The search for better ideas

Access2Innovation offers your company the opportunity to enter an African growth market: Uganda. The Ugandan economy is among the fastest growing these years, with annual growth rates of more than 6 percent, a stark contrast to Denmark, which is dangerously close to having no growth at all.

If you think this is interesting then you probably want to keep reading this concept note. You might be asking yourself: Why is this called a concept note? The answer is quite simple: Access2Innovation has already been to Uganda and identified multiple interesting business opportunities in coordination with NGOs and university communities. The business opportunity is summarized in this concept note. The reason that we are involved with NGOs and universities is that it enables us to create new markets, based on innovative commercial ideas that have the benefit of creating a social impact as well. We are looking for companies that are searching for better ways to do things, that want to embrace new ideas from people that they do not typically work with in countries and markets where they are not already represented.

In the access2innovation network we offer access to a range of talented partners; experts within their fields, that are ready to assist in developing and maturing business ideas. We also offer a very strong local network in Uganda; a network that spreads across sectors, from civil society organizations and high level political institutions to the different business communities.

All we need to get going is you.

access²innovation
The Ugandan dairy industry represents great business and investment potential. The multi-brand retailing industry is booming – new supermarkets are shooting up in Kampala and the other major cities. Before the industry commercialises - as it has done in neighbouring Kenya - Uganda represents good potential for investment. The main challenge in Uganda’s milk industry is that it is not market and demand based, but supply based. Furthermore, Uganda represents a good platform for regional growth as Rwanda, DRC and Northern Tanzania can be supplied from here.

Due to this obvious potential access2innovation has made a partnership with the dairy cooperative UCCCU, who markets more than 36 million litres of milk a year and are producing the biggest share in supply of fresh raw milk in the country, which equals to about 38 percent of the overall production. However, the UCCCU are demanding better solutions for their members’ milk collection, production and distribution - presenting opportunities for Danish companies to enter the emerging market.
Market opportunities

A 2010 estimate of Ugandan milk production showed that around 1.2 billion litres had been produced by approximately 1.2 million smallholders and 8000 large farms with more than 100 cows. The demand is rising and the total market capacity has seen a remarkable increase over the last 15 years. New dairies with large capacities have been established; this has effectuated a significant increase in the amount of processed dairy in Uganda.

As is the case in most other African countries, the lack of dairy products in Uganda is compensated for by imports, primarily of powdered milk. Official data stated the import of dairy products to around US$6 million in 2007, but according to TechnoServe, the actual number may be at least 2-3 times bigger. The yearly dairy consumption is around 50 l/capita, which makes the demand for dairy higher than in other East African countries like Ethiopia, Tanzania and Zambia; but it only amounts to half of the 100 litres that the average Kenyan consumes every year.

Advantages of the dairy market in Uganda:

- **Lowest feeding cost**: Due to the stable, fertile climate and abundance of pastures, Uganda has one of the lowest feeding costs in Africa. This is a vast contrast to the other (East) African countries where seasonal variations are stark. Ugandan farmers still need to supplement feed, but not to the same extent as other East African dairy farmers.
- **Open market**: Uganda is an open market where governmental companies are not present. On the other hand, the government does not provide beneficial subsidiary schemes.

One of the actors on the dairy market is Uganda Crane Creameries Cooperative Union (UCCCU). It is based in Mbarara in the south western region and is a registered cooperative that is principally owned by 10 District cooperative unions. UCCCU has about 18,000 individual farmers as members, organized in 140 primary cooperative societies.

Through the UCCCU affiliated unions, dairy farmers currently have the capacity to bulk and sale an average of 200,000 litres of fresh milk per day. The current market, which is predominantly local, has an annual turnover of US$ 5 million.

The current main purchaser of UCCCU Raw Milk is Sameer Agriculture and Livestock Limited (SALL), who is Uganda’s main processor.

In a bid to move up the milk value chain, dairy farmers have started the construction of their own processing plant in the Mbarara municipality. The plant will process UHT (Ultra-high temperature processed milk), Pasteurized milk, yoghurt, cream and butter for Uganda and the East African Region. To prepare, the farmers are setting up their own milk collection infrastructure right from the milk collecting centres at the primary cooperative societies to the bulking centres.

However, a number of challenges exist within the cold dairy chain. The UCCCU in partnership with access2innovation will address these as they make out business opportunities for Danish companies, surrounding:

- Milking machines
- Transportation
- Sustainable energy for milk collection centres
- Food grade containers
**Dairy cold chain as a potential business case**

With a membership size of more than 18,000 farmers, UCCCU is a potential innovative partner to enter the dairy market with. The following section briefly outlines the current situation and the need for technological innovative solutions.

An average UCCCU member with a farm production capacity of 60 litres will earn about Uganda Shillings 540,000 a month which equals US$ 216 on milk sales alone if selling to SALL, but with the resumption of the processing plant, the farmer will receive a retail price of UGX 600 which will give monthly income of UGX 1,080,000 equivalent to US$ 432.

Research shows that the average UCCCU farmers’ daily sales revenue for milk is around 34,950 Ugandan shillings equivalent to US$ 13.95.

The tropical climate gives dairy and dairy products a short shelf life. Milk is a high-risk food and requires:

- Well-developed cold chain infrastructure for temperature management to prevent growth of spoilage bacteria.
- Aseptic methods to avoid cross contamination, which introduces harmful microorganisms into the milk.
- Adequate transportation means with food grade containers.

In an effort to bring milk quality to accepted national and international standards, the specific needs farmers have that have been mentioned above require addressing the following:

**Milking system**

The milking methods at almost all the member farms are labour intensive and there is a danger that the milk gets contaminated. No milking machines are used due to the fact that the milking is done in various locations and the lack of electricity in the rural areas.

**Transportation**

Milk has to be transported to collection centres by means of a bicycle. They carry a maximum of 50 litres using a milk can, whereas most farm production is more than that amount.

**Food grade containers**

The use of unhygienic containers is a major concern. Farmers often use plastic jerry cans and there is a pressing need to innovate and look for an alternative that is able to solve transportation problems.
A possible payment solution for the farmers is not to pay the lump sum immediately. An arrangement can be reached with the UCCCU affiliated unions that will deduct a portion of the milk delivered towards payment for the can. The farmers are familiar with this kind of payment system already.

Collecting centres

To access the market, dairy farmers are part of a cold chain from the primary milk collection centres to the bulking centres, numbering 60 coolers and generators owned by SALL. Cooling requires energy, and farmers can only safely deliver quality milk if it is not degraded between the point of milking to the delivery at the collection centre. The equipment used for cooling is under a lease arrangement with unfavourable business terms for the individual farmer. All the collected and chilled milk in the network is currently sold to SALL at UGX 300 (about US$ 0.12). The same litre processed is sold by SALL at UGX 2000, which equals about USD 0.80.

In situations when SALL cannot take all the milk, farmers are not supposed to use the collecting equipment to sell to other buyers, and farmers have to pay rent on the machinery and cost of maintenance determined by SALL. The equipment binds the farmer to sell to SALL even when there are other buyers offering better terms of trade. Thus, there is a demand for a better solution for the farmer in terms of new technologies as well as more favourable business models.

Some Milk Collecting centres are not on the electric grid and those that are, suffer from an unstable electricity supply. At the milk collecting centres there is a need for generators running at least 3 hours daily. Generators consume 5 litres of diesel per hour. The cost of each litre of diesel is around 3350 UGX and rising.

Framework

The initial analysis suggests that UCCCU and access2innovation are looking for solutions that target the entire value chain instead of focusing solely on pin pointed challenges. As described above, solutions should however be focusing on:

Milking Machines

There is a need and a demand for portable Milking Machines. The machines should be able to:
- unlock after milk release stops,
- dual system, which can work on both the generator and hand pump,
- time efficient,
- comfortable to use.

Transportation

The primary transportation method of milk is done by bicycle (according to our data 88% of the milk transported is done by bicycle).
- There is a need for new carriage possibilities on the bicycle which are able to hold at least a 100 litre. The normal bicycle carriage is at the moment 50 litres of milk.
- The carriage possibility should be:
  - Able to hold at least 100 litre of milk
  - Possible to use on bumpy roads
  - the openings should be on either side as well as the rear to enable easy access to the cans at the Milk Collection Centre.

Sustainable Energy for Milk Collection Centres

On average a generator consumes 5 litres per hour which is about 200 litres monthly.
The average price for the bought generators at UCCCU milk collection centres is 13,4 million Ugandan shillings, which is equivalent to US$ 5.336. Thus farmers spend a substantial amount on energy pr. year. an alternative source of energy is required, which should be:
  • sustainable
  • easy to use
  • affordable.

Food Grade Containers
There is a need for containers that are easy to strap on the bicycle for it to maximum the load of 100 litres per trip.
The current make of the milk can is cylindrical and a possible solution could instead be a lean one in form of an oval 25 litre can that is easy to strap on either side of the bicycle carrier. This gives the transporter an extra 50 litres to ferry.
Another reason to consider the food grade containers form is to ensure milk does not churn during transportation.

Potential partners
  • UCCCU

Other potential partners include milk cooler makers
  • Mueller
  • Frait Lait Nikos
  • Serap
  • Frigo Milk
These coolers are already being used. They are backed up by generators from Lister or Cummins.

Next step
For further information of how to proceed from here, contact Ivan Butler at access2innovation: ib@access2innovation.com

Access2innovation will be hosting seminars in October 2012 to open the dialogue with interested companies and researchers to further outline the upcoming business opportunities.

Sign up for the coming field visit to Uganda on December 4th -12th 2012

To apply for access2innovation funding, please visit the website www.access2innovation.com