

Questions/remarks sent via the chat channel during the GFAR webinar:

Farmers' Rights: How Complementarity between Researchers and Farmers Impact the Conservation of Genetic Diversity, Food Security and Livelihoods of the Poor

...with replies from the presenters

For Jorge, from Wanja

Q: Are the indigenous varieties prone to the same diseases/pests as the hybrid tubers?

A (Jorge): It is highly dependent on the genotype. Some native varieties are resistant to certain pests and diseases, and others are susceptible.

For Jorge, from Wanja

Q: How do you overcome/treat salinity in soil or water to avoid effect on tubers?

A (Jorge): By using standard agronomical practices such as scraping, flushing, leaching, drainage, etc. If available, varieties tolerant to salinity should be used.

For Jorge from John

Q: Have the technologies (like the multiplication technologies for minituber productions, the breeding selection methods..) you described, been tested under different climatic condition? In Nigeria, we have tropical climates and have found that some technologies are not adapted to our climate despite literature success

A (Jorge): Yes, they are usually tested in different environments, not only biophysical but also institutional and social. The usual recommendation is to first test any new technique at a pilot scale to confirm if it needs to be adapted, which is usually the case.

For Jorge from Axel

Q: What is the problem with certified seeds of potato in Peru?

A (Jorge): There are several issues that explain the low production and use of certified seed, but I would say that the most important are: lack of resources (staff, infrastructure, etc.) to implement the certification scheme (especially in public organizations) and unrealistic regulations about seed quality.

For Jorge from John

Q: Jos Plateau in Nigeria produce large amount of potatoe but the seed quality is not yet there. Government policy does not help either. Yield per hectare is extremely low . How can you help in information on farmer capacity building on this?

Does your organization have training manuals on this technology and any other information that can be of help to potato farmers and policy makers?

A (Jorge): A: We have plenty of training materials, approaches and experience. Please contact our representative in CIP-Africa: Elmar Schulte-Geldermann E.Schulte-Geldermann@cgiar.org for further information.

For Jorge from Kim

Q: Has cost-efficiency been accounted for in the clean seed system? I mean when "cleaner" or superior seeds are produced by companies, their price might be higher and thus inaccessible for poor farmers. Do you have both private or public/community seed banks/companies in Peru?

A (Jorge): Production of pre-basic, basic and registered seed in Peru is done mostly by public organizations, while production of certified seed is done by private seed multipliers. However, the multiplication rates are low, which explains the high cost of certified seed. We assume that having private companies in the business of seed potato production would help to reduce the final cost of certified seed (there are several companies that are starting this business).

For Jorge from Derrick

Q: I am guessing the non-certified regulations you advocate will be short term as certified seeds are superior. My question is; in a Peru context, when do you think it must expire in other words how long will it take for smallscale farmers to be able to access and afford certified seed?

A (Jorge): A: It would depend on how fast they will connect to specialized markets. If that happens and they receive a fair price for their product, then farmers will be eager to invest on high-quality seed (either certified or quality declared). If farmers grow potatoes for their own consumption and for local markets, then it is more likely that they will prefer their own seed.

For all from Richard

Q: why is that the world is so concerned with promoting conventional forms of agriculture, the Green Revolution and promotion of hybrid seeds and synthetic fertilizers. Here in Zimbabwe rural small holder farmers have gone back to their traditional forms of agriculture-agroecology and promotion of community seed varieties

Conventional forms of agriculture are to promote MNCs involved in plant breeding through the plant breeders rights: supporting other agri-businesses

Community seed systems or farm managed seed systems are more sustainable and improve farmers' livelihoods

Why is that govts and research organisations are not taking on board small holder farmers own initiatives in seed multiplication

A (Rose): Some research organizations like Bioversity International do support smallholder farmers initiatives in seed multiplication through community seed banking. The task ahead is to demonstrate to Governments how these initiatives play a role in increasing food security, improving livelihoods, enabling farmers to adapt to climate change as the farmer varieties are diverse in attributes and do contribute to sustainable agriculture in that farmer varieties do not require huge amounts of chemicals in form of fertilizers or pesticides to grow like improved varieties; which cannot be afforded by many and are destructive to mother nature.

A (Juanita): There's still a lack of recognition of the roles, contributions and capacities of smallholder farmers in conserving and improving plant genetic resources for food and agriculture. Some governments (decision-makers) still consider that smallholder farmers are not able to produce seed quality for food security. In this context, there is indeed a way of

thinking that only formal breeding and the formal seed system is capable of producing quality seed.

But we should work to change that paradigm. Researchers and farmers should work together to increase and strengthen farmers' capacities in seed quality conservation and multiplication. Success stories should be shared also with decision-makers for them to understand that smallholder farmers and the informal seed system are relevant for food security, the conservation of genetic diversity, and better livelihoods, not only of smallholder farmers themselves, but at national and global level.

A (Jorge): A: Some research organizations like Bioversity International do support smallholder farmers initiatives in seed multiplication through community seed banking. The task ahead is to demonstrate to Governments how these initiatives play a role in increasing food security, improving livelihoods, enabling farmers to adapt to climate change as the farmer varieties are diverse in attributes and do contribute to sustainable agriculture in that farmer varieties do not require huge amounts of chemicals in form of fertilizers or pesticides to grow like improved varieties; which cannot be afforded by many and are destructive to mother nature.

A (Jeremiah): Data driven and precision agricultures have traditionally reinforced the conventional forms of agriculture to which Richard refers. It's important to recognize that, as with any data system, any when agricultural data is gathered, it will reflect the biases and priorities of the people collecting the data. So, for example, a large portion of agricultural data gathered today occurs within the precision agriculture paradigm and reflects the priorities of large agriculture firms that benefit from mono-culture practices. In comparison, relatively little data is collected on the practices of traditional and small holder farmers.

We've identified this as one area where open data can be a benefit to farmers. Open data can promote trust, helping connect researchers with traditional farmers that may be skeptical of outside monitoring or control. Open data can also increase the impact for data that represents traditional agriculture practices. As a tool that can help farmers and researchers to work together, the dynamics of open data allows farmers who otherwise may not be heard to share their experiences broadly and draw attention and new research to alternative forms of agriculture.

For Rose from Francesca

Q: in your experience, how much do these Community Seed Banks interact with the CGIAR and Centres' gene banks?

A (Rose): Community seed banks interact indirectly with the CGIAR centers' gene banks for instance if there is a variety of a crop that is extinct in an area where there is a community seed bank and farmers are interested in getting back that variety, if it happens to be in a gene bank of any CGIAR center, scientists like me who work with Bioversity, one of the CGIAR centers, can link with that gene bank to get that variety to the community seed bank so as to be accessed by farmers. In the same way, a variety can be gotten from a community seed bank to the national gene bank and from here it can reach the CGIAR gene bank. The other way of interaction is through breeders who use varieties from gene banks of CGIAR centers to develop new varieties which are then accessed by farmers and these farmers take them to community seed banks as well.

A (Juanita): There are few examples on how community seed banks interact with CGIAR Centers' gene bank and even less with national gene banks. There is one example, where a community of smallholder farmers in Guatemala is subscribing a memorandum of

understanding with a gene bank for the repatriation of seeds to their community. Alejandro in his presentation also mentioned the Agreement signed between the Potato Park and CIP for the repatriation of potato seed varieties. He also shared that the indigenous communities of the Potato Park deposited potato seeds at Svalbard. You can find some information in the following links: <http://www.bbc.com/news/science-environment-12493970> <https://www.youtube.com/watch?v=CQ7cDnhNp3Q>

Even though there are some examples, the link between community seed banks and gene banks is not very common. However, these two ways of conservation (community seed banks and genebanks) should be integrated into a holistic conservation system. Smallholder farmers should increase their capacity and knowledge on how to access to seeds from the gene banks, and researchers and managers of gene banks.

Success stories and relevant information need to be shared for further upscaling.

For all from Wanja

Q: Has anyone carried out research on role of insect pollinators in improving seed quality and quantity on farmers fields? It would make interesting information based on the work done in Kenya.

A: (sorry, none of the presenters answered on this)

For Rose from Wanja

Q: How do you prevent disease contamination from farm to farm? Or from one community seed bank to the next.

A (Rose): Farmers operating seed banks have been trained in disease identification and control using simple methods like uprooting and burning the diseased plants. When they go into seed production for business, they are even trained in using chemicals to manage pests and diseases. The management committees of the community seed banks do participatory monitoring of the gardens to ensure that the crops are not infested with diseases. If they get a garden infested, then that garden is rejected and its seeds cannot be accepted in the seed bank.