

# Seed Provision During and After Emergencies

## 1. Introduction

### 1.1 Purpose and scope of this Review

The aims of this Review are to bring readers up to date with the latest developments in knowledge and techniques in seed provision during and after emergencies. We aim to stimulate discussion as to what constitutes ‘good practice’ in this field; the emphasis is on providing practical information concisely and accessibly. There are a number of different types of organisations involved in seed provision, including UN agencies, donor agencies, non-governmental organisations (NGOs) (i.e. charitable organisations), seed companies, national agricultural research programmes, and international agricultural research centres (sometimes known as CG Centres). This Review has been written with personnel of all these organisations in mind, but particularly those in UN, donor and NGO agencies who may have little prior experience of seed provision during and after emergencies.

There is no single widely-accepted definition of what constitutes an ‘emergency’, and what period of time emergency conditions might be expected to last. In this Review, we define emergencies as including armed conflict, natural disaster (drought, flood, cyclones, volcanic eruption, etc.), or – in the worst cases – a combination of these phenomena. In a number of recent emergencies, it has been possible to distinguish three broad phases: an acute phase, which may last around three months; a settling-down period which may last from six to nine months after the acute phase; and a rehabilitation phase. However, conditions vary from emergency to emergency and emergencies may continue in chronic form for many months or even years. These exceptions are often chronic political emergencies, with the current situation in Sudan and Liberia offering two such examples.

For the purpose of this Review, we distinguish between emergency seed provision (ESP) and longer-term seed capacity-building activities. We define ESP as being ‘*a period of significant seed distribution and associated activities*’ (End p1)

*following the acute phase of an emergency*’. In most circumstances, ESP should be a short-term intervention covering only the first few agricultural cycles following the onset of an emergency. ESP is rarely relevant or feasible while an emergency is still in the acute phase, and usually starts during the settling-down period. It may evolve from initial blanket seed distribution, to targeted seed distribution to identified vulnerable groups.

We have identified one exception to the principle that ESP should be a short-term activity, and this relates to the duration of the emergency. If the emergency itself (not the *effects* of the emergency) continues for a number of years, then it may be necessary to continue ESP for a number of cycles, rather than moving directly to longer-term seed capacity-building.

Otherwise, if agencies wish to continue with seed activities after the first few

agricultural cycles, they should aim to move on from ESP to longer-term seed capacity-building. We define this as ‘*supporting the development of sustainable access to seed in the longer-term, once an emergency has ended*’. It may be possible to begin such capacity-building while the settling-down period is still underway, but it should be a long-term commitment which lasts into the rehabilitation phase and very likely beyond.

The Review will go on to good practice in ESP in Chapter 2 and in longer-term seed capacity-building in Chapter 3. Chapter 4 describes three main disaster scenarios in which ESP or seed capacity-building may be relevant, and the particular characteristics of seed activity that are needed in each scenario. Chapter 5 summarises the directions that seed provision may take in the future. The Annexes provide check-lists of the data required for planning, monitoring and evaluating ESP (Annexes 1 and 2) and seed capacity-building (Annexes 3 and 4).

## 1.2 What is seed?

Seed is a complicated commodity. On the one hand, it is one of the main  
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outputs from crop production, in the form of grain (from cereal crops), nuts, or beans (from legume crops). But on the other hand, it is also a vital input to crop production: without seed to plant, crop production cannot take place. Seed produced by seed companies has usually been through a process of quality control which adds to its value for planting. However, many farmers the world over simply save grain from their previous harvests and plant that as seed the following season. Seed is always used for planting cereal and legume crops. However, root and tuber crops like cassava and sweet potatoes can be planted from cuttings as well as from seed.

Each crop (maize, wheat, rice, etc.) has a number of ‘varieties’, which can be likened to ‘brands’ of commodity: maize can be of the variety *Katumani* or *R201* in the same way that soap can be of the brand *Lifebuoy* or *Camay*. These varieties can be ‘local’ in origin, i.e. selected and maintained by local farmers, or ‘modern’, i.e. the result of organised plant breeding by scientists.

Four other characteristics of seed are important, relating to quality:

- *genetic quality* – this refers to whether the seed is varietally pure, and will thus grow true to type when planted, and to the adaptation of the variety to the environment for which seed is being provided;
- *physiological quality* – this refers to the germination capacity of the seed (what percentage of the seed planted starts to grow in a given period of time) and to the vigour of the seed (how well it grows);
- *analytical quality* – this refers to the percentage of inert matter (dirt, stones, etc.) and broken or otherwise damaged seed that is found in a given quantity of seed; and

- *sanitary quality* – this refers to whether there are any pests and/or diseases carried on, in or with the seed.

Only analytical purity and sometimes sanitary quality can be assessed with the  
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naked eye when viewing a given quantity of seed – genetic and physiological quality usually only become obvious after the seed has been planted. This means that quality control systems are very important. Section 2.5 gives further details.

We can only include a very basic summary of seed issues here. For more information, see, for example, Henderson (1988).

### **1.3 Rationale for seed provision during and after emergencies**

The underlying rationale for seed provision during and after emergencies is that it can help to re-establish a ‘self-help’ mode within communities affected by emergencies: once families have seed and basic tools, they can start the process of producing their own food and/or making money from selling crops, and thereby reduce their dependence on external sources for their livelihoods. It is important to remember that in many situations families want to use their own initiative as much as possible to restore their seed stocks. After the 1994 genocide and war in Rwanda, for example, women farmers confidently predicted that shortages of sweet potato cuttings would be quickly overcome through gift-giving (Pottier and Wilding, 1994).

The precise contribution that seed provision can make will vary according to the local situation (see Chapter 4); this variation must be allowed for in the planning and implementation of all ESP and seed capacity-building activities, whether they are intended to be short- or long-term in nature. Therefore, it is vital that there is a thorough and detailed investigation of seed need, and the pre-emergency seed system in the area, before a decision is made to intervene. Nonetheless, some general principles apply concerning when seed provision is appropriate, and these are outlined in the following paragraphs.

Emergency seed provision should take place following a disaster only if there is a strong expectation that a degree of ‘normality’ will have returned to the local farming system by the time of the next planting season. In particular, there should be evidence that families are committed to staying in the area, will have  
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access to land and labour, and will be able to harvest their crops. It is irresponsible to distribute seed if there is not this expectation, for at least two reasons. Firstly, if families plant seed distributed by humanitarian agencies, even though the realistic expectation of a harvest is slim, this involves them making an investment of their own resources (land, labour, etc.) on which there will be no return. When this occurs, the agencies that distributed seed are actually *depleting* families’ resources, rather than contributing to them. Alternatively, if families do not plant the distributed seed, then the money invested by agencies in ESP will be largely wasted, because seed does not store well from season to season so families are highly unlikely to keep it for planting when comparative normality does return.

Even when a degree of normality has returned following an emergency, it is a waste of agency resources getting involved in distributing seed – either ESP or seed capacity-building – unless there is a clear indication that lack of seed is the key factor preventing communities from returning to ‘self-help’ mode. Even after severe droughts or armed conflicts, seed is often still available within communities (from secret stores, or through traditional supply lines from outside the area) and other items – such as building materials, drugs, and tools – are in much greater demand. In these circumstances, it may be more useful either to provide these items, or simply to provide food aid so that families are not forced to eat their hoarded seed.

Furthermore, in some cases, rural communities may not actually be very dependent on agriculture for their livelihoods, and their main priority after a disaster may be earning income off-farm rather than planting crops. The argument is sometimes put forward that identifying whether or not intended recipients of ESP are active farmers is not necessary, because seed can always be traded for other goods by recipients who are not interested in or able to farm. This argument overlooks the fact that the cost of delivering good quality seed to beneficiaries is relatively high (seed is expensive, and in addition it has special transport and storage requirements if it is to stay in good order for planting), so if the recipients are not active farmers, agencies could have provided them with something useful at far lower cost.

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In situations where none of the above factors are evident, and there is a perceived need for seed provision, the aim should be to distribute seed that is as close as possible to what the target communities were using prior to the disaster. This means seed not just of the same *crops*, but also of the same *varieties*, as those which were previously being grown. The aftermath of an emergency is not an appropriate time to experiment with introducing new crops or varieties to an area: evidence shows that such experiments usually fail. Crop and variety issues relating to ESP are discussed in more detail in Section 2.3. There can be a greater role for experimenting with different crops and varieties in longer-term seed capacity-building; the heavy demands – in terms of skills and resources – that this places on agencies are discussed in Section 3.2.

A final point to note is that ‘more’ does not necessarily mean ‘better’ in the case of seed provision during and after emergencies. Repeated distributions of ESP seed after the first few ‘post’-emergency agricultural cycles interfere with the restoration of a functioning local economy and the re-establishment of local seed supply (although repeated ESP may be necessary in chronic emergency situations where there is little prospect of a degree of normality returning in the foreseeable future).

#### **1.4 Key components of seed provision during and after emergencies**

Chapter 4 describes how the precise situation in which seed provision is organised varies from emergency to emergency. Nonetheless, in virtually all situations seed provision should include a number of key components; these are detailed in Box 1.1. Each of these components is discussed in more detail in Chapters 2 (for ESP) and 3 (for seed capacity-building).

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#### Box 1.1

##### *Key Components of Seed Provision During and After Emergencies*

- pre-planning to assess whether or not seed is needed and/or relevant;
- deciding which agencies and structures to work with and/or through;
- identifying the type of seed to work with;
- selecting an appropriate source of seed;
- identifying which supporting services should be provided together with the seed (e.g. fertiliser, tools, etc.);
- identifying target recipients for seed;
- calculating the quantity of seed needed;
- organising the logistics of seed distribution;
- tracking (monitoring) seed;
- evaluating the impact of seed; and
- deciding to stop.

### **1.5 Coordination of agencies involved in seed provision**

One characteristic of humanitarian responses in emergencies is that many organisations may be involved at once, and this applies equally to seed provision. For example, during the first agricultural season after the genocide and war in 1994 in Rwanda – a tiny country – at least 30 different agencies were involved in ESP. The type of agency varied considerably: large international organisations such as the International Committee of the Red Cross, and the Food and Agriculture Organisation (FAO); international NGOs such as CARE and CONCERN; bilateral government assistance; church groups such as Caritas; and even some in-country NGOs which managed to find their feet quickly. In other countries, such as Bangladesh, national government agencies are also directly involved in seed provision during and after emergencies (Brammer, pers. comm.).

There are many different approaches to organising seed provision, reflecting the range of agencies involved, not to mention the range of conditions, crops and emergency situations that may apply. Some big international agencies may know how to move seed quickly but have no knowledge of local agriculture; some (End p7)

smaller local NGOs may have a very good grasp of local needs but be poorly financed. Some specialist agencies, such as the international agricultural research centres (CIMMYT, ICRISAT, CIAT, etc.), serve mainly as intermediary suppliers of germplasm and expertise to other agencies. Very few NGOs, large or small, have specialist knowledge about seed, so they should be prepared to take advice from agencies which do, such as national agricultural research institutes, NGOs with on-the-ground local knowledge, and IARCs.

Because of their different skills and resources, it can be beneficial to involve a number of different types of agencies, but links need to be created between agencies as soon as possible, to avoid duplication, and to capitalise on each agency's comparative advantage. For this purpose, it can be useful to arrange for coordination

of seed provision efforts through a government or NGO coordinating body (see Sections 2.2 and 3.3).

### **1.6 ‘Fools rush in where angels fear to tread’**

Our earlier description of the rationale for seed provision during and after emergencies suggests that the number of situations in which seed provision is helpful to local communities is relatively limited, and that successful ESP needs thorough advance planning by people with a good understanding of a broad range of seed-related issues in agricultural systems (social and institutional seed issues, as well as technical ones).

As the 1996 FAO Global Plan of Action on Plant Genetic Resources states:

‘Food aid, combined with importation of often poorly adapted seed varieties, can lower yields and keep them low for years. Whilst addressing the immediate crisis, such practices can exacerbate hunger conditions, undermine food security and increase costs of donor assistance well into the future.’

*FAO Global Plan of Action (1996) p.16*

A basic principle of seed provision during and after emergencies must therefore be ‘to think long-term before planning in the short-term’.

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