explain that larger scale farms often rely on a slow composting process, where soil is mixed with compost and other organic materials, which are then left to decay for over a year before they can be used to cultivate crops. However, due to the limited size of his homestead farm, Sanele faced a challenge in waiting for such a long process to take place. As a result, he designed a system of two-layered raised beds.

For the bottom layer of his raised beds, Sanele uses a mix of organic materials readily available around his farm and household. These include vegetable remains (such as decaying cabbages, green peppers, beetroot leaves, and spinach), weeds, mulching grass, cattle manure, vegetable scraps and other kitchen waste such as spoiled food. He layers these materials to promote rapid decomposition. For the top layer of the raised bed, Sanele adds a mixture of soil, compost and cattle manure on top of the organic matter to create a nutrient-rich layer into which he plants his vegetable seedlings. Sanele regularly irrigates the raised beds and the moisture speeds up the decay of organic matter, thus releasing important mineral nutrients. This method allows Sanele to grow his vegetable crops continuously without the long composting periods typically seen on larger farms. This two-layer system saves time and also ensures that the soil remains rich in nutrients, which supports plant growth.

Conclusion

These three innovations show how small-scale crop and vegetable farmers are finding ways to solve their challenges and improve their livelihoods while also taking care of their natural resources. By spending time with communities seeing what people are doing differently, we are able to identify locally appropriate ways that other farmers can adopt and adapt, while also creating awareness about farmers' ability to innovate.

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Farmers find their own solution for combatting sorghum smut

Plant diseases, combined with low soil fertility and the effects of climate change, are the main constraints affecting sorghum production in the Ségou region of Mali. To combat sorghum smut, which is a fungal disease that affects the grain, low-income farmers have developed their own strategies. This is the case with a farmer innovator from Cinzana-Gare, Mrs Wondogo, who was using a solution made from the bark of *Balanites aegyptiaca* (known locally as *Zèguènè*) to combat the disease. She removed the bark and soaked it in water overnight (ie for about 14 hours). She then washed the sorghum seeds in the resulting solution and dried them in the shade before planting them. This local innovation was identified and documented through a project titled "*Improving food and nutritional security and the resilience of rural populations to climate change through farmer innovation in the Ségou, Mopti, and Dioïla regions*", known as PROFEIS-Mali Project, under the umbrella of Prolinnova Mali.

The local multi-stakeholders' platform (MSP) in Ségou, including farmer innovators, selected the local innovation to undergo the participatory innovation development (PID) process in order to improve and share with community members and to move towards mainstreaming the PID approach among agricultural and research development actors. The bark from *Zèguènè* is commonly known to form a natural protective coating to the tree, keeping away insects and other organisms that could attack it. The PROFEIS project technical team raised a concern that widespread bark removal could be a threat to sustainable management of this natural resource.

Therefore, Mrs Wondogo, MSP members and the project team discussed this matter, and a joint decision was made to conduct a joint experiment to evaluate the effectiveness of a solution including leaves and twigs compared to the bark-based solution for combating sorghum smut. The experiment intended to test whether the leaves and twigs would be as effective as the bark, because this would be an environmentally friendly alternative in the fight against sorghum smut. The experimentation involved five farmer innovators that conducted the experiments, agricultural advisors and researchers, and was supported by ADAF/Gallè, a non-governmental organisation based in Bamako and host organisation for Prolinnova Mali. Their role was to facilitate and document the process, including the discussions around the outcomes of the experimentation.

The experiment involved testing solutions that contained either bark, leaf or twig powder. Farmer innovators harvested the different plant materials, dried them in the shade and ground them into powder. The sorghum seed was washed in one of the three solutions before being planted in plots in the farmers' fields using a formal experimental design (500g of powder in 5 litres of water to treat 2.5 kg seed). Farmer innovators set up the experimental plots, sowed the sorghum and monitored the experimental plots, which each covering approximately 125 m². The treatments were evaluated by assessing the 'attack rate' for each treatment before the seed heads reached maturity. After harvesting and drying the seed heads, the different components were weighed to allow for comparison against the control, where the seeds were not treated with any solution. The farmer innovators were responsible for the measurements while agricultural advisors, researchers and the project team from ADAF/Gallè captured and analysed the data for generating the experimentation results.

The results were shared and discussed together with farmer innovators. Unfortunately, Mrs

Wondogo, the original innovator, was unable to participate in the experimentation due to eye problems, but she gave her consent at the beginning for the joint experiment to take place. The results showed that during the season when the experiment was conducted, the attack rate was generally fairly low (on average 3.25 plants attacked out of 80) for all the treatments, including the control. The grain and straw weights were also similar for all the treatments (approximately 730 kg/ha for grains and 2,893 kg/ha for straw). This low attack rate could have been related to the rainfall pattern during the flowering stage of the sorghum crop. Nevertheless, the results appear to demonstrate that the leaves of *Balanites aegyptiaca* were as effective as, if not more effective than, the bark in controlling sorghum smut. This will make it possible to limit the use of Balanites' bark and preserve this scarce environmental resource for these rural communities.

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Farmers inspecting the crop for signs of sorghum smut.

Credit: Bourama DIAKITE

Building our pool of Prolinnova trainers

Prolinnova has seen the need to expand the pool of trainers that can facilitate capacity building workshops for network members, particularly within the African Country Platforms (CPs). This led to a Training of Trainers workshop that was held at Mampuya Centre in *Toubab Dialow in Senegal from 7-17 July 2025. The training was funded by the Schmidt Family Foundation through their 11th Hour Project* and focused on training participants to facilitate trainings for facilitators in local innovation (LI) and participatory innovation development (PID), as well as associated topics.

The seven workshop participants were selected from a range of Prolinnova CPs, namely Scholastica Atarah from Prolinnova-Ghana, Jackson Kadiaka from Prolinnova-South Africa, Martha Opondo from Prolinnova-Kenya, Augustin Oudraogo from Prolinnova-Burkina Faso, Oumi Ndiaye (Prolinnova-Senegal), Abdou Thiam (Prolinnova-Senegal), and Paul Jimmy as Subregional Coordinator (SRC) from West and Central Africa (WCA) platform. The training was facilitated by Djibril Thiam (CP Coordinator for Prolinnova-Senegal), Maggie Rosimo from Prolinnova-Philippines, and Chesha Wettasinha and Brigid Letty, members of the Prolinnova International Support Team (IST).

The content of the training included sessions on clarification of concepts and assignments on how to share concepts within workshops (ie training methods). The training sessions at the Mampuya Centre covered the basics of participatory training methods including participatory rural appraisal (PRA) tools, concepts of LI, PID, multi-stakeholder partnerships (MSPs), local innovation support facilities (LISFs), participatory monitoring and evaluation (PME), and farmer-led documentation.

A key objective of Prolinnova is to see participatory approaches such as farmer-led joint experimentation being mainstreamed into formal agricultural research and development organisations and education institutions such as universities and agricultural colleges. Thus, the programme also covered the

