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September 2011

DEVELOPING THE UGANDA APICULTURAL INDUSTRY

Strategic Industry Growth – Discussion Paper

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Document Purpose

The intent of this document is to seek support and financial backing for a development programme that aims to empower individuals/communities to build and develop their own sustainable beekeeping enterprises in Uganda.

Note: If supported by a potential funding agency, a more in-depth document would be drafted outlining a project budget.

The Project for Discussion

The project is a systemic approach to assisting the growth of the Uganda honey bee industry. The project would teach people to understand the industry, honey bee management, the construction of honey bee hives and how to produce protective head veils and clothing, tools, e.g., hive bee smokers[1]. It is a project that would work with people who have very little resources.

Three main areas/phases of development would be undertaken. The three phases would be:

1. Phase 1: Strategic planning – the development of an industry development strategy for the next five years;

2. Phase 2: Beekeeping training - a training the trainers (people trained to train others in beekeeping) programme and the provision of industry workshops on beekeeping with subjects such as:

    - keeping hives – general overview
    - making equipment including hives
    - managing bees for honey production
    - pest and disease awareness and control,
    - preparing honey and other bee products for sale

3. Industry support and extension – on-going industry support, training, and technical support to:

    i. Assist in the fair distribution of beekeeping knowledge - Develop and enhance beekeeping and management skills;

[1] Bee Smokers are small metal vessels that hold a smouldering material, that produces a smoke that may be blown/directed over the bees to help to calm honey bees, making them easier to manage – less stings!

ii. Promote beekeeping as a sustainable form of agriculture leading to the trade of honey and other bee products;

iii. Support and promote beekeeping and the effective distribution of honey bee products for sale;

iv. Assist in the development of manufacturing industries for equipment and consumable items that are required for honey bee management and honey production; and

v. Assist, wherever practical, the education of government officials on the importance of beekeeping as a sustainable income generating practice.

Consequently, as a desired outcome and for the project to be deemed successful, trainees would need to have learnt to be innovative and use materials around them to build hives and keep bees rather than seeking to purchase imported materials. Also, the people keeping bees would need to be generating income from honey and bee product sales.

Further to the above statement, the success of the beekeeping programme would be measured by:

- Improved efficiency and sustainability of this form of agriculture – people keeping bees rather than seeking out honey bee colonies in the wild;
- An increased awareness, understanding and knowledge of beekeeping and the issues relating to the trade of its products on the domestic market;
- Increased number of people in the region keeping honey bees for generating income;
- Increased levels of honey available to the domestic market;
- Government agencies having an understanding of the issues relating to trade of honey, bees and bee products and supporting solutions for industry improvement;
- Aid funding supporting further apiculture projects;
- Increased food security and the alleviation of poverty; and
- Established networks between New Zealand and other international participating organisations, and other stakeholders leading to a wider potential domestic trade.

Measurable performance indicators would be established in an operational plan that would be developed through the industry strategy.

CONTEXT & POINTS OF CONSIDERATION

Apiculture (beekeeping) refers to the farming of honey bees to produce one or more of the following products: honey, propolis, royal jelly, beeswax, pollen, bee venom, bee brood, queen bees, nucleus hives, package bees, and pollinating crops.

In Uganda, while beekeeping is not well understood, the marketing and selling of locally produced honey is profitable. The honey is either gathered from wild honey bee colonies or is produced by local beekeepers; typically sold through local markets. However, honey sales are not meeting demand. The industry is limited by production yield.

In the last decade, an industry has emerged. Local people/farmers have driven the success and the industry continues to attract strong support from the community.

Apiculture Products

Honey is the base product of beekeeping. It is a sweet substance formed as a result of the manipulation of plant nectar by honey bees. The major constituents in honey are glucose and fructose - simple sugars. Vitamins, minerals and protein are present in honey in minuscule amounts, making them nutritionally insignificant. Some honeys are antibiotic.

Honey is the bee product most commonly purchased by the consumer and is the commodity people are most likely to think about when discussing honey bees.

Besides honey there are a number of other products that need to be considered. These are:

- Pollen - A dust-like substance taken from flowers by bees and stored in cells in the hive. Pollen is high in protein and has traditionally been collected from bees, frozen, dried, cleaned and placed into retail packages and sold as a protein food supplement.

- Propolis – Is a mixture of gums and resins produced by plants that is collected and used by bees as a glue and preservative in the hive. This substance is scraped from the interior of the hive by the beekeeper and is then frozen. The propolis is processed by dissolving it in alcohol and selling it as a tincture, or drying to a powder for further processing. Propolis is used in natural health care products, mostly due to its reputed properties as an antibiotic. It is currently being used in toothpaste, lip balms, capsules and tablets, tinctures, cough medicines, hand creams and wound dressings.

- Royal jelly - Secreted by special glands in the heads and bodies of nurse bees, it is the high protein food fed to developing queen and worker bee larvae. This jelly is collected by a skilled beekeeper via a labour intensive process, and is then frozen for later use. The substance may be sold in its raw form, a powder (dust or capsulated), or mixed in with other shelf stable products like honey. It is processed into a number of forms including capsules, tablets and cosmetics, and used as a tonic and restorative.

- Beeswax – Is produced by honey bees from glands on their abdomens and is used by bees to build combs. The beekeeper collects beeswax at the time of honey extraction and while melting down old or damaged combs. Wax cappings from the honey comb are collected, pressed or spun to remove the residual honey, and then melted and molded into blocks for further processing. Most wax is recycled to make new honeycombs for bees. However, some wax can be used for making candles and cosmetics and as a salve for wound dressings.

- Nucleus colonies and queen bees – Bees and queen bees may be produced by the beekeeper for sale to other beekeepers. Nucleus colonies usually comprise of a box of bees with three or four frames inside (two frames of brood, one frame of honey and one of honey and pollen). The beekeeper sells the colonies to others to enable them to develop a new hive or replenish a failing one. Queen bees are sold for the purpose of replacement of old or failed queens, for the maintenance of good production and gentle hive behaviour within a colony.

- Packaged bees – 1 to 1.5 kg of bees sold with a queen bee in a cardboard tube or box with ventilation screens.

- Woodenware – There is a market for the production and sale of beehive components either in kitset form or ready made. This is a market that requires woodworking equipment and a reasonable attention to detail.

- Beekeeping equipment – Veils, smokers, hive tools, overalls, gloves and other components.

Honey bee products – small business

Honey bees produce a range of useful and readily marketable products which require relatively little post-harvest processing. Such products are useful for both domestic consumption and as a cash crop. As such, they are ideal in small scale situations, where any excess can be readily utilised.

Beekeeping is a low technology activity and hives can be constructed from local materials; simple hand-operated honey and wax-processing equipment can also be made locally. Operations are relatively unsophisticated, but do work better if electricity and clean water is available. In addition, beehives generally need little management input. That is, bees do not require daily attention and beekeeping can be pursued in tandem with other activities.

Micro credit money can be quickly repaid if bee products are sold as a cash crop. NB: Bee products tend to command a relatively high price – especially in countries which import competing products. Consequently, returns to beekeepers are good. Overall, beekeeping is very suitable for small-scale agricultural activity in localities where capital and technological resources are low.

Women and beekeeping

Historically, women have not been extensively involved in beekeeping as an income generating activity. It is proposed here that for those who wish to become involved, the potential rewards are high and the risks low. Women are able to undertake beekeeping on an equal basis to men – although it may be difficult to persuade some men of this fact.

In order to introduce apiculture to new areas great care must be taken to be politically sensitive. Once this is achieved, working through women's committees/groups is the next advisable step. It is also important that those who intend to promote such activities are mindful of the existing gender structures. For example, women may not be allowed, unless explicitly encouraged and supported financially by their husbands/partners, to become involved in beekeeping.

In all cases of project establishment and maintenance it is necessary to understand as fully as possible the socio-cultural context of the environment.

As already noted, women's groups are an effective medium for change. Awareness campaigns can be implemented and interest can be generated before money is spent. A project being pulled in by a women's committee, rather than pushed by an outside agency, will have a far greater opportunity for success. Training programs should involve an understanding of social and cultural backgrounds, should be hands-on, and should be conducted in the village, as travel may be difficult for women in outer areas.

The best way to ensure the effective development of beekeeping is through extensive extension processes (NB: a woman beekeeping extension officer was appointed in the Solomon Islands in 1990).

Awareness campaigns and training should attempt to illustrate that relatively little work is required in order to become involved in beekeeping, that members of the family of all ages can be involved, and that a wide range of income generating activities exist. There should also be some emphasis on the health benefits of beekeeping products as food or wound dressings.

Potential Products

There are many products that have the potential to be produced within the industry including some of the above. They are as follows[2]:

- Retail packaged honey – domestic markets
- Bulk honey
- Honey drinks
- Crude unprocessed propolis;
- Processed propolis – drinks, candies, tincture etc;
- Beeswax – candles, sheets of wax, and polishes;
- Beauty range – soap and creams; and

[2] NB: Due to the climate and the nature of Uganda it is inappropriate to assume that Royal Jelly is a potential product due to the labour intensive process and skill levels required in extracting royal jelly for sale and the need be kept frozen.

- Medicinal – honey, creams (containing honey, propolis and other local healing ingredients).

Point of difference
No drugs/chemicals are needed to keep the bees alive in Uganda for honey production. For the majority of the beekeeping countries outside Africa, this is not the case, and beekeepers rely on a number of drug/chemical interventions to sustain their honey bee colony numbers. This is an important success factor for any development programme.

The Environment:
Beekeeping does not damage the environment. Beekeepers promote conservation because plants produce nectar, the basis of honey. The industry does not promote the utilisation of fertile land or the destruction of native fauna habitat.

Land Tenure Issues:
Land is owned by individuals/families as well as by the government. In a number of cases there may be absentee landowners although it is understood that there have been a few issues with beehive placement.

Current issues

The current issues for the honey bee market are:

- Limited infrastructural support and extension (beekeeping training);
- The need for trainers to support sustainable growth in hive production and hive volumes/capacity (enabling greater volumes of honey production); and
- Minimal support to promote an understanding on selling honey bee products, bee hive equipment and honey bee hives within the local domestic markets.

Outcomes

The changes from the implementation of a project are expected to result in:

1. A whole industry approach, looking at all areas of the industry;
2. A noteworthy increase in honey production and honey bee hive numbers within, from a project inception, five years;
3. Individuals/families/communities generating income from the keeping/farming of honey bees;
4. An increase in the community baseline knowledge and skills in apiculture; and
5. On-going industry support and development.

A POSSIBLE WORK PLAN

The main strategy would be implemented in Uganda in partnership with the industry and the KIKANDWA RURAL COMMUNITIES

DEVELOPMENT ORGANISATION. It is proposed that the development process will be spread over a three year period:

- Year one, the advisors would establish the strategic project implementation plan, and establish a demonstration honey bee farm[3], and train the trainers (extension staff).

- Year two, three, and four extension workshops undertaken. Workshops utilising the skills of the advisors and the trained extension staff.

- Year three, four, and five: training and support services provided as needed. This support would be focused on increasing government understanding as to how it could support the industry, provide further training to potential farmers and extension staff, and assist with the marketing of bee products.

The project would pull together a systemic framework that provided the industry with a common structure for different stakeholders to work together to lift the industry to better performance levels. Progress has been made to date and the industry has been growing in many areas. However, there is a desire to capture this organic growth and provide the industry with a strategic focus for greater wealth creation for individuals.

On a more practical note, training would see the transfer of further knowledge and skills to help promote increased production yields and work/business skills in general.

The key deliverables would be:

1. In consultation with beekeepers, a documented strategic direction and implementation plan for the industry;

2. A honey bee demonstration farm established for the purpose of leaning and extension;

3. A honey bee hive wood ware workshop constructed for the purpose of producing hive parts for extension and sale;

4. Workshops run and meetings held to enable knowledge transfer and skill development in all necessary areas of effective honey production, and hive management;

5. Local people taking up beekeeping as an income generating activity; and

6. Bee products available for sale on local markets.

[3] Note: The critical success factor to building hive numbers will be the ability to obtain brood and young bees (frames of young bees) from established colonies. Further, queen bees will need to be produced. This will require the use of established colonies. It is proposed that these colonies be purchased and used to establish a demonstration farm. If this is not practical under Ugandan conditions and with Ugandan honey bees then swarms will need to be caught.