

# Local innovation supports the agroecology transition in East Africa

## An introduction to Prolinnova-Uganda

Prolinnova-Uganda is a multi-stakeholder national platform established in 2003 as part of the global Prolinnova network, which 'Promotes Local Innovation in agroecology and natural resource management'. The platform Secretariat is hosted by Environmental Alert (EA), a civil society organisation with a mandate covering sustainable agriculture, environmental governance and community-based natural resource management.

The platform deliberately brings together actors from across the agricultural research and development (ARD) spectrum. Examples of government partners include the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the National Agricultural Research Organization (NARO), Science, Technology and Innovation (STI) Secretariat, Office of the President, and the Uganda National Council for Science and Technology (UNCST). At the same time, farmer representation is anchored by the Uganda National Farmers Federation (UNFFE) and the Uganda Local Authorities Association (ULAA). Civil society partners include Kulika Uganda, PELUM Uganda, the Development Network of Indigenous Voluntary Associations (DENIVA), Africa 2000 Network and the Centre for Integrated Development (CIDEV), while Makerere University contributes academic research capacity to the platform. The platform utilises the Participatory Innovation Development (PID) approach. This is a process that combines the local knowledge and innovativeness of farmers, the scientific expertise of researchers and the field experience of extension workers and other community-based stakeholders to co-develop practical agricultural solutions that are owned and driven by the communities in which they will be used.

## Opportunities provided by the Agroecology Fund

Prolinnova activities in Uganda are currently supported by the East Africa Region Agroecology Fund (EARAF) through the project 'Strengthening grassroots-led agroecology practitioners for climate resilience and policy dialogue in Kenya and Uganda'. The project is coordinated by EA, in partnership with World Neighbors and INADES-Foundation in Kenya, and with local partner Kulika Uganda. In Uganda the project involves farmers who are part of the Kikandwa Environmental Association (KEA) and the GADES Organic Association, both of which practice agroecology, have linkages with farmer innovators, and are based in Central Uganda. Through working with farmer innovators, the project seeks to empower grassroots actors to promote agroecological innovation, knowledge sharing, and inclusive policy change, enabling local communities to build climate-resilient, sustainable, and equitable local food systems. By March 2026, the Uganda team had documented

13 innovations (covering crop and livestock production, food processing, and environmental protection and wellbeing). They selected three for PID through a participatory process in which innovators pitched their innovations to a multi-stakeholder committee.

## Exploring innovation related to Agroecology

Through the EARAF-funded project, it has been possible to document cases of local innovation that demonstrate how farmers' innovations can support the transition towards agroecology. The three cases shared here provide a view into the lives of innovators and the priorities that drive them.

### Case 1: A visit to Ms Esther Ssebaggala to see her quail egg innovation

#### Enterprise through innovation

Esther Ssebaggala is a young woman farmer from Kikandwa Sub-county, Mityana District. A visit to Esther's quail enterprise revealed a story of resilience, creativity, and continuous adaptation. What began as a small venture to produce eggs to assist with her parents' health problems led to her selling fresh eggs, which later transformed into a diversified, innovation-driven business venture responding to market gaps, logistical challenges and customer needs.



Esther and Wanyama discussing the quail egg enterprise.

Credit: David Ssozi

When Esther's parents' health improved, they began sensitising fellow farmers, including their immediate neighbours and the community at large, about the magic quail egg innovation. Media outlets (including radio, television and print) showed interest and interviewed household members about this innovation. According to Esther's mum's story, the quail eggs made them better because they are 100% organic and produced under agroecological principles.

Esther shared with pain the profound experience that informed the evolution of her enterprise. When she had a loss of about 20 trays of eggs enroute to the market, she realised she had to rethink her entire business model. Fresh eggs, with their one-month shelf life and fragility, were no longer viable for long-distance markets. This situation led to the development of egg powder, the product that now defines the enterprise's identity. The powder extends shelf life to five years, eliminating transport losses, and can be consumed in porridge, tea, juice, or even capsules without losing nutrients. The enterprise's market reach is gradually expanding. The local village remains the core customer base, but the business is gaining national visibility through a website (<https://www.gadesorganicfarm.com>), TikTok and LinkedIn. Supply to supermarkets has been challenging due to spoilage, reinforcing the shift towards powder products. Today, the business boasts five income streams – fresh eggs, powder, porridge additives, capsules and quail manure (droppings) used as fertiliser. Each new product is a response to a challenge, a customer need or a market opportunity. Esther has plans to produce chewable tablets and cosmetics from the powder, thanks to her training in pharmacy at Kampala School of Health Sciences and her soon-to-start Diploma course at the Uganda Allied School of Health Sciences.

Pricing remains a sensitive issue for the enterprise. Eggs are sold at 25,000 UGX (approximately USD 7) per tray of 25 eggs, compared to hybrid chicken eggs, which go for 12,000 UGX (approx. USD 3.5). Esther also sells live quails, with one-day old chicks priced at 3,000



Quails in their coop.

Credit: David Ssozi

UGX (approx. USD 1) each and one-month old chicks priced at 10,000 UGX (Approx. USD 3) each. Quail egg powder is sold at 30,000 UGX (approx. USD 8) for 50 grams, which some customers consider expensive. Esther sees the tablets as a way to reduce the perceived cost and make the product more accessible. The business has recently achieved the milestone of breaking even on the egg powder product line. Initially expensive to produce, the powder now generates profit, though fresh eggs remain the main revenue source. However, financial stability is still threatened by transport losses, predation, theft and the farm's distance from the major markets. Addressing these challenges is essential for sustainable scaling.

Networking and partnerships have played a key role in the growth of the enterprise. Mentorship from YMCA comprehensive vocational institute, in collaboration with Women's Enterprise Network for processing and quality testing and support from the Ministry of Gender, Labour and Social Development (GoLSD) and local leaders have strengthened the business. Churches and community leaders also serve as communication channels. Collaboration with government bodies and NGOs continues to build legitimacy and open the door for policy dialogue and future support. The farm is increasingly

becoming a learning and tourism centre, attracting trainees, farmers and curious visitors who visit the enterprise to learn about breeding quails and processing their eggs. Despite the enterprise's impact, many local leaders remain unaware of its community value, and efforts are underway to engage them as champions.

### *Innovating to solve challenges*

Innovation is at the heart of Esther's enterprise. As an innovator, Esther is constantly encouraged to ask, "What else can I create?" This mindset has driven the exploration of new product lines, the utilisation of waste, and the adoption of cost-saving strategies.

Supporting Esther's innovative quail egg enterprise is a production system that demands full attention. The farm currently outsources egg incubation for hatching to a facility two hours away. Esther hopes to acquire a solar-powered incubator to reduce costs and improve efficiency, while also training others to replicate the process locally. This case is where Prolinnova's PID and farmer experimentation approach come in handy, assisting Esther in designing and experimenting with different forms of incubators based on local knowledge and resources to minimise the cost of acquiring factory-made products. Feed is another challenge for Esther, being her highest cost, and she is exploring

cheaper, locally available alternatives, such as cowpea concentrates and black soldier fly larvae, while collaborating with local farmers to secure a grain supply.

Esther's enterprise is also a perfect case study for new thinking within the Prolinnova community of practice about how to support innovators in increasing the benefits they derive from their innovations through commercialisation. The quail egg innovation serves as a perfect example of grassroots innovation turning setbacks into opportunities through bold experimentation and the building of a business blending nutrition, health, and entrepreneurship – and all of this from a tiny, otherwise wild bird that many would carelessly disregard.

## Case 2: A conversation with local innovator, Ms Margaret Nabatanzi

Margaret Nabatanzi is a local innovator from Kikandwa Sub-County, Mityana District, Uganda. During a field visit with the SRC Coordinator, Jacob Wanyama, Margaret was found seated outside her kitchen, sorting through a small pile of dried *Amaranthus* leaves. The air smelled faintly of roasted, ground grain. When she looked up, she smiled and

said, “You’ve come at the right time. I was thinking about how all this began”. We asked her how long she had been working with *Amaranthus*. She laughed softly, shaking her head as if surprised by the years that had passed. “Since 2007”, she said. “Back then, people didn’t believe you could make much from dodo [as it’s known in Luganda, the local dialect], but Prolinnova came earlier – in 2003 in Uganda and later in Kikandwa in 2006, during which they encouraged us to look at our crops differently.” She paused, picking up a handful of seeds. “From the small plant, I now make more than twenty products. Can you imagine? Twenty! Flour, porridge mixes, snacks, and even health drinks. All from what we used to treat as a simple vegetable.”

The guests asked her what kept her going all these years. “My family”, she replied, without hesitation. “Innovation must begin at home. My children know every step of this work. I trained them myself. If I am away, they continue. That is how you keep knowledge alive,” She added, almost proudly, “Prolinnova always said innovation should support the home. We took that seriously.”

As they talked, a sudden drizzle began tapping on the roof. Margaret

looked up and sighed. “This rain”, she said, “it has been disturbing everything. You plan to dry leaves, then the clouds come. You want to meet people, but the paths are muddy”. She shook her head, then smiled. “But what can we do? We live with it”. She shared stories of mornings when she woke up ready to work, only to find the compound soaked. “Sometimes I just sit and make coffee”. We talk: we wait. Life continues”. Her stories drifted into small, intimate details – someone teasing her about an old phone, a neighbour sharing jokes as they shelter from the rain, the rhythm of daily life shapes when and how innovation happens.

At one point, she leaned closer, lowering her voice as if sharing a secret. “You know, some of the tools I use came from friends abroad”, she said. “Charging devices, small machines...things we cannot find here”. She described the challenges of getting them across borders: delays, questions, and long waits. She recalled how Prolinnova has been with her all this time, providing her with advice on improving her products and connecting her with relevant support organisations. “Without these linkages and relationships, some of this work would be impossible”, she said.



Ms Margaret Nabatanzi explaining her Amaranth innovation.

*Credit: David Ssozi*

She laughed again, remembering a moment at the border. “They looked at my things and asked, ‘What is this for?’ I told them, Amaranthus! They didn’t believe me.” As the rain grew heavier, Margaret began humming a tune. When asked about it, she explained it was a traditional song about rain. “We sing it when the rain disturbs us”. It helps us accept what we cannot change”. Her voice carried the warmth and confidence that emphasised the fact that innovativeness is a skill and technical process, but also a lived experience, shaped by generations and experiences, driven by the determination to find solutions to one’s own and the community’s problems.

Before the guests left, Margaret handed Jacob a small packet of Amaranthus flour. “Take this, she said. When you use it, remember that innovation is not only about the product. It is about people, families, stories and the knowledge we carry with us for generations”.

### Case 3: Walking the journey of the Sycamore Fig Tree innovation with Mr Bagenda

Jacob Wanyama (ESA SRC), accompanied by partners from Environmental Alert and Kulika and long-time Prolinnova Uganda member, John Kaganga, arrived at Mr Bagenda’s homestead in Kikandwa Sub-County, Mityana District in the late morning. The air was still, cool and fresh under the shade of towering sycamores, with a particular one taller than the rest. Before they even settled down, Mr Bagenda pointed towards the forested slope behind his house and said proudly, “These trees you see in front of you have fed my soil for decades”. As the guests walk with him through his forested farm, he bends to pick up a handful of dry leaves that litter his well-maintained crops and lets them crumple between his fingers. “You see how fast it decomposes? That is why my bananas and coffee have never lacked nutrients and look very good, as you can see”.

He explained that the nutrients in

the leaves match almost exactly what the coffee tree needs. “In fact,” he emphasised, “it gives up to ninety-nine per cent of the required nutrients”. He revealed that he had discovered this through years of observation and comparison. He guided his guests to an old banana tree that was, amazingly, still productive after 40 years. “Even during drought, this one survived because of the fig tree”, he tells us while tapping the trunk affectionately.

As they walked, he led them to a small shed where bottles of clear liquid were neatly arranged. “This is the water from the roots of the fig tree,” he said. He explained that the water treats skin rashes and supports detoxification. He then showed them the dried fruit powder too, light brown, finely milled, and stored in airtight containers. “This powder can last for 2 years and is used for medicine. I am improving the packaging to extend shelf life and get it to market without spoilage”, he explained. They could hear pride in his voice, not only in his products but also in



Mr Bagenda explains his fig tree innovations.

*Credit: David Ssozi*

the fact that the powder and the water came from his beloved tree, which many people had overlooked.

As they paused near a particularly old fig tree, Mr Bagenda started to speak about its cultural and religious significance. “This is the tree that Zacchaeus, the Tax Collector in the Bible, climbed to see Jesus because he was too short”. He said, smiling. He talks about the sycamore fig tree’s journey from East and Central Africa along the Nile River to ancient Mediterranean civilisations. Standing there, it was easy to understand why he believed the tree could attract tourists to his farm. The place felt sacred – alive with history, ecology and memory.

The guests followed Mr Bagenda into a more densely wooded part of his plantation, where the trees were tall and straight, planted close together. “I plant them like this so they can grow straight up and not spread their branches too much”, he explains. “This way, my crops below can still get sunlight. He shows us how he prunes the canopy, carefully avoiding disturbance to seed production”. He explained that, through curiosity, he had discovered how to produce viable seeds from the tree, which he used to propagate seedlings. “First, I consulted our local forest department to see whether they have any method for producing fig seeds,” he went on to explain. “As it turned out, they had no technique”, he added, smiling to remind us he is as much a scientist as those in laboratories and universities. “So, I took it upon myself to research and experiment until I was able to produce seeds that I used to propagate my trees”. Then he pointed to a damp patch of soil, “the roots of this tree bring water from deep underground. Sometimes they even create springs”. He tells his guests that farmers, including himself, use the tree locally to drill boreholes. “Where the fig tree thrives, underground water is not far”. They notice insects buzzing around the canopy. “They are not pests,” Mr Bagenda explained, “they distract the real pest from coffee”. His approach is not about fighting nature, but rather about working with it.

Back near the homestead, Mr



**Figure 5: Mr Bagenda’s timber house integrated into the trees.**

*Credit: Jacob Wanyama*

Bagenda showed his guests his small processing area, bottles of medicinal water, packets of fruit powder, and notes on future packaging designs neatly arranged on a table. “I sell mostly to local people”, he said, “but when I go to trade shows, people get excited and ask how they can buy more of my products. If I can plant more trees, I can produce more to satisfy the market demand”. He spoke of branding, scaling up, and reaching regional markets. His vision is clear, grounded and ambitious.

Before the guests departed, he took them to a small structure with a simple public megaphone radio setup. “This is our village radio”, he said. “When someone discovers something, we tell the whole community. About 100 to 200 people can hear it immediately. They can then pass the information on to others who may be too far away to get it.” He explained how this system had become a platform for innovators, a way to share knowledge quickly and build collective pride and confidence.

As they walked back towards the house, he became reflective. “The forestry people prefer exotic trees. Even the Chinese funders push for them, but our indigenous trees are powerful”. He

explained that his work is both innovation and advocacy – showing, through practice, what formal institutions have overlooked. As they were still in the process of leaving, he showed them his home, built among the trees, with the trees forming the house’s walls. “I never cut mature trees”, he said. “They protect the house, the animals and the soil”. They also give me fresh air.” As the group prepared to leave, he stood with them under the shade of a sycamore fig while it started to drizzle. “My principle is simple”, he said, “do not fight nature. Work with it.” Looking around – at the forest, the crops, the products, the community radio, the nursery – it was clear that this principle guides everything that Mr Bagenda does. His innovation is not just technical, it is cultural, ecological and deeply human.

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