



**- International Fund for Agricultural Development –  
– Scouting and Sharing Innovation in Western and Central Africa –**

**– Diversity fields for on-site conservation –**

**I. Background**

**1. Name of innovation**

Diversity fields for on-site conservation and sustainable use of plant genetic resources

**2. Country – Region**

Mali, Zimbabwe, Burkina Faso, Niger

**3. Organization**

- International Plant Genetic Resources Institute (IPGRI)
- National agricultural research services (NARS)
- Sahelian Areas Development Fund Programme (FODESA)
- Community Investment Programme for Agricultural Fertility (PICOFA)
- Project for the Promotion of Local Initiative for Development in Aguié (PPILDA)

**4. Who is the innovator?**

Farmers, NARS (IER, Research Zimbabwe, INERA, INRAN), FAO and IPGRI

**5. Actors involved**

Farmers, IPGRI, NARS and IFAD projects

**6. Implementation date**

1999

**7. Type of innovation**

Institutional and knowledge sharing

**II. Key issues**

**8. Summary**

The diversity field approach is based on a research-action-training system implemented in the field, enabling collective training processes to be established among researchers, developers and farmers in order to boost their joint innovative capacities with regard to plant genetic resource management and use. In the Malian implementation context for the project, diversity fields are organized in 25 villages, with the participation of more than 625 farmers, not counting the exchange visits involving villages without diversity fields. The method has three basic components: (i) testing of plant genetic material by farmers; (ii) observation and analysis of the data gathered by the farmers, using their own selection criteria; (iii) the training of actors in spheres connected with plant genetic resource conservation and socio-economic aspects. The diversity fields are training contexts allowing the actors involved to discuss their practices and reflect together on concepts, words and their meaning in order to create a common language. They are thus essential with a view to joint innovation and joint strengthening of the producers' decision-making processes.

**9. What issues does the innovation address?**

- Striga, pest and disease control
- Production of good-quality organic manure
- Increase in yields through teaching and the adoption of new varieties and cropping practices (crop rotation, thinning, weeding at the right time, correct use of organic manure)
- Reduction in field work through a reduction in lot size by increasing crop yields with the adoption of new technical packages
- Increased harmony and solidarity in the village
- Acquisition of traditional local and improved varieties

**10. Key success factors for replication**

- Ease of use of the process
- Participation of local people

**11. Main results**

The results show that diversity fields modify the intervention approaches of research and development bodies, enabling research experts to work *with* and not only *for* local people. Development agents and research experts quickly gain a clearer understanding of farmers' viewpoints and their capacities for knowledge sharing and joint research. Technical, scientific and even indigenous knowledge is also disseminated among farmers through the conservation and optimization of genetic diversity at the village and inter-village levels. At the inter-village level, seed fairs are organized in the form of competitions among seed exhibitors, combined with a ceremony attended by producers selected from a number of villages, each with his or her own conserved heritage of genetic resources. These fairs are intended to encourage communication among villages, raise the awareness of a wide public to the diversity of local genetic material and allow the participants to learn about the performance and qualities of the various varieties exhibited, and conservation and multiplication products and techniques.

## 12. Target groups

- Farmers
- Young people

## 13. Difficulties encountered

- Insufficient organization of marketing and distribution chains for agricultural produce
- Insufficient financial resources to carry out income-generating activities
- Language barriers with regard to both written and spoken communication in the national languages (Bambara, Peulh, Bomou, Dogon, Mossi, Djerma, Hausa, Sonrail etc.)
- Insufficient and inadequate storage and conservation infrastructures for seed, especially the absence of budget lines in TAGs

## 14. Financial aspects

The cost of organizing and establishing a diversity field varies depending on the locality and also on how long the approach has been in use there. In Mali, the cost can be estimated at an average of US\$7,500 per diversity field. The cost of establishing a field includes the purchase of experimental equipment (tape measure, scales, office equipment etc.), the cost of inputs (fertilizer, insecticide, pesticide etc.), the cost of feeding those participating in observation days (purchase of food or use of the previous harvest in the case of old diversity fields) and the cost of supervision and facilitation (allowances paid to research experts or field instructors, production of reports, administrative expenses etc.).

## III. Technical summary

### 15.

A diversity field takes the form of one large field, identified collectively by the local inhabitants, placed at the disposal of the programme and generally located not far from the allotments. It is divided into two sets of 12 plots about 4 m x 10 m, separated by a central path. The field itself is bounded by a strip clear of vegetation or cultivated under groundnut or other crops not represented in the diversity field. One set of 12 plots is sown with cowpea and the other with millet, each plot receiving a single variety. Other crops (for example sorghum, millet and cowpea) are also tested. Groundnut and okra were introduced during the 2006/07 season. The number of plots may also vary depending on the particular location and the number of varieties available for testing. There are thus 12 different varieties for each species, 6 of local origin (either from the local village or from other villages in the region) and 6 others suggested by research, NGOs or extension services on the basis of identified constraints. Observations, data collection and on-site training take place weekly according to agreed procedures. A training session for trainers and facilitators is organized at the outset. The various varieties are assessed before and after harvesting. A wrap-up session is organized at the end of the season, with full involvement of producers.

## IV. Follow-up

### 16. Key contacts

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### 17. Internet link

IPGRI: [www.ipgri.cgiar.org](http://www.ipgri.cgiar.org)  
IFAD: [www.ifad.org](http://www.ifad.org)

### 18. Key documents

- F. De Leener. Les champs de diversité pour accroître la maîtrise paysanne du développement agricole [Diversity fields to increase farmers' control of agricultural development]. Dakar: ENDA, 2002.
- R. Thijssen. Farmer Field School or Participatory Technology Development? A comparison of principles and results of two participatory approaches. *International Workshop on Farmer Field School: Emerging Issues and Challenges*. Yogyakarta: VECO, 2002.
- Tiina Huvio and Amadou Sidibé. Strengthening farmers' capacity for plant genetic resources conservation in Mali. *Plant Genetic Resources* 1(1):31–41. DOI: 10.1079/PGR200314. AgBiotechNet. CABI Publishing. Wallingford, Oxon, OX10 8DE, UK. Tel: 44 (0)1491 832111 Fax : 44 (0) 1491 829292.
- I. Traoré. Contribution des champs de diversité dans l'amélioration du système semencier traditionnel. Mémoire d'étude de terrain [Contribution of diversity fields to improvement in the traditional seed-production system. Notes on a field study]. Geneva: IUED, 2006.