Concept note
Chili farming, post harvest handling and market information
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 agricultural sector is of vast importance to the country’s economy, with a market that is interested in diversifying the crop production. Among the crops that provide an alternative to traditional cash crop exports is chili, which has the European Union as the primary export market. Through the partnership with CARE Denmark, access2innovation has uncovered a number of market opportunities for improving chili production among smallholder farmers and farmer groups. These opportunities cover the issues of irrigation, post-harvest handling and access to market information.

Chili farmer groups constitute a customer segment that are interested in viable solutions to these issues in accordance to their needs and what is affordable for them.

There are also opportunities for linking and upgrading along the Ugandan chili supply chain, and in for businesses to enter into partnerships with other customer/sourcing segments to promote the chili export to European markets in line with international social and environmental standards.

In partnership with CARE Denmark, access2innovation offers an innovation platform and testing ground for solutions to address these market opportunities.
Market opportunities

As in many other countries in Sub-Saharan Africa, the agricultural sector is of vast importance to the Ugandan economy, contributing nearly 20 percent of GDP and 48 percent of exports, with agro industry accounting for much of the country’s general industrial activity. Additionally, the sector provides employment for some 80 percent of the population, of which 85 percent live in the rural areas deriving their livelihoods from the land. In this context, there is a marked interest in diversifying crop production, particularly within horticulture with a view to increasing foreign exchange earnings.

Apart from traditionally high-earning export crops like coffee, tea and vanilla, other export crops like pepper and chili constitute an interesting proposition for Ugandan agribusiness, and carry high growth potential. In particular, the African variety of Bird’s Eye Chili (Capsicum frutescens) is being increasingly promoted in Uganda. As one of the most significant chili crops exported by developing countries to the world market, Bird’s Eye Chili is commonly found throughout South and South-East Asian countries with India, Vietnam, Indonesia, China and Brazil being the worldwide leading exporters.

The African Bird’s Eye Chili variety is one of the most pungent varieties of chili in the world and produced mainly in Malawi but also in Zimbabwe, South Africa, Ghana and Uganda. In 2010, Uganda exported US$ 496,000 worth of peppers and chili to the world market; including African Bird’s Eye Chili. Exports to the European Union in particular constituted 82.86 percent or US$ 411,000. The end use of the chili is either that it is eaten raw or processed as a powder.

Adding to this, the chilies are also useful because it has proven itself effective for farmers to combat pests and plant disease, hence the growing interest for growing the crop in Uganda. Chili may either be exported fresh, or - more commonly - dried.

In the Western Region of Uganda, the international development NGO CARE Denmark is working to support smallholder farmers in chili production, with an increased emphasis on supporting their links with commercial local and export markets. CARE works with 15 farmer groups in a number of districts (of around 20-30 members each, sometimes more), where the chili has initially been planted as a so-called buffer crop burned at the edges of fields to ward off intruding animals such as baboons and elephants.

In general, chili production in Uganda by smallholder farmers is done on the basis of a general plot size of 0.2 hectares to 2 hectares of land overall, of which a typical chili garden is in the range of quarter of 0.1 hectares to 0.4 hectares. Production per acre ranges between 300-700 kg per year. Chili may be grown either as a mono-crop or inter cropped with other crops, which is by far the most common case in Uganda.

In the 15 farmer groups supported by CARE, chili is grown together with e.g. banana trees.

To sum up, partnering with smallholder farmers could be your innovative platform to develop the sustainable solutions meeting the vast demand at the african market.
Chilies as a potential business case

The smallholder chili farmers in Uganda supported by CARE are fortunate to be part of a supply chain where chili is in high demand. However, challenges persist for these farmers to benefit fully from this market demand.

Access2Innovation in partnership with CARE Uganda have researched the needs of different groups of chili farmers and identified opportunities for businesses. The most relevant opportunities are the following:

- Improved access to irrigation to increase and secure production throughout the year.
- Handling and storing of crops post-harvest to reduce losses and improve bargaining power.
- Improved access to market information to secure optimal prices and trading partners.

As well as these three specific business opportunities relating to the production stage of the chili supply chain in Uganda, there are also opportunities for businesses to enter into upgrading and partnering with the supply chain as a whole.

- Chili production in Western Uganda is primarily rain-fed and has production gaps during dry seasons. Access to irrigation will therefore greatly increase a constant and reliable production.
- Post-harvest handling is important. When Ugandan smallholder chili farmers produce crops, there are a number of challenging questions they are faced with; should the chili be dried or sold fresh? What will fetch the best price? How far is the fresh chili expected to be transported and will it stay fresh during the trip? How to ensure the best storage conditions in order for the harvested to last as long as possible before it is purchased? Etc.
- Because of these considerations, there are significant gains for the farmers if they are able to invest in value adding technologies in the marketplace. When value is added in the production process, the chili farmers are able to earn a higher income and increase further investment in such solutions.
- Accessing market information is important to the smallholder chili farmers because they feel they are in a weak position to bargain for an optimum price for their crop. Prices and trading partners are important factors for the farmers’ chili production; studies show that intermediaries in the supply chain are able to sell to the final customer at a far higher price than what the farmers sell their crop for (sometimes at index 8000 to the final customer compared with an index of 100 when the farmers deliver their crops).
- With the farmers being left out of the profits, there is a potential for solutions to ensure better market information or accessing international supply chains. There might be opportunities for the chili farmers to enter into order-based production, as opposed to the uncertain farming and selling practices of today.
Framework

For the market opportunities listed previously, the following conditions should be taken into account:

**Irrigation** – Water pumping and dispersal should take into account that any solution ought to be affordable for the chili farmers. Here there is a possibility to market to a farmer group as opposed to individual farmers - or considering alternative means of financing.

A solution should also be easy to maintain and powerful enough to draw water from a far-away water source. In one case, the lifting height is 100 meters up and 70 meters across from a point (although this varies depending on the place). In addition, electrical grid connectivity is very rare in rural Uganda, rendering it important to think in terms of solutions that do not make use of grid electricity.

**Post-Harvest Handling** – As in many developing countries, challenges for post-harvest handling of chili in Uganda have to do with high humidity and high ambient temperatures as well as sudden heavy rainfall. These factors promote infestation and rotting and hamper the ability of farmers to deliver crops at certain times and specifications, and - as a result - their ability to fetch the best prices.

Access to cold storage for the harvested chilies means that the fruit can be kept longer without ripening; increasing the value of the harvested crop. The prevailing lack of electrical grid access is important to keep in mind as well.

**Access to Market Information** – The use of mobile phones is common and access to information could become available to smallholder chili farmers through this medium, increasing their chances of profiting from the farming activities. Technologies envisioned to address this market opportunity could cover a mobile platform for getting access to real-time market prices or a trading forum where buyers and sellers could meet.

Customer and sourcing segments

- local farmers
- cooperatives
- farming associations
- NGOs
- large scale farmers

Local sourcing segments (to ensure quality & delivery):

- ICCO
- London Fruits
- Shares! Uganda

Potential buyers in Denmark:

- FDB
- Urtekram
- Solhjulet
- Savannah
Potential partners

- CARE
- Fair trade
- Toro Botanical Garden
- Uganda wildlife authority
- Kabarole district farmers association (4500 members)

Next step

For further information of how to proceed from here, contact David Christensen at access2innovation: dc@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