Report on Market research for Jatropha Oil and Press Cake done in Quissanga District of Cabo Delgado, Mocuba District of Zambezia and Gorongosa District of Sofala.

Jacob M Zulu, ADPP,
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1 Introduction

Following the implementation of the ADPP/FACT Project in and around the Quirimbas National Park in Cabo Delgado Province in Mozambique, it was found necessary that a research is conducted in the area to asses the market potential for the jatropha oil as well as the press cake. The research has been in three different areas, namely Quissanga, Mocuba and Gorongosa, therefore, this report focuses on all the three different districts in their respective provinces. The report reveals the possibility of the potential market for jatropha products such as oil for lamps, oil for soap and press cake for fertilizing the soil. It evaluates the business possibilities and recommends what measures to put in place should there be any attempt of doing business in the respective areas.

2 Objectives

The objective is to predict as good as possible, the future sales possibilities for the various products and services of BBC, for which various productlines can be investigated. The market prediction will be based on surveys with potential clients.

Productline of oil based products ,

- oil for soap and lamp oil,
- and the press cake as potential for fertilizer.

3 Methodology

Data collection by use of questionnaires and through observation. The questionnaires were preprinted and given to data gatherers with the quality control of the PL to avoid high degree of error. The primary data was collected on a random basis in three different areas in the selected districts. The families were interviewed in accordance with the questionnaires and what they gave as an answer is what was recorded unless in situations where there was need only for observation. As for the questions that the household were not able to respond, they were left blank. This report has an error probability of 3% mostly arising from non answered questions and luck of scientific measurements with regard to distance covered to the market as well as total areas cultivated for each field crop, of which in other cases there is intercropping.

4 Results

4.1 Demography

Gender: Though it was done randomly, during data analysis it was discovered that it was at a ratio of 2 to 1 men and women respectively both for Mocuba and Gorongosa and 1 to 1 for Quissanga..
Age group: 47% of the people interviewed were between the age of 30 and 40 years, 10% over 50years but below 65 years, 20% were between the age of 20 and 30 years while the remaining 23% was between the age of 40 and 50 years of age for Quissanga.
Gorongosa: 45% between the age of 30 to 40, 12% over the age of 50 but below 65 years, 18% between the age of 20 and 30, while the remaining 25% was between the age of 40 and 50.
Mocuba: 42% was between the age of 30 and 40, 10% above 50 but below 65 years, 30% between the age of 20 and 30, while the remaining 18% was between the age of 40 and 50 years.

Civil status: 90% of the interviewed were married with 7% singles and 3% not known.

Population density: 60% households had family members below 5 in the households, 32% was members between 5 and 9 members while only 8% had above 10. this shows that most families in the area are still young families as compared to typical families that would register above 5 as an average.

4.2 Quissanga:

Oil for Lamps
80% of households in Ntessa, Bilibiza and 25 de Setembro use 1 to 3 lamps per family, 15% use firewood as they have no access to oil, while 5% use over 5 lamps per family. The biggest consumption of oil was noted in Ntessa village, a family in Tessa spends 25mt per week to get oil that cost 35mt per 350mils of oil. On average a litre of diesel costs 75 mts., these families require more oil but due to economic hardships they can not buy more. In other ways, if there was fuels close to them that they do not need to use the 25mt for transport, it means that they would end up buying more fuel for their homes and would have more light available, the other thing being that if the cost of fuel was slightly less, then the household would have more fuel for less money spent. At the moment there is an estimated consumption of 10.2 liters (costing approximately 500mt), of fuel per week for the 26 families, with a possibility of doubling the consumption if the cost was slightly less and close to their households. Apparently there is a total amount of 295mt spent in transport of the 9 families together for 1 week that have to get public transport to buy this basic need. It was also noted that the families opt to use what is readily available on the market though with preference to kerosene as it produces less smoke as compared to diesel.

Oil for Soap

29 families out of the 30 interviewed use soap and together they spend a total of 568Mt to buy this soap per week, while they use another 120Mt in transport for all the families together that need transport to buy the commodity per week. All these families indicated the need of having more soap for various use eg, bathing, washing cloths, dish washing, washing hands after using the toilets etc, which could not be met due to prices and distance to the market in some cases. As in the case of oil, if the market was close to the people, consumption would increase by one third, besides, there is more demand of soap as compared to oil for lumps. The price of the soap above per kilo is 60mt and this is the cheapest one in the areas.

Press Cake for soil improvement

A total of 49.5 hectare of land is cultivated by the 30 families, of which 38 hectare is for cereal crops, 8.5 for cassava crops, 2 hectare for groundnuts and 1 hector for sesame. On average maize costs 5mt per kg, 3mt for cassava and 20mt for groundnuts and they get 50mt for sesame.

On average, each farmer has about 1.5 hectare of land under cultivation, which in it self does not give the family enough harvest for home consumption as the harvest are extremely low and poor. There was clear indication that all the farmers were looking forward to increased production but none was willing to invest in fertilizer. Only two were using animal manure but also in very small quantities that would otherwise not even make a significant change. The farmer also were not familiar with methods that could improve yields. In this regard, it would require a lot of effort to mobilize and convince the farmer in the use of press cake as organic manure. However, for the ones that are growing jatropha it would not be a problem as such as they would be using what has come out of their own jatropha seeds.

4.3 Gorongosa:

Oil for Lamps

Up to 70% of households in the area use at least 1000ltr per week of kerosene, un like in Quissanga, a litre of kerosene in Gorongosa on average costs 25mt, and these families mostly use two lamps. 25% of households use 1 lamp and the remaining 5% use 3 lamps per family. In Chiro and Nhampondo areas, a family will use 50mt per week for transport in order to get oil that costs 25mt, it was noted just like in Quissanga that these families require more oil but due to economic hardships they can not buy more. In other ways, if there was fuels close to them that they do not need to use the 50mt or even 30mt for transport, it means that they would end up buying more fuel for their homes and would have more light available, the other thing being that if the cost of fuel is slightly less, then the household would have more fuel for less money spent. At the moment there is

an estimated consumption of 35 liters (costing approximately 800mt), of fuel per week for the 30 families, with a possibility of increasing consumption if the cost was slightly less. Apparently there is a total amount of 230mt spent in transport of the 5 families together for 1 week that have to get public transport to buy this basic need. It was also noted that the families opt to use what is readily available on the market though with preference to kerosene as it produces less smoke as compared to diesel.

Oil for Soap

In Gorongosa, all the 30 families that were interviewed use soap and together they spend a total of 716Mt to buy this soap per week, while they use another 270Mt in transport for all the families together that need transport to buy the commodity per week. All these families indicated the need of having more soap for various use eg, bathing, washing cloths, dish washing, washing hands after using the toilets etc, which could not be met due to prices and distance to the market in some cases. As in the case of oil, if the market was close to the people, consumption soap would increase by one third, besides, there is more demand of soap as compared to oil for lamps. The price for soap above per kilo is 50mt and this is the cheapest one in the areas.

Press Cake for soil improvement

A total of 81 hectare of land is cultivated by the 30 families, 58 ha for cereal crops, 7.5 for legumes, 3.5 ha for tuba crops and 12 hector for sesame. For maize they get 5mt per kg, sesame they get 50mt per kg and 20mt for legumes per kg. Maize has price variation of 3mt per kg at the time of harvest, and up to 8mt just before the rain season starts, as for other crops prices are quiet stable.

On average, each farmer has about 3 hectare of land under cultivation, which in it self does not give the family enough harvest for home consumption as the harvest are extremely low and poor. There was clear indication that all the farmers were looking forward to increased production but none was willing to invest in fertilizer. Only four were using animal manure but also in very small quantities that would otherwise not even make a significant change. The farmers are not familiar with methods that could improve yields. In this regard, it would require a lot of effort to mobilize and convince the farmer in the use of press cake as organic manure.

4.4 Mocuba:

Oil for Lamps

90% of households in Mocuba use 1 to 2 lamps per family, 7% use 3 lamps and 3% use 4 lamps per family. The oil consumption on average is at 250ml per family of the 47%, the highest was 1 litre for 15% families, the rest was varying between 300ml to 500ml. 90% of these families need public transport to get the oil, and they spend a total of 1130mt per week to get oil that cost 380mt. Mucuba had the least oil consumption, a total of 13.5 litres per week for the 30 families. On average a litre of diesel costs 28 mts., these

families require more oil but due to economic hardships they can not buy more. In other ways, if there was fuels close to them that they do not need to use the 50mt for transport, it means that they would end up buying more fuel for their homes and would have more light available, if the cost of fuel was slightly low, the household would have more fuel for less money spent. At the moment there is an estimated consumption of 13.5 liters (costing approximately 380mt), of fuel per week for the 30 families, with a possibility of tripling the consumption if the cost was slightly less and close to their households.

Oil for Soap

30 families interviewed use soap and together they spend a total of 900Mt to buy this soap per week, while they use another 1080Mt in transport for all the families together that need transport to buy the commodity per week. All these families indicated the need of having more soap for various use eg, bathing, washing cloths, dish washing, washing hands after using the toilets etc, which could not be met due to prices and distance to the market in some cases. The price of the soap above per kilo is 50mt and this is the cheapest one in the areas.

Press Cake for soil improvement

A total of 72 hectare of land is cultivated by 30 families, 30 hectare is for cereal crops, 23 hectare for legumes, 18 hectare for tuba crops and 1 hector for sesame.

On average, each farmer has about 3 hectare of land under cultivation, which in it self does not give the family enough harvest for home consumption as the harvest are extremely low and poor. There was clear indication that all the farmers were looking forward to increased production but none was willing to invest in fertilizer. Only two were using animal manure but also in very small quantities that would otherwise not even make a significant change. The farmer also were not familiar with methods that could improve yields.

5 Conclusion

The area in and around the Quirimbas National Park has roughly a population of 316,741, Mocuba has a population of 306,543, while Gorongosa has 116,912 bringing a total of 740,196 people of which 90% has no access to electricity. With this back ground it means therefore that there is a big potential for oil for lamps for about 133,000 families. If 90 families can consume 60 liters per week, it means that 133000 families consumes about 88,000 liters per week and in a year they consume roughly 4,000,000 liters of oil for light. Since most of these people are poor, it means that there is an equally available market for soap. Market for Bagaco (press cake fertilizer) can not be granted as it is somehow complex as the people do not have the culture for manure. It would however be worthwhile trying brickets and charcoal.

6 Recommendation

There has to be made some product promotion for the jatropha products throughout the areas. Alternatively, it would be good to do this through local community radio stations as well as during the district agriculture shows. Local hospitals and boarding Secondary schools must be approached as they could be potential buyers of both soap and oil for the lighting systems.