A Palm Oil Mill in Cross River State

A Business Plan

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Project identification/selection

We are proposing to develop a small-to-medium scale palm oil plantation and mill in Cross River State, Nigeria. The vision includes a 1000 hectare (2500 acre) plantation of Tenera-type hybrid palm nut trees, planted approximately 150 trees per hectare (ha). These trees, when mature, should produce between 8 and 10 million kg of fresh fruit bunches (FFB) of palm fruit per year. When processed, this is expected to yield 1.5-2 million liters of cooking grade palm oil annually, and will generate roughly from 0.8 1.0 million U.S. per year in revenue. Most of this income is to remain in Cross River State through direct wages, other operating expenses, grants to the Good Samaritan Society of Nigeria,

or further investments in local industrial development.

The economic opportunity comes from three main areas: the demand for palm oil, the availability of palm nut trees and suitable climate, and the availability of labor. Each will be discussed briefly. The local demand for palm oil is substantial. It is estimated that for every five people in Nigeria, perhaps two liters of palm oil or more are consumed each month for cooking. There are probably probably between 5 and 10 million people living in or near Ikom, so that possibly 50 million liters of oil or more are needed to supply this market per year. It is not known how much of this demand is supplied by local palm oil producers, but it seems likely that much of this oil must be brought in from outside Cross River state. It has

been reported that, although once a significant exporter of palm oil, Nigeria is now an importer, and it is possible the some of this demand may be currently supplied by foreign imports. In any case, it does not seem likely that the introduction of two million liters per year or less into the local market will have significant adverse effects on either the existing local producers or the local wholesale price.

Although only a fraction of the local demand would seem to be met by

locally produced palm oil, there is clearly the potential to produce much

more. Palm nut trees are grown in a number of tropical areas around the

world, but they are native only to the tropical ares of West Africa. In the

vicinity of Ikom are large numbers of palm nut trees, although it seems that the fruit is harvested from only a relatively small number of them. Clearly the local soil and climate is well suited to the palm nut tree, and there seems to be enough land that is not currently productive that would be suitable for establishing a plantation.

In addition to a good potential supply of palm fruit and a ready market

for the oil, it is important that there be a good supply of affordable labor.

This clearly is present, as the only requirements are a general education and a willingness to be trained in the specifics of the plantation care and harvesting or machine operation. There will also be a need for a few management level people, with advanced skills and background in areas such as agronomy, industrial engineering, and perhaps chemical engineering. We expect to identify Americans supportive of the project who would be interested in filling some of these positions. Some Nigerians would also be needed fill the management needs.

Preparation and Analysis

There is much work remaining to be done to answer all the technical questions that need to be addressed. However, research done so far suggests that the challenges can be met. The technical information supporting this conclusion is broken down into sections describing the proposals for the plantation, the mill, distribution & marketing, organization, and statutory requirements.

Plantation

There are three main varieties of the West African oil palm: Dura, Pisifera, and Tenera. The Tenera palm produces the highest oil content of the three, but is actually a hybrid between the Dura and Pisifera. Modern Tenera or variant hybrids are usually

planted when establishing a plantation, due to the high oil yield. Over 40% of an individual palm fruit, and over 20% of a fruit bunch from a typical Tenera palm can be extracted as palm oil. Tree densities as high as 300 trees per hectare have been reported, but it is generally agreed that approximately 150 trees per hectare is recommended.

The trees typically start producing in the third year after transplantation

from nursery stock, and reach peak production by perhaps the fififth year. In southeast Asia, where the extensive plantations are all descended from a small number of transplanted West African palms, trees are generally cut down and replaced when they reach about twenty years old. However, it is not clear if that is the best strategy for the local Nigerian climate and soil conditions.

Once trees reach maturity and produce fruit, 9,000-10,000 kg of fresh fruit bunches (FFB) per hectare (ha) can be expected from a well-managed plantation. Assuming Tenera palms and good extraction efficiencies in the mill, this will yield approximately 2,000 liters of oil/year/ha. There are a number of technical details that still need to be worked out with respect to the plantation. These include identifying the appropriate use of fertilizers (if any), general tree care, ground cover/management, possible mixing of other crops, pest control, harvesting methods and equipment, and transport of the harvested bunches. Our intention is to enlist the services of an expert in oil palm agronomy to settle the fifinal details of the operation of the plantation.

Appraisal

In order for this project to succeed, an excellent relationship with the government and community leaders is absolutely essential. Based on the relationships already being developed through the Good Samaritan Society Mission in Cross River State, we have every reason to expect cooperation and support for a project such as this. However, details about the kind of support the government in Ikom might be able to supply, and what kinds of incentives might be available, need to be worked out. We also need to understand the taxes that would be applicable to this kind of enterprise.

financial analysis is based on very rough estimates, and could change

considerably before the proposal is finalized. The assumptions are that tree planting could begin right away, and that the mill would become operational in 2003. Before the trees are fully mature, a smaller amount of nuts could be bought from local farmers who have mature trees producing fruit now. When the plantation is fully operational, the desire is to continue to work with local farmers in addition to processing fruit from the plantation.

There are likely to be a number of additional expenses beyond what has

been anticipated above, and as was already stated, some of the numbers are very rough estimates that are likely to change significantly when more information is known.

Note that, among the listed expenses, we are proposing to commit ten

percent of all income to go directly to the Good Samaritan Society Mission Village in Cross River State.

Implementation and writing

Not much research has been invested yet into the plans for distribution of the palm oil. In general, the local wholesale market is targeted, meaning primarily people living within 50 km of Ikom. Traditional distribution channels and methods will be employed if possible. The market for the palm kernel oil has not yet been explored.

Several important details are yet to be worked out with regard to the organization of the project. The proposals listed here are preliminary ideas. The money for start-up capital expenses and initial operating expenses is expected to be raised from both American and Nigerian investors who support the project's goals. An American

for-profit corporation, with a Nigerian affiliate or subsidiary, will be organized with the investors owning shares in the corporation.

The company will be operated according to international standards for

quality control, documentation and bookkeeping. Although this will probably require some extra money to be spent hiring someone with these skills, it is expected that the investment will be worth it in the long run.

Evaluation

Based on the projections above it seems that this project has a very good

chance to be financially successful. More important than the economic opportunity, however, are the several important ways in which we envision this

project making a positive impact in the lives of the people of Cross River State.

• We will bring good income to the rural people in Cross River State, improving

the economic well-being of the rural areas.

• We anticipate important positive social impact both through opportunity for regular employment and through participation in organized

industry. In this regard we wish to include interested Nigerians at every

level of the project, from workers to investors and owners.

• We hope that these factors will lead to reduced population pressure on the cities, by helping to make rural life more attractive and productive.

We believe we will be able to succeed in each of these regards, and so

bring improved hope and prosperity to the rural people in Cross River State.