
**FEASIBILITY STUDIES FOR OBIBINI BLACKMAN
COMPANY LIMITED**

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Executive summary

Obibini Blackman Company Limited, a prospective agro processing company which is interested in processing cassava, yam, plantain and cocoyam into instant fufu flour and millet into *Tuo zaafi* for both local and international markets contacted CSIR-Food Research Institute for technical advice as how to go about setting up the processing facility as well as the technological transfer they require as a company. A preliminary meeting was held between Obibini Blackman Company Limited and CSIR-Food Research Institute after which a contract was signed between Obibini Blackman Company Limited and CSIR-FRI for FRI to conduct feasibility studies at Nkwantakese community of the Afigya-Sekyere District in the Ashanti Region. This would enable Obibini Blackman Company Limited to evaluate and ascertain the viability of the prospective project. The feasibility studies was conducted to determine the viability of a food processing facility to be located at Nkwantakese. The feasibility focused on four core areas namely: Market and Financial Feasibility, Technical Feasibility, Resource and Environmental Feasibility as well as Social and Institutional Feasibility. By identifying and understanding the above listed scope of studies, one can determine whether or not to venture into the proposed project or investment. It would give an insight into which gap needs to be filled and which area needs more attention to succeed. The CSIR-FRI team after visiting the proposed site at Nkwantakese in the Ashanti Region observed that there were generally good facilities available for siting a facility for a profitable agro processing business.

1.0 Introduction

Food provides nutrients to the body for the performance of several body functions. Food provides both energy and the materials needed to build and maintain all body cells and is made up of carbohydrates, proteins, fats and their derivatives. In addition to these, there is a group of inorganic mineral components and a diverse group of organic substances present in comparatively small proportions and these include vitamins, enzymes, emulsifiers, acids, oxidants, antioxidants, pigments, and flavours. Food also contains water which is a very important component acting as a solvent and lubricant, as a medium for transporting nutrients and waste and as a medium for temperature regulation.

Since we live in a competitive world, a food manufacturer or entrepreneur must aim to produce a product which consumers will prefer to that of the competitors and the way to achieve this is to adhere to processing procedures that will ensure highest quality. Consumers also like to know or have an idea as to what they are always buying, so it is important that a food manufacturer consistently produces food of a certain quality and there must not be differences in the food product that the consumers buy from the manufacture on different days. Food manufacturers therefore develop a quality assurance system or a systematic approach to food processing that regularly and consistently produces a food product of a certain quality. Of even more basic importance is the safety of the food which is purchased and eaten by the consumers.

CSIR-Food Research Institute, is mandated to manage post-harvest losses of crops, food processing and preservation, food marketing, distribution and utilization to support national food and nutritional security. The overall goal of CSIR-FRI is to assist in poverty alleviation through creation of opportunities for generating and increasing incomes within the micro, small, medium and large-scale food industries. Also, FRI is to contribute to food security, foreign exchange earnings and the application of cost-effective food processing technologies that are environmentally friendly.

Fufu is a staple food of many countries in Africa and the Caribbean. It is prepared with cassava, yam, cocoyam, plantain or potato. It can be made by boiling the starchy food crops and then pounding them into a dough-like consistency. *Fufu* is eaten by taking a small ball of it in one's fingers and then dipping it into an accompanying soup or sauce. Foods made in this

manner are known by different names in different places. However, fufu stands out, especially in Ghana and in West Africa in general.

Preparation of traditional *fufu* is labour intensive and time consuming. The CSIR-FRI developed several products and services through its research and development programmes in the past. One of such products is instant *fufu* flours developed from cassava, yam, cocoyam and plantain. This instant *fufu* developed by FRI eliminates the extensive labour and time used in preparing traditional fufu. The instant *fufu* also provides a quality and safe food product which is much desired by consumers compared to traditional *fufu*. The Institute also developed *hausa koko* and capable of developing other convenient foods of interest to entrepreneurs on demand.

2.0 Visit to Nkwantakese by Food Research Institute Team

The FRI team visited Kumasi and then proceeded together with the CEO of Obibini Blackman Company Limited to Nkwantakese on the 13th of June, 2014. The FRI team was on site to get first-hand information about the proposed processing plant location, the potential of growing cassava and plantain in the area and any further information necessary to advise Obibini on the setting up of the food processing facility in the area. The team visited the proposed location (Nkwantakese) which is about 20km from Kumasi, off the main Kumasi-Offinso road with geographical coordinates: 6° 51' 0" North, 1° 40' 0" West to observe the proposed factory site. Information about the area was also sought; discussions were held on the potential of growing cassava and plantain in the area. Further studies on the potential for setting up food processing facility were carried out.

The team after the expedition and discussions noted the following observations about the area in terms of having potentials for growing cassava and plantain and having the potential for a food processing facility.

3.0 Market and Financial Feasibility

a) Competition

There is no direct competition within the proposed location, though the staple food of the indigenes happens to be *fufu* which competes with the raw material access. The consumption level as compared to their production level is very insignificant, hence one can say that

competition is not so keen within the area or market. Currently, the processed food industry (*fufu* and *banku* flour) market is monopolised by Neat Foods in the Ashanti Region .

b) Major crops grown

The major crop grown at Nkwantakese are cassava, plantain and maize giving the indication that cassava and plantain can be grown in large volumes as a new industrial crop.

c) Distribution

The location at Nkwantakese is ideally suited for the establishment of a processing facility of this nature since it is reasonably well located with regards to resources, input supplies and access to distribution channels. The place is closer to Kumasi which is the regional capital and an urban town.

d) Clientele

The clientele of the proposed facility are identified and segmented into both local (urban cities) and export markets.

e) Finance

All the major banks and financial institutions in the country have branches located in Kumasi (which is close to the proposed location) where financial transactions can be undertaken.

4.0 Technical Feasibility

a) Access to electricity/ Energy

Power (national grid) is available with an electric pole already on the site, and it is being accessed by most community members. This means the proposed processing facility would be able to access electricity. The area is endowed with forest resources characterized by giant tree vegetation. An alternative source of energy in the form of firewood can be explored. Likewise, biogas generated from waste could also be another source of energy.

b) Access to portable water

Nkwantakese community has bore holes available for use and there is also water from Ghana Water Company. This is an indication that boreholes could be constructed on the processing facility for use. The company already has plans to go into mineral water production and distribution in the said area.

c) Key Processing equipment/ capacity

Equipment/Capacity	Cost (US\$)	Units	Total cost	Life span (yrs)
Gas fired Tray Dryer (2 tons/8 hr batch)	10,000.00	2	20,000.00	10
Grater (1 ton/hr)	2,000.00	1	2,000.00	3
Hammer mill (500kg/hr)	3,000.00	1	3,000.00	10
Drum dryer (1ton/hr)	30,000.00	1	30,000.00	10
Sifter (200Kg/hr)	2,000.00	1	2,000.00	5
Hydraulic press (200Kg/batch)	800.00	2	1,600.00	5
Slicer (1 ton/hr)	1,500.00	1	1,500.00	3
Stainless steel knives	3.00	20	60.00	1

5.0 Resource and Environmental Feasibility

a) Factory Land

(i) The company had already acquired a 500m x 230m land where the factory would be sited. The factory would be located in an area that is free from environmental pollution and any industrial activities that can pose a serious threat to contaminating food.

(ii) Topography & Drainage

The Nkwantakese area is largely flat land with scattered hills. It lies partly in the semi-deciduous forest and the savanna belt. The relief in the district is generally undulating with altitude ranging between 800 and 1000 ft. However, the northern part reaches up to 1,200ft above sea level. Isolated hills in the south around Buoho also have altitude of up to 1,200ft. The undulating nature of the relief of the district makes flow of water easy. Besides the river valleys, there are very few waterlogged areas.

(iii) Climate & Vegetation

The climate primarily consists of two seasons: The dry season and the rainy season. Major rains are normally experienced around March through June/July and the minor ones around September through early November. The climate in the area is predominantly hot with dry condition prevailing from November to February. Temperatures range between 24°C and 32.2 °C whilst rainfall amounts are 55" and 70". The harmattan wind blows during the hot dry season in December to mid-February.

iv) Waste disposal

The proposed location is far from residential area where odour emitted from production will be controlled through the construction of a drainage system.

b) Raw materials: (cassava, plaintain, yam, cocoyam)

The identified area has a number of cassava and plantain farms already and can be tipped for the supply of raw materials. However, millet for the production of *Hausa koko* will be procured from the northern region where millet is widely grown.

Back-up farm by the company coupled with farms by contracted out-growers in its catchment area as well as farms of other cassava and plantain farmers around the processing plant will ensure regular supply of raw materials to feed the facility. Production of plantain is on the increase due to high demand and ready market. *Apem, Oniaba, Asamienu and Apantu* are the common varieties cultivated by farmers.

Even though the soils are suitable for yam production only few farmers practice it. Yam tubers are always brought from Techiman and Kintampo which are not too far away from the proposed processing plant.

ii) Share of local production

Although there were smallholder processing or community cassava processors, cassava and plantain grown in the area were in surplus since these smallholder processors could not process in large quantities due to financial constraints. The proposed project will be able to absorb a huge share of cassava produced in the proposed location and surrounding villages.

c) Labour:

The level and availability of human resources and skills to fulfill the requirements of the processing facility at Nkwantakese are currently available considering the fact that these locations had a youthful population. The current level of unemployment leaves the youth and women in the area no alternative than to work to survive the growing economic hardship.

d) Road network:

There is a good road linking Nkwantakese to Kumasi which is an urban market centre. There is also a smooth road from the community to the farmlands and the proposed facility site in Nkwantakese. Any form of transport ie, motor, bicycle, tricycle or Kia truck can access these roads. This will make conveying of raw materials or finished product to its destinations easier since the proposed site is closer to a major road.

6.0 Social and Institutional Feasibility.

The assessment of the social and institutional feasibility of the proposed facility reveals that Nkwantakese population is predominantly a poor rural population characterized, by amongst

others, poor socio-economic characteristics (life expectancy, infant mortality and population distribution). About 80% of the district's economically active population is engaged in agriculture. The social and institutional feasibility assessment of a food processing facility at Nkwantakese reveals that the surrounding communities would benefit in a number of ways from the establishment of the proposed facility. The direct benefits of the establishment of the propose facility include the creation of employment opportunities as well as the creation of a "market" for currently under-utilized resources in cassava roots and plantain. The indirect benefits of the proposed facility include an anticipated decrease in the number of households living under the poverty and ultra-poverty line, a decrease in malnutrition and an increase in incomes for communities, especially for the women in the communities.

Nevertheless, irrespective of the immense benefits that the surrounding communities would derive from the cassava processing facility, the company in itself stands to gain a lot from establishing the facility in the said area. Noted among the gains includes;

- a) Tax exemptions / tax rebates as a result of producing with between 80-100% locally sourced raw materials and enjoying 5 year moratorium for agro processing.
- b) Alternative energy sources i.e the company can make use of firewood or biogas from the waste generated.
- c) Easy access to cheap labour thereby reducing its cost of production.
- d) Equipment / up scaling / funding benefits from any cassava related project.
- e) Enjoying social recognition as a result of performing its social responsibility in the area of employment, poverty reduction, gender engagement etc.
- f) Gender impact of the processing facility: Women are bound to benefit the most from the establishment of such processing facility. Although both men and women will be free to participate directly and indirectly in the processing facility women in the area are more likely to be the main participants as a result of the current stages of processing which involves more peeling and washing.

Taking the net social benefit of the proposed processing facility into consideration, it can be concluded that the processing facility is anticipated to be socially and institutionally feasible.

7.0 Conclusion

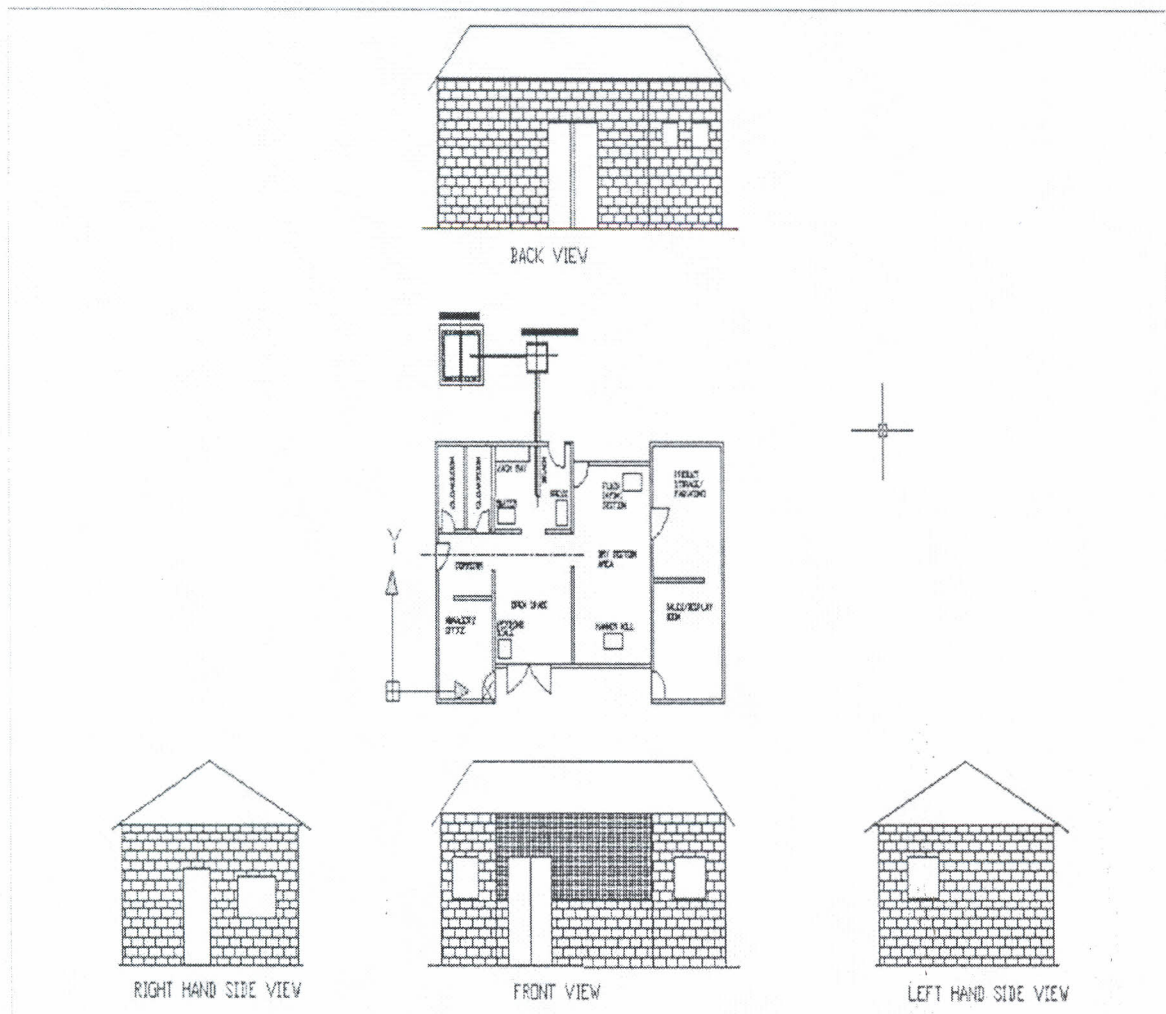
The CSIR-FRI team after visiting Nkwantakese in the Ashanti Region observed that there were good road networks to the farming areas and proposed site of the processing facility, closeness of potable water to the processing facility, availability of power (national grid), closeness to market centres, readiness of cassava, plantain and cocoyam farmers to grow cassava, cocoyam and plantain to feed the processing facility and availability of land for growing cassava, plantain and cocoyam. The proposed location visited generally is therefore conducive to site a processing facility for a profitable agro processing business.

Recommendations

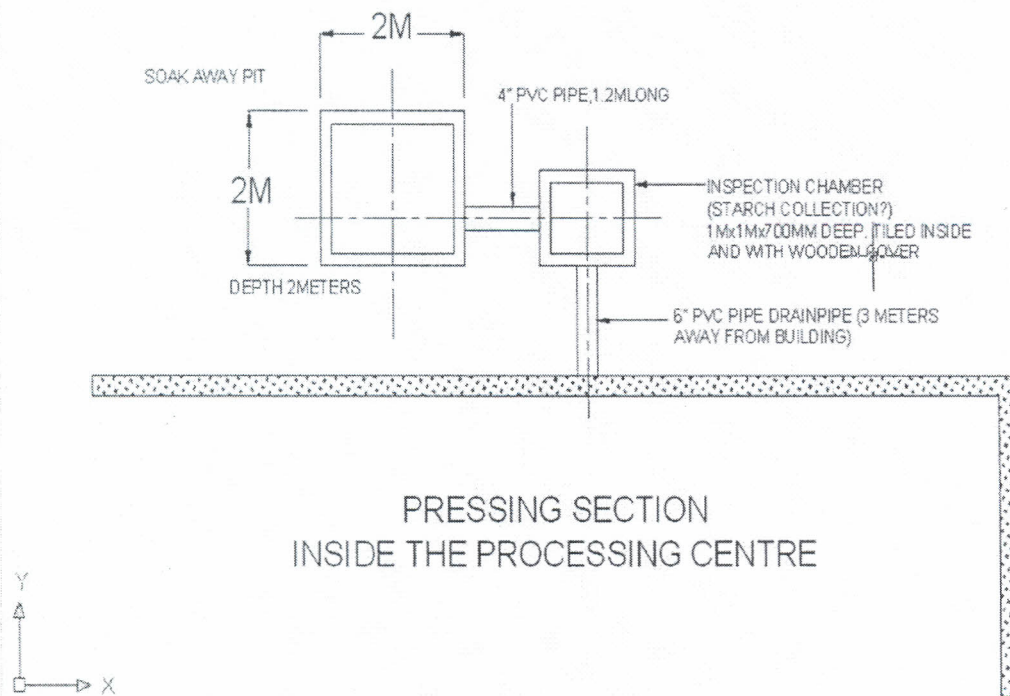
1. The company needs to acquire a minimum of 150 acres for the cultivation of cassava, cocoyam, yam and plantain to act as a backup source of raw materials and start with planting before the season ends. This is important as the raw materials constitute about 50% of the cost of operating a processing facility.
2. Organization and registration of out-grower farmers needs to be carried out.
3. Construction on the proposed location for the processing facility needs to be commenced as soon as possible to enable the facility to be set up in time for the commencement of operations.
4. The company needs to develop a business plan to suit its model of operation.
5. Training of technical staff should be carried out by CSIR-Food Research Institute.

Appendices

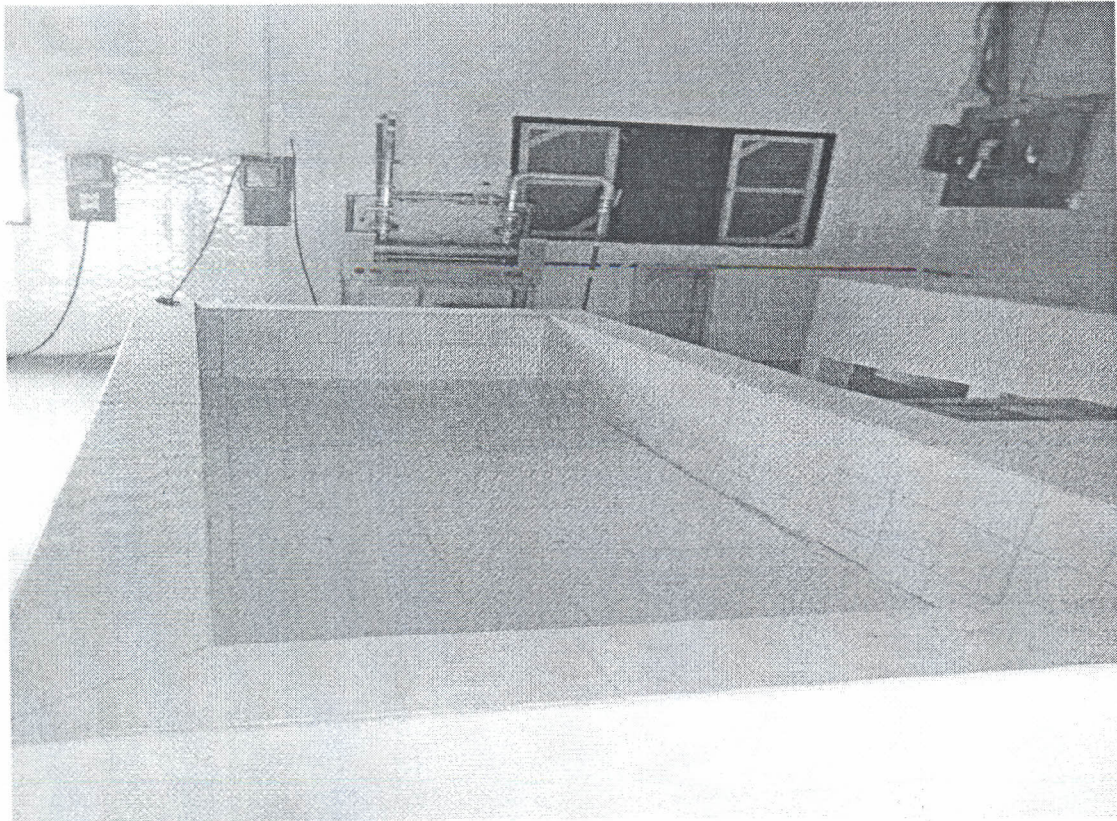
Appendix 1: Ideal design of a processing facility



Appendix 2: Ideal affluent disposal design



Appendix 3 : Ideal washing trough



Appendix 4 : Pictures of the proposed procesing site.

