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**VIRGY COMMERCIAL FARMS**

**BUSINESS PLAN FOR AGRICULTURAL PRODUCTION AND PROCESSING OF RICE, MAIZE AND SOYA BEANS IN ENUGU STATE**

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# EXECUTIVE SUMMARY

Virgy Commercial Farms (VCF) is constructing a 2,000-hectare commercial farm for agricultural production and processing of rice, maize and soya beans in Enugu and Anambra States (the “Project”).

The main promoters of VCF through their consultancy firm Omega Consultants have participated in the design and planning of a number of irrigation schemes and worked for the World Bank in studies for agricultural development in Nigeria. Furthermore, VCF has teamed up with AG Agro, an American based firm for the management of the farm and processing facility. They have over 10 years of experience in Nigeria and have been installing agricultural projects of this nature.

The land for the Project has been acquired by VCF in Adaba, Enugu State and Omogho Anambra State, Nigeria. The General area has a favorable climate for agriculture. The farm would be fully mechanized using the best available technology to produce crops. VCF is working with both International and local partners to ensure that the most appropriate technology is deployed in production and processing activities. The product strategy is based on quality. We would employ the best available people, make use of good quality planting material, good agricultural practices for produce and good manufacturing processes for food products and processed grains.

Through agricultural production and processing of rice, maize and soya beans, we aim to produce branded livestock feeds and processed bagged rice in the second phase. A complete grain processing plant would be installed on site in the second phase. It would comprise of dryers, mill, colour sorter, packaging machine, electrical materials, and spares for one year. The off fall from processing the rice would be utilized in the feed mill in combination with maize and the soya bean, thereby maximizing the utilization of the farm produce.

In the first three years of operations, VCF would focus on the production and selling of crops with adequate storage. Processing of the products would commence from the fourth year. There are plans to include livestock production/feed lot after the 5th year when set benchmarks and targets have been met.

The total capital requirement for the Project is N1.73billion. However, the Project has already commenced for year one with 100 hectares of land developed, and the total investment till date is N593,718,000. The Project requires capital injection to ensure continuity. The funds would be realized by a combination of equity investment, local bank loans, and reinvestment of profits from operations.

# COMPANY INFORMATION

## Overview

VCF is an Agriculture business and investments Company that invests in development and management of agriculture projects (particularly farms) in Nigeria. VCF is operating in conjunction with several specialist partners locally and internationally to deliver profitable large scale commercial farms that would produce essential agricultural products, provide employment, and make good returns to the investors.

## Management Team

### Table 1: VCF Management Team

|  |  |  |
| --- | --- | --- |
| **S/N** | **Name** | **Designation** |
| 1 | Mr. Emeka Ani | MD/CEO |
| 2 | Chika Obika. | Director |
| 3 | Ekene Ogu | Chairman |
| 4 | Dr. Tony Aneke | Executive Director |
| 5 | Jake Tapper | Technical Team Leader |

Table 1. lists the members of the management team, and their designations. The management team is made up of five individuals across different disciplines that would each benefit the Project. The detailed qualifications and experience of management are as follows:

**Ekene Ogu** holds a M.Sc. (Environmental Eng.) from the University of NewcastleUpon-Tyne, England, UK and a B.Eng. from University of Nigeria, Nsukka. He is a Member Nigerian Society of Engineers, COREN Registered and a Graduate Member Institution of civil Engineers (UK). He started his career at Omega Consultants in 1995 and became the chief executive in 2006. He has a good understanding of the business environment in Nigeria and has been responsible for the day to day running of the company. During his period as chief executive, he has successfully overseen the execution of over 160 projects for the company. Some of the projects carried out include; Ukwa Land reclamation and irrigation project for the Anambra Imo River Basin Development Authority, Agaie-Lapai Dam and Irrigation Project for the Upper Niger River Basin Development Authority, “Irrigation Study on Alternative Water Management Techniques in Fadama II Areas” for the World Bank.

**Mr. Emeka Ani** is an Enterprise Architect who designs and delivers strategic enterprise technology programs in the private and public sector. Prior to that, he was the VP of Professional Services at Mark Logic Corp where he was responsible for the delivery of customer engagements ensuring that the framework, methods and tools used to develop requirements, design and deliver solutions were consistent with proven best practices. Earlier in his career he worked as a Principal Consultant with TCS America where he advised global Semiconductor and Equipment Manufacturing clients on their supply chain strategy and was also a Solution Architect at i2 Technologies where he was instrumental in defining and developing i2’s Semiconductor SCM best practices and solutions. Mr. Ani received his M.Sc. in Electrical Engineering from University of Illinois and M.Sc. in Management Science from Stanford University.

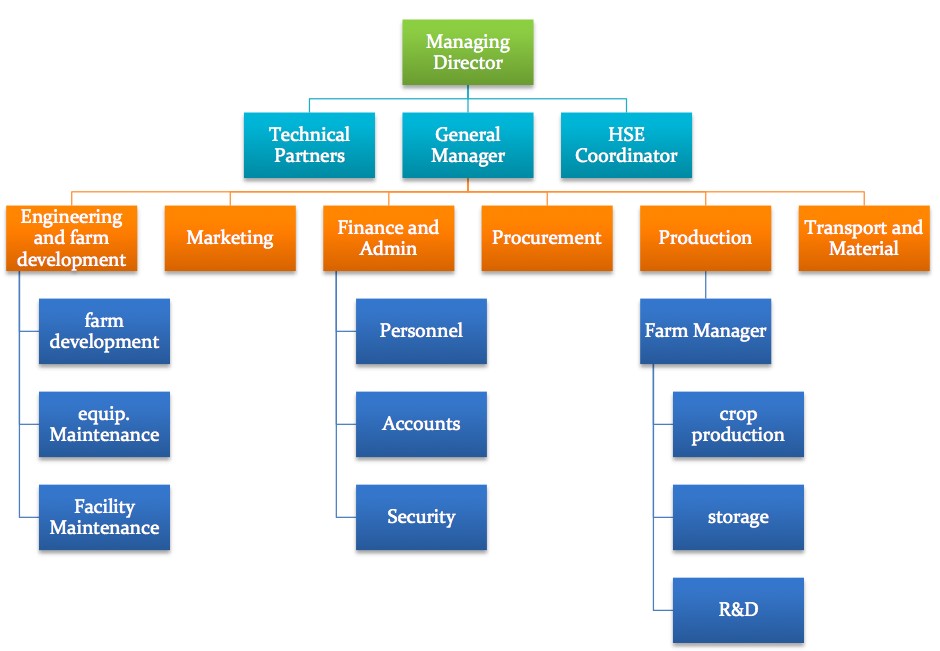
**Chika Obika** Has a B.Sc. (Hons) in Finance, and an MBA in Finance. He has over 18 years management and consultancy experience in strategic planning regional and local economic development, in Nigeria and overseas. He was SEEDS Adviser with the DfID UK funded State and Local Government Program. He had the responsibility for managing the relationship with the MDG Office in the Presidency, National Planning Commission (NPC), national capacity building through the Center for Management Development (CMD and a team of consultants providing support to the national SEEDS process; was Investment Analyst for International Finance Corporations Asia Departments Capital Market’s Unit. He was responsible for supervision of portfolio of over 40 financial institutions; was Investment Analyst for International Finance Corporations Africa Departments General Manufacturing Unit for East and Southern Africa. He supervised the portfolio of 11 manufacturing companies; was Investment Analyst for International Finance Corporations Africa Departments SME Fund covering East and Southern Africa. He also had responsibility for supervision of portfolio of over US$30.4 Million, was Financial Officer for the World Bank’s largest trust fund, the Global Environment Facility (GEF). He was responsible for restructuring and managing reporting infrastructure for US$2.5 Billion in commitments and US$35.4 million in annual budget resources.

**Dr. Tony Aneke** has a M.S., Manufacturing Systems Engineering, Minor in Operations Management from the School of Business University of Wisconsin – Madison, WI, USA; M.Sc., Mechanical Engineering, Focus on Probabilistic Design Methodologies from the Tennessee State University – Nashville, TN, USA and a B.Eng. (Hons), Mechanical Engineering, University of Nigeria, Nsukka. Entrepreneur and executive with extensive knowledge of the telecommunications and information technology service industry in the US, Africa and the Caribbean. He established three (3) successful companies in the United States and Nigeria with extensive consulting experience in Business Process Transformation, Change Management and Information & Communication Technology (ICT) for Small Businesses and Government Establishments in the United States and Nigeria. He has significant experience in technology and change management.

**Jake Tapper (**Technical Team Leader) is a graduate of University of Nebraska – Lincoln, Nebraska, -- Majoring in Agricultural Engineering with a Minor in Mechanical Agriculture and Animal Science. He has IA training in irrigation, Pumps, Center Pivots and electrification. Jerry was born and raised on a farm in Nebraska USA. He has been in the farming related business most of his life. He has worked on agricultural projects in areas such as Saudi Arabia, Egypt, Libya and of course the United States where he grew up. Jerry L Cunningham has been in Nigeria for almost 15 years, developing irrigated farm projects for the Federal Government, State Governments and private individuals.

## Organizational Structure

**Figure 1: VCF Organizational Structure**



From the Organizational structure in figure 1, the MD would be the Head of VCF. The Technical Partners, General Manager and HSE Coordinator would each report to the MD. The business units such as Engineering, Marketing, Finance, Production et al would report to the General Manager, and there would sub-units under specific business units.

# THE PROJECT

## Objectives

The objectives of the Project are to:

* Generate profit for the company, and fairly compensate owners and investors for their money and risk;
* Produce food to help feed an expanding Nigerian population;  Provide employment for Nigerians within the project sites; and  Stimulate economic growth in the host communities.

## Mission

VCF’s mission is ‘*to operate innovative, technologically up to date and environmentally responsible farms that are commercially viable’.*

VCF is sensitive to the fact that many entrepreneurs enter into communities in Nigeria to exploit and not give back to the communities. VCF is prepared to stimulate economic growth of our host communities by:

* Providing jobs;
* Encouraging entrepreneurship in the inhabitants of the host communities by providing land and inputs for their farming operations, and buying the produce from them for processing as the need arises, especially after the 3rd year of the project; and
* Creating and nurturing a healthy work environment, in which our employees are fairly compensated and encouraged to respect the customer and the quality of the product we produce.

## Keys to Success

* Uncompromising commitment to the quality of the end product; and
* Crops are expensive to grow, but we are planning to reduce our production costs significantly by the use of high yielding, water stress tolerant varieties such as NERICA, and also modern production technologies that limit the costs of land preparation. We are hopeful that these measures will increase our profit margin and make the venture profitable beyond the norm.

## Company Ownership

VCF was setup by two companies Nova Limited and Omega Consultants to exploit clear opportunities in the agricultural sector in Nigeria. It has a management agreement with AG Agro limited, an American company which has extensive experience in the management of commercial farms in Nigeria and worldwide.

## Company Location and Facilities

The farming and processing will be cited in Uzo-Uwani local government area of Enugu state and Orumba North Local Government Area of Anambra state.

## Product

In its location, VCF will produce Rice, Soya beans and Maize in the first phase, with plans to produce branded livestock poultry feeds and bagged branded rice in the second phase.

## Situation Analysis

The 3,000 hectares of land for the Project is virgin land, and therefore requires stumping which comes at a high cost. The Project commenced operations in January 2014. During this period of operations, the company has achieved the following:

* Acquired title to 3,200 hectares of land in Enugu and Anambra states; and  Planted 10ha of maize in the 2014 planting season.
* Cleared, prepared and disked 100 hectares of land for 2015 planting season. Preliminary soil tests and study for water sources has been carried out. The work performed so far has been financed wholly by equity. Additional funding is needed quicken the pace of work to meet key targets.
* On target to develop an additional 200 hectares of land in 2015.

# TECHNOLOGY FOR PRODUCTION AND PROCESSING

## Overview

**Machinery and Equipment** - The technology to be used to develop the farm would be mechanized equipment designed for the Nigerian environment coupled with the labor force available. Selecting equipment that will operate in the African sector means less computerization on equipment but maintaining the technology for advanced crop production. Example, AG has developed a planter that has the latest in technology for inserting the seed and fertilizer but kept the drive mechanism manual allowing for ease of operation and maintenance. We would utilize tractors and equipment that are manually controlled rather than computerized. Thus we would have equipment that can be easily repaired which is essential for constant operation.

**Fertilizers** - These are applied in various methods depending on the type of crops. Also, the types of fertilizers are matched to the crops. Dry fertilizer of most types is readily available in Nigeria and recently plant foods have been introduced for improved yields. Soil samples will determine the type and amounts of fertilizer that needs to be applied. Example, for corn, a starter fertilizer will be applied with the planter 2 inches down and 2 inches over from the seed, then each time the cultivation takes place, Nitrogen will be applied with the cultivator 4 inches over from each side of the plant and incorporated with the cultivator.

**Storage Facility** - For the initial stages of the farm a flat storage facility will be used. This is more economical allowing the storage facility to be utilized for other things when it is empty. Special precautions will be taken to ensure the moisture content of the crop is proper for storage. From the third year we would install modern Grain Storage & Handling systems.

**Harvesting** - Our Crops would be mechanically harvested. Being mechanically harvested means that the crops will have less foreign material and be of better quality making it easier to store. As the farm advances and additional storage is needed, silos would be installed to handle the volume of crops produced. This would be done in stages in an economic manner which will benefit the farm.

**Wastage** - Avoiding waste would be controlled by using the right equipment and having the proper storage facilities.

## Seed Varities

We would use the most suitable varieties for planting. We would be relying on the expertise of local centres of excellence such as IITA, Michael Okpara University of Agriculture Umudike, National Cereals Research Institute Badeggi and University of Nigeria Nsukka which is nearby. For soybean, we will be looking at the varieties code-named TGx1740-2F, TGx1987-10F, and TGx1987-62F. For maize we would start with Ife maizehyb 3 and Ife maizehyb 4. They are recognized as IITA hybrids A0905-28 and A0905-32, respectively. They were released on 4 July 2012 by the National Variety Release Committee of Nigeria. The hybrids outperformed local checks with yields ranging from 6 to 9 tons per hectare compared with 2 tons per hectare recorded on most farmers’ fields. We would also be testing various varieties on the farm on a continuous basis (R&D). By using the best available technology, engaging good people and putting a quality assurance program in place, we intend to compete on quality and produce goods to international standards. That is why we are spending huge cost on equipment. We want to produce these goods the same way they are produced in the developed countries.

## Land Clearing

We would use land clearing methods that would minimize the disturbance to the land. This we would be achieved by removing the trees and big roots with excavators and disking over the foliage with 12 foot Rome TRCW discs with hydraulic lift pulled by 300 hp 4 AG john Deer tractors. This way the land would be ready for planting in a shorter time.

## Irrigation

VCF would adopt ‘center pivot irrigation system’ to irrigate the farm. Centre pivot irrigation is a form of overhead sprinkler irrigation consisting of several segments of pipes joined together with sprinklers positioned along its length. The machine moves in a circular pattern and is fed with water from the pivot point at the center of the circle.

The center pivot irrigation typically uses less water compared to many surface irrigation and furrow irrigation techniques, which reduces the expenditure and conserves water. It also helps to reduce labour costs compared to some ground irrigation techniques, which are often more labour intensive. Some ground irrigation techniques involve the digging of channels on the land for the water to flow, whereas the use of center-pivot irrigation can reduce the amount of soil tillage that occurs and helps to reduce water runoff and soil erosion that can occur with ground irrigation. Less tillage encourages more organic materials and crop residue to decompose back into the soil, and reduces soil compaction. For the first year 65 hectares are being irrigated with plans to increase the area under irrigation in subsequent years. Each 80 to 100 hectares of land would fit a 65 hectares’ circle of pivot.

## Storage

VCF has plans to install modern Grain Storage & Handling system including the required components. We would install Model S21-12 MFS commercial flat bottomless storage silo with 251.7 M/Ton capacity base for MAIZE with a density of 721 kg/m3. This includes 6% compaction to Norm ASAE S413.1 Dec-97. The specifications include:

* Diameter 6.40 m
* Eave height 9.75 m
* Overall height 11.63 m
* Seismic Load Rating "0" - UBC 1997 (USA)
* Wind Load Rating 145 Km/h (90 MPH)

However, in the first year to save cost we would have basic storage in the form of a warehouse and install silos as our volume increase.

# MARKET OVERVIEW

## Market Analysis

Nigeria has a population of about 173.6million[[1]](#footnote-1) people. The ability to sell the product is not considered a major constraint to the success of the enterprise, because there is overwhelming demand for the commodities. The demand for the three main crops is discussed below[[2]](#footnote-2):

* **Rice**: In 2011/2012 Nigeria estimated demand for rice was put at 5.3 million tons. The local production was estimated to be 2.9 million tons with the shortfall of 2.4 million tons imported. Prime commercial farms plans to produce 50,000 tons, which is about 2% of the amount currently imported. This shows that there is a lot of room for expansion in the sale of the commodity. Rice is firmly established as a basic staple in the diet of the average Nigerian. Local alternatives such as yam, cowpea, and maize are in short supply and cost more than in years past. Despite recent efforts to boost domestic production, trade sources indicate it is very unlikely to significantly affect imports in the near-term. The decision by several nations to reduce the amount of rice available for export in order to maintain domestic stockpiles and reduce prices for their own citizens highlights the need for local production.

**Figure**

**2**

**:**

**Nigerian Rice Consumption & Supply**

0

1000

2000

3000

4000

5000

6000

Consumption

Local

Production

Imports

Planed PFL

Production

**MT**

**1000**

**Nigerian Rice consumption & Supply**

2012

2011

2010

* **Soybean:** In 2011/2012 Nigeria estimated demand for soybean was put at 930,000 tons. The local production was estimated to be 510,000 tons with a shortfall of 400,000 tons (100,000 tons for soybean meal and 300,000 tons for vegetable oil). Prime commercial farms plans to produce 5,000 tons per year, which is about 1% of the current shortfall. There has been high demand for soybean in Nigeria in recent years. Growth in domestic production lags behind rapid growth in demand by the food processing and poultry sector, averaging about 25 percent per annum the last five years. As a result, the price of soybeans has almost doubled in the last 10 months. Soybean meal remains a vital and preferred source of protein in compound feed by the Nigerian poultry industry. Soybean crushers in the country are operating below capacity and are unable to satisfy the growing demand for soybean meal and oil.
* **Figure 3: Nigerian Soybean Consumption & Supply**

0

100

200

300

400

500

600

700

800

900

1000

Demand

Local

Production

Imports

supply

shortfall

Planed PFL

Production

**1000**

**MT**

**Nigerian Soybean consumption &**

**Supply**

2012

2011

* **Maize**: In 2011/2012 Nigeria estimated consumption for Maize was put at 9.4 million tons. This consumption was mainly supplied by local production. Virgy commercial farms (VCF) would have the capacity to produce up to 50,000 tons per year of maize. VCF’s mechanized production methods would result in the production of a higher quality stone free maize grain which would be preferred by industrial users. Maize is the most important cereal crop in Nigeria and the main staple food in the South and the middle belt of Nigeria; increasingly used for animal feed. The bulk of Nigeria’s maize crop is used for direct human consumption, as it is a staple food of the Nigerian diet. Animal feed utilization of maize is also increasing due to the steady growth in the poultry sector witnessed in recent years. Total maize usage for feed production in Nigeria is forecast at 1.85 million tons in 2012/2013. Despite the good maize crop in 2011/2012, prices remain high because of rising demand. At present, the price of maize in Northern growing regions is 63,000 naira per ton ($400), up from 55,000 Naira ($366). The cost of maize delivered to the main poultry growing areas in Southern Nigeria is substantially higher.

**Figure**

**4**

**Nigerian Maize**

**:**

**Consumption & Supply**

0

1000

2000

3000

4000

5000

6000

7000

8000

9000

10000

Consumption

Local

Production

Imports

Planed PFL

Production

**MT**

**1000**

**Nigerian Maize Consumption &**

**Supply**

2012

2011

2010

## Target Market Segment Strategy

VCF is not intending to satisfy all buyers of our proposed products, but, only those who are most demanding. We are out to address the needs of the high-end buyer, who is willing to pay more for quality.

In the market for feed and produce, we have sought buyers who appreciate two attributes: the quality of the products, with an understanding of the benefits in terms of returns on investments, and customer satisfaction. This is in terms of sensory and nutritional quality, and wholesomeness of the produce. There is a large demand for crops produced under good quality control to the market level. VCF will produce a variety of food products that would meet international standards.

# STRATEGY AND IMPLEMENTATION

## Competitive edge

Quality is the best completive edge in the world market today. Nigeria is situated where supplies can be marketed to all of West Africa.

## Pricing strategy

The pricing of finished products is based on seasonal cycles and cannot be controlled by the farmer but the established trends that can be studied to give an indication of where the market prices are going. There are various organizations that track and compile these data both locally and internationally. Locally companies like NOVUS AGRO Nigeria commodity index and internationally, the FAO track and publish these data.

With the aid of irrigation, the crop cycles can be changed and marketing can be balanced with a constant stream of products. Also having products available off-season can enable the attraction of higher prices for crops. As we would be farming in the southeast closer to the markets, our products would command a premium, as our customers would not pay the associated transport cost that the traditional sources require.

## Sales strategy

The risks in the execution of this project is more on the production side than the marketing side as there is adequate demand for the product as clearly demonstrated in the ‘Market Analysis Summary’ of this document. The high import levels of grains make for a higher market in Nigeria than most export markets. The key to marketing is to have good quality products in virgin states rather than having a lot of inert material in the crop.

Selling something before it is produced is a hard sell to anyone. For the first year or two, we are aware that there may be need to effect a slight price discount to attract the attention of buyers. However, there would be a slight premium in subsequent years as the effect on quality of our large investment in the production process and our economy of scale begin to manifest. Once we prove the quality of our product we can get the top prices for it. For rice and maize we would sell to the Enugu and Onitsha markets while we would target companies like Moreson Nig, Willmerc Nig, Spectra Foods Nig, Grand Cereal and Oil Ltd, and Nestle Foods Plc for soybeans sale. We will have storage facilities to help offset the timing of harvest versus marketing. We can determine the best time to sell rather than selling at the time of harvest.

## Personnel Development Plan

Growth in the number of employees will take place gradually. We are working on a strong benefits policy with profit sharing and additional health care benefits and very low turnover. Plans are on to build houses on the farm for all staff. Our proposed salaries are generally higher than the market pay for the area in our industry, so we will ultimately pay a bit more for our people than what might be considered standard in our market. As we grow, we expect to see steady increases in our personnel to match the increases in sales.

## Strategic Alliances

VCF is collaborating with an International partner AG Agro for the latest in production and processing techniques for the Project.

# PRODUCTION STEPS

The correct farming procedure for various crops is documented in various literatures from the FAO and other agricultural institutions. VCF would employ the services of experts in this area to ensure that we achieve the optimal return on our investment. We would ensure that we employ the best practice in production methods to achieve the best possible result as producing high quality goods is our key to success.

Every crop has its unique production steps to achieve optimum results. As such, an illustration of the steps required for soybean production is presented below.

## Site Selection

We have selected adequate land that has a reliable water source, relatively flat with a local community fully in support of the project. Hydrological studies and agricultural soils test have been carried out on the land and they have shown positive results.

## Site Preparation

We would clear all existing vegetation during land preparation. Good seedbed preparation is important for a good crop of soybean. We would use land clearing methods that would minimize the disturbance to the land. This we would achieved by removing the trees and big roots with excavators and disking over the foliage with 12 foot Rome TRCW discs with hydraulic lift pulled by 300 hp 4 WD john Deer tractors. This way the land would be ready for planting in a shorter time.

## Seed Preparation for Planting

Good seeds are essential for a good crop. We would ensure that we procure the best quality seeds available from a reliable source and inspect it to ensure that it is properly sorted and treated. The seeds will be treated with Apron plus or similar products at the rate of 10 g/4 kg of seeds to prevent seeds from being damaged by insects and fungi prior to and soon after germination.

Recommended improved varieties of seeds would be used. Some recommended varieties of soybean by IITA include:

* Samsoy 2;
* TGx1740-2F, TGx1987-10F, and TGx1987-62F

Good seeds are obtainable from:

* National Seeds Service office.
* The Agricultural Development Project (ADP) or Ministry of Agriculture in Enugu state.
* The International Institute of Tropical Agriculture (IITA) ICS program.

We would also work very closely with the agriculture office of Ezeagu local government. It may sound trivial but it is a good way to work closely with the local community and to ensure that we benefit from numerous government programs for farming.

## Planting

Soybeans for example would be planted in rows. A spacing of 60-75 cm between rows and drilling of seeds at 5 cm along the rows is recommended. This requires about 50 kg of seed per hectare. For our Agroecology zone (Humid forest in Nigeria) the best date of planting soybean is 10-20 July but with irrigation we have more options.

## Weeding

We would ‘discover’ the crops with a tractor to control weeds at set times during the planting season. Also, weeds would be controlled using herbicides if required.

Pre-emergent herbicide:

* Apply Galex or Dual at 3-4 litres per hectare immediately after planting.
* Apply a combination of Fusilade and Scepter at 3-4 litres per hectare of each 3 weeks after planting.

## Fertilizer Application

Generally, fertilizer may not be used in soybean crop if the soil of the site contains sufficient organic matter content. We would improve poor soil with 50 kg of NPK 15:15:15 fertilizer and 200 kg of single Super Phosphate per hectare.

## Pests Insects

(Pod-sucking bugs and defoliators): Pod-sucking insects could cause substantial loss in some locations. In Nigeria insect pests are not a serious problem for now, but could be serious in future as hectarage of soybean cultivation increases under monocropping control. We would be watchful about this matter and pay required attention. Insecticides such as Sherpa Plus, Karate, Thiodian etc. can control insects.

## Rodent

Rodents, especially rats and rabbits, also cause damage to soybean fields. To counter this, we would keep the boundaries of the field free of weeds.

## Harvesting

The harvesting of soybean should coincide with dry weather especially in the case of farmers who plant in August in regions with bimodal rainfall. We would use mechanical dryers for soybean harvested during the peak of rainfall. Soybean matures 3 to 4 months after planting depending on the maturity group of the variety. At pod maturity, the color of the pod is strawcolored. The mature plants would be cut or uprooted at the ground level.

## Storage

Store grains under dry conditions (less than 10% moisture content). Test for moisture by denting a seed with your teeth. If the seed is dented then the seed is too moist to be stored. A well-dried seed will not be dented. Store the dried seeds in woven sacks, or polythene bags in a well-ventilated store, or in an air conditioned store.

# FINANCIAL PLAN

## Capital Requirement

**Table 2: Project Capital Requirement**

**Debt Equity**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **Equipment** | **Operating** | **Equipment** | **Operating** | **Total Investment** |
| **Year 1** |  |  | 68,450,000.00 | 525,268,000.00 | 593,718,000.00 |
| **Year 2** | 220,840,000.00 | 90,979,795.00 | 331,260,000.00 | 90,979,795.00 | 734,059,590.00 |
| **Year 3** | 401,700,000.00 |  |  |  | 401,700,000.00 |
| **Total** | **622,540,000.00** | **90,979,795.00** | **399,710,000.00** | **616,247,795.00** | **1,729,477,590.00** |

**Total Debt** 713,519,795.00

**Total Equity** 1,015,957,795.00

* The total capital requirement for the Project as seen in table 2 is approximately N1.73billion. The Project will be funded through a mix of 59% equity and 49% debt.
* For the operating expenses, 50% will be financed by equity and 50% by debt.

## Scope of Work

**Table 3: Hectares for Cultivation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **1** | **2** | **3** | **4** | **5** | **6** |
| Rain Fed | 0 | 305 | 610 | 1,220 | 1,830 | 1,830 |
| Dual Farmed | 5 | 195 | 390 | 585 | 1,170 | 1,170 |
| Total Rainfed | 5 | 500 | 1000 | 1805 | 3000 | 3000 |
| Irrigated | 65 | 195 | 390 | 585 | 1,170 | 1,170 |
| **Total Cultivated Hectares** | **70** | **695** | **1390** | **2390** | **4170** | **4170** |

Table 3 shows the planned cultivation of hectares over the years. Year one is 2014, 70 hectares of land has already been cultivated. The ‘rain fed’ is zero in year one because nothing was planted in the rainy season for the year 2014.

* Rain Fed – This is the rainy season period of the year, which usually lasts from May to September.
* Dual Farmed – This is the period in-between the rainy season and the dry season usually between October and November. For the financial analysis, the ‘dual farmed’ season is grouped under the ‘rain fed’ season.
* Irrigation – This is the dry season of the year, usually between December and April. Zero rainfall is assumed during the dry season.

## Loan Terms

* Loan amount – N713,519,795.00
* Interest rate – 10% for operations loan, 10% for equipment loan
* Moratorium – One year on the Principal and Interest

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 | 5 | 6 |
|  |  |  |  |  |  |  |
| Total Revenue | 17,450,065.00 | 245,250,195.00 | 559,425,195.00 | 955,342,793.00 | 1,748,475,585.00 | 1,748,475,585.00 |
| Farm Production Costs |  |  |  |  |  |  |
| Production - Rain | 419,000.00 | 43,157,000.00 | 88,903,420.00 | 165,284,793.00 | 282,952,915.00 | 291,441,502.00 |
| Production - Irrigation | 8,112,000.00 | 25,066,080.00 | 51,636,125.00 | 79,777,813.00 | 164,342,294.00 | 169,272,563.00 |
| Staff | 15,600,000.00 | 24,600,000.00 | 30,300,000.00 | 31,209,000.00 | 38,254,200.00 | 38,254,200.00 |
| General | 9,142,000.00 | 40,374,000.00 | 43,784,000.00 | 48,162,400.00 | 52,978,640.00 | 58,276,504.00 |
| **Total Expense** | **33,273,000.00** | **133,197,080.00** | **214,623,545.00** | **324,434,006.00** | **538,528,049.00** | **557,244,769.00** |
|  |  |  |  |  |  |  |
| **Gross Profit** | **(15,822,935.00)** | **112,053,115.00** | **344,801,650.00** | **630,908,787.00** | **1,209,947,536.00** | **1,191,230,816.00** |
| Gross Margin | -91% | 46% | 62% | 66% | 69% | 68% |
| Administration Costs: |  |  |  |  |  |  |
| Admin Expense | 21,800,000.00 | 36,500,000.00 | 39,500,000.00 | 64,500,000.00 | 64,532,250.00 | 64,564,516.00 |
| Finance Cost |  |  | 31,181,979.00 | 64,351,979.00 | 47,351,979.00 |  |
| Depreciation |  |  |  |  |  |  |
| Management Fee |  | 12,262,510.00 | 27,971,260.00 | 47,767,140.00 | 87,423,779.00 | 87,423,779.00 |
| **Total Admin Expenses** | **21,800,000.00** | **48,762,510.00** | **98,653,239.00** | **176,619,119.00** | **199,308,008.00** | **151,988,295.00** |
|  |  |  |  |  |  |  |
| **Profit Before Tax** | **(37,622,935.00)** | **63,290,605.00** | **246,148,411.00** | **454,289,668.00** | **1,010,639,528.00** | **1,039,242,521.00** |

* Repayment period – Four years
* Security – The security to be pledged for the facility for year two is a small estate of four houses valued at N250million in Enugu State, Nigeria. Additional security would be provided from year three if required.

## Profitability

**Table 4: Profitability Summary**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 | 5 | 6 |
| **Gross Income** | 17,450,065.00 | 245,250,195.00 | 559,425,195.00 | 955,342,793.00 | 1,748,475,585.00 | 1,748,475,585.00 |
| **Net Profit** | (37,622,935.00) | 63,290,605.00 | 246,148,411.00 | 454,289,667.00 | 1,010,639,527.00 | 1,039,242,520.00 |

 The Project begins to make profit from year two when more capital is injected into the business, and more hectares of land are being cultivated. The detailed breakdown of revenue projections can be found in Appendix six.

## Projected Profit and Loss

### Table 5: Project Profit & Loss Statement

From the Profit and Loss Statement we can see the following:

* Between year one and six, total revenue is expected to increase significantly because each year, the area of land to be cultivated is increased, therefore increasing the total crop value.
* Production cost during the irrigation season is significantly higher than during the rainy season because crops are artificially watered using irrigation machines that run on diesel.
* Salaries for crop production staff – It is assumed that operations will commence in year one with staff strength of 40, which would increase over the years.
* General expenses include items such as fuel, maintenance, insurance, utilities et. al. The General expenses are increased by 10% from year four upwards to allow for anticipated higher fuel and maintenance cost as the equipment and facilities get older.
* Administration expenses includes management fees, auditor’s fees, director’s allowance, legal fees et al. The management fees and Resident Manager expense are expected to increase between year two and four, while total administration expense will increase by 5% from year five to six. See Appendix five for the detailed breakdown of administration expenses.
* The Management fee is made up of a fixed cost as shown in administrative expenses and a 5% charge on turnover as contained in the P&L.
* Finance cost –At an interest rate of 10% for both the operating loan and equipment loan, all financing cost would be paid between year three and five.

## Projected Cashflows

**Table 6: Project Cash flow**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Year | 1 | 2 | 3 | 4 | 5 | 6 |
| **Inflow** |  |  |  |  |  |  |
| Equity Operations | 34,350,000.00 | 90,979,795.00 |  |  |  |  |
| Equity Equipment |  | 331,260,000.00 |  |  |  |  |
| Working Capital | 78,450,000.00 |  | 245,250,195.00 | 287,498,606.00 | 27,988,273.00 | 726,378,005.00 |
| Inflow - Operations Loan |  | 90,979,795.00 |  |  |  |  |
| Loan - Equipment Bank |  | 220,840,000.00 | 401,700,000.00 |  |  |  |
| Revenue | 17,450,065.00 | 245,250,195.00 | 559,425,195.00 | 955,342,793.00 | 1,748,475,585.00 | 1,748,475,585.00 |
| **Total Inflow** | **130,250,065.00** | **979,309,785.00** | **1,206,375,390.00** | **1,242,841,399.00** | **1,776,463,858.00** | **2,474,853,590.00** |
|  |  |  |  |  |  |  |
| **Outflow** |  |  |  |  |  |  |
| Expense | 55,073,000.00 | 181,959,590.00 | 313,276,784.00 | 501,053,125.00 | 737,836,058.00 | 709,233,065.00 |
| Loan Repayment |  |  | 70,000,000.00 | 170,000,000.00 | 262,249,795.00 | 211,270,000.00 |
| Capital Expenditure | 78,450,000.00 | 552,100,000.00 | 535,600,000.00 | 543,800,000.00 | 50,000,000.00 | 30,000,000.00 |
| **Total Outflow** | **133,523,000.00** | **734,059,590.00** | **918,876,784.00** | **1,214,853,125.00** | **1,050,085,853.00** | **950,503,065.00** |
| **Net Cash Flow** | **(3,272,935.00)** | **245,250,195.00** | **287,498,606.00** | **27,988,274.00** | **726,378,005.00** | **1,524,350,525.00** |

From the projected cash flow:

* The working capital for year one comprises of equity of the current investors and other items like land titles provided by NOVA limited.
* The Company expects to obtain a facility of N713,519,795 between year two (46%) and year three (56%).
* Operations would be funded by 50% equity and 50% debt of N90,979,795.00 each in year two.
* Debt of N622,540,000.00 would be acquired over two years for the purchase of equipment.
* Loan repayment will commence in year three, and would be paid over four years.  From year two, the project begins to have positive cash flow of N245,250,195.00.
* The ADSCR for the project is a low of 1.1 and a high of 8.2. This means that the Project would be generating sufficient income to pay its debt obligations. See table 7 for ADSCR.

**Table 7: Debt Service Coverage Ratios**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **3** | **4** | **5** | **6** |
| **NCF before financing** | **388,998,606.00** | **262,488,274.00** | **1,035,979,779.00** | **1,735,620,525.00** |
| **Repayment (Principal + Interest)** | **101,181,979.99** | **234,351,979.00** | **309,601,774.99** | **211,270,000.00** |
| **ADSCR** | **3.8** | **1.1** | **3.3** | **8.2** |

## Projected Balance Sheet

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **2** | **3** | **4** | **5** | **6** |
| Real Estate | 768,746,000.00 | 1,208,264,200.00 | 1,883,519,000.00 | 3,188,196,000.00 | 3,188,196,000.00 |
| Fixed Assets: |  |  |  |  |  |
| Capital Expenditures | 277,100,000.00 | 321,200,000.00 | 510,600,000.00 | 50,000,000.00 | 30,000,000.00 |
| Vehicles | 155,000,000.00 | 80,200,000.00 | 33,200,000.00 | - | - |
|  | 432,100,000.00 | 401,400,000.00 | 543,800,000.00 | 50,000,000.00 | 30,000,000.00 |
| Current Assets |  |  |  |  |  |
| Bank Balance | 245,250,195.00 | 287,498,606.00 | 27,988,273.00 | 726,378,005.00 | 1,524,350,526.00 |
| Total Assets | 1,446,096,195.00 | 1,897,162,806.00 | 2,455,307,273.00 | 3,964,574,005.00 | 4,742,546,526.00 |
|  |  |  |  |  |  |
| Current Liabilities |  |  |  |  |  |
| Loans | 311,819,795.00 | 643,519,795.00 | 473,519,795.00 | 211,270,000.00 |  |
| Net Worth | 1,134,276,400.00 | 1,253,643,011.00 | 1,981,787,478.00 | 3,753,304,005.00 | 4,742,546,526.00 |

**Table 8: Project Balance Sheet**

* The real estate is from the value of the land. The land value increases as more of it is developed over the years and irrigation equipment is installed.
* The Company is expected to grow strong over the years. The net-worth of the Company from year two is projected to be over N1billion increasing to over N4billion by year six.

# SWOT ANALYSIS

## Strengths

1. The Company is working with an International Partner to ensure best practices are employed for the Project.
2. The Project enhances the promotion and sustenance of agriculture and rural development in Enugu State and Nigeria at large.
3. The Project aligns with the Transformation Agenda of the President Jonathan Goodluck Administration to promote efficient exploitation and utilization of available agricultural resources.
4. The Company has a strong and competent Management Team in place that will drive success of the Project.
5. The Project would lead to Improved food security in Enugu State.
6. This Project would create employment opportunities for a variety of staff such as farm managers, store keepers, drivers, security mean, field clerks and other permanent labor. This would further lead to poverty reduction in the State.

## Weaknesses

1. Finance – Accessing finance has been a major challenge. The successful completion of this Project within stipulated timeframes is highly dependent on obtaining the required additional equity and a facility from a Bank or a DFI.
2. Adequate Staff – The ability to find staff that are already trained would be a challenge considering there are very few similar commercial farms in the region where the farm is located. This makes it pertinent for VCF to sign a management agreement with AG Agro in this regard.

## Opportunities

1. Through this Project, Enugu State has the potential to become a major hub for agricultural production of rice, maize and soya bean.
2. The success of this Project could attract Foreign Direct Investment into the State.

## Threats

1. Theft of crops is a major threat in agricultural production in Nigeria. Given the scale of the production and the use of mechanical harvesters, the crops would be harvested very quickly, much quicker than the manual method of the thieves. Also good security would be put in place to prevent this.
2. Disease and Pest attacks can greatly affect crop production which would affect profitability. However, competent staff would be employed to minimize and if possible eliminate this threat.
3. Loss of labour – Due to the high-end technology expected to be used for agricultural production, intensive training would be conducted, and loosing staff could threaten efficient operations. Therefore, staff would be offered attractive remuneration packages to provide a sense of job security and satisfaction.

# RISK ANALYSIS

|  |  |  |  |
| --- | --- | --- | --- |
| **S/N** | **Risk** | **Description** | **Mitigant** |
| 1 | Environmental  Risk | Risk of damage to land from soil erosion and other environmental hazards such as drought. | Adopt farming practices that would not encourage erosion;  Engage a competent Agricultural Management Firm to run the farm; Employ competent Staff |
| 2 | Price Risk | The risk of revenue loss due to price fluctuations of farm produce and key inputs such as fertilizer. | The Company intends to execute an Off-take Agreement to mitigate this. Furthermore, based on historical data, the probability of a drastic fall in price is minimal. The Government is proposing to ban the import of rice into the Country, which would help drive prices even higher. The effects of short-term price fluctuations can be further reduced by installing adequate storage to store crops in times of abundance, and sell during the off-season.  With regards to the fluctuations in key inputs like fertilizer, the government of Nigeria has always kept the prices low through various kinds of subsidies. There is no evidence that key government policies in this regard would significantly change in the near future. |
| 3 | Economic Risk | The risk of loss of land access due to badly designed titling schemes, infrastructure failure such as degraded roads, transport breakdowns. | Labor is key to production, therefore, an adequate HSE policy will be provided and enforced in the Company.    The Company is also investing heavily in standard commercial farming equipment that would minimize labor requirements.    To prevent land loss, industry best practices would be implemented in the farm.  Adequate attention would be given to basic required infrastructure. Funds have been allocated for this and have been included in the total Project cost estimates |

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|  |  |  |  |
| --- | --- | --- | --- |
| 4 | Political Risk | The risk that a change in government policies, community unrest, conflict and war, or political alienation will affect the viability of the Project. | The Company would take its social responsibility very seriously, and respect the local culture and educate staff to do likewise.  Furthermore, staff would be employed from the local community, and the Company would strive to maintain a strong security presence by carrying the local police and community vigilant service along in key security decisions.  Like most Companies, VCF would be apolitical in its dealings. |

|  |  |  |  |
| --- | --- | --- | --- |
| 5 | Force Majeure | The risk of loss due to natural disasters, circumstances beyond the control of the Company, caused by acts of God, strife, civil strike, commotion, etc. | Take Agricultural Insurance |
| 6 | Diversion Risk | The risk of loss from the proceeds of the loan being diverted for other purposes. | The loan will be disbursed in tranches between year two and three. The lending Bank would have access to the Company’s Project account where revenues related to the Project would accrue. |
| 7 | Demand Risk | The risk of lower than expected demand for farm produce, thereby adversely affecting cash flow. | Statistics from the market analysis show that there is strong demand for maize, soya bean and rice, therefore demand would not be a challenge in the near future. |
| 8 | Completion Risk | The risk that the Project particularly the land cultivation would not be completed on time, and on budget. | The promoters have extensive experience in the constructing infrastructure projects. Also clear performance indicators and benchmarks would be developed to monitor the performance of AG Agro, the specialist management company |

1. [↑](#footnote-ref-1)
2. [↑](#footnote-ref-2)