



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



REDUCING VULNERABILITY OF BANANA PRODUCING COMMUNITIES TO CLIMATE CHANGE THROUGH BANANA VALUE ADDED ACTIVITIES- ENHANCING FOOD SECURITY AND EMPLOYMENT GENERATION



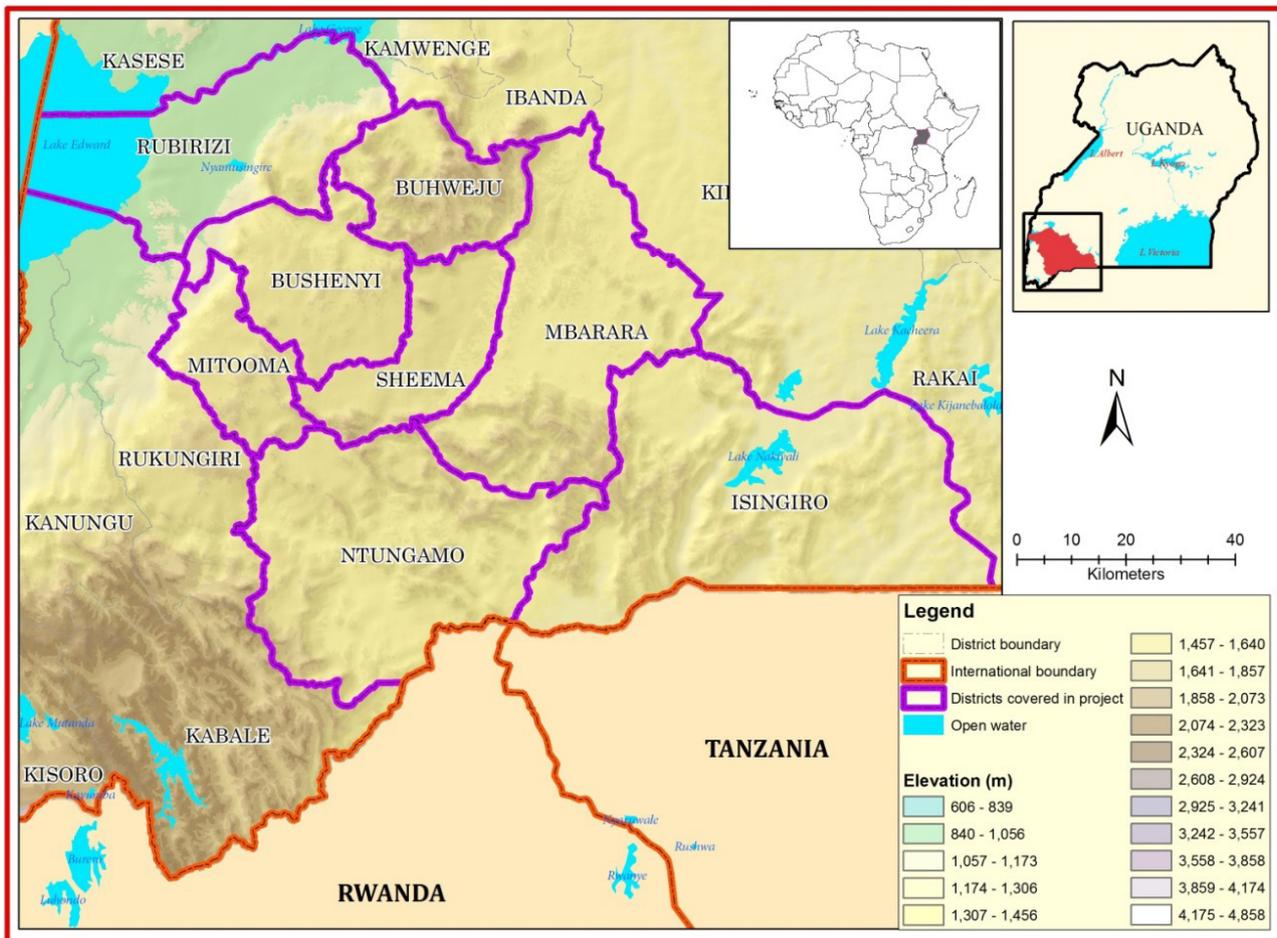
FOREWORD BY UNIDO COUNTRY REPRESENTATIVE MR. BRUNO OTTO TOKWINY

The United Nations Industrial Development Organisation (UNIDO) is the specialised agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalisation and environmental sustainability.

UNIDO's programmatic focus is structured in four strategic priorities namely; (i) Creating shared prosperity (ii) Advancing economic competitiveness (iii) Safeguarding the environment (iv) strengthening knowledge and institutions.

With funding from the Global Environment Facility (GEF), UNIDO is providing technical support to the Government of Uganda (GoU) through the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) to implement the Banana Livelihoods Diversification Project (BLDP) in the districts of Mbarara, Isingiro, Ntungamo, Bushenyi, Sheema, Buhweju, Mitooma and Rubirizi.

UNIDO pledges its continuing support to the government of Uganda towards efforts aimed at poverty reduction, Trade capacity Building, Energy and environment.



Map of project districts

PROJECT BACKGROUND

Context

Climate change affects people directly (e.g. changing rainfall patterns, increasing temperatures) and indirectly, by exacerbating other changes (e.g. crop yields, world and local crop prices, migration and disease patterns and rising tensions over natural resources). In Western Uganda, climate change impacts the growth of key economic sectors as they are dependent on raw materials from climate dependent natural resources and agriculture. The region is considered among the most vulnerable to climate change as the majority of the population is dependent on near subsistence agriculture for livelihoods and food security.

Strategy

UNIDO provides assistance by supporting vulnerable banana-growing communities engage in value addition activities for income generation, poverty reduction and food Security. In order to sustain the banana value chain, the project is supporting a sustainable banana industry through the supply of disease-free banana planting materials, demonstration on the use of banana waste for biogas and as compost for soil fertility and agricultural practices to enhance retention of field and plantation nutrients. In addition the project is promoting improved food safety and quality value added products are produced to improve market access and increase incomes in the beneficiary communities.

PROJECT INTERVENTIONS AND IMPACT

Intervention 1: Increasing access to clean banana planting materials

In November 2017, the project supplied 71,000 disease free tissue culture banana plantlets to 200 farmers to establish 156 acres of banana mother gardens in the districts of Bushenyi, Mbarara, Ntungamo, Isingiro, Sheema, Mitooma, Rubirizi and Buhweju. These farmers are now supplying other farmers in their communities. By the end of the project, it is expected that at least 2,500 farmers who are vulnerable to climate change will have benefited from this intervention.



Image 3: Dr Kephah Nowakunda, the Team Leader at National Agricultural Research Organisation (NARO) explains that at this stage, the plantlets are ready for planting in farms. It takes about six months for the plantlets to grow to this stage.



Image 4: *Mr Stanley Rwabukye, a banana farmer in Bushenyi district, is one of the recipients of the clean tissue culture plantlets. This was one month after he received and planted the bananas.*



Image 5: *This is Ms Joy Kagaaju's banana plantation, six months after she received and planted the tissue cultured plantlets. Ms Kagaaju is one of the beneficiaries in Ntungamo district.*



Image 6: This is Mr Stanley Rwabukye and his wife Ms Margret Bafuruka in their banana plantation, 14 months after they received and planted the banana tissue cultured plantlets. The bananas are now close to maturity

Intervention 2: Supply and installation of Biogas systems for Households and institutional use

At least 200 Banana farming Households and seven community-based processors have received bio-digesters to produce biofuel from banana waste. Farmers are utilising the systems for cooking, heating and lighting as well as a source of manure for their plantations.

Testimony from Asaph Kubiriba, Institutional Biogas beneficiary

“I am a small scale wine producer. I received an institutional biogas system and energy saving cook stoves from the project. For the last seven months, I have been using biogas. This is a big improvement compared to the old way we were doing things. Previously, I would buy two trucks of firewood which would last about three months. The stoves that I am currently using are highly energy efficient and combine both biogas and firewood. When the gas is low, I use firewood and my estimate is that one truck of firewood will last a whole year. This means I will save money and at the same time save the environment,” - Mr Asaph Kubiriba.



Image 7: *The Biogas Cook stoves provided by UNIDO for institutional use*



Image 8: *Mr Asaph Kubiriba, demonstrates the use of the Cook stove*



Image 9: For institutional use, the project provided biogas pits of 45m³ and 30m³

Asaph has been spending close to Ush 1.2 million (Approximately USD 320) on firewood annually. With the new system, he can spend Ush 150,000 (Approximately USD 40) a year and save up to USD 280 a year.

Testimony from Ms Naomi Namara, Household Biogas beneficiary

“My cooking has become very easy. I use biogas the whole day. Previously, we were using a lot of firewood, charcoal as well as an LPG gas which is very expensive. With this biogas, I no longer have to worry about spending money. Once in a while I still use firewood but even then I use much less firewood compared to what I was using in the past,” - Ms Naomi Namara



Image 10: Ms Naomi Namara says the use of Biogas has greatly improved her cooking. It is cleaner and healthier than firewood

Testimony from Mr Frank Berutsya- Biogas beneficiary

“I am utilising the bio-slurry to feed my pigs and to add manure in my banana plantation. For the last four months, I have been mixing the bio-slurry with maize bran and my pigs are a lot healthier. I am planning to buy more pigs,” - Mr Frank Berutsya.



Image 11: Mr Frank Berutsya explains how the additional use of bio-slurry as animal feed has improved the health of his two pigs



Image 12: Mr Berutsya explains that when using bio-slurry as manure, the farmer has to measure the distance between the plants and then bury the manure in the middle of the two plants. This way, the roots reach out for the nutrients which make the plants grow faster and produce bigger bunches.

Intervention 3: Upgrade of banana processing facilities

The project has upgraded nine banana processing facilities including four for processing banana flour, chips and slices; four wine processing facilities; and one juice processing facility. This intervention is aimed at supporting the vulnerable communities to engage in income diversification through value addition activities.

These facilities will also serve as training centres where people from the communities can learn how to process the different products and be further incubated.

a) Facilities for processing banana flour, chips and slices

The four facilities which have been upgraded are spread out in the districts of Mbarara, Ntungamo and Isingiro.

Previously, these groups were operating from dilapidated structures and were using rudimentary equipment for processing. The newly constructed buildings are in conformity with standards set by the Uganda National Bureau of Standards and have been fitted with the necessary equipment. To ensure income security, the upgraded facilities are aggregating processors comprising women, youth and the elderly to who come together and collectively do the processing and marketing of their products.

With these, the processors can add value to their products, produce larger quantities, access bigger markets including international markets and earn more income.

Through this intervention, the project expects to increase production volumes for each facility from 200 kg per month to 1000 kg per month. In monetary terms, this translates to Ush 10 Million (Approx. USD 3,700) per month from the previous income of approximately USD 700 per month.



Image 13: This is the newly built processing facility for Fruits of the Nile Farmers' Association in Mbarara district



Image 14: *This is the newly built processing facility for Rwentoobo Farmers' Association in Mbarara district*



Image 15: *This is a fruit processing facility for Rutunguru Cluster Farmers Association in Ntungamo district*



Image 16: *This is the newly built processing facility at Ankole Foods Ltd, a women's group in Isingiro district*



Image 17: *These metallic tables are some of the equipment installed in the processing facilities*



Image 18: All fruit processing facilities have been fitted with metallic shelves for storage purposes

b) Upgrade of wine processing facilities

Four wine processing facilities have been upgraded to meet national standards. These are in Mbarara, Isingiro, Sheema, and Bushenyi districts.

The wineries will also act as incubation hubs and provide training for other smaller wine processors.

With this intervention, each wine processing facility is expected to increase production to 20,000 Litres per month.



Image 19: This is the new wine processing facility constructed in Mbarara district



Image 20: *This is the upgraded wine processing facility in Bushenyi district*



Image 21: *This is the Upgraded winery in Sheema district*



Image 22: *This is the old structure which was used as a wine processing facility at RockHill Winery in Isingiro district*



Image 23: *This is the new wine processing facility constructed by in Isingiro district*

c) Upgrade of Juice processing Facility in Bushenyi

In Bushenyi district, the project procured and installed banana juice processing equipment worth USD 120,000. A water purification system is also being installed at the facility. With this intervention, banana juice production is expected to increase from 5000Litres to at least 20,000 Litres a month.

The equipment installed has been procured with funding from the People of Japan through the African Agribusiness and Agro-Industries Development Initiative (3ADI).

The technologies and equipment provided will improve efficiency and add value to traditional processing methods.



Image 24: With this type of equipment, the facility can now produce more banana juice and also provide a market for other primary processors



Image 25: This is the bottle cleaning compartment



Image 26: A female worker loading bottles at the factory



Image 27: This is the old manual technology that was used for bottling juice. With the new technology, much of the work is automated.



Image 28: *Manual bottling and labelling of juice*



Image 29: *The project is installing a new water purification system to replace the old one in this picture.*

Capacity building of banana farmers and processors

The project has and continues to provide training to banana farmers and processors in a number of areas including good farm management, Good Hygiene and Manufacturing Practices, Standard Operating Procedures and Hazard analysis and critical control points for processors.

The project working with other partners like the Uganda Industrial Research Institute (UIRI) and the Uganda National Bureau of Standards (UNBS) conducted training for 30 processors on Good Manufacturing and Good Hygiene Practices. The group comprised 11 women and 19 men.



Image 30: *The processors have been trained on Good Hygiene Practices*



Image 31: *This is part of the training that was conducted for the processors at Uganda Industrial Research Institute (UIRI)*

After completion of installation of the juice processing equipment at Forest Fruits Foods in Bushenyi district, Afribanana Products Ltd was contracted to train 37 processors in GMP and GHP and to develop Standard Operating Procedure and HACCP manual for the facility. Those trained comprised both primary and secondary processors from the project areas including 15 women and 22 men.



Image 32: *These are the processors after being trained on GMP and GHP in Bushenyi district*

In order to increase farmers' resilience to Climate Change effects, the Ministry of Water and Environment and the Ministry of Agriculture, Animal Industry and Fisheries have conducted 16 trainings in the project districts. In total, 640 farmers have been sensitised.



Image 33: *Training of banana farmers on good agronomy practices in Ntungamo district*



Image 34: *Banana agronomy training in Rubirizi district*



Image 35: *Training of banana processors in Bushenyi district*

Project participation in National events and exhibitions



Image 36: Some of the project beneficiaries at the Source of the Nile Agricultural trade show in Jinja



Image 37: Project beneficiaries participate at the farmers' day exhibition in Kampala in 2017



Image 38: L-R Mr. Bruno Otto, UNIDO Country Representative; Hon. Jenipher Namuyangu, the Minister of State for Local Government; Ms Rosa Malango, the UN Resident Coordinator; Hon. Mary Karooro Okurut, Minister in Charge of General Duties in the Office of the Prime Minister at a stall of one of the project beneficiaries at last year's UN Day celebrations

ACKNOWLEDGMENTS

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