

# Package 117

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**Legumes: Multipurpose crops for small-scale farmers in Ethiopia**

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**Notes to broadcasters**

Ethiopia is one of the top ten producers of legumes in the world, the second-largest producer of faba beans after China, and the fifth or sixth largest producer of chickpeas. Legumes occupy about 13% of cultivated land in Ethiopia and are critical to small-scale farmers’ livelihoods. Legumes are grown for a number of reasons. Primarily, they are grown for household consumption and nutrition. They are a cost-effective source of protein. Legumes also generate household income for small-scale farmers. In addition, legumes improve soil health when they are sown in rotation with other crops. There are about ten types of legume crops grown in Ethiopia in significant volume. Faba bean is the first in volume of production and cultivated area, followed by field peas, haricot bean, chick pea, and lentils.

Although legumes have great nutritional and environmental benefits, they are considered as secondary crops in most parts of Ethiopia. Thus, they do not receive as much investment and policy attention as cereal crops such as teff, wheat, maize, barley, sorghum, and millet. This lack of investment and policy attention negatively affects land allocation to legumes as well the commitment by stakeholders to improve production.

In this script, three small-scale farmers were asked about their legume production. They talked about their access to improved seed varieties, mechanization services, fertilizers, herbicides, and methods for managing diseases. They talked about the challenges they have long been experiencing and mentioned how the support they have recently received from GIZ Ethiopia on faba bean production has improved productivity. But they also express the need for better access to improved seeds and ways to prevent faba bean diseases. We also spoke to Dr. Dessalegn Molla, a senior advisor and legume value chain manager at GIZ Ethiopia. He emphasized the need to do more to support small-scale farmers to increase legume production and improve farmers’ livelihood.

If you want to produce a program on legumes, including faba bean, you may wish to draw inspiration from this text. If you choose to present this radio script as part of your farming program, you can use voice actors to represent the people interviewed for this script. In this case, please tell your audience at the very beginning of the program that the voices are those of voice actors and not the actual participants.

If you want to air programs on a similar topic, talk to farmers who grow legumes, as well as others in the legume value chain.

**HOST:** Greetings, listeners. Today, we’ll be talking about legume production in Ethiopia. We’ll be speaking with three small-scale legume farmers and an expert on this matter.

You may wish to ask them the following questions, among others:

* Are legumes suitable for this area? If so, which legumes are the most beneficial for generating income? For feeding the family?
* What are the major challenges with growing legumes? What solutions have been proposed for these challenges?
* What are the opportunities for women to be involved in the legume value chain?

Estimated duration of this script with music, intro and extro, is 20 minutes.

Ethiopia is one of the top legume-producing countries in the world, and the second largest producer of faba bean in the world after China. This massive production of legumes is carried out by small-scale farmers. One of these farmers is Tesfaw Abebe, who lives in the South Wollo Zone of Amhara Regional State. He explains why legumes are very important in supporting his family of six.

**Tesfaw Abebe:** Faba bean is basically precious. We use it for consumption and sell whatever remains. It can be boiled as *nifro,* boiled and roasted as *ashuq*, and prepared in other forms. It is very good, especially in the rainy season.

**HOST:** Which crops do you grow and how large is your plot of land?

**Tesfaw Abebe**: I have less than one hectare, and I grow teff, wheat, and some legumes.

**HOST:** Have you experienced any challenges with legume production?

**Tesfaw Abebe:** Legumes have been challenged by various diseases for many years. We almost gave up on faba bean production until recently, when we got support from GIZ, an organization that helped me get a new variety of faba bean seed.

Faba bean seed was almost disappearing. After we sowed the seed, it germinated and dried up after sprouting two leaves or so. We told GIZ and they gave us a new seed variety after giving us a short training. We sowed it and sprayed the chemical they gave us when that disease appeared twice in a seven-day period. Then the disease disappeared. After that, there was no problem and we got a better yield.

**HOST:**  How much faba bean did you produce?

**Tesfaw Abebe:** I was able to get about 400 kgs from less than a half-

hectare of land. This is a big improvement for me since I started producing faba bean.

**HOST:** Tesfaw’s family helped him work on his small plot, and his wife and children did the weeding manually. It is common in Ethiopia for women and children to assist in weeding and hoeing family plots. The fact that schools were closed last year for several months because of COVID-19 actually enabled parents to get their children’s help with the year’s farm activities. Before, parents didn’t get their children’s full engagement until the end of June when schools close in Ethiopia.

Row seeding is generally recommended by farm experts for a better yield. But it is not easy for farmers who lack family members to assist them with row seeding. Because of this, having many children is considered an asset in rural areas of Ethiopia.

According to farm experts, seeding in rows with the recommended spacing between rows increases productivity by providing sufficient aeration, moisture, sunlight, and availability of nutrients. In contrast, broadcasting requires higher seeding rates while also reducing yields. Also, it’s very difficult to hand weed and hoe after you broadcast. Faba bean is sensitive to competition with weeds, which reduce plant growth and yield.

 Tesfaw, did you use row seeding on your faba beans?

**TESFAW ABEBE:** Yes, with the assistance of my wife and children, I planted my faba beans in rows. Sowing in rows makes it easier to keep the appropriate distance between plants and rows and to apply fertilizer directly to the seed, which increases the yield.

**HOST:** Tesfaw has also seen the benefit of crop rotation in increasing soil fertility. He rotates wheat and legumes, particularly faba bean. Crop rotation has been practiced by small-scale farmers in Ethiopia for ages, based on their experience that rotating crops is good for soil fertility. Crop rotation is now practiced by many farmers in various parts of the country, particularly rotating between legumes and wheat, and agricultural experts have confirmed its positive results through research.

Another practice that the overwhelming majority of small-scale Ethiopian farmers have applied for ages is using oxen to plough their plots. Tesfaw’s land may not actually be suitable for using tractors. And in Ethiopia, the use of mechanization services is limited by several factors: small and fragmented plots, the rugged topography, and the widespread presence of stones in fields, which complicates mechanized plowing. I asked Tesfaw how he ploughs his land.

**TESFAW ABEBE:** I have a pair of oxen that I use to plough my plot. Family members also assist me in harvesting and threshing ripe faba beans.

My biggest concern is the disease that affects young faba bean leaves in this area. I would like this to be addressed.

**HOST:** Diseases that affect legumes are challenging for Ethiopian farmers. This is especially important because legumes are a source of protein and a way for families to achieve food security.

Shewaye Tadesse is a mother of two who lives with her husband in the South Wollo Zone of Amhara Regional State. They mainly produce wheat, teff, and faba bean and use crop rotation.

**Shewaye Tadesse:** We used to produce faba bean traditionally without any support from anyone. But now GIZ supports us with faba bean seed and bio-fertilizer. And it gave us a better yield.

**HOST:** What was your yield of faba bean after you used the new seed and the inoculant bio-fertilizer?

**SHEWAYE TADESSE:** I’m grateful that we were able to harvest five quintals or five hundred kilograms of faba bean from half a hectare of land.

**HOST:** Do you have access to tractor services to plough your farm?

**SHEWAYE TADESSE:** I have a pair of oxen to plough our plot because we have no access to tractor services for ploughing and harvesting. We hear of tractor plowing services in far-off places, but not in this area.

**HOST:** What about sowing in rows?

**SHEWAYE TADESSE:** I understand the importance of sowing in rows, but this was a challenge on our farm, where we broadcast faba bean seed.

**HOST:** Why did you choose to broadcast seeds?

**SHEWAYE TADESSE:** Row seeding requires more people to work with than broadcasting. Sowing in rows gives a better yield. I have tried and seen it before. But it is difficult to use as it needs more human resources.

**HOST:** What other challenges do you face growing faba beans?

**SHEWAYE TADESSE:** Weeding is another challenge. This area is full of weeds. We weeded our plot by hand as we were advised that it is better for the soil than using chemicals.

**HOST:** Of course, there might be no need to use herbicides in a very small plot of land like Shewaye’s, and this would also reduce cost.

Kumsa Legesse is a farmer in the Arsi Zone of Oromia Regional State who mainly grows wheat and legumes on his rented plot of land.

Some Ethiopian farmers do not have their own plot of land because land has been shared among family members and become smaller and smaller, which makes it difficult for a household to earn a living from it. Mr. Legesse leases farm land from someone who has land but cannot cultivate it. He is a father of three and sowed faba bean on one-quarter of a hectare of land last season, using seeds supplied on credit from GIZ.

How do farmers such as yourself plough the land in your area?

**Kumsa Legesse:** Here in southeastern Ethiopia, small-scale farmers like me jointly rent tractors to plough our plots. The land here is suitable for tractor farming, so we can prepare our plots by using a rental service, which costs 2,000 birr per hectare.

**HOST:** Do you use machinery to harvest legumes such as faba bean too?

**Kumsa Legesse:** No, legumes are harvested manually or with animals in this area. There is no mechanization service for harvesting legumes in our area.

**HOST:** How do you manage weeds in legume crops? Do you use herbicides?

**Kumsa Legesse:** The plot is small enough so that there’s no need for herbicides. We manage the weeds manually. I have one-quarter of a hectare of land and last year, I got a harvest of eight quintals or eight hundred kilograms of faba beans. I used the money from selling the beans to send my children to school, apart from what we consumed at home. Faba bean is a crop that helps me pay school fees, have food for the household, and keep my soil fertile.

**HOST:** What are the biggest challenges in legume production?

**Kumsa Legesse:** The two major challenges are inadequate access to good seed varieties and diseases that attack legumes. The diseases that attack the leaves and flowers of faba bean are the ones that need careful attention and must be addressed immediately. So, having access to seed varieties that are resistant to disease and better-yielding is important for earning a better income for my household.

**HOST:** It is disappointing for farmers to lose their crops to diseases after invested all they have. The damage is huge. They have to wait another year to try again and have no guarantee they won’t repeat the same loss.

All three farmers we interviewed emphasized the benefits of legumes in supporting their family. Legumes can be sold as a cash crop, consumed in the household, and are valuable for maintaining soil fertility when sowed in rotation with crops like wheat, which is becoming a common practice in Ethiopia. These three farmers’ concerns are more or less identical: access to better seed and disease prevention.

Dr. Dessalegn Molla is a senior advisor and legume value chain manager at GIZ Ethiopia. Dr. Molla, please tell us about the benefits of legumes for small-scale farmers.

**DESSALYN MOLLA:** Legumes contribute to smallholder income as a higher value crop than cereals. They also contribute to the family’s diet as a cost-effective source of protein that accounts for approximately 15 percent of family protein intake. They provide natural soil maintenance through nitrogen-fixing, which improves yields of cereals through crop rotation, and they can also help smallholder farmers reduce the costs of purchasing inorganic fertilizers.

**HOST:** Are Ethiopian legume farmers using improved seed varieties?

**DESSALYN MOLLA:** A seed company owned by the government called Ethiopian Seed Enterprise as well as regional seed enterprises have been releasing improved legume varieties that are adapted to a wide range of rainfall, soils, and altitude. But the use of certified improved seeds by farmers is very low in Ethiopia. Lack of extension services, limited knowledge of recommended production practices, and lack of knowledge of the benefits of crop diversification are among the reasons that limit adoption of improved seeds.

The national agricultural research system managed the development and release of 169 improved varieties of food legumes in the country between 1973 and 2012. Although a wide range of grain and forage legumes were developed, the emphasis was on faba bean, field pea, chickpea, lentil, and haricot been.

But the formal seed system in Ethiopia has been skewed towards cereals and hybrid varieties. More than 80% of the total volume of certified seed produced in the country every year is for wheat and maize.

So, even though legumes are critical to smallholders’ livelihoods in the country, current legume production falls significantly below the potential.

**HOST:** What are the reasons for this?

**DESSALYN MOLLA:** Low use of inputs, limited availability of seed, limited familiarity with the variety of existing legumes, limited usage of modern agronomic practices, market problems, and poor extension services are the major factors that account for low production and productivity.

Getting better access to inputs is a key step in improving production.

Generally, Ethiopia’s agriculture is very old and relies on the ox plow and rain-dependent techniques, and has a very low rate of mechanization. Purchasing and using modern machinery such as tractors and combine harvesters is typically limited to a few large-scale farms because of their high cost and low availability for small-scale farmers. But recently, private mechanization service providers are increasing in some regions, particularly in the Arsi and Bale zones of Oromia region and the West and East Gojam zones of Amhara region. Appropriate farm mechanization technologies have been identified and introduced. Row planters, combine harvesters, and threshers are being purchased and used. This leads to significant reductions in farmers’ production costs.

**HOST:** Do you have any final comments?

**DESSALYN MOLLA:** Phosphate and other fertilizers should be supplied to farmers, along with the knowledge on how to use them effectively. Seed multiplication should be increased to adequately supply the needs of exporters and domestic demand. Legume breeding should expand, and make maximum use of varieties used in other countries. Extension should incorporate pulses into the curriculum.

**HOST:** Supporting small-scale farmers by introducing new varieties and production practices for the legume sector can start with model farmers and scale up to the wider population of farmers. Because there are farmers who are ready to embrace changes, it is good to showcase them in field demonstration days and by other means, so that others can follow suit.

Today, we spoke to the farmers Tesfaw Abebe, Shewaye Tadesse, and Kumsa Legesse as well as the expert, Dr. Dessalegn Molla.

Here is what we learned: Some farmers are using new varieties and practices introduced by GIZ for faba bean production, including row seeding. This helped them achieve a better yield. But they also expressed their need for better access to improved seeds and ways to prevent faba bean diseases. Dr. Dessalegn also emphasized the need to do more to support small-scale farmers to increase legume production and improve farmers’ livelihoods.

**Acknowledgements**

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Reviewed by: Dessalegn Molla, Advisor, Legumes Value Chain, Promotion of Agricultural Productivity Programme, Green Innovation Centres for the Agriculture and Food Sector – Ethiopia, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Interviews

Tesfaw Abebe, farmer, April 20, 2021

Shewaye Tadesse, farmer, April 19, 2021

Kumsa Legesse, farmer, April 20, 2021

Dr. Dessalegn Molla, May 11, 2021

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