

Community seed banks for maintaining genetic diversity

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By the beginning of the 1990s, the Genetic Resource Ecology Energy Nutrition (GREEN) Foundation had realised the importance of working with the farmer community to conserve agro-biodiversity, and its importance in ensuring food security and developing a sustainable agriculture. So, in 1992, we initiated a programme with small farmers in the drier areas of the Indian states of Tamil Nadu and Karnataka. The first activities were aimed at creating awareness about the rapid loss of useful plant species and the concept of conservation of agro-biodiversity. To begin with, farmers had to go through an “unlearning” process, as years of modernised agriculture had taken them very far away from a sustainable production. Many farmers did not seem aware that traditional crops and varieties had been lost, which made it difficult to talk with them about conservation of plant diversity. It was even more difficult to convince them that some of the traditional varieties could yield as well as the introduced, commercial varieties that they had become used to.

Our approach was to promote a sense of pride and ownership within the community towards their common traditional knowledge. The important message was that they were the custodians of their genetic heritage. Seed *yatras* were organised, where farmers, NGO staff and other supporters marched through several villages to promote awareness about the effects of globalisation, and the way this has impacted on the agricultural sector. Such a mass awareness raising activity also helped to build links between farmers from different villages, and stirred general public interest in the concept of sustainable agriculture. During a *yatra*, a combination of art, culture and music is used to engage peoples’ interest: an oxen-cart decorated with produce of different crops and vegetables is taken around the village, which brings people out to see. Subsequently, folk songs and street plays with a message are enacted.



A participatory inventory

During meetings with the community (particularly with the elders) and by using PRA techniques, information was gathered about the plant species and varieties that had previously been in use by the local people and which, in the course of time, had either become extinct or were not used any more. This ethnobotanical survey of a village area was referred to as “seed mapping”. This activity yielded valuable information on genetic diversity, on how local plants were used by people from the community, and where these species could be found. This inventory also revealed whether seeds of the most interesting plant species were still available. Where possible, small quantities of seeds were collected, sometimes from other areas where they were still grown. One such participatory seed mapping exercise, conducted in the northern dry regions of Karnataka, helped to identify 61 different varieties of sorghum and eight varieties of pearl millet.

A seed mapping exercise also provokes dialogue and debate in the village community. Through their discussions, farmers would come to realise what the effects of their conversion to modern, high-yielding crop varieties had been: a mono-crop farming system and loss of plant diversity on their land. However, the GREEN Foundation was always very careful with the message that they tried to convey to farmers so that they would not feel pushed into any decision to change their agricultural practices. This is very important, because when a farmer does decide to convert to a more diverse and integrated cropping system, it is his or her own decision. The GREEN Foundation deliberately uses the meetings with the communities to motivate the women to participate in this effort because, traditionally, women decide which food crops to grow, and the men work in the fields.

Multiplying seeds

After the awareness creation activities and the seed mapping, all interested farmers were provided with seeds of some of the plant species collected during the seed mapping exercises. Some women were also interested in assisting the programme voluntarily by multiplying seeds of several crop varieties on their land. That way, more farmers could be provided with seeds at a later stage.

Women have been important partners in this programme since its inception and they have assumed a very significant role in the GREEN Foundation's efforts to assist local communities in the conservation of agro-biodiversity. The men, however, showed less interest at first because they were mostly focused on growing commercial crop varieties, for the market. But when Karnataka was hit by drought in 1995, the men noticed that some local varieties of finger millet, for instance, still managed to be productive while the so called high-yielding varieties failed.

In time, the assortment of seeds that the programme managed to gather began to increase, and provided an interesting base for further work. Gradually, more women farmers started joining in the programme activities and became involved in multiplying seeds of different varieties of rice, finger millet and other food crops that could be planted in mixed-crop systems. This gave way to the idea of establishing a saving system for seeds, from which villagers could borrow seeds for planting. The first such "seed bank" was established by an existing self help group in a village called Thally. This group's original objective was to organise micro-credit and savings activities for its members.

Seed banks

A community seed bank functions very much like a commercial bank. The transfers are, however, not in money but in seeds. Any inhabitant of the villages that a seed bank serves can become a member of the seed bank by paying a nominal annual fee. Seeds of food crops that are stored in the bank are provided free of charge to members of a seed bank. The member then sows the seed and after harvesting the crop, returns double the amount of seeds to the seed bank.

Seed banks do not require special building structures and seeds are stored at ambient temperature. The staff of a community seed bank have various tasks: making sure the seed is treated properly against pests; monitoring seed distribution by maintaining monitoring cards to see who is growing what; working out a record of members' needs for seeds, and planning for seed distribution in the following season. Seed banks also develop some activities to promote the use of local varieties of food crops. To ensure the continuous quality of seeds managed by the seed bank, the members set down some rules such as banning the use of chemical fertilizers and pesticides. "We go to farms now and then to see whether the farmers are following these rules", says Kalamma, who works for the seed bank in Thally. "When it is harvest time, we often go to the fields of members who have borrowed seeds, and we select the best seeds and ask that these be returned to the seed bank". The women who work for the community seed bank are paid for their service from the membership fees and from commission that the seed banks make on the marketing of rice, sorghum and millets on behalf of farmers. Furthermore, some seed banks earn some income from processing activities, adding value to crop produce.

Initial challenges

The farming community responded slowly to the first community seed bank in Thally village. As the concept was new to them, and they had lost the sense of ownership over their seeds, it took some time for farmers to see the importance of having the option to plant traditional varieties again. The GREEN Foundation took farmers for exposure visits to well-established seed banks, as a way to enable learning between farmers from different regions. When farmers interact with one another, it creates an enhanced understanding, awareness and knowledge about the process at work. With some persistent efforts, the belief in the seed bank concept grew and local farmers also began to see the differences between the traditional varieties and the commercial varieties, both in terms of production cost and yield reliability.

At a completely different level was the somewhat demoralising attitude of the scientists and business community. The GREEN Foundation team often felt dwarfed by the opposition of the big multinationals, universities and the scientists who regarded them as reactionary, trying to take science backwards by promoting the use of traditionally used crops or varieties. We went through cycles of despair and frustration as our work was often looked at with disbelief. But our strong belief in our work made us continue. More farmers became involved in seed banks, and media attention regarding the conservation of agro-biodiversity increased, spreading the message to other stakeholders. Eventually, the message was convincing enough that resource persons from agricultural universities, industry and other NGOs have now also become involved in training farmers at the village level and district levels.

Upscaling

Once the programme had taken root in Thally, the GREEN Foundation looked to expand activities. In 1999, awareness-raising programmes were conducted in the surrounding villages on the need to conserve agro-biodiversity, and the methods of conserving seeds efficiently. Seed mapping was carried out and indigenous seeds were tracked and collected from the farmers who had conserved them. Subsequently, more seed banks were set up in different villages, catering for larger clusters of farmers. A network was created with other NGOs to expand plant diversity conservation activities with selected organisations in their own regions. Of the 45 seed banks currently operating in Tamil Nadu and Karnataka, the GREEN Foundation has facilitated 14 seed banks covering about 100 villages.

Immediately after harvesting the crops, seed fairs are held. This is traditionally the time that several festivals are celebrated while there is also a quiet period in agricultural activities, so farmers have time to participate. A seed fair is much like a traditional market setting where besides buying their weekly needs, farmers also interact socially and exchange knowledge and information about certain practices. By reviving this "market" concept, the GREEN Foundation brings diverse farming communities together, and during seed fairs more farmers become convinced of the need to conserve agro-biodiversity. The seed fairs also provide opportunities for demonstrating seed storage techniques to farmers, and other sustainable agriculture practices such as soil nutrient management, control of pests and diseases, and managing crop diversity.

Over the years, the GREEN Foundation has become an umbrella organisation that trains and serves more than thirty local sustainable agriculture organisations in Karnataka and northern Tamil Nadu. Training and other capacity building activities are based on farmer-to-farmer extension with some farmer-teachers receiving a small compensation for their involvement. Training is also done through village governance programmes where a village can now apply for help from the state government in the process of changing to organic growing. Community seed banks are an important aspect of the programme for safe-guarding traditional varieties of food crops. The GREEN Foundation believes that the seed bank is not just a store where seeds of traditional varieties of food crops are kept for distribution to farmers. More than this, it is an important self-help strategy for maintaining genetic diversity in crop and plant species on farms.