



**Assessment Report
Mbale, Uganda
August 2021**

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Part 1: Logistics

Visa – cost of visa, \$50. In the past it was possible to get a visa upon arrival. Since Covid a visa must be obtained prior to arrival and can take up to 3 days since the application process. At landing if the application process has not been finalized, it is possible to get approval upon proof of payment. The visa is up to 3 months or shorter. A return ticket and place of stay are required at Visa approval (e.g., hotel).

Flight – At the check in to the flight it is required to show the visa and return flight. All international arrivals are to Entebbe.

Cash – 1 USD is equivalent to 3,500 Ugandan shilling and stable. Cash can be accessed from ATM machines but may have limits on withdrawal amount. If larger amounts ABSA or Bank of Africa allow for larger withdrawals. Many places accept credit cards such as hotels and gas stations. It is recommended to always travel with small bills.

Hotels:

In Mbale – Lucia Vila +256 700 582828 is a comfortable and affordable hotel in Mbale. Cost per night is 50,000 – 75,000 Ugandan Shilling (15-20 USD)

Vehicle – It is required to travel by 4X4 due to many roads being muddy and in poor conditions. Locals traveling with us to sites joined the vehicle and this should be considered when selecting a vehicle.

Driver – it is recommended to have a driver that knows the area and with good communication skills. The dialects and language are different in various locations in Uganda hence it makes sense to consider a driver from Mbale.

It is recommended not to drive at night due to poor road conditions and safety concerns. Also, other drivers drive with full headlights, and it can be very difficult for the driver to be focused. In the evenings there is more stop overs by police officers and ask for “payment”.

There is heavy traffic around Kampala, and it is best to avoid the city.

COVID - During the visit a proof of vaccination was required at the exit from the airport. If one was not available, it requires testing at the airport, and this can cause delays of 4 hours.

Weather – Rain may always start in august although it is considered a dry season. Be prepared for rain.

Part 2: Abayudaya villages and agricultural sites

Namutumba

Namutumba, the largest village, is a thriving Jewish community with about 244 members with an active synagogue. The site is located 65 km from Mbale and 157 km from Kampala.

GPS location, 0.885437, 33.685960.

The way to the village from Kampala is mostly asphalt road but the last few km is a dirt road that is very muddy. The village does not have an electrical infrastructure while a few houses have solar panels.

Agriculture for Life Project - Nawasekea

At the village the team met with Israel Siriri, the manager of Agriculture for Life project and Nehemiah, the project's agronomists. Yoash the manager of the school, Tikun olam was also part of the visit as well as Isaac the secretary of the organization and Yona a representative of Rabbi Shadrach. Israel was one of the leaders of the Abayudaya for 6 years, he has a background as an engineer. He is interested in expanding his activities to additional villages.

The Agriculture for Life project started as a response to several droughts in the area. The project was established by Israel together with Isaac and Nehemiah (who just graduated with an agricultural degree). The project works with all members of the village, Jewish, Muslim, and Christian. There are currently 77 members of the project. The project's objectives are to achieve food and nutritional security for the local population by training farmers to improve their productions and agricultural methods.

The first funding for the project was via an Australian granter that provided funding through an NGO called concord. Concord was also responsible for monitoring the implementation and finance of the project. The project was for 3 years and recently phased out. The project is currently planning to continue operation based on funding from revenue from the previous year.

The projects activities include:

1. 3-acre demonstration site for various crops and agronomic methods. One of the plots is for pineapple and a few bananas. The second plot is for cassava. Each plot is about 1.5 acre.
2. Nehemiah is responsible for the training program and meetings occur weekly. On a monthly basis additional farmers from the area arrive for trainings that is operated by Nehemiah and additional extension officers. For each training a date is set and then a publishing committee goes to each village to advertise the training. The topic of the training is based on the desire and requests of farmers. Trainings include, spacing of plants, types of seeds and varieties, seasonal planning etc.
3. There is monitoring of farmer's fields for the purpose of providing support during the cultivation.
4. There are trainings on financial management.
5. There is finance available through the program, a communal fund for all members. The fund enables farmers to save money and borrow. Farmers who deposit the funds get an interest rate earning at the end of the period.
6. The program provides access to seeds, fertilizers, and chemicals to farmers.

The program is attempting to introduce new techniques, such as mulching by coffee for pineapple production for example. Other examples include fertilizing with cow manure, intercropping, drainage systems and improved usage of chemicals. In addition, in order to achieve agricultural optimization, the program individually examines which crops are suitable for the different type of farmer's fields and soil by simply using trial and error. For example, prior to the project most of the tillage of land was done manually. The project was able to purchase a bull and a plow enabling members to use the technology and payment is only for maintenance.

The main crops in the area are maize, beans, rice, sugar cane, mango (two harvests per year), jackfruit, avocado (two harvests per year), papaya, passion fruit, banana, watermelon, pineapple, cassava, sweet potato, coffee, tomatoes, Hot and green peppers, and oranges (two harvests per year). Most of the produce goes to subsistence needs and less for sale, but community members are trying to expand into the possibility of being able to sell. The sale of the produce is done collaboratively. There are project members who are responsible for selling the produce, they collect what is available for selling and by having larger quantities are able to reach larger markets and better prices. In general, there is a difficulty in selling a product as the relationship with the market is not smooth or orderly. Beyond the marketing challenge, other difficulties the project faces are a lack of professional people with knowledge for training and a lack of space to conduct meetings during the rainy season.

A major obstacle in agricultural development within the villages is the nature of the agricultural system where there are many small plots with few continuous areas. This land fragmentation is common in all the villages in the region and in Uganda in general. Most of the plots in the village are small and up to an acre and a half in size. Only a few farmers have large plots. The workforce at the farm is based on the farmer and their family and only a few take daily workers.

In addition to farming, members of the community are very interested in receiving guidance and knowledge on raising **livestock**. They are interested in doing a holistic project with a variety of crops and farm animals, in a way that the crop residues go to the livestock and in return the manure from the livestock goes to enrich the soil.

In terms of seasonality of the region, March-June is a major wet season followed by, July-November is a secondary wet season, and December-February is the dry season. There is a need to better understand the seasonality and weather patterns of the area and to verify the accuracy of the information with other factors. In addition, in recent years due to climate change there has been a disruption in rainy seasons.

General Impression

When walking around the village it is easy to identify which farmers are part of the project. Farmers who are involved have better agronomy that includes improved planting, use of manure, intercropping, growing cash crops and the like. In order to be able to understand the effects of the project more accurately there is more information in follow-up reports. The project provides the appearance that there is a good infrastructure established and good development in the capabilities of the farmers involved.

In terms of involvement / cooperation, it is possible to consider providing extension services, training as well as testing and experimenting with additional crops. Future collaboration would seek to strengthen the program and provide trainings to trainers, logistical support and introduce new methods and technologies.



Israel (left), Nehemiah (right)

Meetings with community members at the demo site



Citrus



Pepper



Drainage tunnels for preventing soil erosion



Pineapples and coffee-based mulch

Link to Video: <https://youtu.be/ls5Yd1eiEVk>

Tikkun Olam Primary School

The school is located 65 km from Mbale, most of the road is gravel road.
GPS coordinates: 33.70782 ,0.895946

During the tour the visited a plot recently purchased for the school, a visit to the school and a visit to small plots where the students and staff grow vegetables. The tour was together with Yoash Mayende (the school principal), Yona, and four teachers from the school. Afterwards, a short meeting was held at the school with Yoash and the teachers.

Yoash is focal person for the school, which he founded in 2015 after returning from the US with an initial sum of \$ 2000 USD which he collected from donations and through his trainings. The initial amount enabled him to set up the nucleus for the school, which was able to be expanded. In 2017 an organization called Global Village Connect (GVC) started to donate funding to the school. The organization was founded and is led by Joanne Trangle. GVC had bought the school a nearby plot of land, 5 acres.

The school has three classroom buildings and a small computer room, all of which receive electricity from a solar powered system. The school also has a borehole that supplies water for the area. Today, the school has 19 teachers who educate 350 students between the ages of 4-15. The outbreak of Covid-19 has resulted in classes being discontinued and this has resulted in difficult economic times for the school and urgent need for donations.

The school is mixed of both Jewish and non-Jewish students and staff and is not solely used by the Abayudaya community. In addition to the 5 acres owned by the school there is also a small garden (1/3 acre) where students receive instruction from one of the schoolteachers. The activity at the garden is done with the understanding that most students will engage in agriculture in adulthood, so by getting involved in gardening they will gain vital agricultural knowledge (Yoash especially emphasizes the need to teach the students agriculture). The garden work is led by a schoolteacher.

In addition, there is a plan to establish a livestock program at the school that will allow students to gain experience in this area as well. The agricultural produce from the farm and vegetable garden is intended to feed the students. When one of the parents has difficulty paying for the student's education fees, they are able to arrange to work at the farmland in exchange. The vegetable garden appears to be maintained and is used growing maize, sweet potatoes, eggplant, kale, and cassava.

Regarding the 5-acre plot Yoash describes several issues. The activity of the plot was done in the last two years under funding by GVC who hired agricultural experts to manage the plot, there were issues regarding the program that led to poor performance. At the time of the visit the area was uncultivated and most of it appeared to be covered with wild vegetation. Yoash plans to establish a rainwater storage reservoir inside the area. A pump will be connected to the reservoir, and this will transfer the water to a tank that will be used to irrigate the area.





In addition, Yoash is interested in moving to more profitable types of crops, as well as those that have a long-term viability (for example: passion fruit and banana). Near the plot we saw a farmer cultivating his land using a tractor so that this service is available in the area. However, renting a tractor is very expensive for farmers (between 100,000 and 200,000 shillings).

General Impression

We got the impression of Yoash as a serious guy with high abilities. He set up the school from scratch and slowly managed to increase the scope of his activities. He seems to be determined with a lot of heart and good intentions.

The 5-acre plot is fenced and provides relatively large space for possible projects. The plot is relatively large and can be suitable for extension services. There is no borehole near the plot, but there are open water bodies in the area from which water can be pumped. It should be considered that due to the relatively steep slope and the fact that the area is prone to flooding, it is expected that a great deal of land preparation of the area will be required before it can begin to grow.

The current condition of the plot emphasizes the need for agronomic support to the region and that purchasing land for agricultural development requires technical support. There is a need to build capacity.

	
<p>The school's water source</p>	<p>Third from right -Yoash and 4 teachers + Daniel and David.</p>
	
<p>5-acre plot</p>	<p>The school's vegetable plot</p>

Links to Video:

<https://youtu.be/P3D4ZxphzDc>

<https://youtu.be/Q7lrzqvG840>

Mbale

Mark Gelfand chicken project

The farm is located about 8 km from Mbale.

GPS Coordinates: 1.077412,34.110353

The tour of the farm was organized by Allan Zilaba and Sam Muwalani. Allen is the farm manager and also runs the Abayudaya Men's Club, a club that empowers and develops the abilities of the men in the community. the visit was organized with Sam.

The chicken farm was established about 7 months ago. The venture belongs to Mark Gelfand and is budgeted by him. The initial investment (capital investment) is made by Mark, but the operational/seasonal expenses are provided by Sam, Allen and based on the farm's revenues. The farm currently includes two breeding rooms, one for chicks and one for adults. The breeding rooms are a common space where all the chickens / chicks are together without partitions or separation. Feeding and drinking containers are laid out throughout the room. The drinking containers are connected to a pipe system that enables the hens to drink by pressing a nipple and getting access to water. The growing room for chicks is heated by heating lamps powered by a solar system.

Chicks are purchased from a large farm in Kampala (Biyinzika), and after four weeks of breeding they are marketed to the local market through a third party (minimum price per chick is 9000 shillings). So far 3 breeding cycles have been done. Each cycle included 500 Poultry. In order to make a profit, it is necessary to sell 350 poultry, so that in every poultry turnover sold so far, a net profit was obtained. With every purchase of chicks from the farm in Kampala a veterinarian arrives to review the facilities and to provide trainings to the staff. The chickens are vaccinated. There are two types of food, one for the chicks and one for the chickens that are also purchased from Biinzika The food is mainly based on corn and fish.

There is a great deal of emphasis on collecting data, this is required by Mark Gelfand and Richard. Data collected includes daily temp (three times a day), amount of water and food given, mortality rate, rate of weight gain etc. There is also financial monitoring of the farm's activities. Once a week Alan, Sam, Mark, and Richard hold a meeting where they discuss the progress of the work. In addition to farm activities, Sam and Allen run training programs for locals on poultry farming. At this stage there is a plan for the construction of a larger coop that will be used first for meat and egg production. Scale up of programs is intended to be established on a new 15-acre site.

General Impression

The visit was rushed due to lack of time but provided a very positive impression. Alan and Sam manage the site very well and keep everything in order. They are very committed and show heart. They are also very committed to teaching the local community in raising chickens for economic reasons. Alan said that many of the people he meets at first treat this occupation with contempt, since from what they know raising poultry is not considered a worthy livelihood. On the other hand, once the visitors arrive at the farm, they see that this is a real business that requires skill and knowledge and can make a lot of money when done right. From what we understood the farm is a pilot as Mark and Richard wanted to test the economic feasibility of the project and also to educate Alan and Sam. It will be interesting to see the establishment of the new farm.



Chicken growing room



Sam (left), Alan (right)



Chick growing room and heating lamps



Chick growing room



Monitoring system of growing room



Chicken growing room

Link to video: <https://youtu.be/FNvKMcpvwOM>

Irrigation Scheme

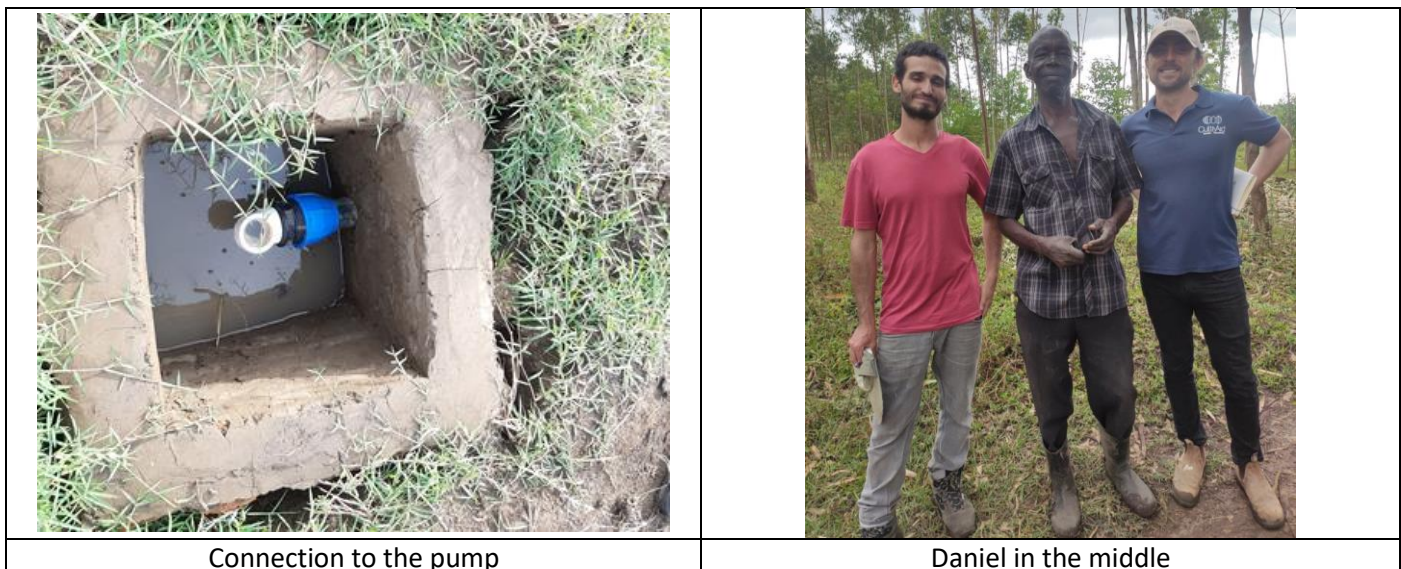
The site is located about 1 km from Mbale.

GPS Coordinates 1.089430, 34.156798

Despite the proximity to the city, access to the area itself is not possible by car and requires several minutes of walking on a narrow and muddy road and crossing small water crossings. The connection to the site was done via Shoshana, a community member who is currently studying in NYC but was visiting during break from school. The tour was organized for us by a farmer named Daniel (Kazeyna) in whose area the project is located. The rationale of the project is that the system could be used by farmers in the area for crops and for training. The infrastructure includes a portable diesel pump, embedded water pipes, a portable pipe, and 5 sprinklers. The pump and the sprinklers were not present at the site. Water is pumped from the nearby stream, which is the source of the water in the area, and which, according to Daniel, has good water quality. The pipe system is spread out in the field and there are several access points to a portable pipe to which the sprinklers are connected. According to Daniel, the irrigation system is inefficient and the cost of operating the pump is expensive (fuel expenses). The sprinklers do not work well, and the wetting coverage of the area is ineffective. The use of sprinklers is done only when there is no rain. Due to flooding problems, there are canals for draining the water. The main crops in the area are tomatoes, corn, beans, and green leaves.

General Impression

The tour was short due to lack of time and start of rain. Although this is a government project, it is clear that both the infrastructure and the operation are not functioning well. Contrary to the rationale that the project will serve a number of farmers, in practice it seems that only Daniel uses the established system. In addition, it seems that beyond the initial establishment, there is no continued involvement of the administration in the field, no maintenance of the system and no accompaniment of any kind. In general, it was difficult to get clear information from Daniel and details were vague and contradictory. Looking at the tomatoes grown at the site it is clear that they suffer from diseases and that their yield will be relatively low. However, since there is not much growing of tomatoes in this season it is possible that even under these conditions the growing is profitable.





Water pipe for connecting to the pipe



Water source for project



Tomato plot



Connection of pipes for site

Link to video: <https://youtu.be/2lHZXzU-i54>

Hadassah Primary school

The school is located in the town of Nabugoye, located about 5 km from Mbale. Access to the place is via a dirt road.

GPS Coordinates: 1.105176, 34.200074

The tour was organized by the school principal Kokas Keki and two teachers. The visit included a short tour of the school grounds. Keki started running the school last year following the passing of his father, who was the manager. The school is under Abayudaya and is receiving financial support from Kulanu.

The primary school had 450 students (prior to Covid), but in the last two years studies have stopped. The school is mixed with Jewish, Christians and Muslims, but teaches a lot of content of a Jewish nature. In the school grounds there is a small garden where one of the teachers teaches the students home farming. The garden grows cassava and corn that are used for school purposes, but the main thought is to train the students to produce food for themselves. In addition to the vegetable garden, a 5-acre plot was recently identified not far from the school and seeking support to purchase the site. In addition to agriculture, Keki is very interested in a project that incorporates livestock.

General Impression

Due to time constraints the visit was short. Keki is very interested in agricultural activities at the school. He emphasized the important needed to teach students with agricultural skills so that they will have the tools to grow food for themselves in the future.



School structure



From left to right: David, Shoshana, Daniel, Keki and 2 teachers.



School building



School garden

Jewish Response Uganda

The day started with a brief introductory meeting at the organization's office located about a ten-minute drive from Mbale followed by visits to farmer site. Three farmers were visited followed by a visit to farmers in the village of Kakoro and KKSJ. The meeting was led by Tarphon Kamy, Elisha (Project Manager), Michael (Chief Agronomist), Fred (an agricultural guide in the organization). Tarphon is the director of the organization and responsible for communication and coordination. Uganda Jewish Relief is an NGO that was established about 4 years ago. The main activity of the organization is in agriculture, but also in financing outstanding students with a difficult background, financing urgent medical expenses and food distribution in times of crisis. The organization has several funders, some private individuals and some organizations which includes Commonwealth Jewish council, world Jewish relief, Sephardic Jews of Uganda.

The organizations activities included operations in the following villages KKSJ, Putti, Buseta, Nasenyini , Nalubembe

The main activities include:

1. Land owning farmers receive support for inputs (seeds, fertilizers, and chemicals), and guidance by the organization's staff.
2. Non-land-owning community members who want to take part in the organization's activities receive 0.5 acres in the first year and 1 acre in the second and third year if they demonstrate good results.
3. In both programs there is full financing of inputs in the first year and 50% financing in the second year (the farmer completes the rest). In the third year there is no financing at all but only guidance, with the concept that a farmer will be able to independently purchase the agricultural inputs from the money he has saved during the first two years.
4. When a farmer taking part in a project experiences failure in his actions, he is sent to another farmer in the project to learn from him.
5. Farmers who complete three years in the project and show good results can start working in the organization as instructors.
6. The organization encourages farmers to work in cooperation, for example in cultivating the land, thus enabling them to save on expenses.
7. Students who are interested in receiving a scholarship for higher education donate two years of agricultural work.

The professional work of the organization operates under the support of an agronomist from Rwanda who mentors them professionally. In addition, they have been monitoring the harvest data for the past four years. The organization has developed an economic plan for growing peppers to achieve seasonal profit. The agricultural produce is mainly sold to Mbale and where the agricultural inputs are also purchased. In addition, vegetables are also sold to Kampala, Busia and Soroti.

In the last season of activity, about 80 farmers were involved in the program. As a result of the project and capacity building among the farmers, it is said that there are many farmers who have increased their plots, buying agricultural equipment or even oxen for tillage. The organization says there are many farmers who want to work with them (both from the Abayudaya community and from outside), but they are forced to limit the number of participants as they do not have the infrastructure to work with everyone.

The organization mentioned several difficulties they face.

- marketing the produce, which is a general problem for the region. Increased production in the region of peppers has resulted in lower prices. To compensate for this are now trying to bring forward the planting times of farmers.
- Land preparations, tillage which is very difficult to perform in the dry season as it is done by plowing bulls or hoes.
- Irrigation of vegetables in the dry season as the way it is done is by funnels / buckets.
- Plant protection is difficult to address
- Due to Covid it is difficult to obtain agricultural inputs whose availability has decreased and often they may even be counterfeit (seeds, fertilizers)
- Agricultural experts are in short supply.

General Impression

The format of the project is impressive, and it seems to work well and correctly. The format was established by Tarpon, Elisha, and Ekaterina (World Jewish Relief). The farms visited are in good condition and able to generate a good livelihood for the farmer who grows them. An agricultural program developed in the region should seek to collaborate and strengthen the working being done by the organization.

Kakoro Village

The settlement is located about 25 km from Mbale and access to the place is via a dirt road.
GPS Coordinates: 1.171354, 34.027969.

The members of the Abayudaya community in the village are about 35 families and belong to the Orthodox sect. The entire locality has a total of about 4,000 residents. The members of the community have 4 acres scattered in several locations. The agricultural activity is done under the guidance of Jewish Relief Responds. The person who coordinates the agricultural activity and communicates with the organization is one of the members of the community named Kawiso Kenneth. The members of the community make a living only from agriculture when the main crops are cassava, corn, beans, sweet potatoes, and bananas. Most of the cultivation of the land is done manually by a hoe. According to the locals, the land available for agriculture are very small and rare. There is a shallow borehole of 20 meters which dries during the dry season. There is no electricity, and the nearest electrical infrastructure is 3 km away. There is no clinic in the village and there are no good schools in the area.

General Impression

The village itself seems more developed in some respects in relation to Putti (although the members of the village argued that it was the opposite). Looking at the buildings you can see more brick houses and tin roofs relative to Putti. They also appear to have larger areas as well as a greater variety of crops relative to Putti (citrus, sorghum, tomato).



Borehole



Meeting with Community Members



Chemical application at Pepper plot



School and agricultural fields



Pepper plot



Pepper nursery

Link to Video: <https://youtu.be/4FGkbTPyp04>

KKSY village

The village is located about 8 km from Mbale and access by a good dirt road.
 GPS Coordinates: 1.103008, 34.125153.

The visit was led by Aaron Maiso who is the chairman of the community and is in charge of the Orthodox synagogue located in the community. Also in the tour were representatives from the Uganda Jewish Responds who operate in this village and own a 7-acre plot located near the synagogue. The area is not fenced and grows green peppers, cassava, watermelon, and potatoes. The land is relatively straight with no problems related to flooding but there is a problem of soil erosion. There is a well that is 17 m deep, and the water quality is good. The water is used for various purposes and is pumped by a manual pump. Adjacent to the area there is a 2-phase electrical connection, and an additional 3-phase connection is found in a 1 km putty.

General Impression

The 7-acre site seems to be the largest community area under Abayudaya that is grouped in one place. It could be a good location for establishing a demonstration/training site. The close proximity to electricity infrastructure is an advantage over other areas of the communities visited. The area itself is slightly sloping, but not to such an extent that it will be a problem in terms of irrigation infrastructure. There is a need to find out more information about the water source

	
<p>The synagogue</p>	<p>Third from right Aron along with the staff from Jewish Response Uganda</p>
	
<p>The 7-acre site, growing peppers</p>	<p>The borehole</p>



Bean production at the 7-acre plot



Uncultivated area in the 7-acre plot.

Innovation Africa (IA)

The Village is located 29 km from Mbale. The road is a gravel road.

GPS coordinates: 33.959585 ,1.001007

The visit was led by Roger (manager of IA Uganda), Ivan (accountant) and Ibra (head agronomist) for IA. The meeting started over lunch and continued with a visit to the site at Butove where IA has an irrigation project. AT the village the team met with Anthony who is the farm responsible for the plot.

The plot is one of many similar projects managed by IA where there combines irrigation with the water towers. The water tower is operated by a solar pump that provides power to a borehole pump located at a depth of 65 meters. The water is transported to 2 containers one which is 10 cubic meters and the second is 5 cubic meters. The larger container is for domestic use and the smaller is for agriculture. The first container is primarily used for a school which has 1000 students and for a health clinic. There are also 10 faucets throughout the village that provides water to over 2000 people.

The borehole has a capacity of 10 cubic meters per day (requires confirmation) and provides 2.2 cubic meters per hour. There is a committee at the village of 9 people who are responsible for overseeing the project, 3 of them have authorization over the bank account that manages the agricultural program.

The agricultural site is 25X72m (1,800 m²) and it is divided into 3 plots. The main production is of tomatoes but there is also beans, onions, eggplant, and leafy vegetables. On average 60% of the produce is sold to market and 40% goes to the produces. The profits go into a communal bank account which funds the next season's production. There are 16 mm drip lines and faucets for the different plots. Since there is a limited amount of water expansion of the plot is not possible.

The role of IA is to provide technical support to the site and arrive 2-3 times a season. All of the villages arrive to the site for trainings. IA is also available to provide technical support via phone when needed.

As a result of the program and water given to domestic use, farmers in the village started to grow vegetables at their homes and to sell surplus to market. According to Anthony all of the villagers feel impact since they come for trainings and that the site is a source of knowledge. The main challenges of the site are 1) marketing

of produce, since the site is small it cannot be marketed to larger sellers. The price per kg is low. There is a difficulty is attaining quality seeds, tools. There is a difficulty is getting the community to support the site.

General Impression

Examining the total yield that the plot's profits against the expenses, it does not seem that the project is economically viable, nor does it produce enough to support the vegetable demands of the village. In addition, the IA team and Anthony emphasized that the main impact of the project is the knowledge that the villagers acquire from the training which they implement in their fields. The project is suitable for extension services. In such a case, it is advisable to do a redesign so that the project will be more economical for the farmers.



Innovation Africa Water Tower



From Left to right: Anthony, Ibra, Ivan, David, Daniel, Rogers



Agricultural site



Water storage for agricultural site (5 m³)

Link to video: <https://youtu.be/tK83DxTZ7HQ>

Meeting with John Matumi

John Matumi is currently working in the Department of Agriculture under the Central Government as a principal agronomical office. The main activity of his office is the drafting of contracts and standards along with control and regulation of the agriculture industry in Uganda. For example, it is the responsibility of his office to ensure that in each district farmers are getting the appropriate trainings and visits from extension workers. John started his work as a production officer - (actually provided training services to farmers) in a sub-county of Mbale. Most of his experience in agriculture comes from working in rice and coffee but has also gained experience in a wide range of crops that he has acquired as part of his work.

According to John the role of the government is to provide support in areas that are most challenging through the establishment of organization that can solve these problems. For example, a government program – operation wealth creation which is responsible for providing quality agricultural inputs to farmers in a timely manner.

An important organization is the national agricultural research center (NARO) which is responsible for the research centers throughout Uganda. The research center in Buginyana, outside Mbale works on coffee, rice, banana, cassava. For each crop there is a supporting organization that provides support for the value chain.

For establishing new projects there is a need to work with the district. If the program includes more than one district it has to be organized with the central government. The authorization from above provides the proper paperwork to the sub country office to enable operation at the field level.

In order to register in Uganda as an organization it is required to go through the Israeli embassy who would contact the foreign ministry of Uganda. The embassy would need to be in communication with the NGO board in Uganda. In addition, as an agricultural organization there is a need to register with the ministry of agriculture as well. In order to meet with the ministry of agriculture there is a need to also go through the Israeli embassy. The ministry of agriculture will then approach the relevant districts.

John stresses the need to meet with the production officer and the community development officer of the district where the project occurs. They are the most informed about the communities of the area and which organizations are operating there.

Mbale is a region with 12 districts. The main agricultural areas are Wanale and Busano which are in the highlands just east of Mbale and mostly grow coffee, banana, beans, potato, and maize. In addition, Bugokho, southeast of Mbale is lowland and grows similar crops.

Agricultural challenges:

- Soil erosion and flooding
- Pest control and management
- Introduction of new technologies
- Marketing of produce.
- Lack of knowledge for post-harvest storage
- Poor data collection

The government is attempting to promote the establishment of cooperatives for collaborative work especially in marketing. The government is promoting mechanization and establishing center for demonstration and training. Planned on opening in 2 years. The government is promoting revenue generating crops such as coffee, banana, and maize and this is a sink for various programs and investments. There are also programs of ground nuts, cassava, and citrus.

Government programs that are important:

- **Vision 2040** – the development plan for Uganda which aims to transform the country from subsistence to commercial production. Much of the work and organizations which John talked about are related to vision 2040.
- **Micro Irrigation** – Subsidies for irrigation and agricultural inputs. For information there is a need to approach the district councils of Mbale. The main focus though is on flood irrigation.
- **Industrial parks** – the park in Mbale is being established. Most of the investors are Chinese companies with collaboration with the regional government. The regional government often provides land, loans, and infrastructure. The parks aim to create an industrial center for promoting industrial development. Promote processing of agricultural products.

Land, John recommends not to purchase private land. Often land does not have full rights or deeds and can cause many problems down the road. Instead, he recommends looking at lease hold tenure of land. Under lead hold tenure the purchaser gets a deed and can be used as desired, the lease if for 49-99 years.

Organizations working in the region

- World Vision
- Child fund
- UNDP
- International fertilizer development center (IFDC)-
- Japan international cooperation agency (JICA)

General observations

John was very collaborative and provided deep and insightful answers to the current situation in Mbale. He repeated several times that Uganda is a free economic state and open for business however he is a government employee and represents that government hence everything needs to be understood from this perspective.



Awoja (Soroti district)

Riverside farm

The farm is located about 90 km North from Mbale in the Soroti District which is a lowland area characterized by a large number of water sources.

GPS Coordinates: 1.653766, 33.716317.

The visit was led by Father Daniel Ochom, Joseph Asutai and Henry. Father Daniel joined us in Mbale and accompanied us throughout the day. He runs a religious and educational institution and is also a member of a farmers' cooperative called FINE. This cooperative is an organization of various farmers and stockholders with an interest in agriculture. The organization is responsible for transmitting agricultural information and operates in a number of places in Uganda. The Riverside Farm is one of FINE's centers where farmers arrive for trainings.

Joseph is the manager of Riverside farm. The farm was bought as part of Joseph's initiative in 2014 for the purpose of operating as a demonstration and research site in agriculture. In addition, Joseph heads an organization called Awoja riverside farm and leisure. As part of the farm Joseph bought a pump, an irrigation system that includes drip and sprinklers as well as 4 greenhouses. The government recognized the project, expressed interest in the project and provides financial support. Henry was hired as the manager for the farm. At that time the main crop on the farm was tomatoes (in the open field and in the greenhouse), and most of the goods were sold in nearby markets. During the war in Sudan, vegetable shipments from Mbale to Sudan ceased, the local market was flooded with vegetables and prices dropped. This forced the farm to diversify to additional crops such as green pepper, onion, and watermelon.

In 2016, a contract was signed with a Dutch association called AVSI. AVSI provides funding for a 2-3-month student training program which includes living expenses, agricultural inputs, food, and related expenses. Joseph is responsible for the material being taught and the operation of the farm and students. At the end of the program, students receive a certificate from an external party. In 2018, a committee was established to oversee all strategic decisions of the farm.

In 2019 a federal training program was established where plots at the farm are rented to farmers for a set period of time (1-2 years) By the end of the period farmers are supposed to earn enough cash and acquire knowledge to open their own farm. Initially the government provided all funding for inputs, but it was reduced to 50%.

Currently the farm has 20 acres of land, which is divided to several plots. There are currently 14 farmers cultivating 0.5-1-acre plots and the rest by Joseph. During the dry season plots are irrigated using gravity-based irrigation. There is a spring that supplies the water to a small reservoir which is transported to the container that is on top of a tower for pressure. The water storage is a 20 cubic meter metal container which is filled by an electric solar powered pump. There is also a backup pump that operates on fuel.

In the agricultural area there are 4 greenhouses for growing vegetables. At the time of the visit only one building was in use which had pepper grown inside containers. Irrigation in the greenhouse is done by pipes spread on top of the growth containers. Here too the system works in gravity and the water comes from a nearby tank which is filled by the central tank. The substrate used for growing in the greenhouse is a mixture of local soil and cattle manure, which is disinfected by steam using a local method. Looking at the pepper plants, they looked healthy. There are a number of local method nurseries for making vegetable seedlings which are located throughout the farm.

Citrus Orchard

A visit was made to an orange orchard of a private farmer. Oranges are a major crop in Awoja and there are even large commercial plantations that specialize in the crop. Oranges of several varieties are grown in the area, including Valencia, Hamlin, and Washington. There are two harvesting cycles a year, one in August (main) and one in January. Due to time constraints, we did not visit one of the commercial plantations, and instead took a short tour of a medium-sized orange plot with one of the farmers in the area. It should be noted that this plot is a representative example of the characteristics of the trees and the growing methods used by farmers who grow oranges. The trees in the plot we visited are not watered at any time of the year and do not receive pruning of any kind. Between the trees, intercrops are grown to maximize land use (e.g., sweet potato).

There was a general impression that trees were in good condition with minimal disease and damage observed on the fruits and leaves compared to the orange trees in the Mbale area. There are a number of small nurseries that produce orange seedlings, but the quality of these seedlings is not good, and in practice most of the farmers who grow oranges know how to produce seedlings for themselves. The oranges are sold both to local markets and to a factory that produces juice and puree. There is a serious problem of marketing the fruit since during the harvest season both the market and the plant become flooded with fruit so that many farmers find themselves with crop surplus that is not sold. There is currently a new plant for orange juice in construction.



Orange orchard

General Impression

The Awoja area is very different from the other areas visited. The region is located in a different part of the country and under different climatic conditions. In general, the area has less precipitation compared to Mbale and according to the locals, the soil there is also less fertile. However, the area has several open water bodies which originate from Mount Algon, Kenya and Ethiopia. Despite the large amount of water, the vast majority of this water is not being used for agriculture. The farm operated by Joseph is a rare case where reservoir is used. Collaboration with the Riverside farm could provide strong impact on the region and farmer since the educational institution already exists. In terms of an option for growing oranges in the area, it seems that the crop has high success potential provided it finds the right market.

		
<p>Joseph (left) (right)</p>	<p>From right to left: David, 2 committee members, Father Daniel, Henry, Daniel Joseph,</p>	<p>Father Daniel</p>

		
<p>Water channels</p>	<p>Water Tower</p>	<p>Pump room</p>
		
<p>Solar system</p>	<p>Backup pump</p>	<p>Agricultural field</p>
		
<p>Pepper production in the greenhouse</p>	<p>Sprinklers</p>	<p>Greenhouse</p>

Link to video: <https://youtu.be/plkGSGJY6DA>

Soroti district governor

The meeting was attended by Etoru Simon Peter, Governor of the District, along with Jams Enyaku, Head of the Department of Agriculture, Jane Akiror, Administrative Director, Joseph, Father Daniel, and Henry.

The meeting was short and was more of a brief introduction. The governor spoke about his visit to Israel and the deep impression the visit created on him (he said, with technology and knowledge from Israel, Uganda would be able to feed the whole world). He recognizes the many advantages of his country and region (vast areas, favorable weather, plenty of water), but also recognizes the disadvantages (lack of knowledge, manpower and technologies that are often expensive or not available at all). At the end of the visit the governor on his own initiative proposed 2 acres for the establishment of a demonstration farm.



Kampala

Meeting with Rabbi Gershom

The meeting with Rabbi Gershom was held at his home in Kampala together with his extended family. In addition, Samson, the rabbi's son-in-law, sat with us, who had set up a small incubator at the school in Nabogia for growing spirulina, under the guidance of a woman from Tel Aviv. Today the incubator is standing but the project has not yet begun.

Rabbi Gershom ended his term in parliament last June and currently serves as the chief rabbi of the Abayudaya congregation (excluding the Orthodox community). Apart from his role as a rabbi, he travels a lot in Africa (especially in Kenya and Nigeria) and serves as a rabbi who supports other communities (conversions, ceremonies, etc.). Rabbi Gershom is the grandson of the second rabbi of Abayudaya (Samson Mugombe), his grandfather was ordained a rabbi by the first rabbi, and the founder of the Abayudaya community, Semei Kakungulu.



Historical background on the Abayudaya community according to Rabbi Gershom

In 1919 the community was established and by 1929 it already had about 8000 members. Following the arrival of missionaries, a very large number of people converted to Christianity because the church provided them with food, education, and a livelihood. So, in 1971 when Idi Amin came to power, the community numbered only about 1,500 members. In 1979, after the fall of Idi Amin's regime (which banned Judaism and even took land from them), only about 300 members remained in the community. This handful of people

concentrated mainly in the villages of Namutumba, Namananyo, Nabugoya, Nasenyi, Putti. During this period, the community was a group of biblical Jews (those without rabbis and schools of Judaism). Later the group began to grow due to population growth and due to new conversions. In 1995, an Orthodox rabbi came to the community and told them that without a supportive framework of rabbis, Beit midrash and synagogue they would not be able to be properly considered Jews or undergo conversion. As a result, part of the community began to convert to Orthodox Judaism. In 2001, after Rabbi Gershom visited a Conservative rabbi, Rabbi Gershom decided to transfer his congregation to Conservative Judaism. He did so because the idea at the base of the Conservative stream matched his values. In 2004, an Orthodox rabbi came to Putti from the United States and said that Conservatives were not true Jews, and they would never be accepted by the Chief Rabbinate of Israel. After this meeting, Putti decided to adhere to the Orthodox current.

The Abayudaya community today

Today there are between 1500-2000 people living in the community in a number of villages and different religious streams. Recently a new Orthodox community was established in Kampala (Mukono). The Abayudaya community has a National Board, which consists of three representatives from each village (except Putti and KKSU, who do not attend due to religious / economic conflict). The chairman of the committee is Shaul from the village of Nasenyi. The role of the committee is to oversee the various activities that take place in the community and to ensure an equal distribution of food and money donations among all the villages or among other factors (e.g., distribution of funds to students of higher education). From there, the various projects of the communities are also managed, and all the various project managers are required to report regularly to the committee. Under the Central Committee, there are local committees in the villages (community / synagogue board), which have representation of women, men, boys, and the elderly. This committee is the one that selects the three representatives who will go to represent the community on the Central Committee

Politics and more

Rabbi Gershom says that there are people in the community who today consider themselves reformers but before that defined themselves as conservatives and they do so to receive donations from the organizations that support reform Judaism. The rabbi reiterated that when there are people from the community who decide to change their definition of religion, it is unequivocally related to the economic good that will come to them from it. However, the rabbi argues that the problem is not usually on the part of the community but on the part of the donors themselves. Other people in the community would prefer to focus on finding a donor, over the unity and strength of their community. Also, when a particular organization decides to donate through a specific person, that person immediately becomes a community leader, which can create internal frictions and power struggles. It is even more problematic when a specific organization decided not to work with a particular person, which again causes a differentiation of the supported community from the other communities. For example, the program that is being operated by Israeli Siriri has resulted in separation of the community from the rest. Rabbi Gershom was not even aware of the funding they are receiving. Beyond the conflicts, the rabbi also talks about the bad habits that reliance on donations and charity creates among community members (laziness, opportunism, and corruption).

In terms of collaborations within the community, the rabbi says that there are quite a few examples on the subject, for example the establishment of an emergency room with oxygen in case of a corona outbreak, the establishment of a clinic and various donor programs that require comprehensive community cooperation.

Vision and ideas

The rabbi's vision for the community includes two levels - one is the spread of Jewish knowledge in the community (which he says is already happening and he is happy about it), and the other is the economic independence of the community. The rabbi supports the establishment of a single center for everyone so that people in the community can come and study agriculture. When asked about the economic difficulty arising from the arrival of people from remote villages to a central training center, the rabbi replied that people should find a way to get there if they think it is worthwhile for them. In addition, the rabbi thinks it is important to open a program for microfinancing.

Proposals for an agricultural project

The rabbi emphasizes that it is important to have a project that will help all communities in the most equal way possible. In addition, it is important to focus on marketing, especially in areas that are farther away. There should also be a focus on post-harvest activities and the production of agricultural processing products (juices, jams, etc.), in order to increase the value of the product and create diversity in the produce. Beyond that the rabbi recommends contacting a man named JJ (Joav jonadav) who is one of the elders of the tribe in the community and owns a lot of land in the Mbale area on which he grows coffee and cocoa. Finally, the rabbi welcomes our visit to Uganda, he says that he is very excited and that he believes in the project and what we are doing. "Uganda is an agricultural country and really almost everyone is involved in agriculture, so there is a very high value to every little improvement we can bring."

Part 3: Putti Village

General Information

Putti is 14 km northwest of Mbale. Most of the route is on a muddy dirt road with poor infrastructure. The settlement has a relatively spiral structure and between the houses are small agricultural plots. The visit was led by Enosh Mainah, the political and spiritual leader of the local Jewish community. He was joined by a teacher and several members of the community with whom an introductory meeting was held, followed by a tour of the village.

The Abayudaya community in Putti belongs to the Orthodox stream and has about 200 members, while the entire village of Putti is around 5,000 members. The community has a school named after Yonatan Netanyahu that includes Jews, Christian and Muslims. The school is financed by donors and was established by Enosh who has a teaching license. The school offers teaching in Judaism and Hebrew language studies. The school has 220 students between the ages of 4-12 (kindergarten and primary school). The school has 7 classes in 2 buildings with 20-40 students per class. To compare with public schools which have 200 students in a class. The school also provides lunch to all students. The primary courses of study are English, science (including agriculture), mathematics and social sciences (e.g., history and geography). Prior to Covid, there were also teacher trainings at the school funded by the government. Since Covid there has been no education at the school.

Agriculture:

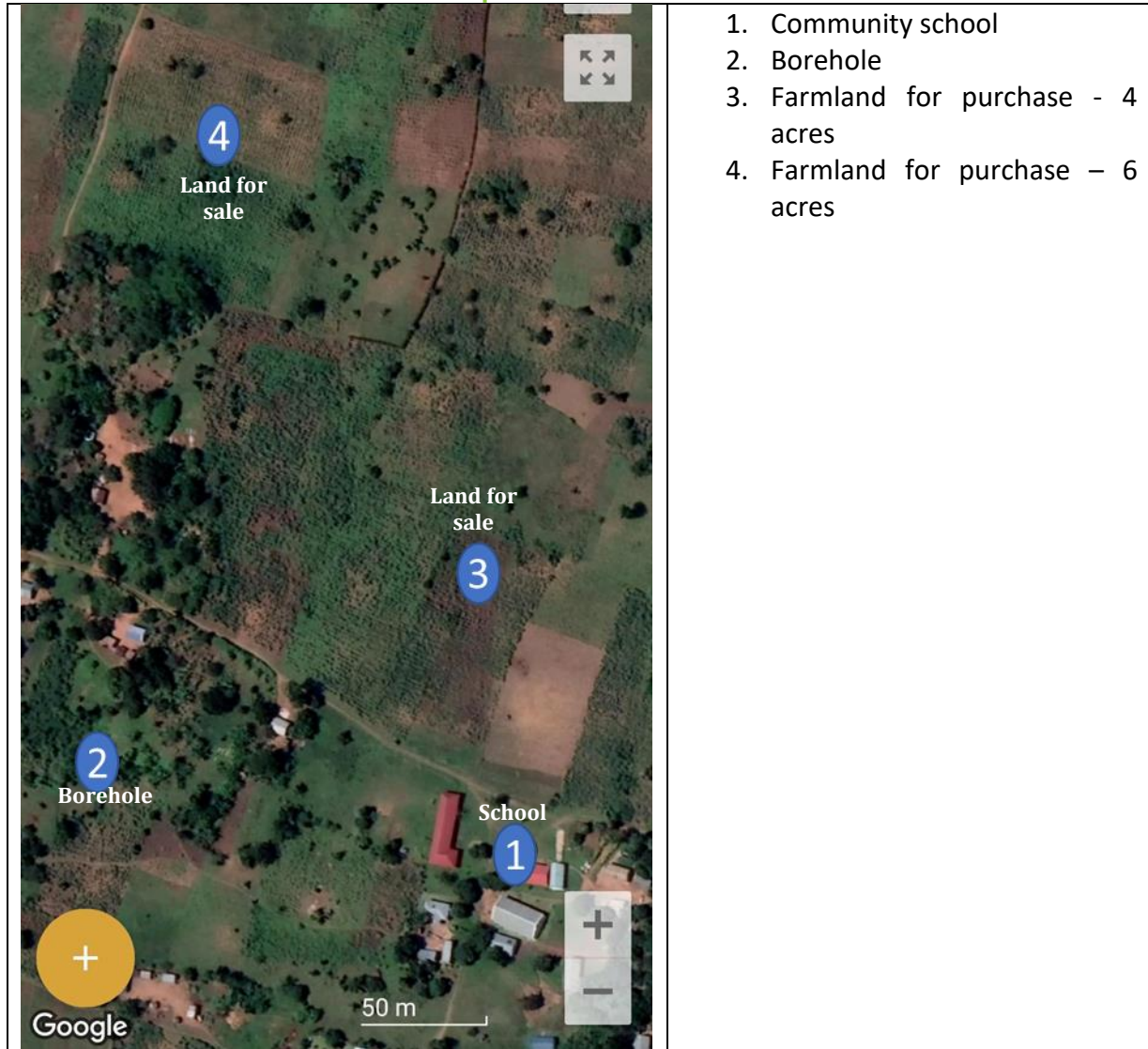
Agriculture is dependent on rain and all crops are grown without irrigation. Most of the members in Putti grow on small plots for personal consumption. The main crops are banana, cassava, maize, and beans. Most village members do not own large plots of land and are not able to engage in commercial agriculture. There is no type of collaboration between farmers in Putti, not in terms of purchasing inputs, in production or in selling to market. There is no interest in operating communal land due to issues of trust and low expectations from each other to work equally.

Farmers in Putti

- Most of the plots do not apply any type of fertilizers.
- The tillage of the land is done with by a bull and plow or by hand with a hoe.
- Farmers grow the same crops on the land from year to year, without crop rotation.
- The village has several chicken, goat and cow growers which are all very small units of production and mainly for self-consumption.

The Abayudaya community

- Has a communal land of less than 1 acre which is surrounded by lands owned by the community members. The communal plot has tomatoes, maize, onion, and beans. There is no order or proper agronomy used in the field and it seem more like random planting. The reasoning was to maximize the land usage.
- Enosh is interested in expanding the agricultural plots.
- An initial analysis of the soil suggests it is fertilized.
- All fertilizers and seeds are purchased in Mbale.
- Next to the office there are lands that are of interest for purchase. The land is adjacent to the school and is about 4 acres and currently privately owned. An additional 6 acres are located nearby. Both sites are currently used for agriculture and seem to be appropriate with minor slope and no signs of drainage problems.



Employment

Most of the employment revolves around agriculture. Beyond that, the other sources of livelihood in the village range from wood and iron crafts (e.g., tool making). The majority of those engaged in these crafts are usually the older population. Young people who are not engaged in agriculture leave the village during the week to work in construction and infrastructure and return to the village at the weekend. In addition, there are sewing shops where women work and many people in the village are engaged in teaching.

Infrastructure and water

The housing in the village is very simple. Many of the houses are constructed of mud bricks that are produced on site and a few are built of concrete. In the village there is a clinic which provides a solution to only basic needs. There is no electricity in the village and the closest electrical connection point to the community school is 3 km away. There is a water well near the school. A tap is connected to the well and the pumping of water is done by a hand pump. The depth of the well is 50 m, the maximum discharge of the well is 2.1 m³/hour, and the recommended pumping rate is 1.56 m³/hour. More information about water quality and well specifications can be provided. In addition, there is a government water line 3 km away to which you can be connected to.

Innovation Africa





In 2018 IA donated solar panels for house use and a solar powered pump for the borehole. The community has since grown and only some houses have solar panels and many of the panels are no longer functional. IA does not support the maintenance of systems hence the community needs to pay for it.

General Observations

Putti seems to be one of the least developed communities in the area. According to Enosh, the Jewish community is less developed with smaller plots of land and less animal husbandry. Enosh mentioned that while there is a loose connection with all the Jewish communities, there is no collaborations. Putti feels even more neglected in comparison to other communities. Enosh said there were disagreements between Kulanu and them resulted in ending all support from the organization to them.

Putti is not any more fit to be a central location for activity in comparison to other village. There is no infrastructure at the village and not enough land. Furthermore, the poor relations that exist between the village and other communities further stress for a more neutral site to be the main area of operation. Like other villages a central site in Mbale would provide Putti extension support for establishing agricultural programs.

Establishing an agricultural site in Putti would require extension support and capacity building in order to properly operate the stie. Revenues from the agricultural site would provide support for expanding educational activities at the village. Purchasing of the land should serve towards strengthening the agricultural capacity of the community and as an economic foundation.

	
<p>Office</p>	<p>Enosh in the middle</p>
	
<p>On the Left the water container and the right the borehole</p>	<p>Classrooms</p>



Agricultural plot located walking distance from the school



Agricultural plot adjacent to the school

Links to video:

<https://youtu.be/Vn4FJ-sNXDw>

<https://youtu.be/VCrqFkU2HgM>

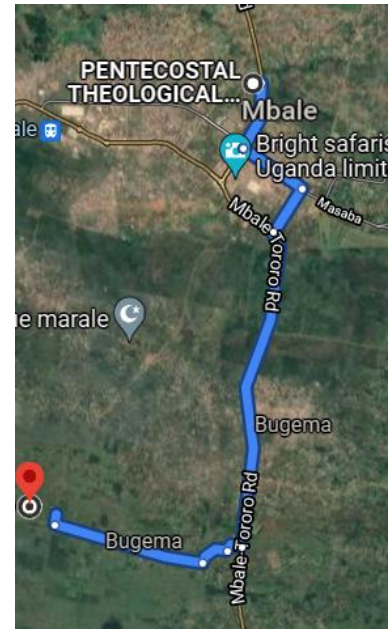
Part 4: Potential centers for operation

As part of the assessment, the team reviewed potential sites that can serve as a centralized training center. The site would serve to build capacity for the entire region while prioritizing the Abayudaya Communities. The following sites were identified from the desk review as potential sites and thus more closely examined.

Pentecostal

The Pentecostal church operates the Pentecostal Theological College and a farm known as Ebenezer Farm. The school is located within the city and the farm is 8.5 kilometers south of the city. The tour of the site was organized by Rev. Erich Ogulo who manages the site and by David Oninge who is the head agronomist and manager of the farm. David has 11 years of experience, mostly in animal husbandry. The site is supported by the church which provided the capital investment, and the farm is required to operate on its own budget of operating costs.

The school was established in 1960 and serves as a teaching center for priesthood. In addition, the site offers a variety of courses for 1 year certificate or a 2-year diploma. As part of the field training, students at the college sleep at the college for 2 months to live the operations of the farm. In addition, the farm provides trainings to farmers in the regions and to schools nearby. Each month about 40 farmers and students arrive at the farm for trainings. David does all the practical training, and an additional trainer does the theoretical.



Ebenezer farm:

The farm is located 8.5 km south of the college.

GPS coordinates: .34.154582 ,1.036184

The farm size is about 13 acres, it is fence only on one side and there is no connection to electricity.

The farm has a livestock component and a horticulture component. There is also a plot for growing of eucalyptus trees. The livestock includes 8 cows, 4 of which are milking. The cows produce 35 liters per day all together, about 8-9 liters of milk per day per cow. In comparison, in Israel the average cow produces 40-45 liters of milk per day.

The cows were imported from Kenya (Friesian breed) and are expected to provide 20 liters per day. The main feed for the cows is rice husks, soy, pasture, and sunflower seeds. In the past there were pigs at the site, but they died due to disease and currently there is only one pig. There are several buildings at the site suitable for livestock, this includes a milking parlor and a piggery.

Water at the site is sourced from a borehole that as a manual pump that flows directly to the watering troughs for the animals. The borehole is a shallow borehole of about 3 meters and has saline water. The borehole dries up during the dry season. According to David at 6 meters deep there is already better-quality water, this would need to analyze.

The rest of the area of the farm is used for plant production, around 5.5 acres. This area includes a banana orchard, a plot for vegetables, a grazing area for cows and there are 5 additional acres for eucalyptus for industry. The banana plot is located on the highest area of the farm and the plants seem to be water stressed. According to David, the plot experienced difficulties due to a shortage of water this year as a result of rains coming late in the season and due to the high intensity of radiation in the area. The area designated for

growing vegetables was unused at the time of the visit. The types of vegetables grown on the farm include cabbage, peppers, onions, and tomatoes. The crops are all rainfed, but in the dry season vegetables are watered using buckets. David has a track record of harvests, quantities of milk sold and prices that can be supplied. Other farmers in the area grow mainly corn, beans, bananas, and cassava.

Adjacent to the agricultural land runs a river whose source is mount Elgon. The river runs for most of the year with some years the river running dry during the dry season. The river water looks to be high in sediments but according to David the quality is good. The farm has been trying to divert the river water for irrigation at the farm and there is a desire to establish a reservoir for water storage.

The land seems to suffer from problems of poor drainage. The elevation of the land has larger differentiation with some areas forming surface water ponds and in other parts high soil moisture. In examining the natural vegetation that covers the farm, it corresponds to that of wetter areas. Tillage is done by a tractor that can be rented for 200,000 shillings (slight variation with the season, 60 USD). Bull plowing, common in many places in Uganda, is not available in the area. The farm uses cattle manure collected from the dairy unit to fertilize the horticulture.

Adjacent to the farm is a vocational school, which teaches technical subjects, including agriculture. The school is not directly connected to Pentecostal. There are plans for establishing a new national university in the region. There is no agricultural research institution in the area (the nearest is NARO, a few hours' drive away), but there is a private laboratory for soil and water testing in the area.



General Impression

Erich expressed great interest in cooperation and a great willingness to implement a project on the farm. David gives the impression of a professional, with great knowledge and is highly motivated to learn and develop in the field of agriculture and livestock. There are several problems with the farm from the perspective of setting up a centralized training center. The main problem arises from the location and layout of the land of the farm since the low elevation makes the farm prone to flooding. The farm's land is not homogeneous, both in terms of topography and in terms of the level of moisture and soil density. Therefore, if there is an interest in establishing an agricultural site it needs to consider that only a small area of the farm will be suitable.

The quality and quantity of water from the borehole are not sufficient for production and cannot be relied upon for an agricultural project. There will be a need for deep excavation and possibly to establish a water diversion of the stream, but the water supply at the site is not high and the availability is not constant. In addition, a lack of electrical connection is also a problem.

To the contrary there are many potential benefits in establishing cooperation with the farm. It is linked to educational institutions and recognized among many communities from the area. Cooperation will enable impact to the wider region through the existing linkages to farmers and institutions.

	
<p>Dairy farm</p>	<p>From left: Daniel, David O. David, Erich, Enosh.</p>
	
<p>Grazing site</p>	<p>Grazing site</p>
	
<p>Vegetable site</p>	<p>River</p>



Link to video: <https://youtu.be/1CVoTG6AOro>

Saint Paul's college and farm

The farm is located on the northern outskirts of Mbale
 GPS coordinates: 34.188895; 1.092673

The visit to St. Paul consisted of two short visits. The first visit was with Father Moses with David Oninge, while on the second visit Father Roman also joined. Father Moses serves as Deputy Teaching Director, Father Romano is the general manager of the St. Paul's and David is the agronomist belonging to Pentecostal but works to support the agriculture and livestock at St. Paul's as well.

At the center of the farm is a secondary school with students aged 13-18 study (in Uganda students are divided according to academic achievement and not according to age, so classes have mixed ages). The students study science (biology, chemistry, physics, and agriculture) and there is a computer class. Agricultural studies are Compulsory for the first three years. For the 4th year students are given the opportunity to choose specific subjects of study which they would like to deepen their knowledge, agriculture is an option.

Challenges of the site:

- Lack of teachers with ability to teach agriculture
- Lack of equipment for educational purposes
- The buildings are all connected to 2-phase electricity that should be converted to a 3-phase infrastructure.

The farm itself is spread over a large area of 150 acres (60 hectares) that includes a barn, a chicken coop, a greenhouse, agricultural areas, and pastures. The site has a fence around the buildings and agricultural/livestock areas while most of the open field production is unfenced. The drinking water and water for the livestock comes from a well located near the college buildings and is the only source of water for the site. According to Father Moses, the water in the well is saline. Water from the well is pumped via a submersible pump and transferred to a metal storage tank with an estimated volume of 36 cubic meters. The pump is electrically powered and there is also a generator that can be used if there is no electricity. Technical details about the well and water quality can be provided.



Dairy:

The barn contains about 40 cows, of which 11 are milking cows. In total the cows provide 40 liters together (average of 3.6 liters per cow per day). The barn includes a structure for the cows to be at night, as well as feeding and milking stations. Milking is done manually. The farm also contains poultry, a chicken coop with 80 broiler chickens (previously containing 250), and another coop of turkeys with 60 poultry. Both the chickens and turkey are grown for meat. The chicken coops are built in the form of one room with areas for feeding / drinking and areas for laying. The farm has a greenhouse that is used for growing vegetables and was established by AVIS. The greenhouse has a gravity drip irrigation system with a 1 cubic meter tank that is adjacent to the structure and is filled by the main tank. The last time there was production in the greenhouse was in 2020, when tomatoes were grown.

The agricultural areas outside the fence area is estimated to be around 85 acres (34 hectares). Of the total land, 57 acres (~23 hectares), the central area, are concentrated as one piece while the rest of the area is divided into several fields. The main crop at the farm is maize with beans and soybean produced sometimes as well. The central area has unequal topography, some is flat and some sloping. There are concrete pillars around the site there were part of a former fence. Fertilization of the soil is done by cattle manure collected from the barn. Chemical application is applied as needed. The soil has a Sandy loam texture and has a relatively low pH value of 4.5-5.6.

The land used for cattle grazing are within the fence area of the farm. The plots are divided into 1–3-acre units. They are located in close proximity to each other and are separated by tree barriers. Some of these plots have a moderate slope and in some the slope is greater. Inside the farm is a 2.5-acre mango farm and a small-scale coffee grower. There is a problem with an inability to undertake post-harvest resulting in post-harvest loss of a large amount of the maize.

General Impression

Of all the sites visited this is seen as the most suitable for any type of large-scale commercial agriculture. It is important to note that it is by far the largest land area visited. The quality of the land and the impression from the management seem to make the place most suitable for establishment of a central site for training, demonstration, and research (TDR) with emphasis on the area inside the farm as more appropriate for establishment of a TDR as it is in closer proximity to water, electricity infrastructure, fenced and within the city of Mbale. A major challenge will be to ensure there is sufficient water resources for the farm. In terms of the potential for collaboration, the first impression was given that there was complete willingness and interest on the part of the church in establishing a project in its territory. However, the final decision and approval can only be made after final approval from the bishop.





Dairy Farm



College



Water Tank



Borehole



Greenhouse



Poultry



Agricultural land



Agricultural land

Links to Video:

https://youtu.be/R_RTQdYAQJc

<https://youtu.be/nkiFgHnQdHE>

<https://youtu.be/s29g39IBLuA>

Part 5: Thoughts and Conclusions:

- 1) 90% of Uganda are farmers and most of them grow crops in their backyards that are primarily used for consumption. Even a small improvement in agricultural production could have a big effect on the population.
- 2) The entire region of Mbale has great potential for agriculture development with a focus on vegetable and fruit production. The potential can serve both issues related to health and economic development.
- 3) The Abayudaya are a small and poor community that lack the resources for self-development and hence requires assistance to improve their living conditions. There is friction within the community and conflict between different “leaders”. This conflict is also fueled by outside organizations and donors who create a competition for outside resources. Any project established should remove itself from the conflict and strive to provide equal opportunity and services to all Abayudaya communities otherwise it could deepen the divide.
- 4) There is a **lack of professional knowledge** and current agricultural methods are outdated. There is a lack of market connectivity and a need to focus on the value chains for production.
- 5) There are **market challenges** that need to be addressed, both in terms of supply of agricultural inputs and in terms of selling produce to market.
- 6) The **land structure is a major obstacle** as most farmers own small plots of land that are fractured. There is a need for establishing larger areas of land and for farmer organization into clusters.
- 7) There is a strong interest in establishing both **horticulture** and **livestock** programs.
- 8) The operation of projects like **Agriculture for Life** and **Uganda Jewish Relief** have established a good infrastructure for working with farmers and rather than reinventing the wheel, collaboration should be established to strengthen these organizations and support their scale up.
- 9) Any program with farmers needs to take up a **cluster approach**, where farmers need to work as collective units rather than having the program serve each farmer individually.
- 10) The relevant government agencies need to be contacted and approached for establishing a **government supported program**.
- 11) The model on the ground in the **Abayudaya villages focuses on farms connected to schools** that promote revenue generation for the school and attain self-sufficiency. Strengthening these sites and providing technical support could improve the educational status of the schools and further the ability to provide agricultural education for widescale impact.
- 12) There are many economic opportunities for establishing projects that can generate revenue, programing should look at **establishing revenue-generating projects** that can support themselves and enable long term programming in the region.