Feasibility Study

OIL AND ANIMAL RANCHING

Summary

This feasibility study was meant to evaluate the business opportunities evident in setting up an Oil palm production and processing farm on 2,400 hectares of land in Delta state. In addition, the feasibility also examined the viability of establishing an Animal ranch within the Oil palm plantation. The plantation has the capacity to produce annually 36,000 tonnes of fresh fruit bunch (7200 tons of Crude Oil palm), 2,500 palm kernel fruits. For most part of the study, we examined the following options.

- Cost Implication of setting up the Oil palm plantation and Processing
- Cost implication of setting up the Cattle ranch within the Oil palm plantation
- Analysis of Markets drivers and the business expectations.
- Financial Projection of the Business.

The study showed that setting up an Oil Palm plantation/processing and Animal ranch in Nigeria especially in Delta state is a highly profitable venture largely due to the demand for processed palm oil and cattle, and favourable conditions of operation for both farming ventures in terms of production and market availability.

After analysing the entire production process and the inputs needed to make a success of the business, we projected that a sum of N 846,004,800 will be required to set up the oil palm plantation and processing, the starting cattle ranch with 800 cattle will require N 118,500,000. (2019 figures)

On the overall, the business was projected to start giving returns on investment from the fourth year depending on the financing model adopted for this project. (Funds flow from shareholding, loans from banks, personal funds from the business owners, etc.)

The financial projections covering the first ten years of the project investments were prepared on the basis of assumptions considered to be realistic according to relevant indices that pertain to the industry.

The following were the assumptions for the oil palm production and processing

Assumptions (Oil Palm)

1. The 2,400 hectare land is virgin land requiring heavy duty equipment for clearing.
2. Recommended variety of Oil palm is Tenera (hybrid) for planting; yield per hectare is 15 - 20 tons/ha of fresh fruit bunch (FFB) and 3 -4 tons Palm oil/ha/yr (Approximately 4,400 litres/ha/yr).
3. Average gestation period of an oil palm asset (between 3-4 years)

4. It takes 90 to 100 days for seed to sprout.
5. Seedlings spend 10 to 12 months in the nursery before transplanting to the field.
6. On the field, oil palm is planted at a triangular spacing of 9m by 9m (143 seedlings are required per hectare)
7. For every 100 kg of fruit bunches, typically 22 kg of palm oil and 1.6 kg of palm kernel oil can be extracted.
8. As the oil palm continues to mature, its yield increases and it reaches peak production in years seven to eighteen. Yields start to gradually decrease after eighteen years.
9. The typical commercial lifespan of an oil palm is approximately 25 years.
10. Average price per litter used for the projection is N 480/Litter (N525.76 per Kg) (2019 figures)
11. Price projection increment of 10% every three years
12. Fully mature oil palms produce 18 to 30 metric tonnes of fresh fruit bunches (FFB) per hectare. The yield depends on a variety of factors, such as age, seed quality, soil and climatic conditions, quality of plantation management and the timely harvesting and processing of FFB.
13. The ripeness of FFB harvested is critical in maximising the quality and quantity of palm oil extracted. Harvested fruits must be processed within 24 hours to minimise the build up of fatty acids.

The oil palm tree yield is distributed over the entire year. The oil palm bears fruit in response to the rainfall pattern and hence there are two peak harvesting periods in the year.

Assumptions for Cattle Ranching

For cattle ranching, our calculations were based on the following assumptions.

- The 2,400 hectare land will be available for grazing for the animals
- Recommended breed of cow is Muturu which is well adapted to the southern part of the country and gives better quality beef.
- The ratio of 10 female to 1 is recommended for the breeding herd; (720 heifers: 80 Bulls)
- Average gestation period of a mature herd of cattle is between 2 -3 years
- Bulls and heifers meant for breeding will take between 20 - 24 months after birth to mature.
- Fattening of bulls for the market to be carried out after 20 months for 3 months
- Commercial productive lifespan of a breeder cow is approximately 10 years. After which the cow can be sold off
- The average number of births per annum, for the herd projection is based on 90% successful fertilisation rate.
- Cost of a young breeding cow is N80,000 (The heifer should be of reproductive age as the financial projection is based on this otherwise, revenue will be until the 4th year)
- For this projection, the ratio of male to female at birth is put at 1:1, Mortality rate of 5% per annum.

We attempted to be cautious with some estimates in order to provide some cushion of remedies for possible adversities in the course of time.