



API News

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A publication of The Uganda National Apiculture Development Organization (TUNADO)

A Membership & Apex Body for
Coordinating Apiculture Sector in Uganda



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Editorial Message

Note: TUNADO welcomes articles for this newsletter from all sector players at no cost.

For more information and contributions, please contact the editor on

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Message from

CHAIRMAN Board of Directors

The TUNADO Board is once again delighted to communicate to the beekeeping fraternity at the beginning of the year. This annual report is on TUNADO's performance in the year 2019. It is derived from the strategic objectives of the organisation. The year 2019 was a wonderful one. Overall, our strategy that focused on increasing production and productivity as well as mobilising the beekeepers and value chain actors into bee products production groups was a success. We also stepped up our follow up plan through regular outreach, training and extension.

In response to the 2019 annual plan which was agreed upon by the Annual General Meeting, we strategically dedicated 49 % of our annual budget towards membership development. Some of the achievements realised under this plan were training of Apiary Masters, who are now our competent extension workers. Trainings were also conducted to various stakeholders in equipment making, beeswax extraction and processing, value addition, quality assurance, record keeping and making business plans. The capacity of some of our members was also built in bulking and collective marketing, financial literacy. Business Development Services and profiling of less known bee products was also done.

Another major achievement for TUNADO in 2019 was the support provided to competitive and profitable apiculture enterprises aimed at commercialising technologies and innovations through business incubation. This was to demonstrate to all stakeholders and prospective investors that beekeeping is a profitable agribusiness undertaking.

In August 2019, TUNADO successfully organised the 10th National Honey Week at Forest Mall Lugogo, under the theme "save the honeybee now for the future of agriculture". The Honey Week was successful in the following ways: i) more exhibitors attended than in 2018 ii) it led to recruitment of new TUNADO members iii) it led to creation of awareness on the importance of bee friendly farming iv) it led to creation of new markets for members v) it provided a learning and knowledge sharing platform to the exhibitors and the general public. The show attracted the participation of vulnerable people such as South Sudan refugees from Imvepi settlement camp in Arua and representatives of people with a hearing and visual impairment from the districts of Gulu, Masaka. For the first time the show was attended by the Apimondia Regional Commissioner for Africa. The official opening of the four-day event was presided over by Captain Wasswa Ddamulira representing the coordinator of Operation Wealth Creation, Rtd. Gen. Caleb Akandwanaho and was closed by Hon. Joy Kabatsi, State Minister of Animal Industry.

Another achievement in 2019 was institutional strengthening of TUNADO. We were able to build the capacity of the organisation to fulfil her mandate through effective governance, transparency, accountability and inclusion. With the guidance of stakeholders, members and partners, TUNADO Board developed



and operationalised three policies in 2019. These include The Disability Policy, The Gender Policy and the Safe Guarding Policy. With the help of Light for The World, an international disability mainstreaming organisation. TUNADO organised and conducted a PWD mainstreaming training for Board of Directors and management staff. The training improved staff and BoDs' understanding of disability visa vie impairment, inclusion and action planning.

In 2018, TUNADO embarked on a project to establish her own home and bought 2 acres of land in Gayaza. In 2019, final payment of the land was made and a land title secured in TUNADO's name. Furthermore, TUNADO engaged an architect to develop a building plan and an artistic impression for the building. The plan was approved by the Annual General Meeting in April 2019. Similarly, TUNADO with funding from SYTEL a UK based software company purchased land in Omoro district, Koro Sub County. The land is located on Gulu-Kampala high way, 4 km to Gulu town. TUNADO intends to use the land to construct a beekeeping training Centre for Mid-northern region.

Uganda participated in 46th Apimondia Congress held in Montreal, Canada which was held in September 2019. Apimondia is world federation for beekeepers. The Ugandan delegation was led by our Executive Director Mr Dickson Biryomumaisho who presented a paper titled "Shifting Goal post: From Promoting Frame-hives as Magic bullet to increase apiculture production to Importing Queen and Bee-breeding in Uganda". Dr Tunanukye George (Director -TUNADO Mid-west) and Ndayabarema Robert (former ED-TUNADO) also participated.

... continued to page 2

Message from CHAIRMAN Board of Directors

Continued from page 1

In 2019 TUNADO successfully received official accreditation by Ministry of Education under the Directorate of Industrial Training (DIT) to operate as a training and assessment Centre for DIT. Also in the same year TUNADO received technical guidance from UNBS which provided trainings to 35 processors and packers across the country. The support focused on advice on constructing standard honey processing units, setting up a hazard analysis critical control points, and developing quality supply systems. As result, out of the 35 processors, 14 successfully acquired a Q mark. Five of them were audited and are waiting for their audit reports. A total of 16 are working on their facilities to meet the required standards.

In August 2019 TUNADO successfully organised a joint Apiculture Congress between research agencies (NARO), academia (Makerere University), private sector and apiculture value chain actors. This was the 2nd congress organised by TUNADO at Kati-Kati restaurant, Kampala Uganda. The event focused on presentation of scientific papers focusing on colonisation, honey bee diseases and their management in Uganda, effects of agro chemicals on bees, quality parameters of hive products.

In the year 2020, we hope to continue with the projects that are being implemented as well as focusing among on the construction of TUNADO home.

One of the biggest challenge this year is the Coronavirus (Covid 19) pandemic. The social distance guidelines and the economic impact of the pandemic is going to negatively affect all our members. On this note I urge all apiculture stakeholders to comply and observe ministry of health guidelines and we shall emerge victorious.

Message from

EXECUTIVE DIRECTOR



*Mr. Biryomumaisho Dickson,
ED - TUNADO*

Promoting Apiculture Rural Transformation Centres In Uganda

A Case Study of Arua Market Women Honey Traders Association Rural Transformation Centre.

Establishment of a strong Honey Supply chain by Arua Market Women Honey Traders Association (AMWHTA) is in the offing in West Nile region, thanks to The Uganda National Apiculture Development Organization (TUNADO) who have come up with a novel innovation dubbed the Rural Transformation Centre (RTCs). This is premised on the notion that a well-functioning urban collection centre based on business principles like AMWHTA provides an excellent opportunity for rural beekeepers to access national, regional and international markets for honey.

A Rural Transformation Centre (RTC) is a well-established collection centre whose core business is to bulk and process honey and other bee products in accordance with guidelines provided by Uganda National Bureau of Standards on honey processing and food handling. The facility of AMWHTA which was granted a permit by UNBS in March 2020 is located on Simsim Road, Kenya Ward, Prison Cell, River Oli Division, Arua Municipality, Arua District. At this facility, honey is collected from farmers and processed and packed in food grade containers for onward processing and packing into smaller portions by processors based in Kampala and neighbouring countries.

The Rural Transformation Centre is being piloted by TUNADO in the West Nile Region with Arua Market Women Honey Traders Association in the project Bee a Champion (BAC). This project is implemented by TUNADO, Woord en Daad and AMWHTA and is funded by NORAD. The project emphasizes business approach to beekeeping. In this regard, 62 practicing Beekeepers who have at least 20 and 50 Colonies and above have been selected to participate in the project.

The project aims to grow the businesses of the participating beekeepers so that they double their colonies, increase their productivity, production of honey and overall increase their incomes within 3 years of the project period. The beekeepers were guided to develop business plans to grow their businesses. At the inception meeting of the project they were guided through the implementation process. The capital for investment as indicated in the business plan is shared as follows:

- The beekeeper contributes 40% of the capital
- The project contributes a grant of 40% towards the capital
- The processor AMWHTA contributes 20% towards the capital however this is soft loan at no interest to be recovered from honey supplies by the participating beekeepers

In the project, beekeepers register with

AMWHTA as suppliers of honey and other bee products and this way they are establish a business partnership where they supply quality bee products in the required quantities and AMWHTA pays them promptly a fair market price. In order to build trust and guarantee consistent supply of quality honey AMWHTA in close collaboration with TUNADO will coordinate the Beekeepers. To maintain quality which starts from production AMWHTA will supply all the inputs indicated in the Business Plans of all the 62 Bee Champion. Apiary Masters have been recruited and retooled by TUNADO to provide personalized extension services to the Bee Champions in proper apiary management including harvesting and post-harvest handling of honey.

The project intends to invest UGX 586 Million and envisages to increase the colonies from 3677 to 7354 within the project period. At an average yield of 8kgs per colony, 58.8 Metric tons worth UGX 352Million will be realized at the end of the project. Given the fact that the Hives lifespan is over ten years the Beekeepers should be able to recoup their investment within the following two years and continue to earn more revenue in the subsequent years.

The above measures will boost productivity and production and result in consistent supply of Honey to AMWHTA Collection Centre. With close cooperation the level of trust and understanding will increase hence the supply chain will be strengthened and overall revenue base will increase for the Beekeepers and AMWHTA.

To qualify to participate in the project the Bee Champions agreed to train 10 Beekeepers at their Apiaries .This in turn will lead to increase in number of Beekeepers doing Beekeeping as a business .By the end of the project period a total of 620 Beekeepers with at least 20 Colonies will be trained. At the average yield of 8kg per colony 99,200 Kgs of honey worth UGX 595 Million will be realized. This effort will further strengthen the supply chain for honey and guarantee quality honey supply to AMWHTA. A total of UGX 947 Million will be earned by the Beekeepers in the West Nile Region which should improve the livelihood.

The RTC innovation is the answer to bulking honey which links Beekeepers to Regional and International Markets which leads to growth in the sector hence this concept is worth replication in the entire Country.

‘The sum total of our collective effort is far greater than our individual capacities’

**Compiled by Jurua M Jackson
Project Manager
AMWHTA**

APITOURISM “An extra Source of Income for your Beekeeping Enterprise”

Understanding the 1st Uganda bee safari february 2020



Left: Admiring local hives On Mr. Nkambwe’s Farm in Zirowwe. Right: Interacting with Jesca, a youth beekeeper in Kasese.



Below Left: An artificial Wetland with ‘cabbages’ in Zirowwe. Below Right: The tourists with Pison (in Kaki bee suit ready to visit his strong colonies.

Three ladies and 2 gentlemen, with one of the men having gigantic characteristics is the phrase that can best describe our visitors that made the first ever apitourism visit to Uganda. These were from the United Kingdom (UK) of Great Britain and Northern Ireland and all of them were above 50 in terms of age.

On 3rd March 2020, the visitors honoured their promise of showing up for the bee safari via our own Entebbe International Airport, the Corona Virus pandemic notwithstanding. Our visitors were led by **Ms. Francin** of Bees for Development and the others were **Jenny, Chris, John** and **Kate**. The ED took the visitors through

what TUNADO is all about and shared with them our history in a chronological manner.

He then took the team through the Safari route, highlighting the areas and places to visit including the names of the beekeepers to be visited. After the formalities, a group photo was taken before the team headed to the field. The TBA was chosen as the tour guide from TUNADO’s side while Moses was the tour guide from Gofan Safaris. The journey started and we hit the road, making our first stop at Zirowwe beekeeper’s group.

Youth, Youth and Youth Beekeepers shine

“You may not have a second opportunity to make a first impression” goes the old adage and this was brought into play by TUNADO

when planning the route. We looked out for catchy features which would help our clients wind out while also learning and enjoying beekeeping. At Zirowe Beekeepers group, **Mr. Nkambwe Ismail** ably welcomed the visitors, taking them through the entire honey value chain and showing the visitors the different 12 types of bees present on his farm. Clad in their bee suits, the visitors were able to have an up-close and personal with the bees, without fear. What mesmerized them however the artificial wetlands were. This is a bee watering technique comprising a feeding trough with water and aquatic 'cabbages'. The Aquatic cabbages act as a landing surface for the bees to prevent them from drowning. The Apitourists were amazed at how the different bees were used to this method of drinking and related it to the increased productivity of this apiary that boasts **57 colonies/67 Hives**. Mr. Nkabwe showed the tourist the various sources of forage for his bees and the visit was wound up with a tour to the brick making kiln where they learnt how bricks are baked. As beekeepers of TUNADO, it is important that we improve our apiaries to be of 'international standards' so that at any time, they can attract visitors of both national and international stature. This can best be done by adhering to common basics such as:

- a) Inspect the hives at a frequency of utmost twice a month but not less than once a month. This is so because so much disturbance to the bees can result in them absconding, while at the same time not inspecting the hives may culminate in us not knowing how the colonies are doing, what pests are disturbing them, whether they need cleanliness or not and so on.
- b) Ensure that the bees have access to water, in case the water source is more than 100 metres away, make sure you provide supplementally water sources using means such as the artificial wetland (illustrated in this article, earlier on and showed in the picture) or use of a basin with stones/ bricks to provide a landing surface for the bees.
- c) Forage: Regardless of the type of forage that you have (whether it is mono-flora like coffee, eucalyptus, bananas, sunflower) or multi-flora like natural vegetation of albizia trees, Venonia, *Lantana camara*, black jack and so on, it is important that additional forage is planted. Such type of forage that we encourage to plant includes angels trumpet, bottle brush and *Calliandra callorhysus*. These provide supplementally food for the bees and are also of use to the households e.g. bottlebrush is used as medicine for cough while *Calliandra* is fodder for goats and cows.

- d) Development and growth orientation: It is imperative that our beekeepers have a focus on development and growth. Regardless of the level they are at, our api-tourists are so interested in the growth journey of our beekeepers. If one has 20 hives and their plan is to increase to 100 hives and colonies, The Api-tourists would want to be part of that journey through technical support and /or in other 'in kind' means. If one is a processor focusing on only a ton of honey per month, it is encouraging to see such a processor aim for 4 tons per month. Getting certification by UNBS, automation of production and payment systems is another example of growth and development that is encouraging for us as TUNADO. Just as a parent feels proud to see their children grow, so are we, when it comes to seeing our members grow and expand.
- e) Finally, all beekeepers in Uganda have the potential to be part of the Api-tourism route since we are a national based organization, however, those beekeepers who are on the routes to major tourist destinations in Uganda such as national parks, crater lakes, rivers and water falls. These routes include the following:
 - ✓ Kampala, Luweero, Mubende, Fortportal, Kasese, Bunyaruguru, Bushenyi, Kisoro, Kanungu, Mbarara, Masaka and Back to Kampala.
 - ✓ The other route is: Kampala, Masindi, Kiryandongo, Karuma, Murchison Falls National Park, Nebbi, Arua, Adjumani, Gulu and Back to Kampala.
 - ✓ The Eastern route: Kampala, Mukono, Jinja, Iganga, Tororo, Kumi, Soroti, Kotido, Kidepo, Kitgum, Gulu, Lira, Kampala. All farmers along these routes and in any of these districts have the potential to be hosts to tourists.
- f) Finally, our beekeepers and readers at large need to know the three principles that govern Api-tourism i.e.: i) The Beekeeper must have something to show (Apiary, Unique way of beekeeping, unique hives, forage etc.); ii) The beekeeper must have something to do (the tourists like participating in an activity such as forage planting, harvesting of honey, hive cleaning and may be labelling and packing of honey); iii). The beekeeper must have something to sell. This is because it is not the culture of tourists to get free things nor is it their culture to give out free money. In order to tap from the foreign exchange (dollars, Euros, pounds) that the tourists move with, they need to find a product or products that

they can buy from beekeepers.

The other beekeepers and players in the hive industry visited exhibited some of the above and what transpired at their premises during the visit is highlighted here under.

Bugaari Winery: To wind down the evening, TUNADO took the api-tourists to Bugaari Winery where **Miss. Immaculate** took us through the wine making process. She showed us around both houses i.e. the juice processing room which also harbors the settling tanks; and the packaging room. We were treated to a honey mead (honey wine) testing session. Each bottle goes for 20,000 thousand shillings. The Visitors then retired to their rooms in Hotel Africana, before being joined by our ED for a dinner. The following morning and the subsequent days involved travelling and visiting beekeepers and their apiaries.

Youth Beekeepers: Two youth however caught the attention of the api-tourists i.e. **Atwine Pison** of Kikamba Village, Nyakahita Parish, Rubenje S/C, Buhweju District and **Jesca Kahuju** of Kihoko Village, Bugendabura Town Council, Kasese District. Pison is an agribusiness graduate from Makerere University but chose to concentrate on beekeeping as his business. He awed the Apitourists with his grasp of the sector, his level of organization, the forage nursery and the "Bee house" were the first of their kind that the visitors were encountering but the sheer strength of his colonies was amazing too. He hosted us to a sumptuous lunch, putting the icing on the cake with a cup of tea for the visitors. The Api-tourists managed to buy honey and propolis from him in order to support his enterprise. **Jesca** on the other hand elaborately explained the performance of her apiary, how she has been able to maintain the mango and orange orchard that supplies forage for the bees and the team work she has with two other youth (a lady and a gentleman) who are all below 28 years.

In conclusion, the Apitourism visit was a success, and our visitors enjoyed the hospitalities of our hotels in the wilderness such as Mweya Safari Lodge, Mountains of the Moon Hotel and Wagtail Safari Lodge. This was coupled with breath taking sites of flora & fauna such as the Banded **Mongoose**, **Elephants** and the **Hippopotamus** in various national parks. One thing that I am sure of is that many more will follow suit to visit this wonderful pearl of Africa for more Api-tourism.

Compiled By, Amena Dennis, Training and Business Advisor, TUNADO.

SURE DEAL

“YOUTH SKILLING FOR EMPLOYMENT AND EMPOWERMENT IN WEST NILE”

About Sure Deal!

Sure deal is a youth skilling project supported funded by European Commission under the European aid programme. The project is implemented by the Uganda National Apiculture Development organization TUNADO as the lead agency in cooperation with Trias – Uganda and Uganda Small Scale Industries Association USSIA.

Overall objective: Is to contribute to improved quality of life of youth through increased decent employment opportunities and agency in the West-Nile region in Uganda.

Specific Objective: Is to strengthen capacities of USSIA and TUNADO towards economic empowerment and youth voice

in Arua, Nebbi and Zombo districts in the West Nile sub region.

Project aim: Providing 1000 youth aged 18-30 with an opportunity to gain a skill and experience in a profitable trade by focusing on entrepreneurs to train and initiate youth in the world of work and business.

Project Area and Duration

The project will run for three years 2020 – 2022 in West Nile sub region specifically Arua, Nebbi and Zombo districts.

Project Trades

The project will focus on eight major enterprises: 1) Apiculture 2) Agro-Processing 3) Leather 4) Plumbing 5) Carpentry 6) Metal Fabrication 7) Leisure / Hospitality and 8) Motorcycle Mechanics.

Target Group

The project targets to skill 1000 unemployed and under employed youth aged 18 – 30 years with an interest to learn a practical skill and can demonstrate at the time of selection that he or she is committed to self-improvement through putting the skills to work.

The programme will also work with;

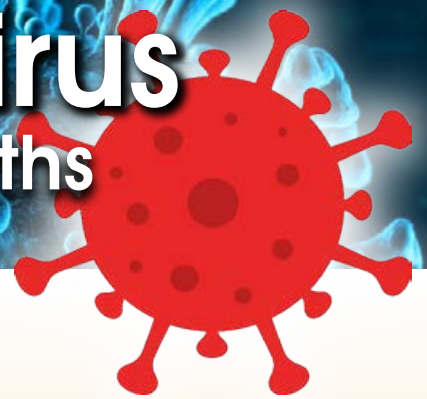
- 67 private business owners based in the programme area
- 3 local district governments at district and sub county levels.
- National level policy makers and advocates for youth empowerment which include the ministry of gender labour and social development, Parliamentary committee on youth, National council of youth and national voluntary associations for youth such as the Federation of Young entrepreneurs and the National youth network.



Patria Stevenson the project contact person EU Uganda giving her remarks during the Launching of Sure deal project Paidah town council Zombo district



Corona Virus Facts and Myths



FACTS

The Corona Virus Disease (abbreviated as COVID-19) is a dangerous virus disease and new in the world discovered in Dec 2019. COVID -19 has no known cure or vaccine yet.

You can get COVID-19

- If droplets from an infected person splash on your T-Area
- If you touch a contaminated surface and touch your T-Area

What are symptoms of COVID-19?

- Cough
- Fever
- Shortness of breath
- Muscle aches
- Sore throat
- Unexplained loss of taste or smell
- Diarrhea
- Headache



Depending on the severity of Covid 19, can lead to death. The reason we need to follow WHO and Ugandan Government Ministry of Health guidelines and Standard operating procedure (SOPs)



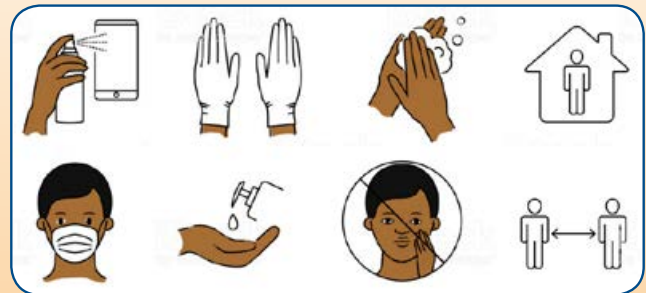
How to prevent contracting COVID-19

1. Avoid close contact with others.



2. Practice good hygiene wherever you are

The new coronavirus can survive for hours or even days on some surfaces. Touching a contaminated surface and then touching your face is one of the ways to become infected. The virus is no longer detectable on plastic after 72 hours, and on stainless steel or cardboard after about 48 hours.



With that in mind:

- Wash your hands with soap and water frequently and thoroughly for at least 20 seconds, especially:
- After being in public places and touching door handles, shopping carts, elevator buttons, etc.
- After using the bathroom
- Before preparing food
- If soap and water are not available, use hand sanitizer with at least 60% alcohol.
- Avoid touching your eyes, nose or mouth, especially with unwashed hands.
- If you cough or sneeze, do so in the bend of your elbow.

Take precautions if you are living with or caring for someone who is sick

- Wear a mask if you are caring



IF YOU FEEL SICK, FOLLOW THESE GUIDELINES:

- Stay home. Get out only if you are experiencing a medical emergency such as severe shortness of breath or a very high fever.
- If you leave your home to get medical care, wear a mask if you have respiratory symptoms.
- Call the following toll free numbers: **0800100066**; **0800203033**; **0800303033** if you have 3 of any of the above symptoms or WhatsApp **0770818139** and explain

your symptoms.

Does COVID-19 cause death?

Yes. Research shows that for every 10 infected persons, 1 person is likely to die.

COVID 19 can spread through sex-false.

Truth: no scientific proof.

Covid-19 can be acquired through eating chicken, meat & fish-false.

Truth: No proof yet.

COVID 19 does not kill Africans-false.

Truth: all races are affected as long as the individuals have a compromised immunity e.g. old age, diseases like asthma, diabetes, cancer, HIV AIDS, etc.

COVID 19 does not attack and kill young children-false.

Truth: Children also die.

You can protect yourself from COVID-19 by injecting, swallowing, bathing in or rubbing onto your body a bleach agent, disinfectants or rubbing alcohols false. Do not try that at all.

If you get COVID 19, you can treat it using herbal remedies like lemon, vernonia, garlic, honey etc. or their combination-false.

Truth: No proof but these boost your immunity that is important to overcome COVID 19 and should therefore be eaten.

COVID 19 can be treated with chloroquine-false.

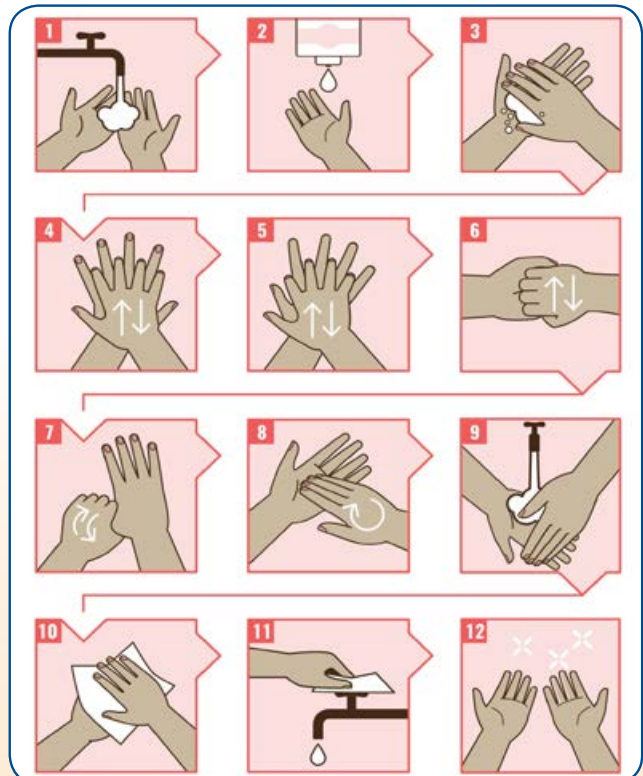
Truth: Do not self-medicate. Only Health facilities can prescribe medication.

The new coronavirus was deliberately created or released by people-false.

Truth: No proof. Diseases can naturally occur.

COVID 19 cannot survive in hot climate therefore people living in the tropics are safe from it-false.

Truth: they also die of COVID 19.



How to go about your business in the face of the pandemic

COVID 19 is most likely to remain with us therefore we need to learn how to go about our daily routines while remaining safe by applying the following precautionary measures:

- Put handwashing facilities for your customers to minimize the risk of transmission from them to you or you to them
- Don't shake hands or hug with your customers
- Wear a mask when talking to people. Follow government issued guidelines on how to use the mask
- Sanitise hands after touching money. You can use mobile money as well
- Thoroughly wash hands and face with soap and water at the end of the business day to minimize risk of transmitting the virus to your family
- Put a marker in front of your business premises to keep customers at a distance
- Stay home and avoid unnecessary movements



References:

Ministry of Health Uganda

Presidential guidelines to prevent the spread of corona virus, Republic of Uganda 2020

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus>





WOMEN IN BEEKEEPING PART 4 (Unique Stories of Turinawe Justine and Sandra Ejang)

Am called Turinawe Justine I hold a Bachelor of Commerce (Accounting) Makekerere University. A Director of a beekeeping Company called Rukanju Company Limited, located in Rwampara District Western Uganda.

During my school time I had a dream of being a Director of a very big Company. After my course at Campus I thought I had no capital to start up the company of my dream so I opted for employment. I worked as an Accountant for 10years, but as I worked and trying very hard to save for my dream company in vain.

It was at this time in 2011 that I made my decision to join beekeeping. Beekeeping was not very new to me as my Grandfather kept bees, my Father Mzee Njunwoha Apollonari was keeping bees and more to that; I had read some story by Mzee Karwemera Festo saying that beekeeping was one of the activities of the Bakiga tribe. From these I gained the strength and confidence to go for beekeeping.

In 2012 I made my first local beehive with the help of my Father. It colonised in short time that I got the courage to add more. My first harvest was in 2013 and since that time I have been moving forward concerning beekeeping.

As per now I do beekeeping, honey packaging and training the locals in beekeeping.

I have benefited a lot from beekeeping:

1. I earn my living
2. My standard of living has improved
3. I see myself moving towards achieving my long-time dream.
4. Because I was a beekeeper, I was able to join The Uganda National Apiculture Development Organisation (TUNADO)
 - (a) TUNADO has made it possible for me to associate with other beekeepers in the whole country and whenever we meet I don't go back the same way I came.
 - (b) Each year's honey week organised by TUNADO cannot be taken for granted a number of contacts are got during this time.
 - (c) Market access: Because Am a beekeeper and a member of TUNADO, World of Bees buys my honey.
 - (d) Trainings: Because I was a beekeeper, TUNADO invited me for a UNBS training. It was from this training that I acquired all the knowledge we applied on our apiary and factory and when we applied for the UNBS Distinctive Mark Rukanju Company Limited passed through on the first attempt and now we have the Distinctive Mark. TUNADO I respect you.

Generally; my life and income are now better than before I became a beekeeper.

My future plan to grow my enterprise:

- (a) Professionalising my business: we want each department to be headed by a qualified personnel. For instance Accounts department be headed by a qualified Accountant, Marketing, Human resource, Production etc. as was always my dream.
- (b) Systemize: We are planning to put a system of how our Company can be managed smoothly and efficiently even when the Directors are around or not.
- (c) Boosting Production: We have plans of increasing our production. Now that we have acquired a UNBS Distinctive Mark our hopes are very high that if all factors remain constant our market will increase.
- (d) Marketing: we are planning to beef up our marketing team. For instance we have not been reaching East and Northern Uganda and according to our research they seem to be having some reasonable market.

My advice to fellow ladies who are outside there still fearing to engage in beekeeping I encourage them to start as soon as possible because with beekeeping there is nothing to regret.

For instance;

- (a) Land: For one to keep bees he/she doesn't need hectares of land just half an acre can do the needful.
- (b) Capital: Here your need to suffer. Just think of making a beehives come to me/ any other beekeeper to teach you how to go about it free (me) of charge go back and make money.

- (c) Human labour: No human labour needed to be employed. For example you have like five (5) beehives at the beginning. Do you really need human labour to manage your apiary when actually you are also unemployed?
- (d) Time: Time taken to see your first harvest is less compared to other investments.
- (e) Equipment used in beekeeping are

locally available and affordable.

With all the above information beekeeping is a very good, affordable and profitable business to invest in.

**Compiled by Turinawe Justine
Rukanju Company Limited
0783536576/0702121815**

My name is Sandra Ejang. I am a mother of 4 and a Telecommunications Engineer by training. I started beekeeping 6 years ago with my husband. When we started out, it was a way to create additional income to support our family. This was after assurance that beekeeping was neither demanding nor labour intensive and we would recover our initial investment within 1 year. We took the hives to Kaduku, Kigumba where we had established an apiary and literally abandoned the hives there. One year later we had insects in the hives and no honey.

That was when we realized it was more than just putting the hives in an apiary. We started learning how to do beekeeping the right way. We set up a shade and started out and 1 year later, we harvested 100kgs of honey. However, we had nowhere to sell it since the people that had promised to buy were offering very little money per kg. This is what drove us into packaging. We were completely clueless at that as well. Fortunately for us, I got admitted into the Mandela Washington Fellowship where I went for a six weeks business training in The US. I met with several beekeepers and processors including a visit to Sue Bee Honey. I learnt so many ways to add value to honey and when I came back, I knew what I had to do.

We had our first honey tasting event, the first of its kind in Uganda in 2018 and have since then made it an annual event. That was when we officially launched the business and eventually opened a Honey Shop.

We are involved in the entire honey value chain from primary production of honey, wax, propolis and other beehive products, to processing, value

addition and packaging. Some of our value added products include our infused and enhanced honey, candles, propolis and cosmetics. We do make and supply several beekeeping equipment and implements e.g. bee hives, bee suits, smokers, honey press to mention but a few. On top of that we offer consultancy in beekeeping and can guide new beekeepers to establish a profitable and rewarding beekeeping venture. Through research, creativity, innovation and sheer curiosity we have created a broad range of products such as pure honey, honey infused with spices, honey with macadamia, cashew nut peanut butter, , chocolate, propolis tincture, Bees wax sheets, Bees Wax Wraps, honey based lip balm, bath soap, lotions, face creams, to mention but a few.

Along the way, we realized that the best way to help the neighbouring community was though engaging them in beekeeping. We currently have a countrywide network of over 600 beekeepers and still growing. Engaging in beekeeping has helped us reach and cause socioeconomic transformation

of several beekeeping household rural areas who had otherwise given up on beekeeping

We are working towards becoming the biggest player in the honey value chain in Africa. It might sound too ambitious but we are confident we will surely achieve it .My advice to my fellow women who are afraid of engaging in beekeeping is: if I can do it, so can you. In all this though, beekeeping will be more successful and rewarding if we have the right partners e.g. your husband to support and encourage us along the way.

Beekeeping can easily be done alongside all other farming and economic activities allowing a beekeeper to have multiple sources of income. Also, we can achieve greater success by working together in partnerships, beekeeping groups or cooperatives which allow us to each harness the strengths of the other members. As the African saying goes...if you want to go fast go alone but if you want to go far, move as a team.



DIFFERENT WAYS OF SITING YOUR BEE HIVE (PICTORIAL)



KTB hive placed on a V-shaped pole stand



KTB Hive suspended on a wire



KTB Hives on a metallic stand



Traditional hive hung in a coffee tree



FACT SHEET ON BEE POLLEN

1 GENERAL INFORMATION

1.1 History

Bee pollen has been recognized in traditional medicine for centuries. Since ancient times it has been considered a valuable source for its medicinal and nutritional applications. Pollen was mentioned in the Bible and also ancient text from Greece and Rome recommended pollen to be part of a healthy diet. The name pollen was first used in Historian plantarum in 1686 and it is originally a Latin word for fine flour or dust. In modern history pollen started to be commonly used after the World War II when pollen traps started to be used for extraction.

1.2 Characteristics and components

Pollen is generated by flowering plants and it takes form of 2.5-250 micrometer grains. The physical properties of the grains depend on the type of plant and can take different shape, size, weight, and colour. The grain shape can be round, cylindrical, bell-shaped, triangular, or thorny. The colour might range from yellow to black and take various shades of gray-white, orange, red, green and blue.

1.3. Collection and modification

Pollen is collected by bees from plants. The bees fly through the air and their bodies become positively charged with static electricity. When the bee lands on a flower, the pollen particles stick to the static-charged hair of the bee. Then the bee uses its legs to wipe the **flower pollen** and makes it a sticky substance to be compressed into its pollen baskets (corbiculae), one on each of the back legs. For the bee to collect a full load of pollen (about 8 mg), it has to visit about 200 flowers. A worker bee makes on average 10 trips for pollen a day.

2 HARVESTING AND PROCESSING

2.1 Harvesting and storing

There are two ways to collect bee pollen. Either by installing a 'bee pollen trap' at the entrance of the hive or by picking the bee bread directly from the honeycombs.

1. Bee pollen trap

In order to obtain pollen, apiarists install traps in front of the entrance to the hive, so that when returning home the worker-bees lose their pollen pellets. These are then collected into a container placed under the trap. The idea of all traps is in general the same: putting

an obstacle to the entrance of the hive with holes in it. The bees then need to squeeze through the holes to get in. While doing this, the pollen loads in their pollen baskets fall off their legs and fall into a tray below the trap. When the bee gets to the hive and finds that the pollen has been lost, it flies out again for another load. The bee notices that the delivery of the pollen was not successful and mobilizes other bees so that they increase number of field bees and the number of flights. The amount of pollen collected varies substantially but most literature sources agree that the colony is able to collect 1-2kg of bee pollen per season at least.

There are many types of pollen traps, some of them designed specifically for certain beehive types, but all of them contain some type of grid and a container to store the pollen pellets.

Most types of pollen traps are currently only fitted to standard frame hives. When fitted to traditional log, clay or straw hives, small modifications are necessary. A simple trap can be made by attaching a screen made of thick plastic sheet (at least 3 mm) with holes with a diameter of about 4.8 mm for European honey bee and 4.2 mm for African bee.

Harvesting tips:

- Choose a trap type that does not make the foraging bees refuse to go through it to the hive. Check that it is easy for you to assemble and install. Make sure there is enough ventilation so that the moisture does not build up.
- Hang it to the hive entrance and leave it there. Collect the pollen within a day if you want to harvest it. When coming for harvest, make sure that the pollen collected is clean and free of debris. Pollen traps that have a pull-out tray protect the pollen more from dirt but when used check that this tray can be removed without disrupting the hive.
- Timing of harvesting should be considered with respect to the honey season so that it does not interfere with the colony growth and honey production.
- Pollen should not be harvested daily in drier climates.
- After collecting the pollen should be immediately placed in a freezer where after two days of storage, the pest insects will be killed. Then unfreezing and further processing is possible.

Global production of the pollen is around 1500 tons per year with China, Australia and Argentina being significant producers.

Bee bread collection

It is also possible to collect the bee bread; that means the pollen that has been sealed

as food in honeycombs. The harvesting of bee bread is labour-intensive because it requires the beekeeper to extract it from honeycombs by hand. The second option is to separate combs filled with bee bread and sell it as a whole.

Bee bread harvester is a hand tool which serves to extract bee pollen that has been sealed in the honeycombs to transform into bee bread. The procedure is simple: after identifying the combs that contain bee pollen, insert the end of the tool into the comb. After removing it the bee pollen stays inside of the tool and after pressing the tool the bee pollen is pushed out again.

Storage and processing

Generally, processing of raw bee pollen involves cleaning, freezing, thawing, dehydration, packaging, transportation and marketing.

Raw bee pollen contains about 20-30% water. It also strongly absorbs water by extracting it from surrounding air, which makes the pollen soften and deteriorate. Additionally, many of its biologically important components degrade when exposed to environment in form of raw bee pollen. Therefore, several methods to extend the shelf life of bee pollen have become a common practice.

- **Fresh raw:** this bee pollen will start to rot if kept in the room temperature.
- **Fresh frozen:** Store in a freezer with temperature of -4 to -18°C.
- **Hot air-dried:** Hot air drying is the most commonly used method in commercial bee pollen, using an electric oven with 40°C. The dried pollen has a moisture level of about 6%. Maximum temperature during drying should not exceed 42°C although some sources state that to reach the best effect the temperature of only about 30°C is recommended. A simplified method uses a regular light bulb suspended high enough above the pollen tray so that the pollen does not heat up to more than about 40°C. For solar drying, the pollen should be covered to avoid direct sunlight and overheating. However, the drying process affects not only water content but also negatively influences colour, phenolic content, flavonoid content and antioxidant activity of bee pollen.
- **Vacuum-dried:** Better results are achieved when using vacuum drying at approximately 45°C.
- **Freeze-dried (lyophilisation):** research shows that this storage method is the most effective to preserve biological properties of bee pollen. This involves freezing the pollen, lowering pressure and removing ice by sublimation (no evaporation as with



drying). The machine to do this is called a freeze dryer (lyophilizer) and contains vacuum. The disadvantage of this process is the cost.

- Bee pollen may also be **combined with other bee products**, such as honey, propolis and royal jelly.
- **Bee pollen tincture:** grind pollen finely and mix with 80% ethanol. Use 2 g of pollen per 15 ml of ethanol and leave for at least 3 days. When pollen is extracted in ethanol or water, the flavonoid content significantly increases, which improves its antiradical activity.
- Dried and packed as **pills:** A specialized machine is needed to process bee pollen into pills. Its cost is the main obstacle to this processing method. First a paste is mixed from pollen and honey. No other ingredients are necessary but gum Arabic or pulverized wax can be added. Pills are coated with wax to make them non-allergenic by preventing the contact with mucous membranes. In case of no pill press available, more gum Arabic or other gel and wax mixtures should be used and the pills formed individually.
- Dried and packed as **capsules:** Gelatine capsules are filled with dried pollen. Filling should be done carefully so that no pollen stays on the outer part of the capsule. There are small, manual capsule fillers available. Pollen can be encapsulated in its pellet form, as a powder, a honey & pollen paste or together with other bee products such as propolis or royal jelly. Capsule filler machines commonly include a description of how to operate them.

In case of harvesting bee bread from the combs, the advantage is that it does not have to be further processed for preservation.

Packing and labelling

The best storage method of the dehydrated pollen is vacuum-packing to preserve antioxidant activity. Alternatively, dried bee pollen is stored at a cold temperature in an air-tight jar. Store away from sunlight. Labelling of the product is particularly difficult because of the variability in its composition. No recommendations for treating diseases shall be made as the pollen varies highly in composition and its biological activity depends on its botanical origin. It is therefore recommended to rather list benefits in terms

of positive effect of the bioactive components contained in pollen.

Recommended 'Best before' is 2 years for vacuum-packed pollen at cool, dry, dark place 0°C to 10°C and 1 year at 0°C to 4°C for hermetically (airtight) sealed pollen. Because the handling and processing of the product influences its quality, a truthful label could describe all the steps taken in order to guarantee quality.

Capsules should be stored in a well-sealed glass or plastic bottles. These should be refrigerated and consumed within 180 days. Freezing prolongs the lifetime of both dried pollen and capsules.

Finally, allergy warning shall always be displayed so that consumers are aware of the potential risk of severe allergic reaction upon ingestion of bee pollen, especially in patients with pollen allergy. Age restriction of 1 year is recommended.

Quality check

Bee pollen-based products by their nature are not standardized. Chemical analysis can be run to obtain the chemical composition of the bee pollen with water content being maximum 6-10% (standards vary by country). Next, microbiological testing should ensure that the bacterial load is within legal hygienic limits. Contamination for pesticides and heavy metals can also be tested. Modern computerized methods can also establish the floral source of the pollen.

A basic sensorial check can be done on the quality of bee pollen. Check for contamination with foreign substances such as parts of bee and hive debris. With the pressure of fingers squeeze the bee pollen pellets to roughly see the moisture content. If it is not possible to squeeze them, they have been dried too much. Smell the squeezed pollen. We should smell the characteristic blossom or honey scent. When the smell is similar to boiled cauliflower, it has been dried too much. The pollen must not give smell similar to mould.

Other tips for ensuring good quality standard are:

- Use disposable gloves when working with pollen traps and during the primary processing of the product.
- Immediate (daily) pollen collection from pollen traps and processing are recommended to avoid additional contamination.
- In the distance of at least 3 km radius around the apiary, no industrial activities shall exist with negative environmental

impacts. The area should be free of agrochemicals and no chemical treatment should be used for the colonies.

- Check the water content with the humidity meter. This shall not exceed 10%.
- The quality of the pollen may also be tested by bioassay, i.e. feeding pollen back to colonies and observing the quantity of brood reared. However, this is a lengthy process and therefore the pollen should be sourced only from reliable sources who have the required knowledge and facilities.

Cost of production and marketing

The cost of production depends of the method chosen for harvesting, and mainly processing and packing.

Prices for equipment, excluding transportation cost:

HARVESTING

Narrow 3 cm bee pollen grid: 20 pieces for 10 USD

Simple plastic pollen trap collector: 10-25 USD.

PROCESSING

Small electric pollen dryer 220-240 V/ 250 W: cost about 95 USD excl. transport. Big professional pollen dryer can reach 3500 USD. However, a basic dryer for fruits (not specialized for pollen) is available starting at 33 USD for small size.

Freeze dryer (lyophilizer): 1000 USD.

Capsules: Manual capsule filler costs about 22 USD.

Market prices for final products:

Prices for bee pollen found not be observed at the Ugandan market. In other countries, the price per 100 g of bee pollen averages around **17,000 UGX**. The price per 100 g bee bread (from combs) varies substantially but reaches around double the price of bee pollen. The price per 100 ml of pollen tincture is about 120,000 UGX in the international markets.

Interview with a Ugandan producer who currently harvests bee pollen and trains other beekeepers on the process

Q1	How do you harvest?
A1	2 types of pollen traps are being used: a plastic one suitable only for modern langstroth hives and a wooden one for others. The plastic one has a container which ensures clean process of harvesting; the wooden one is simpler without a container.
Notes	In line with the literature.
Q2	How often do you harvest?
A2	We do not collect pollen every day because it is not good to interrupt the bees. We choose time either early morning or evening and go collect once per week or less.
Notes	According to the literature, pollen should be collected within a day when used as a product and dry it under controlled conditions right away. Leaving in the tray for couple of days can damage its properties and cause contamination.
Q3	How do you dry the pollen?
A3	We put the pollen on an iron sheet and leave outside to dry.
Notes	It is recommended to cover the pollen not to be in a direct sunlight. Presence on an iron sheet is questionable as it might get in touch with corrosion.
Q4	How do you pack?
A4	We seal in a jar of 200 g. The price is 100,000 UGX (<i>misunderstood?</i>).
Notes	This is 50,000 UGX per 100 g. This is rather high as in international market the average price of 100 g bee pollen is about 15,000-20,000 UGX.
Q5	Where do you sell/who are your current customers?
A5	We sell to individuals; they use it for personal consumption (nutrition and balanced diet). Those who know the benefits of it will look for it and come back.

**Compiled by
Marketa Pokorna**



INCREASING MARKET ACCESS FOR YOUR BEE PRODUCTS THROUGH WORLD OF BEES' (U) LTD.

Greetings from World of Bees. World of bees (U) LTD is a one stop centre for beekeeping products and services fully owned by TUNADO and works as a marketing agency for the products and services of her members.

We are excited to inform you that we opened up a new shop courtesy of King B Foundation, It is located at Kingdom Kampala Mall along Nile Avenue. The new shop is focused on enabling us to tap in to the high end market which tend to have more value for bee products. In order to attract many people we also decided to serve honey tea, honey coffee and honey bites. We shall also broadcast beekeeping documentaries publicizing the work of TUNADO members and their beautiful inspirational stories. The shop has a display for honey products and equipment as well

as a sitting area for our clients who will want to sit and enjoy healthy honey beverages and bites.

What happens to our first baby shop at Kira house? We are keeping it.... we realize there are some of our loyal clients who are not comfortable with Kingdom Kampala Mall, so for that reason it is important for us to keep it there, we had also built a strong client base at Kira House who were used to that location and we cannot afford to lose them. In addition to that it will also work as our bulking centre.

We are looking forward to having a media launch for the new shop a month after Quarantine.

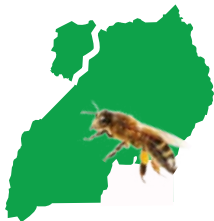
We wish you God's health and protection.

Patience Amutuheire
Business Manager
World of Bees (U) LTD



API PRICE WATCH

Farm gate price of bee products in Uganda as of 9 th April 2020					
Region	Comb Honey (Kg)	Semi Processed Honey (Kg)	Crude Propolis (Kg)	Beeswax (Kg)	Bee Venom (g)
Central	9000	12000	25000	15000	70000
South Western	8000	10000	28000	18000	60000
Mid-West	9000	12000	30000	15000	70000
West Nile	6000	9000	30000	15000	60000
Mid North	7000	12000	12000		
North Eastern	8000	10000	20000	15000	50000
Eastern	7000	13000	16000	12000	50000



THE UGANDA NATIONAL APICULTURE DEVELOPMENT ORGANISATION

A membership & apex body for coordinating apiculture sector in Uganda

TUNADO

Vision

A vibrant membership based apex body coordinating apiculture industry in Uganda for sustainable national development

Mission Statement

To provide a national platform for apiculture sector growth through, capacity building, lobbying and advocacy market development, product diversification and information sharing.

Mandate

A national apex body that coordinates initiatives of stakeholders in the apiculture industry.

TUNADO Philosophy

Apiculture is business

Organizational Values

- Membership centered
- Accountability
- Innovativeness
- Inclusivity
- Voluntarism

OBJECTIVES

- To bring together all people involved in the Beekeeping industry into active and gainful commercial production of honey especially for the rural poor.
- To contribute to policy formulation and implementation processes pertaining to the apiculture industry in Uganda.

- To protect the National bee colonies from diseases, infections infestations, and interferences of a harmful nature of whatever manner, so as to maintain the productive quality of the indigenous bee species.
- To conduct research and disseminate knowledge pertaining to the apiculture industry in Uganda.
- To liaise with Uganda National Bureau of Standards, Uganda National Bureau of Statistics and any other body to monitor quality, standards and statistics of bee products.
- To collaborate with any other Beekeeping related organizations and firms all over the world hence, soliciting for local, regional and international markets for hive products.

Upcoming Events

3rd Apiculture Business Forum

Venue: UMA conference hall
Date: 21st -22nd November 2019

Apiculture days/ open markets street days

Venue: Masindi
Date: 29th-30th. November 2019

End of year Apiculture MSP

Venue: National Farmers Federation Hall Nakasero
Date: 4th December 2019

Membership

TUNADO is a membership and national apex body mandated by the Government through the Ministry of Agriculture Animal industry and fisheries (MAAIF) to coordinate the apiculture sector in Uganda. Currently its membership is open to individuals, Institutions, Non- Government Organization, Companies and associations or other persons involved in Apiculture development in Uganda. This membership is renewed annually and is based on the following categories:-

Category	Membership Fee (UGX)	Annual Subscription
Associations, Processors Corporate membership	100,000/=	200,000/=
Registered Groups/CBOs	100,000/=	100,000/=
Individual Membership	100,000/=	50,000/=
Honorary Membership	FREE	FREE

Support a bee keeper

Did you know that 50 USD can train a vulnerable woman in beekeeping?

Donate now through the TUNADO account number;

Account Name : The Uganda National Apiculture Development Organization Limited.
Account number : 95010200001852
Bank : Bank of Baroda, Kampala Rd.
Swift code : BARBUGKA

More information, www.tunadobees.org

In proud partnership with;

