



White gold in Ethiopia: Sowing the seeds



In his hands, Abdul Kadir holds a milky white bean. Ten years ago, he says, it was a rare thing here. But today, it enables him to buy cattle, send his children to school, and build a house. If there's one thing Kadir knows well, it's bean varieties – especially the “white gold” variety that guarantees his income.

“This variety is called Awash 1,” he says. “It yields more than other varieties, and we can get three times more income.” Kadir, one of 2.5 million smallholder farmers who rely on white pea beans for an income, also multiplies bean seeds for other farmers to buy.

The difference between Awash 1 (named after a market town in central Ethiopia) and other varieties, he explains, is that it is well suited to local soils and agro-ecological conditions as well as stringent export market requirements. “This variety performs best in our environment,” he says, adding that the extra investment in improved seed pays off.

“Varieties from other sources are not adapted to the environment and can be susceptible to diseases and pests. This variety is also higher yielding compared with

local varieties,” he explains. Initially, he got the seeds on loan from Ethiopia's National Bean Research Program: Now he invests in them himself.

Two-hundred kilometers away, Mekonnen Kebede, wearing a crisp lab coat, inspects a handful of white pea beans in a dimly lit packing house. Pointing to tall stacks of rigorously checked beans, he notes that 80% are destined for Europe to be processed into the popular baked bean or canned bean.

In the last decade, his company – Agricultural Commodity Supplies, or ACOS, headquartered in Italy – has played a pivotal role in transforming the grain into one of Ethiopia's major exports. Accounting for 10% of the global market, the country is Africa's biggest exporter, and ACOS is the largest supplier.



Sustaining the white pea bean revolution

Kadir and Kebede work at opposite ends of a US\$90 million export value chain, which links farmers in Ethiopia's bean corridor with European consumers of canned beans. Ten years ago, that market was valued at just \$8 million.

Demand for quality white pea beans is higher than ever, says Kebede – an agronomist and contract farming coordinator at ACOS – so maintaining quality is key. Before the advent of Ethiopian-based bean seed companies and seed producers, farmers used to save and plant seed of low-quality, old varieties. Making high-quality varieties available was key for starting and sustaining the white pea bean revolution. Today, the bean business provides employment, food, and cash income across Ethiopia's bean corridor.

“We have close relations with bean researchers in Ethiopia and at the International Center for Tropical Agriculture (CIAT). They do variety development and research that benefits us and our farmers,” notes Kebede. “Now, we have highly acceptable varieties on the Ethiopian market released for production.”

“But we have to work on improving quality, which is the dominant factor in this business,” he says. “We know the demand is there – our customers even come here to assess the bean production, and quality assurance works.”

Keeping beans on the menu

Asnake Fikre, director of crop research at EIAR, says strong partnerships and close collaboration have been central to success.

“This relationship didn't exist before. Farmers could not find quality bean varieties in their local markets, and traders were looking for high-quality beans to export.”

The difference, he says, is in good linkages across the entire bean value chain, strengthened through the CIAT-coordinated Pan-Africa Bean Research Alliance (PABRA) and EIAR. This means bean breeders are linked with farmers to tackle real problems in the field, and exporters can advise which varieties are in demand.

PABRA has linked the efforts of people like Kadir and Kebede across Africa. With more than 350 partners in 30 countries, the Alliance helps the whole range of actors involved in producing beans – one of the most actively traded commodities in Africa – achieve the shared aim of breaking bottlenecks in seed systems.

In Ethiopia, PABRA has worked through EIAR to improve farmers' access to new varieties – from





20 to 75% in the last decade. Improved bean crop management and better supplies of quality seed have helped double yields from 0.7 to 1.4 tons per hectare.

Making history

Back in 1972, a variety called Mexican 142 was released in Ethiopia for commercial canning and became a leading variety. But over time, its quality eroded, prices went down, and traders complained about the high proportion of rejects – around 40%. Limited bean supply was a major bottleneck, which had to be broken.

In 2004, EIAR and CIAT, working through PABRA, called the first of many stakeholder meetings, bringing together bean researchers, extension staff, exporters, traders, and representatives from the Ministry of Agriculture, NGOs (e.g., Catholic Relief Services or CRS), and seed producers, such as Ethiopian Seed Enterprise.

It was time to address key production, delivery, and supply chain problems head on: low seed quality, disorganization along the value chain, and farmers' lack of experience in growing beans. Improved varieties, partners agreed, were an ideal incentive to kickstart productivity.

Kidane Tumsa, head of Ethiopia's National Bean Research Program at EIAR, is a key participant in the PABRA network. Surveying a relatively healthy looking row of white pea beans during the height of a drought, he says that the past decade of work is already paying off.

"We introduce germplasm from CIAT and develop and test the beans in our own breeding program. Each

region has constraining factors, like diseases, insect pests, drought, low soil fertility, and soil acidity," he adds.

Over the last decade, thousands of beans have passed through local trials to ensure they are tolerant to major constraints and meet export standards. Only those that make it over all the hurdles – culminating in evaluation by a variety release committee – make it into farmers' fields.

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To the finish line

PABRA members are working together and in partnership with farmers to breed, multiply, supply, and deliver quality bean seed across Ethiopia.



In the last decade, the number of organizations multiplying improved beans has nearly tripled from 15 to 43.

At the same time, farmers have improved their management practices – for example, weeding three times instead of just once or not at all, investing in fertilizer, and using appropriate seed rates and spacing – to increase their production.

Making quality seed available to farmers was a key first step in boosting bean yields. But engaging partners – including government agencies, NGOs, and farmer organizations – has also been essential for impact. And there is more to do to ensure that quality beans reach the export market.

Robin Buruchara, CIAT's regional director for Africa, says: "The transformation of bean production in Ethiopia shows that when demand and prices for a product increase, farmers are better prepared to benefit if they have ready access to improved bean varieties through a well-organized system."

The combination of good varieties with better crop management can boost yields considerably. Government intervention and leadership have also played a major role. Sound policies catalyzed public-private partnerships and investment in the bean value chain.

Missing links between partners – including policy makers, researchers, and farmers – translate into missing links in the value chain: varieties that do not match market preferences, for example, or drought-tolerant varieties that are wiped out by a local disease.

Introduction of the Ethiopian Commodity Exchange in 2010 – of which PABRA partner ACOS is a founding member – has done much to reduce price and quality fluctuation in the market. But challenges remain, such as processing beans into baked beans and other value-added products. The success of white pea bean in Ethiopia shows that strong partnerships, combined with a strong export market and variety improvement, can yield impressive results.



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