* Generate part of the start – up capital from personal savings and sale of his stocks
* Generate part of the start – up capital from friends and other extended family members
* Generate a larger chunk of the start-up capital from the bank (loan facility)

NB: We have been able to generate 75% of the needed capital, and we are at the final stages of obtaining a loan facility from our bank. All the papers and documents has been duly signed and submitted, the loan has been approved and any moment from now our account will be credited.

**SWOT ANALYSIS**

It is not enough to emphatically adjudge a business profitable and viable without a proper analysis of Strengths, Weaknesses, Opportunities and Threats at one’s disposal. A detailed and convincing SWOT analysis is the mainframe of any successful business. Hence, SWOT analysis of this proposed *maize project* is pivotal to its success. The strengths, weaknesses, opportunities and threats of this proposed *project* are as follows:

**1) Strengths**: One of the factors critical to a successful outcome of any investment at all, is the availability of time to personally concentrate on its management. It is expected that the investor don’t just have the time but the determination and tenacious doggedness beaming on all shady paths to breakthrough. And if he doesn’t have the time to personally manage it, then he should employ a farm manager that can effectively and efficiently manage the project given his wealth of experience in project management (especially with regards to farming), and skills that will come to bear in all of the production and marketing processes involving administration, procurement, inventory management and the supply chain. Experience, they say, is the best teacher. It’s indeed a pedagogue that stands as a guide in the path of any successful entrepreneur, making him more courageous, determined and wise. Lessons from past business management experience of the investor must have been learned and should be re-invigorated while executing future plans to extract the best from his courage, devotion and wholesome commitment.

**2) Weaknesses**: Paucity of funds is usually a greater constraint in most cases. Without means of finance, even the best of ideas may not come to fruition or reality. However, a financial backbone should be harnessed from reliable source.

**3) Opportunities**: The high market demand for maize during the dry season, coupled with the inactivity of competitors (i.e. farmers) or farmer’s apathy during this season, leaves a loop hole to exploit and a goldmine to diligently explore.

**4) Threats:** During the dry season, most of “buffer crops/weeds” are generally absent or limited, hence, exposing a planted *sole crop* to insect pest infestation. To curtail this however, effective organophosphate insecticide should be applied on the emerging maize seedlings as at when due. Threat of theft is likely to rear its ugly head, depending on the farm location. And no threat from climate change is envisaged; because there won’t be any dependence on rain whatsoever.

**CONCLUSION**

The proposed *maize* production project has a reasonable chance of success at the start and it’s sustainable. The all year round *maize* has the propensity to be produced efficiently and can be marketed effectively.