



Climbing to new heights



Ellen Tuyisenga has the answer. It came to her one day in the field, as she talked with friends about earnings from the previous bean harvest. One lady recounted that she had made more than US\$1,000. Then her husband took the money away, leaving her with nothing.

“I saw how hard the women worked, but they could not make decisions,” she said. “This story added to my frustration. I made a promise to myself that I would form a company, so that as women, we can make decisions and open our own bank account. I wanted to demonstrate that it can be done.”

With support from her husband, she formed the Ibisubizo cooperative, whose name means “the answer.” Today, she is president of Ibisubizo in the hilltop town of Musanze, northern Rwanda. More than 500 other smallholder farmers have the answer too.

While the cooperative’s shelves are stacked high with different bean varieties, 80% of its business consists of supplying high-yield climbing beans, particularly those with increased levels of iron and zinc. “Our motto is

one field, one variety; one bag, one variety,” Ellen says, weighing out beans for a growing queue of customers.

One farmer, who buys climbing beans – the type that climb up stakes like a vine – says she buys beans here to feed her family of four, selling surplus production back to the shop for a profit. “I come here because I know these seeds are all the same variety,” she says. “If I go to the market, the beans are mixed.”

One bag, one variety

If the farmer plants beans from the market, she gets only 4 or 5 kilograms, and she doesn’t know what varieties could be in the bag she is sold. If she buys a sack of climbing beans from Ibisubizo, her yield is around 10 kilograms per harvest – that usually puts twice as much money in her pocket.

In Rwanda, farm sizes are declining, as population increases: By 2100, the country’s population of 12 million is projected to reach more than 40 million. Agriculture is the backbone of the economy, and beans are the leading staple grain legume, accounting for 25% of crop land use.

Beans are also among Rwanda’s top commercial crops, constituting 78% of total pulse production and contributing importantly to diets, nutrition, and income security. High-yield climbing bean varieties – like those sold by Ibisubizo – are two to three times more productive than other varieties.

Today, improved climbing beans are planted on more than half of the country’s bean production area, representing a 45% increase since 1985. In the last decade, the country has been transformed from a net

importer to an exporter (with exports valued at US\$12-20 million), as yields have increased from 0.7 to 1.1 tons per hectare.

Through information-sharing platforms set up by the Rwanda Agricultural Board (RAB) – where groups like Ibisubizo are at the table – women’s participation in decision-making has increased by 38%. Beans also contribute 13,200-22,000 tons of protein per year to local diets.

Being at the table

RAB fosters collaboration between farmers, cooperative groups, the small but growing private sector, research organizations, universities, traders, and international agencies. It is through RAB that Tuyisenge first heard about “innovation platforms.”

These involve regular meetings, in which key decision-makers across the bean value chain discuss improvements or challenges in delivering better beans to farmers. In these meetings, Tuyisenge has a place at the table to influence the future development of Rwanda’s bean seed system.

She now also has Augustine Musoni, head of RAB’s Legume and Oil Crops Program, in her phone book. She contacts him for updates on the best varieties available and improved techniques to boost agricultural production. So, Ibisubizo remains stocked full of quality-assured RAB beans.



“In Rwanda, everybody consumes beans on a daily basis – even at every meal,” says Musoni. “Rwanda has made a breakthrough with climbing beans in terms of the number of farmers growing them. Partnerships make the system strong: with development and research partners as well as farmers.”

As a partner of the Pan-Africa Bean Research Alliance (PABRA), which is coordinated by the International Center for Tropical Agriculture (CIAT), RAB is linked to key partners throughout the bean value chain. According to Louis Butare, RAB’s director general: “We bring together key stakeholders and discuss topical issues – such as technical support and variety traits in demand – to extend our reach. We forge partnerships and linkages across the country to reach farmers in all of Rwanda’s diverse agro-ecological zones.”

Reaching far-flung communities

Since so few farmers have access to certified seed – only 3-5% in some regions of Africa – it is a high priority for researchers to provide farmers with high-yielding, disease-resistant beans.

Louise Sperling, a seed systems expert with Catholic Relief Services (CRS), says delivering improved bean varieties to farmers is vital for enhancing smallholder livelihoods. “Multiplying bean varieties in far-flung communities is definitely a step in the right direction,” she adds.

“But bean farmers are not well served, and getting seeds out to them is a challenge in many parts of the world. Bean seed systems are not well developed compared to other crops – farmers get bean seed in a haphazard way, through NGOs or seed aid or neighbors – but not through sustainable channels.”

Rwanda, notes Sperling, has one of the best breeding programs and strongest community-based seed systems in the region. Through farmer cooperative groups like Ibisubizo, more than 30 high-performance bean varieties were released in the last decade.

“It’s not just about money, it’s also about building resilience and improving nutrition,” says Sperling. The



question is how to get systems in place that can deliver benefits to many different users. Seed systems need to be designed to do that. In Rwanda, I think we are getting there,” she says.

Power in packing small

Low demand and investment in research have been key constraints in developing and delivering quality seed in Africa. Nyiringabo Ignace, chief executive officer of Win Win Agritech Ltd – the first company in Rwanda to commercialize bean seed – explains that PABRA has pioneered this process.

“One opportunity which being part of this network provides is that we get good varieties, we have a lot of choice,” says Ignace. “We have different varieties for different agro-ecological regions of the country, like mid-altitude climbers – and we can choose the best for certain areas.”

Smaller bean seed packs (containing 1 and 5 kilograms) – designed for farmers who grow the crop on plots of less than 0.2 hectares and cannot afford 10- or 20-kilogram packs – are an example of how platform discussions lead to better ideas, tailored to the smallholder client.

“We select based on demand,” says Ignace. Feedback from stakeholders is key.

“Some people prefer the taste of certain varieties, while others want a particular seed size. Certain varieties are in big demand from hotels, while others are the first choice for consumption at home, because the bean coat is softer, making the beans easier to cook.”

Through the PABRA network, seed multiplication companies like Win Win Agritech Ltd get high-quality, high-yielding bean varieties without having to invest in costly and long-term breeding programs. And Rwanda’s national bean program can support seed producers by multiplying breeder seed on a scale that would not otherwise be possible.

Farmers – like those supplied by Ibisubizo – get both higher quality beans and better access to them. “It’s a win-win situation,” says Ignace. Across Africa, PABRA works with around 60 seed companies and more than

430 farmer organizations to ensure that these benefits are sustained.

This success is already being repeated in other countries. Across Africa, 19.5 million households have gained access to quality seed of improved varieties developed through PABRA networks in the last decade. More than half of these contain germplasm from the genebank and breeding program at CIAT headquarters in Colombia. “Biofortified varieties, with enhanced levels of iron and zinc, have been developed with support from the CGIAR HarvestPlus Program, which is jointly coordinated by CIAT and International Food Policy Research Institute (IFPRI).



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