

Active Venture
Beans packaging for BOP markets



Summary

Adelina is a young woman in Magunguli village in Tanzania. With a team of people from the village she wants to run the business of cleaning, drying and packaging beans. Biashara Mapema, a local service company that provides the Transaction Security Services (TSS) will purchase beans from farmers and then pay Adelinas team a pre-fixed fee for each kg of beans they will clean, dry and package. This fee will be a middle cost of a TSS deal by Biashara Mapema. The sealed packages of 5kg-10kg-20kg will be marketed by Biashara Mapema to retail shops in the urban centres who sell to the big majority of low-income consumers (BOP markets; bottom-of-the-pyramid in economic terms). There are two innovations here: a) The added value of cleaning and packaging is earned in the village and b) There will be a new branded product of clean beans with standard quality available for urban consumers . This creates incomes in the village for the packaging. And the TSS mechanisms of TruTrade allow farmers to share in the added value up to the sale of their beans to urban retail shops.

Status of financing	USD committed	USD not yet raised
1 First milestone: Technical proof of concept for sealing plastic bags with beans and test marketing	0	3'100
2 Second milestone: Proof of operational concept with 5 tons of beans (estimate). To be projected as TSS pilot deal	0	6'900
3 Third milestone: Proof of scaling up concept with at least 20 tons and repeat deals.		not yet budgeted

Situation

Beans are an important crop and staple food in East Africa. They are usually not processed in any way before sale to final consumers.

The system as it presently works is like this:

1. Farmers uproot the ready beans and collect them on tarpaulins in the field. This is done carefully in order not to shatter the dry pods and lose the beans. Then the whole plants are beaten on the tarpaulin with sticks. Sometimes this happens even without tarpaulins on a place with compacted earth.
2. The straw and empty pods are taken away and the threshed beans are winnowed by dropping from basins back on a tarpaulin while there is a little wind. This separates much of the chaff. Then the beans are put into bags and brought to the farm.
3. Whenever it is possible the beans are spread in the sun for drying on tarpaulins or cloths or mats on the ground. This can take several days, depending on the weather. The hygienic conditions for this are dubious.
4. The farmers then sell the bags of beans to small traders who come to the village and pay per bag or per debe (standard bucket). The small traders usually sell the bags of beans they could collect to the nearest town traders who run stores for bulking (eg. in Makambako).
5. The town traders then sell their bulked beans to distance traders who come with trucks to load at the local market town (eg. Makambako).
6. The distance traders then hire teams of people in the market to clean and sometimes again dry the beans. The sufficiently dry and clean beans are then put into new bags of around 90-100kg
7. Such bags are then loaded onto long distance trucks and shipped to the wholesale markets in the large urban centres or even exported.
8. Wholesalers in the cities then sell single bags to retail shops, who in turn sell to the final consumers from the big open bags.

This system has some serious drawbacks that result in low income for farmers:

- A Drying beans is not as easy as drying Maize because when the sun shines on the beans they dry on the outside layer but not inside. So overnight the inside moisture seeps out again to the outer layer. So next day again the beans have to be dried. It is up to three days strong sunshine that is required to get the beans dry, longer if there is not good strong sun. Farmers often do not have the time and equipment to take care of this drying well enough. This problem is the root cause of the Aflatoxin challenge with beans.
- B The distance traders can not trust what is in a bag coming from farmers. So they must supervise the cleaning and grading in the market centre. This is a major logistical headache for them. That means the price these traders pay in Makambako for a bag of beans is always calculated so that they can add the costs of cleaning and grading and even drying and re-bagging. The small traders who pick the bags from the villages and also the town bulkers never look into the bags because they know that the price they will get from the distance traders is in fact for dirty and ungraded beans. This system therefore gives no incentive to villagers to invest time and effort for quality of their beans and thereby increase their income. Rather, the incentive for farmers is to deliver as much rubbish as possible to counteract the low price, which in turn again reduces the price, etc.

The Business Idea and Innovation

This business is designed to happen where Biashara Mapema operates collection points to do bean deals with Transaction Security Service (TSS). The pilot will be in Magunguli-Isaula in Tanzania and will use the RAPP building as its premises. A team of villagers led by Adelina (the wife of Rajan Pesanane) will attempt this business:

They will dry, grade and package beans into sealed bags of strong transparent plastic. The bags will be 5kg, 10kg and 20kg made ready for sale directly to end consumers in the big cities. So when the TSS-deal purchases beans from farmers, these beans are brought to the RAPP building. The beans are then given to Adelina and her team to clean, dry, grade and package. For each kg that was handed over for cleaning and grading the TSS deal will then pay a processing fee and calculate that as a middle cost to the deal ("toll-processing"). The finished packages will then be marketed by Biashara Mapema to retailers in the major cities ("BOP-outlets"), or to traders along the chain.

- The incomes of this beans packaging business: The toll-processing fees

- The expenses of this business: The purchase of materials like plastic bags, and the rent of equipment like sealing machine or sieves and buckets for grading, and the labour.

The innovation

The first innovation is this: The added value of grading, cleaning and packaging will all be earned in the village itself. Also, there will be branding on these bags of beans and therefore traders and buyers will be sure of quality or at least they will know where to go if there is a complaint.

Honest traders will appreciate the finished plastic bags and pay premium price for them because this allows them to avoid all the logistical headaches of re-cleaning in the market centre. It also allows wholesalers to directly sell packaged beans to retailers and end customers without any further handling.

The second innovation is a new product on the BOP markets: Branded packaged beans of standard quality that can be tracked to source through the TSS mechanisms of TruTrade. Through the mechanisms of TSS these packages are sold by farmers in Magunguli to the BOP-outlets in urban centres.

So these two innovations shall lead to:

- Higher incomes to farmers per kg of their marketed beans
- Incomes in the village itself from the processing
- Improved food security for end consumers

Status at present

1. **Technical proof of concept** for sealing the plastic bags still needs to be worked out for Magunguli because of required electricity. By default this will have to be managed by a small generator unless the battery of the large solar system can do the job. Or is there an alternative with fire-heated metal bands?
2. **Proof of concept for operations, economic viability and scaling up** are yet to be achieved
3. No activities have yet been started
4. Suitable plastic bag material should be available, but sources still need to be identified
5. Adelina in Magunguli wants to build this business at the RAPP location in Isaula, but she has no own resources to invest beyond her own labour.
6. The premises for this business are available in the RAPP building.
7. So far no investments have been committed

Next activities (in steps):

1. Find a suitable source of the plastic material for the bags and check its cost-effectiveness. And identify the sealing machine that can be used. Find out how to power the sealing machine. Then do a technical test run in Magunguli to achieve **technical proof of concept**. The questions to answer are:

Where is the plastic available and how much does it cost? What is the most reliable small sealing machine? How can this sealing machine be powered (small petrol generator or the large solar system in Magunguli?). Can we achieve reliably sealed plastic bags in Isaula?

Only if and when technical proof of concept is achieved continue to next step.

2. With a pilot TSS deal market a batch of 5 tons of beans with 5kg-10kg-20kg bags by offering them in Makambako and in Daressalaam and Mbeya. This shall achieve **operational proof of concept** and test the market. The questions to answer are:

What is the best procedure to clean, dry, and grade the beans ready for packaging? How much is the cost of labour per kg? What can we do with the rejected beans (eg. mill to chicken feed?). What are the labour costs for packaging? What brand can we apply? How do small retail shops in Makambako, Daressalaam and Mbeya react to these packaged beans and will they pay prices that justify the effort? How do distance traders in Makambako react to these packaged beans?

Only if and when proof of operational concept is achieved continue to next step

3. Conduct a first full scale 20 ton deal with TSS, aiming for stocking beans in Magunguli for regular packaging and delivery to outlets. This can become the **proof of scaling up**. The questions to answer are:

*How can we stock beans in Magunguli to regularly process into packages and achieve regular supply to retail shops through the TSS mechanisms? How can this procedure be replicated in other villages and areas and markets?
What are the technical, operational and financial challenges to grow or replicate this business?
What are the next innovations required to grow this business, eg. improved drying and grading technology?*

Provide a full technical and operational report for replicating the business in various places.

Funding requirements (for details see Spreadsheet)

Technical proof of concept (first step)

1. Search for and test required materials: 255 USD
2. Pay farmers for about 1 ton of beans to do the trials, along with middle costs: 1000 USD
3. Supervision and control by Bahat Tweve in Magunguli: 350 USD
4. International conceptual and technical assistance with backup: 1500 USD

Total: **3'105** USD

Incidental incomes during testing: From sales of beans during test-marketing, estimated at least 1000 USD

Operational/financial proof of concept (rough estimates)

1. Pay farmers for 5 ton of beans = 4'238 USD
2. Supervision and control by Bahat Tweve in Magunguli: 720 USD
3. International conceptual and technical assistance with backup: 2'000 USD

Total: **6'960** USD

Incidental incomes: From sales of beans during test-operations, estimated at least 4'000 USD

Proof of scaling up (third step)

To be projected and handled as a regular pilot TSS deal after operational/financial proof of concept is successfully achieved.

General assessment

The potential of this business is in pulling to the rural villages the added value of cleaning and packaging beans. The TSS mechanisms of Biashara Mapema allow farmers to sell clean and packaged beans to the retailers in the cities, whereas before they sold dirty ungraded beans to middlemen who buy their beans on their farm. The TSS deals take care of farmers' beans from the time they give them for processing all the way to final marketing to urban retailers. With TSS Biashara Mapema arranges for farmers to share in the earnings from the value addition.

One drawback is that this effect only works well within the TSS mechanisms of Biashara Mapema, and therefore this business is closely dependent on the success of Biashara Mapema and can therefore only expand with Biashara Mapema operations. However, since Biashara Mapema itself is dependent on broad expansion to be successful, there will be mutual incentive and benefit to expand and scale up.

The initial investments for technical proof of concept are rather small, and even the operational proof of concept looks like being achievable with small investments.

If you are interested to provide grants specifically just for bringing this venture to a viable business (in which later you may want to invest with loans), write an Email to **farip**. We will respond to any questions you may have and provide you the means by which you can engage.