1.5 The diversity kit
Restoring farmers’ sovereignty over food, seed and genetic resources in Guaraciaba, Brazil

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The decline in use of farm-saved seed and varieties
Access to quality seed has become one of the underlying developmental needs of farming communities for achieving food security and sustainable development. The advent of the green revolution in Brazil heralded a massive loss of farmers’ varieties, which were replaced by a few high-yielding and hybrid varieties. Small-scale farmers in Guaraciaba, in the western part of the state of Santa Catarina (Figure 1.5.1), recall that up until as recently as the 1970s they were only growing their own local varieties of major staple crops. However, by the 1990s these had already vanished from most of their farms. The resulting dependency of farmers on the seed of external sources has been a burden for them, in terms of the high costs involved with such cultivation.

The Micro-watershed Development Programme was implemented by Santa Catarina State Enterprise for Rural Development and Extension (Epagri), from 2004 to 2009, with funding from the World Bank. In the municipality of Guaraciaba, communities associated with micro-watershed areas decided to dedicate several activities

![Figure 1.5.1 Map illustrating the location of Guaraciaba, Santa Catarina State, Brazil.](image-url)
The diversity kit in Brazil

within the programme to community biodiversity management (CBM). One of the most successful of these activities, the diversity kit, focused on addressing the aforementioned decline in use of farm-saved seed and varieties.

We developed the concept of the diversity kit with the aim of regaining seed security and enhancing our subsistence in food production, thereby restoring our self-esteem and food sovereignty. The diversity kit itself is an assemblage of seed that is selected by farmers, containing both local and improved varieties but without either hybrid or transgenic seed. We became involved in the diversity kit process in Guaraciaba through our various roles – as micro-watershed development project facilitators (Adriano Canci and Luciane Lazzari); municipal extensionist (Clistenes Antônio Guadagnin); and leader of a community-based organization (CBO), the Rio Flores Micro-watershed Development Association, which was set up and supported as part of the Micro-watershed Development Programme (Jair Pedro Henke).

The origin of the diversity kit as a concept

In 2004, during several meetings held with the communities in Guaraciaba over the course of implementing the micro-watershed programme, one of the farmers, Iracema do Carmo Weimann, asked us to revitalize the farmers’ habit of saving and exchanging seed to produce, rather than purchase, vegetables for home consumption. She inspired us to seek strategies that would support and facilitate farming communities to reduce household costs. This topic was identified as a priority, especially with regard to basic staple foods like rice, beans and several vegetables. In 2005, several farmers, joined by co-authors Adriano and Clistenes, participated in a training course at Chapecó, where success stories related to CBM in Nepal were shared by Bhuwon Sthapit of Bioversity International, who highlighted the CBM practice of the diversity kit. Soon after this course, we adopted the process of the diversity kit as a strategy for farmers to regain access to their own food, seed and varieties.

The diversity kit and its multi-step process

The diversity kit in Guaraciaba evolved as a collective approach to share seed, ideas and practices that promote the debate concerning the restoration, conservation, use and management of plant genetic resources (PGR). The process was innovative because it attempted to facilitate a participatory and multi-stakeholder approach to connect different segments of society, ranging from government, farmers’ associations, Epagri, universities, local and regional institutions and the donor community. This process was made up of the following five steps, which are illustrated in Figure 1.5.2.

Step 1: Understanding the local context

We carried out participatory rural appraisals to understand the food production status at household level. The diagnosis included an inventory of crop varieties to document the availability of local diversity and the associated knowledge. We used
preference-ranking during focus group discussions with farming households to identify the crops most in demand.

**Step 2: Developing a common platform**

The CBO provided farming households, Epagri and project staff with a common platform for sharing the results of the diagnosis, selecting crops for seed production, and identifying farmers who were interested in, and committed to, seed production. Bhuwon Sthapit, together with academics from the Federal University of Santa Catarina, shared experiences concerning participatory methods on diversity assessment, participatory varietal selection and seed conservation. This contributed to achieving a common understanding on project goals and to developing a participatory implementation plan.

**Step 3: Implementing the diversity kit**

We identified a number of farming households for producing quality seed, based on their social status. The assumption was that by providing services to the CBO, they would earn additional income, and this would also enhance their capacity to continue
to generate such income in the future. We strengthened the seed production capacities of those farming households identified. Epagri purchased the ‘basic’ seed that farmers needed for producing seed for the diversity kits.

Each kit consisted of several small packets, containing at least four to eight different crop species, and up to five varieties of each crop that had been identified during the first two steps. We provided detailed information on all crop varieties included, covering name, use-values and cultivation practices. Each kit box was labelled with pictures of local rice and bean crops, illustrating local food culture. We distributed the kits to all farming households in the community.

Step 4: Participatory monitoring and evaluation

The diversity kit project facilitated the organization of joint field monitoring activities on a regular basis, involving seed-producing farmers and project staff. We organized learning and sharing meetings with the CBOs responsible for monitoring the progress in the micro-watersheds, and for making necessary plans for the next cropping season.

Step 5: Documenting and scaling-up the diversity kit

We integrated field monitoring and a post-evaluation process as part of a learning process, and subsequently disseminated the information extensively within the CBOs. We documented the experiences in several chapters of the book, *Diversity Kit* (Canci *et al.*, 2010), which was written by farmers, project staff, and PGR professionals. The book was widely distributed, locally, regionally and nationally, and led to a scaling-up of the practice in the adjoining villages and municipalities.

The diversity kit: more than just a box of seed

*Increase in access to seed of choice*

Over the course of the project, a total of 300 farming households were able to benefit from the diversity kit, obtaining access to more than 16 food crops and 53 varieties. As a result of the implementation of the diversity kit, farmers obtained better access to quality seed of varieties and crops of their choice. One major change resulting from the diversity kit process was that an increasing number of households began to grow more crops and a wider range of varieties. Members of 16 farming households produced seed for the diversity kits, and their capacities in quality seed production and multiplication were enhanced during the process. Now, these farmers produce and exchange farm-saved seed, thus revitalizing the informal seed system.

*Restoration of knowledge and socio-culture*

Knowledge on traditional use-values and even local crop cultivation practices had almost completely disappeared in western Santa Catarina. This accompanied the loss of local crops and varieties as a result of the industrialization of agriculture. The
seed of local varieties, and the detailed information sheets contained in the diversity kits, contributed to the restoration of local knowledge and practices. In addition, the diversity kits incorporated other, more subjective elements, such as the pleasure experienced by farming households in producing their own food, and an overall increase in their well-being and happiness. The image depicted on the kit boxes, showing a father and a mother harvesting food, reinforces cultural values shared by communities over time.

**Self-reliance on household food production and food sovereignty**

At the beginning of the project, it became clear to us that the dependency of farmers on markets to get staple foods, such as rice and beans, was a major challenge. Our target was to rebuild self-reliance on farm-grown food. The importance of this goal was further highlighted by the results of a survey we carried out in Guaraciaba in 2007. The survey showed that before the kits were distributed only 25% of farming households were growing rice and 50% beans. Upon distribution of the kit in some of the communities these figures increased to 58% for rice, and to approximately 90% for beans. In addition to this, more than 35% of households interviewed considered the fact that they were able produce healthy food again at household level an important benefit (Vicente et al., 2010).

We used the kit as a tool for debating food security and sovereignty, for enriching the area and promoting sustainable development. Furthermore, the kit facilitated the raising of awareness of the need to reduce, or even abandon, the use of pesticides in food production, for improving the dietary habits, health and general well-being of the farming households. The right of households to protect their food production and cultivation, with the assurance that they are consuming healthy products, promotes true food security and sovereignty.

**Lessons learned**

We observed that the farmers’ interest in experimenting with new varieties was one of the main incentives for planting the seed included in the diversity kits. This illustrates the fact that the farmers’ innovative spirit and curiosity, despite having been repressed by the green revolution and industrialization of agriculture, is still alive and can be reinvigorated. It also shows the profound relationship of farming households with their environment, and their continuous observation of the results of their work. The economic impact of the diversity kit is also an important factor. When a household produces its own food, it ensures an increase in its income by reducing the costs of household food purchases. This factor, coupled with the fact that the farmers are now cultivating varieties of a known origin and quality, thus avoiding heavily processed and industrialized food, enhances the quality of food and livelihoods. It is clear that the diversity kit project was successful in motivating farming households to produce their own food. Moreover, they now realize that their participation in this CBM practice has been an important tool for regaining food sovereignty.