# Planting trees in Africa is a lifesaver for the local population!

Report of a h hybrid meeting hosted by VHS Winnenden on 1 March 2023

with participants from England, Scotland and the USA, and from Uganda, Ghana and Zimbabwe.

by Keith Lindsey

Introduction

Can we honestly say, that planting trees a lifesaver for people in Uganda?

Climate change in Uganda, as in Sub-Saharan Africa as a whole, has resulted in longer periods of drought and more torrential rains. This, combined with deforestation, especially on the foothills of the mountains, has had catastrophic consequences. Following torrential rains, rivers overflowed their banks and landslips have occurred resulting in the destruction of houses and crops, with loss of lives and livelihoods. Throughout Uganda irregular rainfall patterns with extended periods of drought have led to crop failure and hunger.

Uganda is in the middle of Africa, right on the equator. All of Uganda is over 1000 metres above sea level. There are two mountain ranges, the Rwenzori Mountains in the west, and the Elgon Mountains in the east. Both have been subject to deforestation.

I invited three Discover partners who are very actively planting trees in Uganda to speak, Kenja Thomas, Rehema Namyalo and Makabuli Yusuf.

Kenja Thomas describes some of the ways that communities under the Rwenzori Mountains have suffered, and how he and his colleagues are doing to reduce the terrible impacts in the future.

Rehema Namyalo lives in Masaka, where there are no mountains. She describes the practice of agroforestry, which is a wonderful way of managing land in ways that give protection against the impacts of climate change and yield good harvests.

A woman with a one-year old child on her back plants a seedling of Zanthoxylum gilletii on her farm in western Uganda on the slopes of the Rwenzori Mountains.

Makabuli Yusuf describes the combined impacts of deforestation and the climate crisis on the communities of the slopes of the Elgon Mountains, and how, under his leadership, communities are working together to improve their lives and their environment.

I have known each of them for many years and hold them all in high regard. They are dedicated and very hard working.

Because of problems with the internet, Kenja Thomas could not speak. The presentations here are not in the order they were given on 1 March, but in the order that we had planned. This summary report includes Thomas's presentation, which he had prepared in advance.

## Kenja Thomas – who lives under the Rwenzori Mountains in western Uganda

Kenja Thomas was born in a remote village, where the people are desperately poor. Through Thomas's initiative, and a little support from Discover, the villagers now enjoy a better quality of life and standard of living. The area lies at the foot of the Rwenzori Mountains. Thomas tells us what that means for the people who live there.

Thomas with three leading villagers in Kighengi

When I was a young boy during the 1980s and earlier, we were used to receive heavy, seasonal rains. When our valleys and hilltops were covered in white mist morning and evening, then we know to expect drizzle in the morning The high peaks of Mount Rwenzori could be seen covered in heavy snow.

Mighty indigenous trees were growing in every place, different species of trees which our parents taught us to recognise by name and purpose. Most of these trees were medicinal and could be used to treat different illnesses. Others provided habitat for a variety of mammals, such as squirrels and monkeys, birds and creeping insects. Some provided nutritious fruits and vegetables.

The river valleys and riverbanks were covered in swamps, papyrus reeds, and massive climbing plants which were breeding places for animals and birds. Rare species of trees and plants could regenerate here.

Starting in the 1990s, things started to change. After very many trees had been cut down, the beautiful indigenous trees and plants disappeared rapidly. Trees were cut for timber, building materials, kitchen fuel, and charcoal, for which there is great demand in towns and cities. Unprotected forests were rapidly destroyed using motorized chain saws.

Swamps were drained for agriculture, and river valleys and riverbanks reclaimed for grazing animals. There were no laws to protect the existing forests and swamps, or if there were, they were not enforced. As a result, many calamities started to happen, which include:

- unreliable rains which sometimes come off-season.
- prolonged droughts leading to springs and fountains drying up.
- a very low water table.
- the disappearance and extinction of many animals, birds, insects, indigenous trees.
- the reduction of snow on the mountain peaks.
- floods, landslides and mudslides which covered homes and fields.
- short human and animal lifespans.
- crop failure, leading to food shortage and starvation.
- severe soil erosion and soil infertility.
- poverty and malnutrition in families.
- severe changes in weather patterns.

The whole community gets involved in tree planting activities.

For the third year, we are conducting a massive tree planting project sponsored by Discover in Germany, to create permanent solutions to these problems.

This year we are working hard to strengthen the banks of the Nyamwamba River, which has flooded several times and caused tremendous damage to farmer's fields and their crops. We are planting bamboo, which is fast-growing and has deep roots.

Thomas standing between two six-month old bamboo plants. The dry and very wide riverbed can be seen in the background.

We are enjoying major benefits because of tree planting. For example:

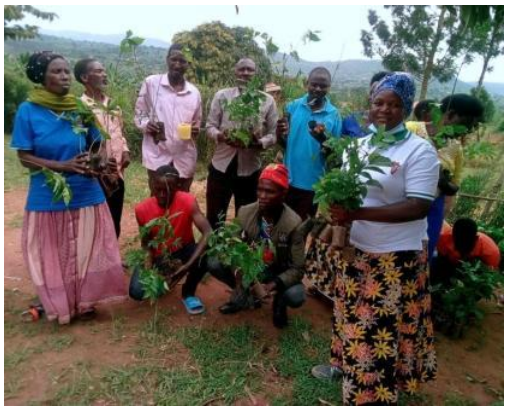
1. Tree planting has become a family-centred activity. Families work together, are practising agroforestry and take good care of the trees.
2. The villages which used to experience constant droughts have now started receiving normal rainfall and can now harvest crops.
3. Trees planted along boundaries have led to many fewer conflicts over land.
4. Areas prone to flooding, especially river valleys, are being planted with bamboo forests to reduce the possibility of flooding.
5. Trees are reducing the amount of water runoff, hence reducing soil erosion and loss of fertility.
6. Leguminous trees are restoring soil fertility, and crops can now grow well.
7. Trees are enriching the atmosphere, reducing diseases.
8. Medicinal trees are now source of herbal medicine in form of leaves, barks, roots, fruits and seeds.
9. Fruit trees are now providing fruits for family food and income.
10. Trees have united families and communities as they are working together to plant them.
11. The temperature in the village has fallen making a more pleasant environment for living and working.

I am convinced, therefore, that trees are reducing the impacts of climate change.

I would like to make the following recommendations:

- cleaner ways of cooking should be promoted to vastly reduce the demand for firewood.
- forests and forest reserves must be effectively protected and supervised internationally, as local regulations are not policed.
- Town and cities throughout the world should be compelled to establish recreational gardens, green belts and streets planted with climate friendly trees.
- Many more trees should be planted along highways, riverbanks, valleys and hilltops to protect the rain cycle.

Discover trainer Rehema Namyalo lives near Masaka, Uganda



Rehema Namyalo trains, and plants trees, with a group of farmers connected to the Nyakayaga Child Development Centre in Uganda.

Rehema has vast knowledge and experience of organic farming and of treating all manner of medical complaints with natural remedies using locally available medicinal plants, most of which she grows in her own demonstration garden. She is a brilliant trainer and spares no effort to enable her trainees to be healthier, happier and to know how to improve their environment.

What is **agroforestry?**

There are two words to understand: Firstly, **Agro** is from agriculture (**plants and animals**) and, secondly, **Forestry** is from **trees / to forest**.

Agroforestry, therefore, is a system of farming which involves the growing of **crops, trees and keeping livestock** (animals) **together sustainably**.

The following are the benefits of practicing agroforestry:

1. **Improving and maintaining soil fertility** especially with nitrogen-fixing trees. When the leaves of these trees fall, they decompose and further increase soil fertility. Examples of leguminous trees are calliandra, leuceana, albizia, Sesbania sesban and Faidherbia albida.
2. **The integration of crops, trees and livestock maintains nutrient recycling.** Tree leaves and plants are fed to livestock as fodder and the animal manure goes back to the soil to support plant growth. This synergetic relationship increases productivity.
3. **Food security** is assured through agroforestry. Communities can access a **balanced diet** from different food sources, for example:

   **Carbohydrates** from cassava, maize, potatoes, rice, matoke (i.e., vegetable bananas), yams etc.

   **Proteins** from beans, groundnuts, peas, soya, milk, eggs, chicken, beef, fish etc.

   **Vitamins and minerals** from fruits like papaya, avocado, mangoes, guava, pineapples, citrus, and vegetables like sukuma wiki, cabbages, amaranth, moringa, black night shade, spinach, tomatoes, onions, eggplants etc., and honey from bees.

   **Medicinal teas** for preventing and treating illness, for example Artemisia annua, lemongrass, neem tree, Vernonia amygdalina etc for treatment of malaria, fever, coughs, flu, colds, pneumonia, bronchitis, allergies, sinusitis and generally boosting the immune system.

This young boy, Bwambale Jaydin, stands next to a 2½ year old Prunus africana tree. It is two meters tall and stands in a garden of yams, beans and cassava.

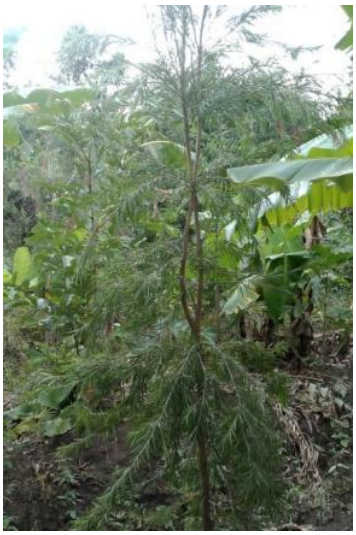
***"Let your food be your medicine and your medicine be your food"!*** This can always be achieved when practising agroforestry.

4. **Income security:** Farmers can have a variety of sources of income, e.g., from the sales of matoke, cassava, coffee, beans, milk, eggs, chickens, dung from cows and goats, fruits, vegetables, honey, tree branches as firewood etc.
5. **Good health:** Many communities have improved their quality of life using herbal medicine from the agroforestry trees and medicinal herbs. Examples are neem, Prunus africana, Warburgia ugandensis, Cassia alata, Artemisia annua, rosemary and Costus pictus.
6. **Soil and water conservation:** Under agroforestry trees, heavy rains soak gently into the ground, resulting in less soil erosion, less flooding and an improved moisture content in the soil for trees and crops. Here it is important to mention that there must be a cover crop such as mucuna or a layer of mulch so that no soil is exposed to the falling rain. In this way farmers can survive periods of drought because water is retained in the soil and the soil is more fertile.
7. **For shade and microclimate**. Under trees, the air is cooler and there is a pleasant environment for people, plants and livestock. It is also possible for people to hold meetings or training seminars in the shade of the trees.
8. **As windbreaks**: Since trees take the force of strong winds, weak houses and plants are protected and do not break.
9. **To purify the air:** This is particularly useful in towns or near the roads. Trees trap dust particles.
10. **Trees absorb carbon**: This slightly reduces the amount of greenhouse gases in the atmosphere, which are the main cause of the climate crisis.
11. **For building materials, firewood and stakes:** Tree branches are cut to provide firewood and to provide poles for supporting weak plants like bananas or beans. After about 20 years, some trees may be harvested for timber which may be used for making furniture or for building houses. Suitable timber trees include musizi, markhamia, albizia, ficus, grevillea.
12. **Safety for women and children:** If it is no longer necessary to walk long distances looking for firewood or water, women and children become less tired and are less often attacked or sexually molested.
13. **Less stress in the family**: If agroforestry leads to better nutrition and an increase in income, then stress in the family is reduced, as the family suffers no hunger and can pay school fees.
14. **A reduction in conflicts over land**. If the boundaries are clearly marked with a row of trees, then the number of disputes over land is reduced.

A splendid example of agroforestry from western Uganda with citrus, banana and beans. Note the excellent ground cover.

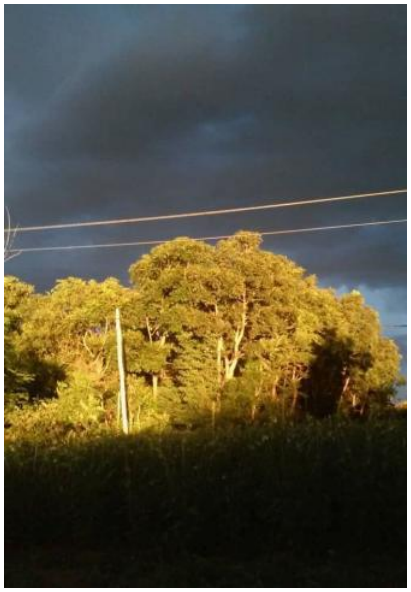
15. **Protecting indigenous species**: Some indigenous trees are becoming scarce. Indigenous trees also help to maintain and increase the biodiversity of insects, birds and small animals. For example, in Uganda, depending on the location, Prunus africana, waterberry tree, Warburgia ugandensis, Spathodea companulata, Erythrina abyssinica, Albizia coriaria, Vitellaria paradoxa (shea butter tree).
16. **Educating the next generation:** Planting trees and practising agroforestry in school compounds with teachers and pupils communicates this knowledge and these skills to the next generation. As the children become involved, they understand the importance of trees and then teach their parents.
17. **To provide men and women with the opportunity to work together**: The roles traditionally played by men and women in Ugandan family life have been separate and very different. We have observed that planting trees and practising agroforestry, men and women have begun to work together to the benefit of their relationship and their family life.
18. **Job opportunities:** As farmers work together, they also work together looking for a market for their produce. To this end, some farmers form groups to do market research and form a vendor association to ensure they have a reliable outlet for their produce.
19. **Mindset change:** There have always been many traditional healers who use trees, shrubs and herbs for treating common diseases, but they have not been willing to share their knowledge, skills and experiences with others. When I train groups, I share my knowledge, skills and experiences freely, and then encourage everyone, similarly, to share. Consequently, as this culture of openness develops, we all benefit. We all become more knowledgeable in the practice of agroforestry and the use of healing plants.

An online participant asked the question, have you seen evidence that planting trees causes more rain to fall?



These responses came after the meeting:

Kenja Thomas wrote: “Keith, the trees we planted are growing very fast and they are creating a change in the environment. You visited my village a few years ago and saw how dry everything was, but I tell you, what we are experiencing now compared to previous time is remarkable. Look at this picture of the bottle brush tree planted with markhamia for attracting bees. It's already looking like a forest!”



Agnes Ziegelmayer shared the experience of Gbati Nikabou of Salem Togo. Gbati has managed a tree planting project in Togo for more than 20 years. The Khaya senegalensis trees in this picture were planted in 2008 on a hill that was completely bare. These heavy clouds resulted in heavy rainfall, while in the nearby town of Bassar not a single drop of rain fell.

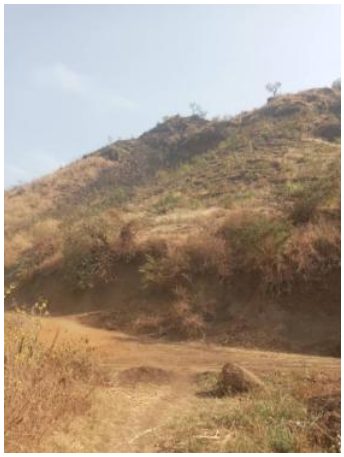
## Makabuli Yusuf lives and works under the Elgon Mountains in eastern Uganda

Makabuli Yusuf in his indigenous forest describing his work to Discover partners from other areas of Uganda.

Makabuli Yusuf has worked for many years with Salem Uganda, a partner project of Discover. Over many years he has established a large tree nursery and a 17 acre (7 hectare) forest of indigenous trees, which includes over 2000 African mahogany trees. The Elgon Mountains, like the Rwenzori Mountains, have suffered deforestation, and the people have suffered from terrible landslips. Now he coordinates many local communities on the slopes of the mountains in collecting seeds, running tree nurseries and planting trees. Yusuf is passionate about growing trees and is extremely knowledgeable.

This is my summary of Yusuf's talk:

As a result of the combined effects of deforestation and climate change on Mount Elgon over several years, torrential rains have caused devastation; landslips have buried homes, many people have died and crops have been destroyed. Yusuf works with the communities on the slopes of Mount Elgon to improve their lives, to make the environment such that such tragedies can be avoided in the future, and, in doing so, to enable them to understand the importance of trees for the environment and for their survival.



Tree planting must be very urgently undertaken on such bare mountain slopes to prevent erosion and landslips.

At the appropriate times of year, 9 different communities collect seeds from at least 20 different important trees; threatened indigenous species, fruit trees, medicinal trees and trees for fodder or timber. These villages are scattered over a wide area. The seeds are brought to a central point and cleaned. The seeds are then distributed to 39 community nurseries. Some seedlings are planted by the communities themselves, and some are sold to the "Mount Elgon Tree Growing Enterprise". This is a larger organisation which is working to reforest the mountain. The young people and women who collect the seeds receive a little money, which gives them incentive and in these very poor communities is a significant help for their survival. Through Yusuf's teaching, they quickly learn the importance of what they are doing; they learn how to clean, process and store the seeds, how to sow them in pots, and in what way the various trees are useful.

Yusuf planting vetiver grass on the contour line to prevent soil erosion and help water retention. Sustainable land management in Namanyonyi subdivision.

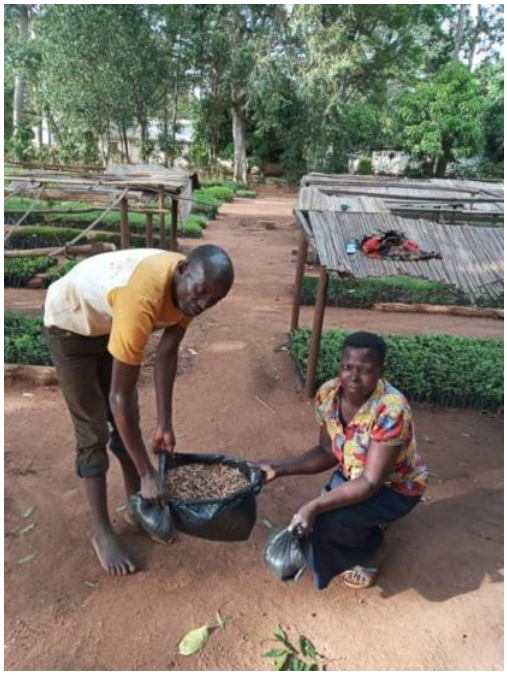
Yusuf works closely with the communities. He trains them in how to plant and care for trees. Together they plant vetiver grass along the contour lines to stop soil erosion and to aid water retention. On bare ground they plant trees, according to the principle of "family planning".

As trees are planted, Yusuf teaches the principles of "family planning" and "long-term / short-term."

Family planning: The family on a piece of land must be planned: it should include tall trees, bushes and ground cover. All these plants must be useful. For example, the trees for shade, medicine, fodder, fruit or for maintaining soil fertility, the bushes for a crop, for example coffee, or even elephant grass for thatching, and the ground cover may be vegetables such as beans or mucuna.

Long term / short term: Some tree species grow quickly and have almost immediate use, e.g., leucaena for soil fertility and the side branches for firewood, or grevillea for timber. Other trees grow more slowly, e.g., fruit trees such as jackfruit, citrus or mango. Indigenous trees also grow more slowly and are essential for the conservation of native species and biodiversity.

Working closely with the communities has positive results for the people and the environment. People benefit from fruit, timber, firewood, herbal medicines and bee keeping. They are also enjoying higher productivity in the vegetable gardens and often have produce which they can sell. They benefit also because the environment is cooler and more pleasant, the variety of tree and plant species in greater, and most importantly, the danger of landslips is much reduced.



Seeds of Terminalia superba being received at the Salem Uganda nursery.

In conclusion,

one can honestly say that planting trees in Uganda saves lives. Our speakers have made that point very clearly.

- Planting trees on mountain slopes, as well as planting vetiver grass along the contour lines, enables the torrential rains to soak into the ground. Thus, severe flooding is avoided, or at least reduced, and those awful landslips that have caused the loss of many lives are prevented.
- Agroforestry enhances the soil fertility and enables crops to thrive, even during extended drought periods and provides a harvest of fruits, vegetables, herbal medicines, timber and firewood.

Thank you for your interest, and an even bigger thank you if you are willing to support this work financially. Bear in mind, improving the environment in Africa benefits those of us in Europe as well!