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**Restoring the past for a brighter future: Recovering and improving traditional seeds in Safo, Mali**

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### Notes to broadcaster

The continued availability of both traditional and new varieties developed through formal plant breeding is very important to ensure biodiversity and crop productivity. Traditional varieties can be critical.

For example, 20 million hectares of rice in Asia are prone to flooding. Rice dies within days of complete submergence, resulting in total crop loss. Through conventional, non-GMO breeding, the International Rice Research Institute introduced a gene from existing varieties of rice into popular varieties grown in Asian rice-growing countries. It is also being bred into popular African varieties.

Five years ago in Mali, the NGO CAB Dèmèso, with support from USC Canada, launched a participatory research process that helps farmers select new varieties after testing growing them with their production methods on their own plots. The new varieties include both local seeds and seeds produced through national research selection programs. Farmers tested 35 endangered varieties of millet, sorghum, and cowpea in three different agroclimatic areas of the country.

The goal is to increase the diversity of varieties in farmers’ fields and to select varieties that are better adapted to the local climate and meet farmers’ preferences for taste, nutritional value, and ease of processing, an important criterion for women. The process is called participatory varietal selection, and it places farmers at the heart of producing, selecting, and using crop varieties.

Currently, Cab Dèmèso is working with the communities it supports to multiply selected varieties and then distribute them to other farmers and communities. In the future, these farmer varieties could be registered through a community registration system.

This script is based on interviews with farmers and with workers from CAB Dèmèso. You could use it as inspiration to research and write a script on varietal diversity and how farmers can conserve agricultural biodiversity.

You might also choose to produce this script as part of your regular farmer program, using voice actors to represent the speakers. If so, please make sure to tell your audience at the beginning of the program that the voices are those of actors, not the original people involved in the interviews.

Here are some possible questions for on-air discussion:

* How are traditional seeds preserved in your area?
* What are the most important criteria that local farmers use to choose seeds to grow? Do women and men have different criteria? If so, what are they?
* What is the value of promoting agricultural biodiversity?

Estimated running time: 20 minutes, with into and outro music

**HOST:** Hello, listeners. This morning, we are in the rural district of Safo in southwestern Mali, where we will speak with farmers who are involved in a project on participatory varietal selection set up by the NGO, CAB Dèmèso.

If you don’t know what participatory varietal selection is, it’s basically a way for farmers to participate fully in choosing the crop varieties they want to produce by growing them out in their own fields. Stay tune for more about that.

Safo is a rural district made up of 14 villages, about 15 kilometres from Bamako, the capital of Mali. Residents make a living from agriculture, and are now facing problems linked to climate change.

The people we came to speak with welcome us as a group. As in any farming family compound, the sounds of donkeys, small ruminants, and poultry are everywhere. After exchanging greetings, we talk to the first person.

**HOST:** Hello, sir, can you introduce yourself to our listeners?

**Amadou:** My name is Amadou Diarra, and I am from Zorokoro, a village in Safo district. I am a farmer and the chairperson of Dun kafa co-operative (*Editor’s note:* “Dun kafa” *means “eat your fill” in the Bambara language)*. I supervise the various activities of the co-operative, including grain and vegetable production, as well as arboriculture.

**HOST:** What do you think of the Programme Agro Biodiversité Dun ka Fa with the NGO CAB Dèemèso?

**Amadou:** The project focuses on improving productivity for grain crops and market gardening while respecting the environment and the needs of farmers. We have a positive opinion because, when you analyze its goals, you realize that it is just reinforcing our own ideas. We strive to get good crop seeds and to return to our roots by using the traditional production system, which doesn’t use chemicals.

Our community is located near Bamako, which makes it more difficult to find farmland because of rapid urbanization. To address this situation, the program educated farmers through plays about growing good quality of a sufficient quantity in spite of our small plots, by using agroecological practices. We can grow many crops in the same piece of land without them disturbing each other, and with organic fertilizer only.

 We were also trained to select seed varieties. This involves growing different varieties of the same crop on a plot, so that we can choose the variety we prefer. Farmers also learned about tree planting and about using organic manure.

**HOST:** Talking about participatory varietal selection, can you give us more detail and explain to us how it works? What was the goal of your community in joining the project?

**Amadou:** After the co-operatives were established, the first goal of the program was to do research to ensure that the farmers were producing good seeds so that we don’t have to always rely on external vendors. We were fully involved in these research activities. There were already a lot of shortages. Each farmer struggled to get seeds.

The project noticed that this individualism was probably the root of our problems. So they asked us to meet in order for everyone to explain how he or she looked for seeds. Finally, we chose a single method, which seems to work for all of us. The method consists in, first, growing a good variety, and then at harvest time, we sort the best plants and we store their seeds for next year. Everyone applies this method in his or her field to get better quality seeds.

 The co-operative also has collective fields where we carefully observe the development of crops from seed to harvest. We evaluate the potential of each variety in terms of yield and resistance to factors such as insects, drought, diseases, birds, and many other things. Plants which do well are harvested separately so they can be used as quality seeds to be distributed at the beginning of the rainy season.

So the project supported the preservation and the promotion of our own local seeds, which are usually well adapted to the current climate and are as productive as imported varieties.

Here, we don’t pay for local varieties preserved in the seed bank. In contrast, the imported ones are expensive and do not always respond well to our climate. So, we share the same vision as the program about using our local seeds, using organic manure, and using the biopesticides we produce ourselves.

 I should add that, before the arrival of the program, we had difficulties with seeds. Traditional seeds were almost abandoned in favour of imported seeds.

**HOST:** Which challenges do you face?

**AMADOU:** Our major challenge is that many farmers hadn’t really understood this project and the benefits they could get from it. At the beginning, we had difficulties getting people to join in. But now, thanks to the efforts of the facilitators and the members of the co-operatives, this challenge has been significantly overcome, and I think that by following this path, we will achieve our goal of becoming more self-reliant with regard to seeds and other inputs.

**HOST:** Dear listeners, we will now speak with Mr. Abdou Bomba, head of the agricultural biodiversity program at the NGO, CAB Dèmèso. Mr. Abdou, can you introduce yourself to our listeners?

**Abdou Bomba:** I am Abdou Bomba, an agronomist by training. I am the head of the agricultural biodiversity program in the districts of Safo, Tienfala, Diago, and Baya. This program is run by an NGO called CAB Dèmèso, which provides advice and assistance to farmers in the project.

**HOST:** For me, participatory varietal selection is a technical term. What does it mean exactly and how does it work?

**Abdou Bomba:** Participatory varietal selection is a process that helps farmers try out and select new cereal and market garden varieties to introduce to their fields. They select these varieties based on their own needs and preferences.

So it’s the farmers who first express their needs, saying, for example, “We need a variety which is resistant to insects, drought, crop diseases, birds and other things.” And then the scientists or the NGO starts working to get the seed which meets these criteria. This is the first step.

 In the second step, farmers grow the varieties in their fields. The NGO supports them by collecting information on the seeds. Farmers grow the new varieties near the local variety which they consider to be performing best. If it is a sorghum variety, for example, they will grow it near a sorghum variety they used to grow, and which they think is the most productive.

 To grow these new varieties, farmers choose their own production system, including sowing, weeding, and fertilization. Then, farmers choose which of the different local varieties impresses them and decide which one to adopt. CAB Dèmèso supports them through this process, but farmers are the ones who make all the decisions. At harvest time, farmers see which variety is the most productive and they adopt it.

 In September, just before the harvest, farmers evaluate the different varieties. They go together to the fields and talk about the different varieties based on the criteria they value, including the size and height of the plant, the tassel, or the colour of the grain.

 After the evaluation in the field, they prepare the different varieties for tasting, and then they make the final choice based on the yield of flour and the taste of each variety. These are the various stages of the participatory varietal selection.

**HOST**: How can a farmer get access to your support?

**ABDOU BOMBA**: In this program, they can get support through co-operatives. If the co-operative expresses the need, then we provide seeds. The co-operative multiplies the seeds on isolated plots to get better quality seeds. They distribute these seeds to other producers, who reimburse in-kind. For example, a producer who receives one kilogram of seeds must bring back two kilograms at harvest. Then, after the harvest, the co-operative gives seeds to producers to sow.

**HOST:** This is interesting. So, do farmers choose which varieties to grow based on all these steps?

**ABDOU BOMBA:** That’s it. To cope with climate change, we brought endangered seed varieties from the Douentza area to Safo in 2010. We planted and evaluated these varieties on demonstration plants with local varieties such as *Sokabou*, *Dérébleni*, and *Nguene*. After more than five years of evaluation, farmers chose three sorghum varieties: *Emba café*, *Emba tonè*, and *Emba mindji*. These variesties were multiplied in 2016 and 2017 on isolated plots in order to produce seeds which were then made available to producers.

 Before planting a seed, we check to ensure that it’s reliable. In other words, we see if it’s capable of germinating by conducting a germination test. We conduct the test in a mixture of sand and clay.

**HOST:** Where do the names of the sorghum varieties come from?

**Abdou Bomba:** These are names in the Dogon language. *Emba* means sorghum. After the people in Safo chose these varieties last year, we had special plots where three producers produced these seeds. This year, we distributed seeds of these varieties to farmers, and they will plant them in their fields next to their local varieties. Then each farmer will make his or her choice.

**HOST:** How do you do the research to develop these varieties?

**Abdou Bomba:** We do the research at two levels: the participatory varietal selection and participatory plant breeding, which is different.

 Participatory varietal selection enables farmers to find and adopt new varieties. Farmers work with an existing variety. They grow it and compare it with another variety to see if it meets their needs. If it does, they adopt it.

 Participatory plant breeding aims to develop a new variety. To do that, we first choose a good variety that has some of the qualities we want, and then work with it to get those other qualities we are looking for.

 We crossbreed the variety with other varieties in the fields, along with farmers. We select and isolate the new varieties that result from crossbreeding. This is participatory breeding. But we are not yet working on this component of the program.

**HOST:** Do you have any parting thoughts?

**Abdou Bomba:** My last words are for farmers. I want them to know that maximizing agricultural biodiversity like we do in this program by encouraging farmers to grow several crop varieties can significantly improve their lives through better agricultural production and good maintenance of soils.

**Host:** Many thanks, Mr. Bomba. We will talk now to a woman who is the oldest of our speakers.

Good morning, madam, can you introduce yourself?

**Sitan:** I am Sitan Diarra, from Safo, and I am a member of “Dun kafa” co-operative. I am part of the seed producer group, and a member of the committee in charge of gene or seed management. We store the seeds and give them to farmers at the beginning of the rainy season. And we produce vegetable seeds.

**HOST:** What types of agricultural seeds do you work with?

**Sitan:** We work on groundnuts, maize, sorghum and all of our traditional seeds. There are many varieties, but we look for our local traditional seeds to keep them in our community.

**HOST:** Did the program help women? If yes, how?

**Sitan:** It helped us by training us to produce seeds. The practical part of the training was done in a communal garden. The program also taught us how to produce plants of forestry species and vegetable seeds such as onion, pepper, and zucchini.

**HOST:** How were women involved in the program?

**Sitan:** Women participated actively because it created very profitable activities for us. For example, market gardening is just as profitable a business as seed production. Last year, I earned 75,000 CFA francs from producing seeds of forestry plants and 90,000 by producing vegetable seeds. Earlier, I made only 72,000 CFA francs per year.

Also, previously, there was no interaction between women and men. But in this program, we share ideas. There are more women in the co-operatives than men. That is why we occupy an important place. I don’t know the exact number of women, but there are four areas: Sidoni, Kokola, Noumouda, and Bougoudakoura— and each area has its own women’s group. The communal garden has contributed to better collaboration among women, and to the development of friendships. Hope has grown. So, to put it briefly, we women are well integrated into the program.

**HOST:** Dear listeners, through the voices of our speakers Amadou Diarra and Sitan Diarra from the rural district of Safo, and Abdou Bomba of the NGO CAB Dèmèso, we have learned how CAB Dèmèso and USC Canada support farmers in the Safo district of Mali. Among other activities, they have helped farmers understand how to identify, select, and use local seeds that are well adapted to their environment, including the changing climate.

Thank you for listening to the program and we invite you to stay tuned for another important rural topic.

## Acknowledgements

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Revised by: Abdou Bomba, Head of the Programme Agro Biodiversité, CAB Dèmèso, and Élodie Rousselle, West Africa Program Manager, USC Canada

**Sources of information:**

Interviews with :

Amadou Diarra, Abdou Bomba, Sitan Diarra, Soungalo Coulibaly, Nantenin Sinaba, Djeneba Coulibaly, and Nah Kané, September 20, 2017

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