



# National Agricultural Research Laboratories- NARL

## E-bulletin June 2024

A quarterly E-bulletin highlighting News from NARL and stakeholders: Collaborators, NARO Institutes, Agriculture sector, Donors and the Public and Policy Stakeholders Contacts: P.O.Box 7065, Kampala Tel +256414661977, Email: [director.narl@naro.go.ug](mailto:director.narl@naro.go.ug) website [www.narl.go.ug](http://www.narl.go.ug) tweeter @NarlKawanda, Facebook NarlKawanda



### *Message from the Director of National Agricultural Research Laboratories (NARL)-Kawanda*

*Dr. Robooni Tumuhimbise,*

It is my great honour and pleasure to share with our esteemed stakeholders the progress made in research and development at NARL during the financial year 2023/2024.

Firstly, established in 1934, NARL has shaped agricultural research in Uganda and still momentously contributes to the development of the agricultural sector and socio-economic development of the country. Throughout its journey, NARL has evolved in mandate and structure to develop novel agricultural technologies and innovations that solve agricultural challenges of the times. Our current mandate is to carry out agricultural research of a strategic nature and national importance and offer development services under five key research areas: banana; food biosciences and agribusiness; bio systems and agricultural engineering; soils, environment and agro meteorology; and biodiversity and biotechnology.

In 2023-2024, many plans were executed by NARL staff through management oversight of the Advisory Committee, management of the Director of Research and Program leaders with support from administration units. Together we worked towards increasing total factor productivity and access to agricultural research products and services for inclusive markets and industrial growth; working through all the five NARL research programs.

During the FY 2023-2024, NARL registered significant progress in Technology Generation, Technology Promotion, Research Partnerships and Strengthening Agricultural Research Capacity. Albeit there are challenges facing agricultural research for which we are learning lessons and hope to strive for more progress in the new Financial Year 2024-2025.

We have since learnt the need for multidisciplinary research and involvement of target beneficiaries right from planning stages is key. We have equally observed that there is need to increase partnerships with the private sector, especially grain traders, farmers, processors, and innovators. Exploring this potential may result in cost sharing during technology uptake which can improve dissemination and adoption of technologies.



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On the human resource front that executes NARL's mandate, we report changes. New staff joined NARL and we bid farewell to retired staff who had served their terms of work including the former Director of Research Dr. Wilberforce Tushemereirwe and welcomed Dr. Robooni Tumuhimbise once a senior scientist at NARL as the new Director of Research. Similarly new Program leaders have joined leadership functions at NARL and other Scientists and support staff. Regular meetings and communication platforms have been strengthened for easy correspondences and feedback among staff with in Kawanda station, Namalere and at the Plant Genetic Resources Center in Entebbe. Working committees have been instituted to offer support and shared synergies at work and build stronger teams of staff at NARL.

With the mission to innovate for sustainable agricultural transformation, NARL working with collaborators and partners has evolved from the 1937 year 630-hectare rubber estate then the research division of the Department of Agriculture that conducted research on coffee, tea, cotton and native food crops; to becoming one of the 7 National Agricultural Research Institutes under NAR Act of 2005. NARL hosts the Agricultural Research Information Service (ARIS) of NARO, Korean Project on International Agriculture (KOPIA), and International Center for Tropical Agriculture (CIAT), International Institute of Tropical Agriculture (IITA).

In this issue of E-Bulletin, we share with you the highlights from the Buganda kingdom Agriculture and Cooperative exhibition in Bulemezi held at the Kasana- Luwero spots grounds and a success story of the ripple multiplier impact of a Banana grower in Lira beaming with financial satisfaction, growth of a banana SACCO and food security as a result of cultivating bananas. I wish you nice reading!

Thank you

The Giant is Awake!

Dr. Robooni Tumuhimbise DIRECTOR OF RESEARCH, NARL-KAWANDA



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### The National Agricultural Research Laboratories (NARL Kawanda) has registered progress in its research Areas in the Financial Year 2023-2024



*Left: Engineers from NARL with fish farmers in Kaliro stand in front of the safe fish smoking kiln during an impact assessment activity. Middle: Farmers being instructed on soil and water conservation at a training at Awoja Riverside farm. Right: Government extension officers from 9 districts trained by NARL Kawanda and ICIPE staff to combat Fall Army Worm using the push-pull technology biological control in Soroti district.*

NARL is progressing towards attaining its research milestones From technology generation, technology promotion, building research partnerships and strengthening agricultural research capacity, the Institute has disseminated potential agricultural research results executed through the five programs of Banana, Food Biosciences and Agribusiness (FBA); Bio systems and Agricultural Engineering (BAE), Soils, environment and agro meteorology(Soils program); and Biodiversity and Biotechnology (BBP) respectively.

Market-oriented products, improved agricultural technologies and innovations, research products and services for the industry, food and nutritional security, developing markets under product lines, genetic resource conservation and developing and updating soils, crops suitability maps and fertilizer blends are poignant results delivered by NARL in the financial year.

Technology promotion focused on establishing improved technology demonstrations at the Public Agricultural Research Institutes (PARIs), empowering stakeholders, promoting market-led demand driven technologies for youth businesses and developing as well as promoting improved technologies. The research partnerships have focused on supporting multi stakeholder agricultural innovation platforms, fostering functional Public Private Partnerships, managing new and existing as well as ongoing research partnerships for technology generation and promotion, and fostering research partnerships for on-farm trials. It has been noted that one critical aspects that has promoted delivery of NARL's results has been the strengthening of agricultural research capacities for infrastructure, human and financial resources and the knowledge and information resources.



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Under Technology development, the oldest NARO Institute has delivered 4 market oriented products generated in Banana and FBA programs while 12 improved agricultural technologies and innovations have been developed and adopted in Banana, FBA, BAE and BBP respectively. 9 research products and services for industry have been developed in Banana, FBA and BBP; research products and services for food and nutritional security have been generated in Banana and Soils research. 9 gene banks have been established and maintained in BBP; a range of genetic resources have been conserved for sustainable utilization in BBP. From Soils program, 2 crop suitability maps digitized and updated and 2 fertilizer blends have been developed.

Under Technology Promotion, Banana program set up improved technology demonstration fields at PARIs and more than 500 stakeholders were empowered in Banana, FBA, BAE, BBP did 4 market-led demand driven technologies that were promoted by the youth while the Soils program have developed and promoted more than 10 improved technologies respectively.

Under Research Partnerships, 6 multi-stakeholders agricultural innovation platforms have been supported by f Banana program, FBA, BAE and BBP; 33 functional PPPs have been established with 30 in FBA, 1 for Banana program and 2 for Soils program respectively. More than 50 research partnerships for technology generation and promotion have been established across the 5 Programs of NARL. In the area of strengthening agriculture research capacity, Infrastructure development has involved constructions of 1 BB laboratory, maintained 3 Banana research laboratories and 2FBA field demonstrations.

### NARL Technologies awe stakeholders at Buganda Kingdom Agricultural Exhibition in Luwero-Bulemezi



*Left: Katikiro receives a cheque from Ms. Jane Barekye towards the Emwanyi Telimba programme. Middle: Ms. Eva Zaake from PGRC attends to inquisitive show goers in Luwero. Right: Key stakeholders at the training of farmers in Cooperatives, Banana management and processes of obtaining agricultural loans from the Credit Facility of Bank of Uganda at the agricultural exhibition in Luwero.*

The Katikiro of Buganda has called upon the people of Luwero and greater Bulemezi County of Buganda to seek more knowledge and skills for better food production. Katikiro emphasized that the



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people of Bulemezi should listen and follow advice from Kabaka regarding working together in cooperatives to enhance productivity of farms for better yields.

“In the past cooperatives did tremendous work in this country in supporting farmers. We want to replicate what was done in the past so that those engaged in farming can realize better yields due to better knowledge and skills.”, He urged all people in Luwero to come to the exhibition and learn new things which they will put in action. Five NARO Institutes with in Buganda Kingdom exhibited technologies from agricultural research. At the NARO-NARL Kawanda booth it was a nexus of seed conservation through the plant genetic resource centre (PGRC), soil fertility management and improved banana varieties, that attracted many people to the booth and a special training session on bananas was undertaken due to demand for information on disease resistant banana varieties from NARL.

The 4 day event that ran from 13<sup>th</sup> to 16<sup>th</sup> June 2024 was graced by attendance of Ministers from Buganda kingdom, Chiefs and officials from the central government of Uganda. At the training on Agronomy of bananas Wasswa William, a Banana Technician from NARL advised farmers that more effort is needed in cultivating bananas because there are concerns that are beyond finding the right variety of the banana. “ Farmers should maintain soil fertility, good agronomical practices like mulching. Weeding and water conservation. Any banana variety needs the best agronomic practices for it to yield highly.”

At the same event, the Buganda kingdom received 413 million shillings from President Yoweri Museveni as contribution towards “*Eemwamyi Telimba*” program run by Mengo government. The cheque was handed over to Katikiro Charles Peter Mayiga by State house comptroller Jane Barekye. President Museveni commended the Katikiro of Buganda for fighting poverty in the Kingdom through promotion of coffee growing. He welcomed the Kingdoms interest in coffee but also cautioned that coffee is only a beverage therefore food crops, fish and livestock should equally be promoted because people require food daily.

The Minister of Agriculture Cooperatives and marketing in Mengo Hajji Hamis Mukasa Kakomo was glad that the progress with exposure to new technology, networks and markets was becoming stronger. “The efforts of Buganda wealth creation started in 2022 in Busujju County and later in Kyaggwe County in 2023 and this year in Bulemezi County”. The *Owekitibwa Omugeere* , Mr. Semugoma Samuel the County Chief of Bugerere was impressed with the advancement of research on cooking bananas (*Matooke*). He observed that “For farmers to have a banana plantation lasting for more than 13 years is a good advancement.

Many banana varieties were destroyed by pests and diseases but NAROBAN 5 gives us hope that there will be food in many households for our people to consume and sell surplus”. Bulemezi farmers commended NARO -NARL Kawanda for the good work done in research for bananas, seed conservation and soil fertility enhancement and water management.



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### Hundreds Trained in Best Agronomic Practices of Banana in Lira district



*Left: Dr. Alex Barekye Program leader of Banana stands with Dr. Laban Turyagyenda Director of Research at Ngetta ZARDI address farmers at the training. Middle: A session on fertilizer application to Banana plant during the training. Right: Participants who attended the training in Ayac village, Amac Lira district*

It was a resounding show of progress, hard work and demonstration of farmers' interest in growing Bananas in Lira. On Friday 17<sup>th</sup> May, 2024 at Mr. Olobo Patricks' farm in Ayac village, Ayac Parish, Amach Sub County in Lira district, more than 300 banana farmers, seed multipliers and advisory service providers from the Lango region converged to show case and learn more about banana agronomy. The event organised by the National Agricultural Research Laboratories-Kawanda support of USAID's Feed the Future Agriculture Research Activity, aimed at spurring banana production and commercialisation. The farmers were trained in agronomic practices including how to plant, how to prepare clean planting materials, how to identify and manage banana diseases and how to maintain soil and water nutrition. The event also created a platform for local seed businesses to promote their products.

Speaking at the event, Dr. Priver Namanya Bwesigye, a principal research officer with NARO under the National Banana Research Programme (NBRP) said this event was a climax of an activity that started more than three years ago. This project is coordinated by the NBRP under NARO in partnership with Ngetta Zonal Agricultural Research Institute (ZARDI)-NARO's technology transfer Institute in the Lango region and Lira Distich Local Government production department.

"We are working in four sub Counties in Lango and Acholi region and our primary objective is to support the communities to attain food security. With most crops grown in Northern region being annual crops, the matter of food security in the context of drought and diseases was very prominent and we decided to introduce *Matooke* varieties which are improved for pest and diseases resistance and tolerant to drought," she explained. Dr. Namanya explained that NARO came to Amach Sub-county because it was one of the areas that was already growing bananas.



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“For the purpose of expanding plantations, we have trained community-based seed entrepreneurs, who will multiply the planting material (banana seed) in a manner that is of high quality, not infested with diseases as a business. This host farmer, is one of the seed multiplier beneficiaries,” she added.

Mr. Olobo Patrick, the host farmer praised NARO for the intervention in Amach Sub-county. He commended NARO’s improved *Matooke* varieties for saving him during the corona pandemic. “I decided to concentrate on banana farming because it gave me food during the corona pandemic especially the M27 banana variety I received from NARO.” At the beginning of the project in 2020, the programme-initiated promotion of local banana production and developing seed supply systems in Northern Uganda. This involved building capacity of farmers in banana production and local seed businesses. From this intervention, farmers testify of improved household income. “We have gone far in earning money which we use to pay medical bills, school fees and we now have a better living standard,” says Mr. Olobo. He adds that “I can proudly tell you that because of banana, the lowest amount of money I can have in my pocket is Ug Shs 100,000 per week,” Mr. Olobo compares harvests from his banana plantation to his other crops of sorghum, cassava, maize and sunflower and the difference is huge. In 2023, he planted 20 acres of maize and it gave him only 53 bags from the expected 300 bags of produce. And yet in the same year, between June and November, he earned Ug Shs 9 million from bananas mainly from the FHIA17 and M27 banana varieties.

Apart from conducting trainings in agronomic practices, NARO has also helped farmers in the region to organise themselves in a farmer association to help them access better bargaining prices for their products, access flexible and affordable financial services and has also widened their market base. The farmers were able to have it officially registered as a cooperative called Amach Bananas Producers and Seed Marketing Savings and Credit Cooperative Society limited in 2024.

Dr. Namanya says the cooperative members have established their leadership and believes the improved technologies introduced in the region will be owned by the communities with support from their SACCO and will have a legacy that goes beyond the project.

### Upcoming Events

1. NARL Scientific Review Workshop with the theme “*Contribution of NARL to Uganda's Socio-economic Transformation*”. Date and Location: Thursday 25<sup>th</sup> July 2024 to Friday 26<sup>th</sup> July 2024, NARL –Kawanda main conference hall.
2. 30<sup>th</sup> National Agricultural Show with the theme “*Innovating pathways to farm business led Agro-Industrialization*” From the 26<sup>th</sup> July to 4<sup>th</sup> August 2024.