

# & Seeds & FFSs

The agrobiodiversity@knowledged programme initiated by Oxfam Novib and Hivos, aims at generating and sharing evidence and insights for transformation in the area of agricultural biodiversity. At the heart of the programme is a global knowledge and experience community of organisations working at various levels on this topic with millions of farmers worldwide.

For resilience and risk-spreading, as well as to meet highly diverse consumer and market demands, farmers need to be able to have a choice from a wide variety of seeds. SEARICE has developed a methodology to enhance farmers' breeding and seed selection processes, working with individuals and organisations throughout South East Asia in order to upscale results. We use the Farmer Field School methodology to do so.

SEARICE

**F**For more than 30 years, the introduction of modern varieties as part of the Green Revolution, and the subsequent loss of agricultural biodiversity, has been a cause of concern for many people. Farmers have become more dependent on traders and external companies for their seeds. Fortunately, efforts like on-farm conservation are safeguarding the genetic characteristics that will otherwise disappear if farmers only plant modern varieties, and are therefore helping to increase the genetic diversity of crops available. By working with national and local partners, such as

agricultural extension departments, agricultural research centres, academic institutions, civil society organisations and farming communities, SEARICE promotes community-based conservation and sustainable use of plant genetic resources in Bhutan, Thailand, Cambodia, Laos, Vietnam and the Philippines. A key element of its approach is organising and facilitating Farmer Field Schools.

**Learning about seeds** FFS use a flexible training methodology based on farmers' priorities rather than a set curriculum brought in by the

extension worker. Having an empowering effect, they are a perfect approach for the plant genetic resource activities that SEARICE promotes. Within the training programme, farmers share their perspectives on the varieties that they use, those that have been lost, and those that they want to plant. It is not uncommon to find farmers who, for example, like a specific variety of rice because it is aromatic, but who would prefer if it would also have a shorter production period. Our training programme aims to help farmers search for and develop different varieties based on their needs and preferences.

As part of the FFS curriculum, farmers get to experience the whole plant breeding cycle in the first season, using the basic components of plant breeding – varietal evaluation, seed rehabilitation, actual breeding or crossing and segregating line selection. After the first season, farmers decide which aspects they would like to focus on. The varietal evaluation trial allows them to grow several varieties that meet their criteria on a demonstration plot, and then select and decide which of these varieties will work well for them in their locality. Another study field is line selection, where farmers select materials from promising or stable lines. In the third activity, seed purification, farmers learn to choose good seeds to restore a variety of which the purity and quality has deteriorated. Finally, the fourth training section involves farmers learning to do the breeding of new varieties themselves, either

through selection from early generation seeds (segregating lines) or by actual crossing selected parent materials.

At the end of the season, close to harvest time, we organise a Farmer Field Day: farmers from neighbouring communities come to learn about the different varieties that have been tested and which appear to have potential. This field day is a good time for choosing seeds for the next season – for participating farmers as well as their neighbours. The field day is a way of reporting back to the community, but also a good opportunity for lobbying and advocacy. Government officials and policy makers are usually invited so they can find out about what the farmers have been doing and (hopefully) support them in the future. In some cases, local media are also invited for wider dissemination of the farmers' initiatives.

We want farmers to be able to control their own seeds. Research centres do line selection and breeding, of course, but they have their own ideas about the characteristics that a variety should have, and only ask farmers for their opinion when the selection process is complete. By involving farmers from the beginning of the breeding process, the whole process is based on their criteria and needs, and the final product will be one that they really want. Our experience has shown that, even by the end of the first season, farmers are very eager to continue and have a clear idea on how they want to proceed.

**Changing mindsets** SEARICE does not implement the FFS itself, but mobilises others to do so. Working with local and national institutions is a way of scaling up the project, ensuring that more farmers are involved, and more farmers benefit. We train local extension workers – mostly from the government, but also from interested civil society organisations and schools – to conduct the FFS. We introduce the principles of adult education and the steps that make up a Farmer Field School, the process of engaging farmers in a participatory process, and of course the technical aspects related to plant breeding and the conservation of a region's plant genetic resources. Local governments can support the FFS by providing resources such as land or inputs. Research centres play an enormously important role in providing seeds for varietal selection or pre-breeding materials for segregating line selection or farmers' breeding in the FFS.

Working with these institutions also helps us bring about a change in attitudes towards working more closely with farmers. Unfortunately the dominant paradigm in these institutions is often to work top-down, seeking to impose institutional priorities on the farmers. As we partner with government agencies and other organisations, their perspectives change when



**"The whole process is based on farmers' own criteria and needs, and the final product will be one that they really want."** Photo: SEARICE

they see the results in the field. SEARICE provides support for at least three seasons, but we hope that by the end of the third season there is enough interest and enthusiasm among the local partners or farmers themselves to continue without external support. At this time, SEARICE withdraws but continues to provide technical backstopping on an on-call basis.

As part of our policy work, we target universities and seek to influence mainstream agricultural education to include more participatory approaches. Actively engaging students in research in the communities helps farmers to record inputs or calculate the benefits from production. But it also changes the students' mentality, encouraging them to be more engaged with farmers when they start working, rather than taking the top-down approach.

**Changing extension** Sometimes, when extension workers apply the FFS approach for the first time, there is some hesitation because it is new for them. SEARICE prefers to work with those who are already familiar with FFS and support its principles, but also wants to bring about change among those who are doubtful. Usually, when extensionists start seeing the results from the FFS, their perspective changes. We keep providing the trainers with support in terms of technical backstopping and reflection on their work. Every now and then a star pupil arises, who is more passionate than the others and who keeps

## Farmer Field Schools

Farmer Field Schools are a structured approach to facilitate experiential learning by farmers on their own fields. This approach was developed with rice farmers in Indonesia in the early 1990s, and is now widely used in a variety of contexts. While developed initially to teach farmers about integrated pest control to reduce pesticide use, it is equally suitable for many other agro-ecological farming strategies. In a FFS, farmers are trained to systematically observe their crop ecosystem from week to week and, based on their observations, to make informed decisions on how to act next. Extension agents act as facilitators, making FFS a more participatory learning method than regular extension. Through interactive learning and field experimentation, farmers learn problem-solving skills that make them less dependent on external information sources. Ideally FFS graduates increase knowledge within their communities by disseminating their findings with other farmers. (Source: Learning AgriCultures, Module 7, ILEIA.)

taking the initiative. For example, partners such as those in Pangasinan, the Philippines, have spread the programme to other areas and even developed a FFS for school children. SEARICE can only provide minimal resources, but some partners are willing and able to obtain resources from other places and take initiative themselves.

Initially, most people we work with believe that only those with a Ph.D., or those who work at an agricultural research centre, should be engaged in plant breeding. They think we are crazy to enhance farmers' breeding skills in this way. But they change their minds when they see what farmers are capable of. This is why the Farmer Field Days are such an important and inspiring part of the process: they highlight what farmers have learned and the potential they have for doing this kind of work. We have already developed a pool of farmer breeders, and they have done remarkable work. One farmer in the Philippines, Jerry Demon, breeds corn and claims he can surpass the production of GM corn.

This process does not only help others to realise what farmers are capable of, but also farmers themselves. Talking to farmers, it becomes clear how it has empowered them. In the northern Philippines, farmers have bred and now produce a variety of rice suitable for the rice cake industry, which used to buy rice from outside the province. One of the farmers approached the rice cake producers and challenged them: *"tell me what sort of variety you want, and I will be able to produce that."* Another farmer told us that he was not too worried about crop failure in the face of natural disasters: *"I know even if my crops get destroyed by a calamity, I still have the knowledge to continue producing very good variety seeds, and that I will be able to pick up and recover."*

**Sharing knowledge** As part of the Agricultural Biodiversity Community we are all learning from each other. For instance, at SEARICE we are discussing which marketing elements are required to guarantee farmers' rights and to continue to promote biodiversity. The community allows us to explore the solutions that other organisations have found. In a broader sense, international knowledge exchange helps us share our experiences and convince others to take a farmer-centred approach in the policy and practice of education.

Based in the Philippines, **Southeast Asia Regional Initiatives for Community Empowerment (SEARICE)**, is a regional non-government organisation which promotes and implements community-based conservation, development and sustainable use of plant genetic resources. E-mail: [searice@searice.org.ph](mailto:searice@searice.org.ph). For more information about the programme, write to **Sarah Doornbos**, knowledge officer, [Agrobiodiversity@knowledged](mailto:Agrobiodiversity@knowledged). E-mail: [s.doornbos@hivos.nl](mailto:s.doornbos@hivos.nl)