A basis for a better future:

Agrobiodiversity and emergency response

In emergencies, direct aid is required to meet people's basic needs.

Photo: Catholic Relief Services

Utilising the diversity of domestic animal breeds and crop varieties adapted to local conditions makes it possible for people to live in places where conditions for agriculture are difficult – even in normal times. This becomes all the more important when disasters, conflicts and other crises add to the hardships of survival. For example, crop diversity enables people to mitigate climate- and market-related risks, cope with the varying availability of labour, or secure a harvest even if they cannot sow at the normal time.

Emergency aid should therefore be planned in a way that conserves this local diversity. It is particularly important that it does not destroy whatever survived the disaster as a result of well-intentioned but inappropriate measures. Many organisations that provide emergency and reconstruction aid therefore aim to combine emergency assistance with longer-term development goals. They seek not just to provide short-term help but also to lay the foundation for sustainable development in the affected regions. However, the subject of agrobiodiversity has tended to be only indirectly considered. The FAO's guidelines on seed aid envisage that measures will build on local systems of seed distribution and that choices between different varieties will be offered. Other organisations, such as the OFDA (US Foreign Disaster Assistance), recommend that the systems that exist under normal conditions should not be undermined by aid measures.

Seed aid: The basis of reconstruction

In emergency situations people's first need is for food, drinking water, shelter and medical aid. Once immediate emergency aid has been provided and thoughts turn to reconstruction, seed is one of the first requirements if people are to begin producing their own food again.

In the past the provision of seed aid was often based on the assumption that, in consequence of the disaster, seed supplies were no longer available in the region. The response was to bring in seed – often of "improved" varieties from other areas. Under marginal conditions, however, and without fertilisers and pesticides – which impoverished farmers cannot afford – these varieties cannot fulfil their yield potential.

This form of seed aid creates problems because it ignores not only the advantages of the indigenous varieties but also the existence of local seed supply systems. It is now recognised that these systems continue to function – albeit to a restricted extent – even in extreme situations of drought, flood or civil war.

As a result, a deeper understanding of seed security has developed in recent years and the "informal" seed networks that farmers have among themselves are now taken into account (FAO 1999; CIAT, CRS, USAID 2001). Local markets and dealers, too, often play an important role in seed procurement. The chief problem for farmers in disaster-hit regions is often not that there is insufficient seed available, but that they lack access to it: They have no money to buy it, or dealers are investing in less seed because of the general insecurity. In addition, the displacement of peoples destroys social networks that were important for the exchange or purchase of seed.

More diversity through market-based assistance

No one approach to seed aid is inherently good or bad. Local markets need to be understood and support provided at appropriate points if aid measures are not to have a negative impact on agrobiodiversity. A wide range of suitable measures may be considered, including:

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Seed System Security Assessment (SSSA)

Seed System Security Assessment is a new tool for analysing seed security. The approach has been developed by scientists and practitioners in an attempt to learn from earlier instances of aid provision in a number of African countries.

SSSA involves three aspects of seed security: availability and quality of seed and access to it. Ideally data will be collected before a disaster occurs and will indicate, for example, the quantities of particular plants and varieties that are grown, the time of year at which they are sown and the source of the seed. An analysis of the strengths and weaknesses of the seed system provides a basis for preventive measures which might, for example, include better local storage facilities. After a disaster the SSSA tool can rapidly provide a detailed picture of the need for intervention.

While applying this method socio-economic differences should be considered, for example by obtaining separate information about seed procurement for poor and wealthy farmers, members of different ethnic groups or men and women (Remington et al. 2002; CIAT, CRS, CN 2005; ICRISAT-Mozambique 2002).

- Procurement of grain/seed from local sources for direct distribution;
- Provision of credit or loans for local grain traders to enable them to transport and store locally adapted seed from surrounding areas;
- Offering vouchers, cash or income-generating opportunities to farmers to enable them to buy seed;
- Organising local seed fairs – perhaps combined with voucher distribution – so that farmers have access to the seed they need (Sperling et al. 2006).

These approaches have the advantage that they support local business and help integrate it into the reconstruction process. They also enable farmers to put together a "mix" appropriate to their own needs from the range of available crops and varieties. The distribution of vouchers for locally organised seed fairs has frequently proved to be successful in the past. Such schemes are provided by large international aid organisations such as CRS (Catholic Relief Services), FAO, World Vision or CARE, usually in collaboration with local NGOs and the state authorities. Ultimately, though, one of the best ways of supporting seed provision that reflects local biodiversity is to help farmers produce and conserve their own seed.

Vouchers enable women farmers to choose the types of seed that they need. Photo: Steve Walsh/ Catholic Relief Services

A special relationship: Seed and food aid

When farmers produce their own seed or buy it at local markets, there is no clear distinction between grain for sowing and that for eating. Of course, some farmers in-

The SADC Seed Security Network

The SADC Seed Security Network is an initiative of 14 African countries, supported by organisations in Germany and Switzerland (GTZ, SDC – Swiss Agency for Development and Cooperation). Most SADC member countries regularly experience food shortages and are regular recipients of food and seed aid from the international community. It was this situation that led the SADC Seed Security Network in 1999 to start an initiative to stabilise seed security at various levels:

- Farmers' production of their own seed, especially in small "seed gardens" outside the main growing season, is a key activity of the project. This gives many farmers direct access to seed which they or their neighbours have produced themselves, and as a result they need less money to buy seed at the beginning of the season.
- Although national and international research institutions have developed varieties suitable for unfavourable locations and small-scale cultivation, the small quantities required have meant that commercial companies have had no interest in marketing these seed types. Through decentralised seed multiplication, farmers are now able to select from a wider range of varieties suited to local growing conditions.
- Agreements with private companies have ensured that larger seed quantities are produced of varieties that are particularly popular with farmers. The harmonisation of seed legislation in all SADC member countries encourages the exchange of seed across national borders.
- The Seed Security Network has in addition set up an early warning system and advises international aid organisations on the planning of their measures.

vest considerable time in the selection and safe storage of their seed. However, for many crops grain from the farmer's general stock or from the local market can also if necessary be used for sowing, and stored seed can be consumed if required. This feature of local seed systems – the interchangeability of seed and grain – is of great importance in emergency situations.

If food aid is provided immediately after an emergency and in sufficient quantity, this may prevent farmers from consuming their own seed stocks. This approach has become known as the "seed protection ration". For example, after the Rwandan genocide food aid was crucial in allowing seed stocks and varietal diversity to be maintained; it served in particular to protect the country's staple bean crop (Sperling 2001).

If food and seed aid are not coordinated, farmers may use grain received as food aid for sowing. This involves considerable risk, because the varietal characteristics and the degree of adaptation to local conditions are usually unknown. Furthermore, local varieties of crops such as millet or maize may be "contaminated" by cross-pollination. One way of avoiding such problems is to distribute foreign food aid in the form of processed products, for example as flour rather than as whole grain.

Emergency aid for livestock – not yet practicable

To date there are few examples of emergency aid targeted at pastoral people for the purpose of ensuring the survival of breeding animals of traditional breeds. It is difficult enough to provide adequate aid for people, particularly in remote areas with poor infrastructure.

However, it is in just such marginal regions that particular livestock breeds have developed. These animals are often ideally adapted to local living conditions. Traditional knowledge and traditional forms of organisation have in the past ensured the survival of the most valuable breeding animals. Experts therefore suggest that aid measures should focus on understanding and strengthening these traditional practices (Chand et al. 2005).

The *ex situ* conservation of valuable animal genetic resources is drastically under-developed. Live conservation of breeding animals outside their area of origin, for example in zoos, and the freezing of semen or embryos are methods used in some industrialised countries to safeguard rare animal breeds. Close cooperation and partnership between traditional breeders and state institutions is needed if the same techniques are to be used in developing countries. There is a great need for support in this field (Chand et al., 2005).

Distributing food aid in the form of flour prevents imported food grain being used as seed. Photo: Steve Walsh/ Catholic Relief Services

Three problem areas

The key obstacles to the inclusion of considerations of agrobiodiversity in emergency aid lie in the following areas:

• Underestimation of the value of agrobiodiversity

The value of local crops and animal breeds and the related knowledge of local people continue to receive insufficient consideration when aid plans are being drawn up.

• Vested interests

There are vested interests in any emergency situation. For example, private seed companies or wholesalers can make a good profit from the emergency supply of seed and may make use of the opportunity to introduce new varieties by the back door. Aid organisations like to demonstrate quick results: they may do what is easiest but not necessarily that which is most effective.

• Institutional challenges

For people and their needs to be best served, both disaster prevention measures and emergency relief and reconstruction aid must be organised decentrally. This requires coordination and cooperation between local, national and international participants, the systems for which are in most cases not yet sufficiently developed.

Needs and options for action

• Seed aid can only be effective if information is available about the sources from which farmers normally procure their seed, the particular conditions that apply and the strategies that the farmers themselves have in place for emergencies. There therefore needs to be far more investment in the recording and analysis of seed systems

Emergency aid should not only provide help in the short term; it should also lay the foundation for sustainable development.

Photo: Guenay Ulutunçok

(SSSA). It is also important to ascertain how such systems can be strengthened in the long term.

- Similar information is required about livestock keepers. Research needs to identify specific action that could be taken in an emergency to ensure the survival of domestic animal stocks.
- There is scope for the improvement of cooperation between emergency aid organisations and institutions involved in longer-term issues of food security, seed security and agricultural development. There needs to be an increase in development-oriented emergency aid that is coordinated with longer-term development goals for the affected region.
- Early warning systems need to be set up at national and international level for droughts, floods, storms and other recurrent events. There needs to be a permanent system for the exchange of information between governmental and non-governmental, formal and informal institutions.
- Seed aid should increasingly follow good practice guidelines that ensure that the requirements of agrobiodiversity are considered – both by governments and by international donors – as part of emergency aid.

Emergency aid and the maintenance of agrobiodiversity must go hand in hand; only then can the resource base on which the life of people in disaster-prone areas depends be secured for the future and new development opportunities arise for the affected regions.

The Issue Paper series "People, Food and Biodiversity" aims to:

- stimulate an interest in the conservation and sustainable use of biological diversity,
- present quickly and clearly concrete actions and experiences,
- explain new concepts and issues relating to the topic of biological diversity,
- encourage and stimulate the mainstreaming of this topic within development cooperation projects and programmes.

We look forward to your suggestions and experiences so as to enable us to improve this series.

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Imprint

GTZ is implementing the sector project "Global Food Security and Agrobiodiversity" on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).

Issue Paper series "People, Food and Biodiversity"
Published by: sector project "Global Food Security and Agrobiodiversity" (OE 45)

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