Support of the Informal Seed Sector
Support for the Informal Seed Sector

in

Development Cooperation

- Conceptual Issues -

July 2000

Deutsche Gesellschaft für

Technische Zusammenarbeit (GTZ) GmbH

in collaboration with the

Centre for Genetic Resources, The Netherlands (CGN)
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BADC</td>
<td>Bangladesh Agricultural Development Corporation</td>
</tr>
<tr>
<td>BMZ</td>
<td>Federal German Ministry for Economic Cooperation and Development</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biodiversity</td>
</tr>
<tr>
<td>CGIAR</td>
<td>Consultative Group on International Agricultural Research</td>
</tr>
<tr>
<td>CIAL</td>
<td>Comités de Investigación Agricola Local</td>
</tr>
<tr>
<td>CIPRES</td>
<td>Centro para la Investigacion, la Promoción y el Desarrollo Rural y Social</td>
</tr>
<tr>
<td>CPRO</td>
<td>Centre for Plant Breeding and Reproduction Research</td>
</tr>
<tr>
<td>DANIDA</td>
<td>Danish Agency for Development Co-operation</td>
</tr>
<tr>
<td>DGIS</td>
<td>Directoraat Generaal Internationale Samenwerking</td>
</tr>
<tr>
<td>DUS</td>
<td>Distinctness, Uniformity, Stability (of a variety)</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>FFS</td>
<td>Farmers Field Schools</td>
</tr>
<tr>
<td>GO</td>
<td>Governmental Organisation</td>
</tr>
<tr>
<td>GTZ</td>
<td>Deutsche Gesellschaft für Technische Zusammenarbeit GmbH</td>
</tr>
<tr>
<td>HYV</td>
<td>High Yielding Variety</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agricultural Research Centre</td>
</tr>
<tr>
<td>IARS</td>
<td>International Agricultural Research System</td>
</tr>
<tr>
<td>IITA</td>
<td>International Institute for Tropical Agriculture</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>IPGRI</td>
<td>International Plant Genetic Resources Institute</td>
</tr>
<tr>
<td>NARS</td>
<td>National Agricultural Research System</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisation</td>
</tr>
<tr>
<td>ODI</td>
<td>Overseas Development Institute</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PGR</td>
<td>Plant Genetic Resources</td>
</tr>
<tr>
<td>PPB</td>
<td>Participatory Plant Breeding</td>
</tr>
<tr>
<td>PVS</td>
<td>Participatory Variety Selection</td>
</tr>
<tr>
<td>REST</td>
<td>Relief Society of Tigre</td>
</tr>
<tr>
<td>SADC</td>
<td>Southern African Development Community</td>
</tr>
<tr>
<td>SVC</td>
<td>Seed Village Committee</td>
</tr>
<tr>
<td>TRIPs</td>
<td>Trade Related aspects of Intellectual Property Rights</td>
</tr>
<tr>
<td>UN</td>
<td>United Nations</td>
</tr>
<tr>
<td>UNCED</td>
<td>UN Conference on Environment and Development</td>
</tr>
<tr>
<td>UPOV</td>
<td>International Union for Protection of New Varieties</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organisation</td>
</tr>
</tbody>
</table>
Table of Contents

1. Scope of the paper 1
2. Background 1
   2.1 Informal seed sector 1
   2.2 Formal seed sector 3
3. Problem analysis 4
   3.1 Limitations of the formal system 5
   3.2 Limitations of the informal system 6
   3.3 Limitations of the regulatory framework 6
   3.4 Development co-operation 7
4. Alternative approaches 7
   4.1 Need for new initiatives 7
   4.2 The opportunities of complementarity 8
5. Objectives, areas of intervention and target groups 10
   5.1 Objectives 10
   5.2 Areas of intervention and target groups 10
6. Design of project and programme activities: strategies, activities and partners 11
   6.1 Community-based activities 11
   6.2 Interaction of informal - formal seed sectors: 14
   6.3 Policy interventions 16
7. Experience in projects 18
8 References 21

Appendix: Definitions
1. Scope of the paper

This paper aims to identify the conceptual and strategic background for support to the informal seed sector within the framework of sustainable seed supply systems and development co-operation. It concentrates on the informal seed sector and its complementarity and interface with the formal sector, since this important area has been neglected in the past.

The paper states the importance of local seed security for food production and sustainable agricultural development in general. It underlines the vital contribution of the informal seed sector to ensuring food security for the rural population. This includes small-scale farm households, tenants, local traders, and especially the women among them.

Additionally, the paper shows that support for the informal seed sector contributes to in situ management of agrobiodiversity, and thereby to the implementation of Agenda 21 of the UN Conference on Environment and Development (UNCED) and of the Convention on Bio-Diversity (CBD).

The paper aims to support the German Federal Ministry for Economic Co-operation and Development (BMZ) and the implementing agencies in relation to project identification, appraisal, planning, implementation, management and evaluation.

2. Background

2.1 Informal seed sector

For small-scale farmers in developing countries, management of seed is of crucial importance and forms an integral part of their crop production systems. For many centuries, farmers have developed and maintained their own plant genetic resources, based on local means of seed production, selection and exchange. Introgressions, mutations and
introductions from elsewhere are the common sources of new genetic material in a community.

Newly introduced varieties are subject to farmers’ experimentation, and when adopted they become part of the local gene pool. In many cases this integration involves physical mixing of seeds and spontaneous crossing with other materials. The informal seed sector has strong local character, without necessarily being confined to a small geographical area.

**Genetic diversity and the use of varieties**

Genetic diversity at farm level plays an important role in ensuring household food security. Diversity of crops and varieties serves diverse household needs for consumption and other uses. Farmers also need crop genetic diversity to cope with such variable environmental conditions as incidence of (new) crop pests and diseases, changing climatic conditions, soil erosion, changing market conditions and increasing population pressure.

Today most farmers continue to manage and use a portfolio of varieties, often both local landraces and modern varieties. Local landraces continue to play a crucial role in many farming systems for two major reasons:
1) the seed of landraces is readily available and
2) landraces are usually adapted to the local growing conditions, the low-input cultivation practices, and the needs of the farm households.

**Gender differentiation**

Local plant genetic resource management in many situations shows clear gender differentiation. Women tend to play a dominant role in seed selection, and storage and planting. This role is usually associated with rich knowledge of the characteristics and behaviour of different varieties and genotypes. The different roles of men and women in seed management form only one aspect of the differentiated needs, priorities and interests found within and between households and communities.
Variation in informal systems

Local seed management systems vary greatly. In some communities seed management is elaborate and sophisticated, linked with religious and cultural ceremonies, with specialised seed producers and selectors, and a high degree of farmer experimentation. In other communities it is simply a question of retention of seed, with multiple opportunities for improvement.

For variety use, a similar situation exists. There are many situations in which the local varieties perform better than the improved varieties. In other situations (i.e. other areas or other crops on the same farm), improved varieties may be a significant contribution to the local portfolio of materials because of their higher yield potential or other characteristics.

Local seed supply and diffusion are mostly based on existing traditional channels of information and exchange within and between communities. A wide range of mechanisms exists to exchange and supply seed. Transactions involve cultural forms such as gifts, seed swaps, in-kind seed loans or exchange for labour.

Today the importance of this informal system is generally recognised, yet political recognition and operationalisation of support is still poor.

2.2 Formal seed sector

Governments invest in research and development of the formal sector in order to maintain or improve national self-sufficiency in food production. In the last decades, many developing countries invested considerable resources to strengthen their research and extension capacities in the formal seed sector. Sophisticated governmental seed programmes concentrated almost exclusively on main staple crops and improved varieties. Seed multiplication, certification, and marketing of modern varieties and inputs are often heavily subsidised; these policies favoured the use of modern varieties.
Additionally, there was a general perception that the informal seed systems were backward and needed to be replaced by better systems that were based on successful western agricultural models. Local varieties were to be replaced by improved ones and, ideally, with seasonal purchase of seeds.

Particularly in the ‘70s and ‘80s, these approaches discouraged farmers’ use of local seeds and varieties. The success of these approaches has resulted in the disappearance of many local varieties in more favourable high-potential areas, thereby drastically reducing genetic diversity. In the less favourable low-potential areas where farmers employ higher levels of crop genetic diversity, the support has been much less effective. These farming systems are important for food production and maintenance of genetic diversity, but have so far been largely neglected.

With time, the political and economic conditions changed. The inefficiency and ineffectiveness of public seed supply systems was recognised. In the context of structural adjustment, seed production programmes were drastically reduced and seed certification was separated from production (for instance, in Morocco and Egypt). Seed produced by the governmental sector remained heavily subsidised, however, and the target group in marginal areas remained unaddressed. Additionally, the formal seed sector neglected the traditional role of women farmers; support and development programmes have been aimed at men only as a target group.

3. Problem analysis

At present an estimated 80% of the seeds planted in developing countries is farmer-produced. Small-scale farming is estimated to contribute more than 50% of the total food production in developing countries. So far, the formal sector has not been able to address effectively the needs of small-scale farmers in terms of seeds and varieties.
3.1 Limitations of the formal system

Formal sector breeding is typically organised in rather centralised programmes and produces relatively low numbers of improved varieties. These varieties have mostly been selected for wide adaptation in relatively favourable conditions. As a consequence, they are often not adapted to the needs of small-scale farmers and complex environmental stresses in low-input conditions. Farmers usually plant crops with more genetic diversity than the small portfolio of materials provided by formal breeding and seed programmes. In total, the formal sector has difficulty in addressing the differentiated and varied needs of farming households in marginal areas.

Additionally, it is becoming increasingly clear that farmers in more favourable areas also benefit from more access to genetic diversity than normally offered by the formal sector. In general, farmers’ needs for genetic diversity in the face of agro-ecological and socio-economic variation is underestimated. Also, diversity is needed in more favourable areas to maintain ecological sustainability, for example, in relation to control pests and diseases.

Large-scale seed programmes are often hampered by the fact that the seed they distribute does not compare favourably to farmers’ seed. Farmers produce in many cases seed of similar or higher quality and at more affordable costs than the seed programmes. This is particularly the case for self-pollinated crops. Furthermore, the seed price and availability are in many cases a limitation for the resource-poor farmer. Overestimation of seed demands, and the logistics of seed diffusion to small-scale farmers further contribute to the inefficiency and ineffectiveness of formal seed programmes.
3.2 Limitations of the informal system

Although the informal seed systems are well adapted to local farming environments, they often face numerous constraints. These systems function in environments which are typically characterised by a combination of biotic and abiotic stresses, creating very specific local conditions. This reflects the need for diverse and well-adapted, improved germ plasm.

Evidence from field studies shows that seed quality is in many situations sub-optimal due to diseases and storage problems. Exchange between communities often does not easily cross valleys, watersheds or other geographical and cultural barriers. Access to local seed by the poorer farmers within a community often seems limited as well. Local seed systems do have reasonable buffering capacity and are able to provide seeds where the formal system may already have collapsed under natural disasters, political or other turmoil. However, informal systems as well have limits on how they function under such pressures. Several seasons of low yields or crop failures have a tremendous impact on seed availability and its local prices. Once collapsed, the local system does not easily recuperate. In such a situation, local varieties are easily lost and replaced by relief-supplied seeds.

3.3 Limitations of the regulatory framework

The regulatory and legal framework of the national formal seed system in many countries becomes a factor that limits the development of the informal seed system. National seed regulations are usually based on international standards which are often useless or incompatible with farmers’ reality. They impose restrictions on free exchange and marketing of seeds. Especially the combination of compulsory variety registration and seed certification, as practised in European and other countries, is a heavy constraint both on the efficient functioning of the formal seed sector and on the development of alternative seed systems.
3.4 Development co-operation

The main strategy of donor organisations in supporting agricultural development was to strengthen governmental formal structures. This was aimed at the development of a formal seed sector, organised according the successful western ‘blueprint’. Although the impact of the approach has sometimes been significant in high-potential areas and in major food and industrial crops, ineffectiveness and financial non-sustainability are recognised as well. As a consequence, donor support to seed sector development in developing countries has been drastically reduced.

4. Alternative approaches

4.1 Need for new initiatives

At present the seed sector in many developing countries does need re-orientation. The policies of structural adjustment have drastically limited public seed sector activities in a majority of the countries, and left farmers in a vacuum, with the informal system as the only source of seed. So far, little has been done to fill this gap or support the informal system, partly because clear concepts and strategies are lacking. Alternative approaches that are based on the strengthening of the informal sector and the complementarity of both informal and formal seed sector provide such concepts. Opportunities for wider implementation need to be analysed and supported.

The need for developing countries to define and implement a regulatory framework is a related area that requires attention in order to facilitate seed sector development.
4.2 The opportunities of complementarity

The complementarity of the formal and informal sector offers multiple opportunities to develop a well-integrated seed sector in which both formal and informal actors play a significant role. Farmers’ capacities and knowledge regarding local conditions, seed selection and traditional mechanisms of seed exchange are valuable elements in the functioning of the informal seed sector. Instead of replacing the informal sector, the formal sector can build on these elements to address more effectively the seed demands of small-scale farmers. The informal system can be significantly strengthened, for instance, by introducing improved genetic materials and adapting improved seed technology to local conditions. The limitation of the formal sector lies in its incapacity to address widely varying agro-ecological conditions or the needs and preferences of small-scale farmers. Farmers’ knowledge and capacities and farmer-based organisations can play an important role in this respect. This knowledge and these capacities can be mobilised through participatory approaches.

Operationalisation of strategies to strengthen the informal seed sector is also significant for on-farm management of agricultural bio-diversity. Basically, a more diverse portfolio of varieties and seeds provided by the formal sector offers farmers a wider choice to select from. This enhances the use of crop genetic diversity in farmers’ fields.
Figure: Local and formal system of management of plant genetic resources (adapted from de Boef et al, 1997 and Almekinders & Louwaars, 1999)
5. **Objectives, areas of intervention and target groups**

5.1 **Objectives**

Interventions to strengthen the informal seed and biodiversity management systems in the framework of development co-operation aim to contribute to seed security at the household, community and national level. In other words, the objective is that farmers have access to availability of seeds of optimal quality and diversity.

5.2 **Areas of intervention and target groups**

Three areas of intervention to support the informal seed sector can be distinguished:

- community-based activities to support farmers’ seed management activities
- interaction between the informal and formal systems
- international and national seed and variety policies

In relation to the three described areas of intervention, the target groups for activities in development co-operation are:

- farmers: individual farmers, farmers’ groups, especially women farmers
- small seed enterprises
- NGOs and development agencies
- researchers and technicians of national systems
- policymakers

In the following chapter, the three areas of intervention will be briefly reviewed in relation to strategies, activities and partners.
6. Design of project and programme activities: Strategies, activities and partners

6.1 Community-based activities

**Strategies**

Analysis of the local informal system is the starting point for a strategy that aims to strengthen and build on the existing system. Identification of weaknesses or gaps in seed security lead to the definition of activities to improve household and community seed security. National seed security will improve when local seed security is increased. The following aspects are relevant for strategies to improve local systems.

*Integrated approaches*

Local seed production and supply forms an integral part of household livelihood systems. The attempt to improve seed supply at this level calls for a holistic approach. Such an approach takes into account the agro-ecological and socio-economic environment of farming households. This includes effects of the environment on household needs and priorities, availability and access to resources and technology, and possible cultural elements in needs and priorities. **Local seed system activities can therefore be integral parts of projects addressing rural development, local food security and agricultural development.**

*Plant genetic resource management*

The integrated character of on-farm seed production also implies that when ‘seed’ is addressed, the aspects of breeding and conservation of crop genetic diversity are also involved. Seed selection relates to variety maintenance and crop improvement; the availability of and access to different seed sources is linked with on-farm genetic diversity. Exchange with other farmers and communities influences the dynamic variability of the local gene pool, etc. This places seed management practices in the context of local plant genetic resource management.
Stakeholder differentiation

Women are known to be in many places the key players in local management of seeds. Within a household, gender may be related to differences of interests. Age differences may also be linked to varying interests or priorities. Within a community or region, wealth status and/or ethnic-cultural differences can also affect knowledge, preferences, access to resources, etc. This includes the access to seed. Projects addressing community levels need to be aware of the possible differentiated needs and priorities (stakeholder differentiation).

Participatory approaches and farmers’ knowledge

Complementarity of the informal and formal sector suggests that seed supply can be significantly improved by building on the local system. An important aspect of the local system is the farmers’ knowledge and capacities. This knowledge and these capacities can be mobilised through participatory approaches. Participatory Technology Development (PTD) has proven to be effective in a range of technology areas, but its application in seed technology has so far been relatively limited.

Partners

Partners are first of all the farmers. Local seed system and stakeholder analysis can point to a particular target group in a community or a region. Non-governmental organisations (NGOs) may also be useful or necessary partners in the activities. Linkages with local authorities are important for the success of activities; linkages with genebanks and research programmes of international and national agricultural research systems (IARS and NARS) are important for the sustainability of successful approaches, and linkages with development organisations are important for upscaling and mainstreaming them. Partners from the private sector may secure the supply of new genetic materials and distribution of improved seed and technology to other farmers, and relate successes to policymakers.
Activities

Depending on limitations in local seed security, a range of activities may be of interest to farmers for experimentation and implementation.

- *Seed technology improvement* (seed selection and seed storage practices):
  These activities relate, for instance, to seed selection from marked, well-performing plants in the field, implementation of special seed production plots, and experimentation with improved drying and storage techniques.

- *Crop improvement* related activities: introduction, evaluation and selection of improved genetic materials (participatory variety selection/participatory plant breeding).
  These activities can involve local varieties and improved varieties. Examples of activities are: farmers’ visits to and evaluation of plant breeding or genebank materials at a research station; selection of varieties in a communal variety trial and mass selection in landraces and subsequent multiplication. Participatory Plant Breeding (PPB) is an area of activities offering interesting opportunities to strengthen the local seed system. To be successful, it needs to be linked with local seed multiplication and diffusion activities.

- Community activities supporting access to and availability of seed diversity:
  This involves community systems of seed production and storage (e.g. community seed banks), community conservation of crop genetic diversity (identification and support of farmers/curators) and seed exchange activities such as seed fairs or seed diversity competitions.

- Private sector development:
  Support activities to improve seed production and marketing relating to seed technology, credit, and small business management and marketing are relevant to support local seed production initiatives. The opportunities for successful small seed enterprises need careful analysis: Seed enterprises can only be sustainable if seed demand is large and constant enough.
Activities addressing minor crops and landraces may be particularly relevant, as no formal seed sources normally exist for these crops and varieties.

Activities to raise awareness, local capacity building and community organisation in the context of seed-related activities strengthen the local seed systems and development in general. Experimentation through Farmers’ Field Schools (FFS - SE Asia) or Comités de Investigación Agrícola Local (CIAL - Latin America) are examples of local organisations that target these objectives.

6.2 Interaction of informal - formal seed sectors:

*Strategy*

A better interaction between the formal and the informal systems is of mutual interest. The farmers’ demand for seed in developing countries is complex and diverse. It is not realistic or efficient for the formal seed sector to aim at covering the total seed demand. The complementarity of the informal seed sector should be recognised and operationalised. Such operationalisation can lead to the development of an integrated seed system in which formal and informal actors each have a role to play. It does, however, require important collaboration between the actors of the formal and informal sectors, i.e. among breeders, genebanks, seed projects of the formal sector, farmers and NGOs.

*Partners*

All organisations and farmers are potential partners/collaborators in seed-related activities: NARS genebanks, breeding and seed programmes, NGOs, farmers’ co-operatives or organisations, and individual farmers. Involvement of private enterprises is relevant as well, for instance, to stimulate the development of a contract growing system. Support of international agricultural research centres (IARC) and donor agencies can provide relevant expertise and is important to legitimate national professionals and organisations in their efforts to strengthen the informal seed sector.
Activities

The community-oriented activities mentioned earlier provide opportunities to establish linkages between different partners.

A range of activities can be instrumental in facilitating the linkages.

• Workshops, seminars and field days with mixed presentation and/or participation
  Exchange of ideas and experience is still needed for recognition of the informal seed system as a complementary system of seed supply.

• Training and extension for capacity-building among professionals of governmental organisations (GOs) and NGOs
  Training and extension objectives can be the dissemination of concepts and of information on technical issues in adapted seed technology and breeding, participatory approaches, the relation between use and conservation of crop genetic diversity, and between social and technical issues, etc.

• Establishment of committees or platforms
  Such platforms can serve as places for exchanging ideas among farmers, development workers, researchers and agricultural policymakers, as well as for negotiation of interests and formulation of collaborative activities.

• Possibilities of mixed participation of GOs, NGOs and private enterprises in events in order to generate mutual understanding of differences in perspective and interests

• Providing access to and exchange of technologies and materials such as those provided by NARS or NGOs

• Providing advice or exchange of knowledge on seed production, processing, treatment and storage
6.3 Policy interventions

**Strategy**

A policy framework which favours the development of an informal seed sector is characterised by:

- Decentralisation of research and development
- Financial conditions (credit/investment, tax and seed import/export procedures) favourable for (small-scale) private initiatives
- Administrative and legal conditions favourable for small-scale private enterprises
- A coherent Agricultural Sector Programme in which the importance of the informal sector is recognised

Recognition of the importance of the informal sector relates to farmers’ role in the supply of seeds, *in situ* conservation, utilisation of crop genetic diversity, and farmers’ knowledge. Recognition also involves the importance of identification of farmers’ needs.

- A National Seed Policy supportive of informal seed development. At present the seed policy in many countries is restricting informal seed sector development. A legal framework has to support a pluralistic variety and seed supply, with farmers being served by a number of institutions, including those in the private sector. On-farm seed production and exchange, maintenance, development and registration of local varieties should not be restricted by national seed policies. In a system with multiple seed sources to select from, seed control or certification may not be relevant for all seed planted, but can concentrate on, for instance, breeder and foundation seed. Seed control agencies may also develop an instrumental function in the monitoring of the informal seed sector. Identification of weaknesses in the informal seed sector may result in effectively targeted support.

- Advocacy of farmers’ rights, i.e. the recognition of the contribution of farmers to the development and maintenance of genetic resources, may contribute to raising awareness of the importance
of strengthening the farmers' system of crop development and seed supply.

**Partners and instruments**

In relation to the formulation and implementation of national seed policies, the international donor organisations can be instrumental. This is a policy field where the interests of the commercial seed sector meet those of farmers and biodiversity conservationists. WTO/TRIPS requires member countries to establish a system of intellectual property rights applicable to PGR. The UPOV-supported regulations of Plant Breeders Variety Protection serve in this respect as *sui generis* mechanisms. However, UPOV '91 regulations seriously restrict the farmers' privilege to multiply seed for their own use. The CBD and the FAO Undertaking ask signatory countries to support free access and *in situ* conservation of PGR. Farmers' rights and those of indigenous communities deserve special attention and more support by governments and international organisations.

Various donor organisations support seed sector programmes in different countries on the formulation of a national seed policy that is in agreement with the different treaties and conventions. Coordination of international donor support may therefore be a special point of attention.

The International Plant Genetic Resources Institute (IPGRI), Plant Resources International (formerly CPRO, The Netherlands) and ODI give training courses and policy advice with regard to the establishment of coherent seed policies.

International and national NGOs are important partners in the policy field of developing countries. Support for their campaigns may influence policymakers in developing countries on the incorporation of small-scale farmers' interests into policies on seed and biodiversity conservation and management.

Instruments of support are the organisations of debates in national or regional fora, workshops, seminars and training courses on policy issues.
7. Experience in projects

As mentioned under point 3.4, since recognition of the ineffectiveness of the large-scale subsidised public sector seed programmes, many programmes have been discontinued. The vacuum in seed sector support is partly due to the lack of new concepts. As a consequence, there is little experience available of approaches along new lines. A number of interesting programmes and approaches are the following:

"Small-Scale Seed Production by Self-Help Groups (SSSP)"

This GTZ-supported project was initiated in 1992 and operates under the Regional SADC Food, Agriculture and Natural Resources Programme (FANR). It is based in Harare. Since availability of appropriate seed at household level was found to be one of the major factors for household food security, the project aims at the formulation of strategies for enhancing quality seed supply of appropriate crops and varieties. It supports a range of initiatives in the informal seed sector, such as training courses, field days and seed fairs, the collection of baseline information, and studies on aspects of the local seed system. The project plays a catalysing role in raising the awareness of the importance of the informal seed sector through the support of publications and newsletters, and the organisation of events and workshops with policymakers. Initially the project focused on activities in Zimbabwe. In the last two years, the project has extended into other SADC countries, such as Zambia and Malawi, with the objective of developing a seed network of formal and informal organisations.

"Promotion of Seed Production and Marketing in West Africa"

This IITA- and GTZ-supported project aims at improved seed supply in the informal seed sector by introducing improved materials into the informal seed sector. Such materials are accepted by farmers and are adapted to their local conditions. Subsequent farmer-to-farmer diffusion
will ensure that a large number of small-scale, resource-poor farmers will have access to these materials.

The project connects principally with government organisations and aims to support these organisations in the creation an ‘enabling climate’ for small-scale private sector seed enterprises. The project works through demonstration farms/stations for the multiplication of quality seed (including tuber crops). These demonstration farms are considered pilot project model approaches which can be applied elsewhere in the region. The project also supports the preparation of business plans for small seed enterprises, and has produced manuals on seed marketing as well for informal seed growers.

"Strengthening and development of the seed industry in Bangladesh"

This programme by the government of Bangladesh and DGIS aims to stimulate all activities in the formal and informal seed sector that can contribute to improved seed supply. The existence of the programme illustrates the recognition of the government of Bangladesh that seed supply from the public sector cannot effectively and efficiently meet farmers’ demands. The Seed Promotion Unit is a catalysing project within the Crop Diversification Programme of the Ministry of Agriculture which initiates and supports seed enterprise development, organisation of contract growers, stimulation of adaptive research and other activities that favour the development of a seed sector.
The project is important and successful in relation to establishment of linkages between public and private sector initiatives. The project was financially supported by DGIS, The Netherlands, and enters a new phase with DANIDA support in 2000.

"Bangladesh-German Seed Development Project"

This project, supported by GTZ, is implemented with the Bangladesh Agricultural Development Corporation (BADC), which traditionally has been the organisation responsible for input supply to agriculture (fertilisers). With regard to the informal sector, the project evaluates the potential for small-scale seed enterprise development. It specifically targets the development of organisations and capacities of small farmers in Bangladesh to produce, process and market seeds. It is also important in relation to the re-orientation of the perceptions of public sector technicians, in particularly those in BADC. The project recently entered a second phase.

Other seed production activities

Various NGOs support farmers in different aspects of seed production. For example, CIPRES, an NGO in Nicaragua, supports farmers in the production of bean seed of improved and local varieties. Various NGOs around Cuzco, Peru, support farmers in the production and diffusion of good quality seed of native potato varieties. REST, an NGO in Tigray, Ethiopia, strengthens local seed security through the organisation of seed banks. Also the Institute for Biodiversity and Conservation Research (Ethiopian Genebank, supported through GTZ) is involved in the organisation and support of community seed banks. Improving seed security of local materials is a way to support in situ conservation.

Various Participatory Plant Breeding (PPB) projects, involving breeders of NARS and NGOs, do consider seed production and diffusion an important element in the up-scaling of the benefits of PPB.
8 References


Several publications of the SADC/GTZ project: "Promotion of Small Scale Seed Production by Self-help Groups" (SSSP).
ANNEX: Definitions

variety:
- a plant grouping which is distinct in one or more forms or functions from other such groups of a plants of the same species, and which maintains these distinctions when reproduced. In this book synonymous with 'cultivar,' which is a cultivated variety.

farmers' variety, traditional variety, local variety, or landrace:
- a population of plants resulting from the combination of environmental selection pressure (biotic and abiotic) and the cultivation and seed selection practices of the farmer over a period of time. A landrace is usually a complex heterogeneous population, but not necessarily.

improved variety:
- a term that is used in different ways by different people, and is therefore not used in this book.

modern variety:
- a variety which is developed by trained breeders working through targeted generation of diversity, through crossing or other biotechnology tools, and selection.

high yielding variety:
- used as synonym for modern variety, but actually an incorrect term since it implies that modern varieties always have high yields.
seed:
- the generative or vegetative part of the plant used as propagation material. Correctly used, 'seed' only refers to the plant part that developed from the flower after fertilisation (true seed). This correct use is sometimes emphasized in this book by making separate reference to the seed and vegetative plant parts (roots, tubers, stems) used for propagation.

propagation material:
- the overall term for any plant part used to grow a crop from (seed, tuber, root or stem part)

crop:
- in a narrow sense refers to cultivated and harvested plants. The forester may speak of a timber crop, the livestock man of a calf crop and the American Indians can speak of a wild rice crop (Harlan, 1992).

domestication:
- the process of genetic evolution that adapts the plant to cultivation and use. A fully domesticated plant or animal depends on man for survival.

cultivation:
- caring for plants through any of the following activities: preparing the soil, planting, manuring, protecting, watering, followed by harvesting of the products the plant was cultivated for.