



For the fourth year running, Vision Group together with the Embassy of the Netherlands, KLM Airlines, dfcu Bank and Koudjis Animal Nutrition, is running the best farmers' competition. The 2018 competition will run from February to November, with the awards in December. Every week, Vision Group platforms will publish profiles of the farmers. Winners will walk away with sh150m and a fully paid-for trip to the Netherlands

By Joshua Kato

When he started his community schools, Rev. Emma Kiwanuka, 57, believed he could feed the hundreds of learners if he became a farmer. The institutions include a nursery school, primary and secondary schools.

"I realised that if we engaged in farming, we could easily reduce the cost of running the schools," Kiwanuka says. Kiwanuka, who has a degree in education and a master's degree in theology, is the proprietor of Zana Community Christian Schools.

Land for farming

Kiwanuka has at least 65 acres of farmland at Kyaali near Mpigi district and in Saenyambi, Kamenga. He uses over 50 acres for maize, five for sweet potatoes, three for passion fruits, three for watermelon and four for bananas. He also has six ponds stocked with over 13,000 fish.

Most of the produce, apart from fish is sold to his schools. "We sell to the school at a subsidised price and then reinvest the profits in the farms," Kiwanuka says.

"In addition to feeding learners in my school, I also wanted to show people that we can contribute to the development of the country by engaging in agriculture," he says.

How he started

Kiwanuka started farming seven years ago, when he planted matooke and Agoyya. "I planted bananas on the farm and started feeding our students," he says.

"I first bought 29 acres at sh5m each in 2015," Kiwanuka says.

The benefits he accrued from growing food for his learners compelled him to invest more in agriculture. In 2015, he acquired a larger piece of land - 59 acres - in Kamenga.

In 2016, he bought 30 acres at sh9m each, totalling sh270m. He says all this money came from his church and schools activities.

Fish farming

At the land near Lake Victoria, Kiwanuka set up six fish ponds last year after learning that fish stocks in Lake Victoria were dwindling.

KIWANUKA GROWS FOOD FOR HIS SCHOOLS

Kiwanuka sells all his farm produce except fish to the schools at a subsidised prices. The profits are re-invested into the farms and used to pay permanent and temporary workers. Right, workers weed Kiwanuka's banana plantation

Learners at Kiwanuka's schools use his gardens for practicals in agriculture

He visited fish farms to learn more about the practice before starting. He says for each pond, he spent about sh3.5m. He spent sh21m on setting up the ponds. Each of the ponds measure 140x40ft.

Kiwanuka says proper stocking determines the yield. "Most farmers stock five to 10 fish per square metre, others even stock 20, expecting to have a bumper harvest. However, this is wrong," he says.

Kiwanuka contacted Emma Wasityo, a fisheries expert at Kajjansi Fisheries Research Institute. "I brought in the expert to help with the stocking ratios and general management of the ponds. In January this year, the ponds were stocked," he says.

Kiwanuka says his stocking density is two-three fish per square metre. Here a farmer is assured of harvesting fish of between 800g-1.2kg for catfish and mirror carp and between 800g-1kg for tilapia. His first harvest will be around July.

Proper pond stocking saves a farmer from wasting feeds and eases pond water quality management since there is no congestion.

Kiwanuka says if one is to rear tilapia, they should opt for the Melica species that can weigh up to 5kg at one year. "The fisheries research institutes have all these varieties," he says.

He, however, says tilapia lay a lot of eggs, which can result into congestion if not regulated.

"To regulate the numbers in the tilapia ponds, a



Kiwanuka owns a tractor, which he uses to plough his gardens

farmer can introduce some catfish, which feed on them," Kiwanuka says. For every 4,000 tilapia, he puts 100 catfish.

Keeping birds away

Birds are leading predators of young fish. Given that the ponds were near Lake Victoria, the threat of fishing birds preying on the young fingerlings was high.

"We bought fish nets and put them over the ponds," Kiwanuka says. "These prevent the birds from swooping into the ponds to grab the fish."

To keep other predators like snakes at bay, Kiwanuka planted herbs that repel such creatures around the fish ponds.

Feeding fish

"For fish to gain at least 1kg, it has to be given an average of 1.5kg of feeds," Kiwanuka says. This is in a period of around eight months from stocking.

Kiwanuka says after setting up the ponds, feeding the fish is the next most important aspect of the venture.

"Many fish farmers feed their fish poorly. It

is such farmers who harvest fish of 100-150 grammes after eight months and yet the ideal harvest should be 0.5-1kg per square metre," he says.

To figure out the amount of feeds that should be dropped in the ponds every day, you need to know the number of fish in the ponds. For example, if a fish consumes 1.5kg in eight months, it means that daily consumption averages 6.25grams, especially after the second month of stocking.

A kilogramme of pelleted fish feeds cost sh3,000. This means that at eight months, Kiwanuka should have spent sh4,500 feeding each fish. To feed all the 13,000 fish will cost over sh58m.

Acquires pellet machine

"Pellet feeds are costly, so we have acquired and set up our own pellet processing unit in order to save on the cost of the feeds," he says.

The motorised machine, which works using an independent engine, can be operated from anywhere since it does not require grid electricity

Fish farm WHAT YOU NEED TO START

- A flat area, but with the ability to hold water.
- Capital to dig the pond. On average, a 140x40ft pond with capacity to hold 4,000 fish costs sh3m to dig.
- Store feeds for the fish to run through for 8-10 months. A kilogramme costs sh3,000 on average.
- Young fish are sensitive and fragile. Therefore, a farmer has to be careful when transporting them from the breeding centre to the farm. The care must start right away from harvesting the fingerlings through transportation to the final stocking. Handle them carefully to avoid causing any form of trauma to the fish.
- The fish should not be congested in anyway and must be put in enough water. The main thing, however, is that the fish must have oxygen.
- To avoid overstocking, a farmer has to put into consideration the size of the pond. For example, the standard measure for tilapia is five fish per square metre. On average, you need at least 4,000 fish for a pond measuring 40x20 metres pond.
- At a cost of sh150 per fingerling, the cost of buying the stock amounts to at least sh600,000.
- You must keep proper records of everything that goes on at the farm - when you stocked the fish, feeds used, fatalities and health, among others.
- In this business, you must not practise any guess work, otherwise you will go wrong.

Tips sourced from Jean Kahwa who runs Shalom Fish farm in Luzira.

to work. Kiwanuka works with a fisheries expert to prepare the right feed mixes before they are put in the machine, which are then processed into pellets. "This reduces our expenses on feeds by about 30%," he says. The other advantage is that because they are now mixing their own feeds, they are sure of quality.

Expected income from fish
While all the other crops are grown to feed the children at school, the fish is for sale. "We realised that giving fish to the students may turn out problematic because of hygiene," he said. "With 13,000 fish at an average sh10,000 per kilogramme, Kiwanuka expects to earn a gross of around sh130m after harvest."

Maize farming
Maize covers the largest part of the farm, over 50 acres. Kiwanuka says the biggest threat to his maize at the moment is the fall armyworm. He says he has stocked the right pesticides to handle the pest should it strike.

To prepare the farm for planting, Kiwanuka used a tractor that he owns. "I bought the tractor at sh52m," he says. He uses the tractor to plough the land before the maize is planted.

The other expenses incurred on the maize section include buying NPK fertilizer and urea, which are applied before planting. Each acre requires about 50kg of NPK and urea at sh150,000 each.

To increase his earnings from the crop, Kiwanuka bought a flour mill at around sh5m. In the last harvest last year, Kiwanuka harvested about 20 tonnes of maize. He says he sold 10 tonnes of grain at sh1,000 per kilogramme, earning sh10m.

The remaining grain was processed into flour, which yielded 7,000kg for the schools. At an average of sh1,600 per kilogramme, the grain raised sh11.2m.

Sweet potatoes
Kiwanuka has five acres of sweet potatoes at Kyaali, his second farm, which the students themselves grow.

He used an average sh1m for each acre. This expense went to setting up the potato mounds (ebikata) and planting the vines. He expects the current harvest in July.

Under good conditions, an acre can produce around four to five tonnes or 40 bags of 100kg each. At the moment, a bag of potatoes goes for between sh100,000 and sh130,000.

From his five acres, he expects at least 200 bags of sweet potatoes. If he sells to his school at a subsidised price of sh80,000 each, he will make sh16m. "This money will help us prepare the farm for the next planting season and also pay workers," he says.

Bananas
These are at Kyaali, sitting on about four acres. "This was our very first farm in 2014," Kiwanuka says. The bananas are a combination of matooke and Agoyya. "We harvest 20 to 30 bunches weekly," he says.

Watermelon
Kiwanuka has three acres of watermelon. "We planted the zebra variety," he says. This is a variety that is light green with white stripes.

Watermelons cost between sh2,000 and sh3,000 on the farm, depending on the size, while retail sale ranges from sh3,500 to sh5,000. There is a growing market for the fruit country-wide with demand coming from fruit vendors, markets, hotels and supermarkets.

Watermelon performs well near water bodies, dry flat land and hilly midlands and can be first planted indoors, then transplanted or directly sowed.

It requires well-drained sandy loam with a pH of between 5.5 and 7 and medium nitrogen levels. You need to carry out a soil test to find out the pH of the soils. "We plough the soils three weeks before planting," Kiwanuka says. He says they then plant seedlings six feet apart. We started harvesting after three months.

Farm management
"I am the chief supervisor of the farm. I make sure that I visit at least once every week to see how the farm is running," Kiwanuka says. He, however, has a manager and other workers. The farm has six permanent workers, plus several consultants who are brought in to supervise some

of the enterprises. "The consultants include one for fish farming and another who looks after the passion fruit garden that is currently being set up. The permanent workers are paid about sh100,000 and given meals and accommodation. Their children are also given free education at the schools," he says.

During peak weeding periods, the farm hires workers from the community, who are paid between sh5,000 and sh10,000 depending on the day's work.

Bio security
Because of the big number of enterprises on the farm, there are measures put in place to control the risk of diseases attacking crops. He intends to fence off the land. "We shall also put in place a footpath, so that whoever comes in is cleansed of any possible diseases before they enter the farm," he says. The farm is also being divided into blocks for each enterprise. For example maize, passion fruit, bananas and watermelons have got their own blocks. "Blocks ease control of vermin, because you get to handle one enterprise at a time," he says.

Challenges
Like most farmers, Kiwanuka's biggest challenge is getting trusted farm workers. He also says it sometimes he has bought farm inputs that have turned out to be fake. "There are fake farm inputs on the market. These days, I only buy inputs from certified establishments stores," he says. Kiwanuka says security at the farm was a huge challenge, however, they now have guards. He, the workers also contribute to farm security.

Community
The farm also acts as a community school for neighbours and students. "Our students use the farm for practical work in agriculture," he says. It is also a source of income for many members of the community, since they get jobs during 9 hours.

What others say

Joseph Ssenfuka, worker
I have learnt a lot as far as management of a farm is concerned and this is all thanks to the Kiwanuka's openness.

Emma Musoke, student
The farm has helped us learn more about agriculture, since we grow some of the food ourselves. It also gives us a balanced diet.

Christine Nakubulwa, student
Because the school has got a farm, it gives us an opportunity to practise what we do during our holidays at home. Even for those students who do not practise farming at home, the farm gives them an opportunity to practise it here.

Steven Angudubo, an agricultural economist under the Root Crops Programme at the National Crops Resources Research Institute (NaCRRI), explains that potatoes can be grown three times a year, depending on the location.

With an investment of sh100,000 for half an acre, one is able to harvest more in terms of food and vines for money, based on an assessment conducted by the research station.

"We have carried out an assessment with farmers and have discovered that they can get three times much more by investing in a little garden," Angudubo says.

Kiwanuka says to prepare the potato gardens, he used an average sh1m for each acre. This expense went to setting up the potato mounds (ebikata) and planting the vines. He expects the current harvest in July.

Under good conditions, an acre can produce around four to five tonnes or 40 bags of 100kg each. At the moment, a bag of potatoes goes for between sh100,000 and sh130,000.

From his five acres, he expects at least 200 bags of sweet potatoes. If he sells to his school at a subsidised price of sh80,000 each, he will make sh16m. "This money will help us prepare the farm for the next planting season and also pay workers," he says.

Bananas
These are at Kyaali, sitting on about four acres. "This was our very first farm in 2014," Kiwanuka says. The bananas are a combination of matooke and Agoyya. "We harvest 20 to 30 bunches weekly," he says.

Watermelon
Kiwanuka has three acres of watermelon. "We planted the zebra variety," he says. This is a variety that is light green with white stripes.

Watermelons cost between sh2,000 and sh3,000 on the farm, depending on the size, while retail sale ranges from sh3,500 to sh5,000. There is a growing market for the fruit country-wide with demand coming from fruit vendors, markets, hotels and supermarkets.

Watermelon performs well near water bodies, dry flat land and hilly midlands and can be first planted indoors, then transplanted or directly sowed.

It requires well-drained sandy loam with a pH of between 5.5 and 7 and medium nitrogen levels. You need to carry out a soil test to find out the pH of the soils. "We plough the soils three weeks before planting," Kiwanuka says. He says they then plant seedlings six feet apart. We started harvesting after three months.

Farm management
"I am the chief supervisor of the farm. I make sure that I visit at least once every week to see how the farm is running," Kiwanuka says. He, however, has a manager and other workers. The farm has six permanent workers, plus several consultants who are brought in to supervise some

of the enterprises. "The consultants include one for fish farming and another who looks after the passion fruit garden that is currently being set up. The permanent workers are paid about sh100,000 and given meals and accommodation. Their children are also given free education at the schools," he says.

During peak weeding periods, the farm hires workers from the community, who are paid between sh5,000 and sh10,000 depending on the day's work.

Bio security
Because of the big number of enterprises on the farm, there are measures put in place to control the risk of diseases attacking crops. He intends to fence off the land. "We shall also put in place a footpath, so that whoever comes in is cleansed of any possible diseases before they enter the farm," he says. The farm is also being divided into blocks for each enterprise. For example maize, passion fruit, bananas and watermelons have got their own blocks. "Blocks ease control of vermin, because you get to handle one enterprise at a time," he says.

Challenges
Like most farmers, Kiwanuka's biggest challenge is getting trusted farm workers. He also says it sometimes he has bought farm inputs that have turned out to be fake. "There are fake farm inputs on the market. These days, I only buy inputs from certified establishments stores," he says. Kiwanuka says security at the farm was a huge challenge, however, they now have guards. He, the workers also contribute to farm security.

Community
The farm also acts as a community school for neighbours and students. "Our students use the farm for practical work in agriculture," he says. It is also a source of income for many members of the community, since they get jobs during 9 hours.

MACHINES

The farm has a tractor that is used to plough and prepare gardens before planting. It is also used to fetch farm requirements from the trading centre. The tractor cost sh52m.

They have also acquired a pellet feeds processing unit at sh4.5m to ease the cost of producing pellet feeds for fish. Kiwanuka acquired a grain milling unit that is used to process maize flour. It cost sh5m.

"These machines have eased work on the farm," he says. He, for example, points out that if he was to get a tractor from elsewhere to plough all the 55 acres of maize, he would spend at least sh5.5m for each season, since each acre is ploughed at sh100,000. However, with his own tractor, he spends about sh20,000 to sh30,000 for fuel and an allowance for the operator.

Irrigation

The farm has a pond where water is pumped from using a water pump, into about 19 tanks that have a capacity of 3,000 litres scattered around the farm. Each of the plastic tanks costs around sh650,000.

"We are assured of water even during the dry season," he says. The farm uses an overhead water gun to irrigate the crops.

"We simply put a pipe attached to the water gun in the nearest water tank and then switch on the pump," he says. A single water gun costs sh23m.

FRAUD ALERT!

Do not be duped! Entering the Best Farmers' competition is free-of-charge and journalists are not involved.