

# How you can make

**Editor's note**  
Agriculture, only for the prepared

The value and quantity of agriculture products imported by Uganda has drastically gone up in the last one year, compared to the previous one according to a story in *New Vision* on Tuesday, April 3. Two crops where the drastic increase has been noted are maize and beans.

In the other hand, there has been an increase in production on the farms across the country. For example, coffee production is estimated at 1.5 million tonnes in the last year up from around 4.2 million tonnes in the previous year. Coffee production has recently gone up to around 4.6 million tonnes last year, up from four million tonnes in the previous year. There is also an upward trend in production of fish, pulses legumes and other products which can be sold to earn an income.

The dairy sector too has seen a permanent upward curve with a production of 2.8 billion litres per year. This indicates that perhaps employing better agricultural practices to improve yields or production of food is a key in agriculture. It is one of the ways that every person should engage in. However, it is only those who are prepared who will benefit from his hope.

By Joshua Kato

Beekeeping was one of the major topics during the February 2018 Harvest Money expo. The enterprise was handled by Tom Okello Awyil of Tai Assured Mixed Farm in Lira district and Eliczar Nsubuga from Mobile Bees in Nakaseke district. Below are some of the issues they tackled during the trainings they conducted during the expo.

**Role of bees**  
Bees are currently boosting the food production of two billion small farmers worldwide. According to research, if pollination is managed well on small farms, crop yields can increase by 24%.

Bees increase food quality because rich in micro-nutrients such as fruits, vegetables and seeds depend on pollination. A well-pollinated plant will bear good fruits. However, as farms expand, production systems coupled with increased use of agricultural chemicals intensify, the honeybee population decreases, resulting in reduction of the quality of the food produced. Declining pollination is also a threat to nutrition and if this trend continues, nutritious crops such as fruits, nuts and many vegetables will be substituted by staple crops.

Farmers should keep bees because they pollinate their crops and also provide honey and other products which can be sold to earn an income. Farmers should create a good habitat for bees by leaving some areas unsullivated. They should avoid use of agrochemicals. Agrochemicals must be used, timing is crucial – one can spray very early in the morning and late in the evening.

**Well-paying enterprise**  
Beekeeping can be practised from anywhere. For a farmer starting out, all you need are about 10 beehives. Depending on where you get them, they cost at least sh2m. If they are fully colonised, if one does not have enough space, set up stands with each taking three or four hives. For 10 hives, one needs only three stands. Constructing these wooden stands will cost less than sh100,000.

The other requirement for the enterprise, is a bee-keepers' suit which costs sh100,000. This is worn by the beekeeper during harvesting. Overall, with sh2.5m one can start a modern 10-hive apiary.

From the 10 hives, after one year, each can produce at least 20kg of pure honey, which translates to 200kg per year. At sh15,000 per kilogramme, this translates to sh3m from the 10 hives.

In fact, one gets total investment after just one year.

Input in terms of labour is low. Bees have few predators and are not attacked by diseases so one does not need to buy medicine for them.

A beehive remains colonised for as long as its structure is intact. Bees multiply often.

- Selection of apiary site**
- **Water:** Bees need water if they are to produce honey. Make sure that there is a water source within 500 metres of the hive. Although bees are known to travel for over 5km looking for water, the nearer the better. If there is no source nearby, you can place water in small saucers or pails near the apiary site.
  - **Flowering plants:** Bees process honey from nectar. The sources of natural nectar are mainly flowers. This is, therefore, why it is important to have flowering plants near the apiary. These can be coffee, mangoes, maize, bananas, calliandra, eucalyptus and simsim plants among others.
  - **Have shade over the hives:** Bees do not like direct sunshine. Therefore, you must



Wearing protective gear while harvesting honey is important

## FACTS ABOUT BEES



- Worker bees gather both pollen and nectar from flowers to feed the larvae and other members of the colony.
- The honeybee is the only social insect whose colony can survive many years.
- Bees live in colonies that contain the queen bee, the worker bee and the drones.
- There are about 20,000 different species of bees in the world.

select a site that has trees to create a shade. Direct sunshine makes the hives uncomfortably hot for the bees to live in.

**Away from human and animal habitation:** The site should be at least 100 metres away from human houses. This is intended to stop attacks from the bees. The nearer the bees are to a homestead, the easier it is for the bees to be provoked into attacking people.

Keep the hive away from any animals or animal shelters, for example, a kraal. Bees are easily irritated by animals and they may attack them. Animals may also meander into the apiary provoking attacks.

**Beehives**  
On the market a top range beehive, the Kenya top bar hive goes for sh80,000-sh120,000, while the modern or Langstroth hive goes for around

sh150,000 (not colonised) or over sh250,000 (when colonised). You can make your own hive using materials that are readily available on one's farm. These may include old tree trunks.

A hive made using tree logs is called a log hive. All one needs to do is cut the log to a length of say four feet and scoop out the inside to make a hollow inside. Both sides of the log are sealed to leave small openings through which the bees access them.

At harvest time, the log is split open and the honeycombs removed. If one wants to use the same logs again, all that one needs to do is to combine two hollow logs and at the time of harvest separate them, remove the honeycombs and stitch them together again in preparation for the next harvest.

There are also modernised local hives

# sweet money from honey



A beekeeper in western Uganda. An apiary should be away from human settlement to prevent bees from stinging people

**sh2m**

The average cost of setting up 10 fully colonised bee hives in Uganda

**sh15,000**

The amount of money one kilogramme of honey costs on the market



Processed honey ready for consumption

where a queen extruder is included. These cost sh70,000 including the stand.

You can also use banana fibres or papyrus to make cheap hives. This is when flexible sticks are woven together in a conical shape. The outside is then smeared with wet soil mixed with animal dung. Both ends of the cone are sealed with leads made out of banana fibre and grass.

Other beehives that can be made using readily available materials include the grass hive and the gourd one. Although these improvised hives do not yield as much as the top bars, they can sufficiently meet your family's honey needs and

even save some for sale.

**Attracting colonies into hives**  
Having hives is one thing, but attracting bees to colonise them is another. Having many hives colonised is the dream of every beekeeper. This is because the more hives are colonised, the more money a farmer expects per harvest.

If bees take long to colonise one's hives, one can use what is called baiting to attract them. Baiting involves the application of attractants in the beehive. The baits include melted beeswax, propolis, honey and lemongrass extracts. These can be got from other beekeepers.

**How to divide colonies**  
Colonies of desirable traits can be divided to increase their numbers in an apiary. Such colonies should be selected from those with high honey productivity, resistance predators and not have absconding behaviour. Select brood combs and some honeycombs from the colonised hive and place them in an empty hive. The combs must have adult bees.

**How to catch bee swarms**  
Swarming is when a colony divides with one group remaining in the original hive, while the other group goes away. You need to catch the swarm though, if you are intent on increasing the number of your hives. You can do this by setting up catcher boxes/empty hives. These swarms will most probably go for these boxes. You can collect these swarms if they settle on a tree or hanging branch by shaking them into a catcher box.

**Buy hives with bees**  
Alternatively, if you are not sure of getting colonies quickly, you can buy colonised hives. These can be got either from hives makers with farms or fellow farmers. Be prepared to pay an additional sh50,000 to sh100,000 for the bees on top of the initial cost of the hive.

**Maintaining the apiary site**

- Keep the trees for the shade well-trimmed to reduce incidences of pests.
- Carry monthly checks on the hives to look out for infiltration by insects. If a hive is infected by other elements, for example bee beetles or termites, you need to decontaminate it and clean it.
- If there is not enough water or flowering plants, put water mixed with sugar in small containers not far from the apiary unit.

**Dealing with bee pests**  
There are a wide range of pests that attack bees,

- Farmer must carry out various interventions.
- Bee hornets: Look for their nests near the hives and destroy them manually.
- Termites: Smear burnt engine oil on the hive stands in order to stop them from climbing up.
- Wax moth: use bottle traps with vinegar and water. Plastic mineral water bottles can do. The moth will be attracted into the bottle and it will not come out.

**Harvesting quality honey**  
By the eighth month after setting up the hives and colonisation, there should be honey to harvest from the hives. However, it is advisable that a farmer takes at least 12 months before the first harvest. This helps the honey to mature. Thereafter the first harvest, you need to follow the flowering period of crops and trees in your area. Bees suck a lot of honey during the flowering period which means that you need to harvest soon after the flowering period.

For proper harvesting, you need a beekeepers' suit, which prevents bees from stinging you. A set consists of a suit and gloves and costs sh80,000-sh150,000.

You need a smoker to sedate the bees, a bee knife to help pull out the combs. It is advisable to harvest in the evening because bees are less aggressive at that time. Smoke the hives entrance and sides before opening and harvest only sealed/capped combs.

After harvesting, put the combs in a clean bucket(s).

You can either use a honey press to extract the honey from the combs. Honey presses are sold in agri-inputs shops starting from sh400,000 onwards. One can also let the honey drip slowly from the combs into the bucket. This process may take days, but it is the best way to get the purest honey.

**Pollen**  
During their hundreds of visits to flowers, bees collect a lot of pollen. They keep this in the hives as part of their food. It can be harvested from the hives and processed for human use. It contains high protein levels, it is a proven antibiotic and antioxidant.

**By the eighth month after setting up the hives and colonisation, there should be honey to harvest**

and reduce honey production. Some of these are insects like termites while others are reptiles or even mammals like the mongoose. Insects include hive beetles, termites, weaver ants, bee hornets and wasps. To stop these attacks, a

## HOW TO HARVEST HONEY

- Fasten the cloth/wire mesh over the container with the nylon cord.
- Place honeycombs on the wire mesh so that honey can trickle into the container.
- Cover the honeycombs and container with plastic and secure this with another cord.
- Leave the honey and container in the sun. Both honey and wax will gradually seep down into the container. The wax will harden above the honey and can be removed when the honey cools down to be decanted and bottled.
- Beeswax collected should be moulded in

the following manner:  
● Use a container with a round bottom and a mouth wider than the bottom with a smooth inner surface. Many plastic containers are suitable.



A group of honey bees

- Place a small quantity of water in a cooking pot and put on the fire.
- Do not melt beeswax in a dry container. It should

not be exposed to fire because it burns easily and can be damaged by too much heat. All beeswax and all melt combs outdoors.

● Combine all the beeswax and watch carefully as wax melts. Remove the container used to heat the beeswax from the fire immediately after the last lump of wax has melted.

● Pour melted beeswax in the mould and place in a dry place to cool.

● Remove the cakes of beeswax next morning.

● The dark material collected at the bot can be scraped with knife and can be sold to a shoemaker.