Disasters, 2002, 26(4): 316–328

Getting Off the Seeds-and-tools Treadmill with CRS Seed Vouchers and Fairs

Tom Remington
Catholic Relief Services

Jeremiah Maroko
Catholic Relief Services

Stephen Walsh
Catholic Relief Services

Paul Omanga
Catholic Relief Services

Edward Charles
Catholic Relief Services

The free distribution of seeds and tools is the standard approach to agricultural recovery. The predominance of this approach is partly attributable to the: (1) perception that farmer seed quality is poor, (2) insistence on seed certification, (3) promotion of researcher varieties, (4) misdiagnosis of unavailability, (5) difficulty accessing farmer seed, and (6) support for the commercial seed sector. This paper presents a Seed Security Assessment Framework to distinguish among the causes of seed insecurity and focuses on three principal concepts: seed availability; access to seed; and factors associated with seed utilisation. Using this diagnostic framework, Catholic Relief Services (CRS) has developed a better approach to promoting seed system-based agricultural recovery. It involves a combination of seed voucher distribution and the organisation of seed fairs, which bring together a range of sellers from whom the holders of vouchers may purchase seed. This approach is advantageous because it: strengthens farmer seed procurement systems; is cost efficient; in economic terms, has a multiplier effect in the community; is straightforward to plan and implement; allows commercial sector participation; provides an opportunity to promote improved varieties for farmer evaluation; brings together different communities.

Keywords: Catholic Relief Services, Seed Security Assessment Framework, seed vouchers and fairs, seeds and tools, seed availability, seed access, seed utilisation.

Introduction

The purpose of this paper is to present a Seed Security Assessment Framework for seed system analyses or diagnoses, and an alternative approach to free distribution of seeds-and-tools in agricultural recovery which combines the distribution of seed vouchers with the organisation of seed fairs attended by a range of seed sellers and voucher holders.

Throughout Africa, distribution of seeds and tools has become the preferred approach to assisting farm communities struggling to recover from disaster. Although

Published by Blackwell Publishing, Oxford OX4 1JF, UK and 350 Main Street, Malden, MA 02148, USA.

a review of seed-based agriculture recovery efforts is beyond the scope of this paper, the popularity and persistence of seeds and tools is discussed. This is followed by a presentation of a Seed Security Assessment Framework and discussion of why seed security diagnoses have proved so challenging. A better approach that CRS has been using in east and central Africa is then described. A combination of seed vouchers and fairs, this approach can get relief agencies off the seeds-and-tools treadmill, that is, the repeated use season after season of seeds-and-tools interventions (for example, see, Jones et al., this issue: 302–15, Sperling, this issue: 329–42). The paper then presents an ex post evaluation of the effectiveness of seed vouchers and fairs using the Seed Security Assessment Framework and closes with a discussion of the opportunities and challenges ahead.

The persistent reliance on the formal seed sector in agricultural recovery from disaster

There are six principal reasons for the current focus on a seeds-and-tools approach that relies almost exclusively on the commercial seed sector:

- Assumption that farmer seed is of low quality.
- Donor regulations and acceptance of seed certification as a proxy for seed and varietal quality.
- Exploitation of seed-based agriculture recovery by research as an opportunity to promote research-developed varieties.
- Misdiagnosis of unavailability of seed in the farmer seed system.
- Difficulty accessing seed from the farmer seed system.
- Exploitation of seed aid activities to support and subsidise the commercial seed sector.

These are very briefly elaborated below.

First, there is a widespread belief that commercial seed is of higher quality than farmer seed. Farmer seed is undervalued because it is produced in the same field as grain and is not certified. In spite of the fact that over 80 per cent of seed planted in both developed and developing countries is from the farmer seed system, this seed system goes largely unrecognised and unappreciated (Longley and Richards, 1998).

Seed procurement tends to follow food and non-food item procurement in a logical logistical sequence. Regulations to ensure quality and avoid corruption are enforced by donors and relief agency procurement departments alike. These donors and procurement departments have adopted seed certification as a way to guarantee seed quality. Because farmer seed is uncertified, many relief agencies, donors and the FAO prohibit its purchase (Chemonics and USDA, 1996).

Third, there is widespread faith that improved varieties, emerging from the formal research system, outperform farmer varieties and that if farmers have access to seed from these improved varieties, they will recognise their superior performance and adopt them. Often research institutions view disasters as opportunities to access funding to promote the distribution of seed of improved varieties on a large scale (Friss-Hansen and Rohrbach, 1993).

The diagnosis of seed unavailability, that is, that no seed is available in the region, is usually based on the diagnosis of food unavailability. It is assumed that a

lack of food means that farm families have consumed seed stocks and are unable to access additional seed through the farmer seed system.

There is a preference for purchasing seed from the commercial seed sector, transporting and distributing it to beneficiary families. Seed procurement locally from small farmers is avoided because it is deemed too difficult — in terms of time and money — to source seed from many individual seed sellers and then distribute to many more households in need of seed. So even when there is an awareness that seed is available, the logistics of locating farmers with seed to sell, determining seed quality, negotiating price, bulking and bagging, discourages relief agencies from sourcing seed from the farmer seed system.

There seems to be an unquestioned consensus that certified seed[1] of improved varieties will have a dramatic impact on small farm productivity and profitability, and therefore, there is a need to support the development of a commercial seed sector. Over the past decade, sale of commercial seed to relief agencies for distribution in agriculture recovery programmes has increased dramatically. For example, it is now the leading source of revenue for seed companies in Mozambique (Bay, 1998).

In brief, the persistence of the seeds-and-tools approach stems from a combination of a negative perception of farmer seed and seed systems and an overestimation of the benefits of commercial seed of improved varieties.

Using a seed security assessment framework for better seed system diagnoses[2]

Definitions of seed security and food security are remarkably similar. Both include aspects of availability, access and utilisation (FAO, 1997, 1998; USAID, 1995; Scowcroft and Scowcroft, 1997; Joost Van der Burg, 1998; Louwaars and Tripp, 1999).[3] Drawing on these common elements, a detailed Seed Security Assessment Framework, inspired by the US Agency for International Development (USAID) Food Security Framework (1995), has recently been developed (right column) (CRS, 1998; ICRISAT et al., 2001; CIAT and CRS, 2001) (see Table 1). Some of the nuances of this framework are discussed below.

'Availability' is narrowly defined as absolute availability of seed of the target crops. This is regardless of the quality of the seed or the desirability of the varieties. Farmer practice and preference are, therefore, of secondary importance in the determination of availability. If seed is available, but of unacceptable seed or varietal quality, then a utilisation determination would be made.

Absolute unavailability is the most common misdiagnosis made by relief agencies and research institutions alike. For example, a diagnosis of seed unavailability following drought would be based on the diagnosis of food unavailability. It is assumed that a lack of food means that farm families have also consumed seed stocks. In spite of the frequency with which one hears that farm families have eaten their seed during disaster or stress situations, there is virtually no documentation of this. Following displacement from conflict and drought in Bahr-el-Ghazal, southern Sudan, there was no evidence that seed stocks were consumed (see Jones et al., this issue: 302–15).

The diagnosis of seed unavailability following conflict is based on the recognition that displacement results in a loss of assets, including seed. Although

Table 1 Food and Seed Security Assessment Frameworks

Parameter	*Food security*	*Seed security*
Availability	Sufficient quantity of appropriate foods are within reasonable proximity to people	Sufficient quantity of seed of desired crops are within reasonable proximity to people (spatial availability), and in time for critical sowing periods (temporal availability)
Access	People have adequate income or other resources to purchase or barter for appropriate foods	People have adequate income or other resources to purchase or barter for appropriate seeds
Utilisation	Food is properly used (food processing, storage, nutrition, child-care, health and sanitation practices)	Seed is of acceptable quality and of desired varieties (seed health, physiological quality and variety integrity)

displacement does result in a loss of seed, this determination focuses narrowly on affected families rather than on the larger community seed systems.

A diagnosis of a lack of access to seed indicates that traditional methods of obtaining seed have been disrupted. These may include:

- Social networks that facilitate seed exchange have collapsed.
- Families' lack of capital to barter or exchange for seed.
- Markets — which may routinely supply seed — are no longer functioning.

Relief agencies rarely diagnose seed insecurity as a lack of access (see Longley et al. (this issue: 343–55) for a discussion of a seed assessment tool). Rather, seed diagnoses are influenced by preceding food aid diagnoses and interventions. The implicit diagnosis of food unavailability and subsequent logistical approach carries over to how seed security is diagnosed and seed interventions carried out. In summary, the precedent for a determination of food unavailability, the complexity of diagnosing a lack of seed access and the challenge of addressing access all contribute to the avoidance of an access determination.

Within utilisation, there are basically two distinct quality characteristics to consider: seed (physical and physiological) and variety (genetic).

When seed quality is defined according to the formal sector definition (see Chemonics, 1996), quality refers to certified seed. As previously mentioned, formal sector seed certification standards have been adopted by donors and procurement departments to guarantee the quality of seed provided by relief interventions.

Farmer seed is not valued because it is produced in the same field as grain and is not certified. However, there have been very few studies directly comparing the performance of farmer and commercial seed and their conclusions have been mixed (depending on the crop and the proficiency of the farmers (Tripp, 2001)). Further, while formal sector seed quality standards are biased towards commercial agriculture, such standards may not reflect the priorities of small-scale semi-subsistence farmers. For example, farmers' own assessment of bean seed quality in the Great Lakes Region (Rwanda, Burundi, DRC) showed their distinct evaluation criteria and suggested they felt their quality concerns were under control (Sperling et al., 1996):

- Absence of broken seed, weed seed and inert matter was not important as women hand sorted seed prior to seeding and discarded the inferior material.
- High germination was not a problem as farmers' germination rates were usually high and when germination rates were low, farmers compensated by increasing seeding rate.
- Farmers assessed seedling vigour as sufficiently high and therefore not a problem.

There are cases where farmers' seed of crops may be judged 'low'— by anyone's standards, such as seed of crops subject to seed-borne diseases (e.g. potatoes) or of crops that are difficult to store (e.g. maize and cowpea). However, there are rarely quality problems with the sorghums or millets (ICRISAT and CRS, 2001). Given the variability in crop seed quality, it is important that farmers participate in quality assessment.

As with seed quality, characteristics of varietal quality depend on who is doing the evaluating. Characteristics such as desirability, appropriateness, adaptability and preference suggest that assessment of varietal quality is subjective. Characteristics such as high yield and genetic purity — promoted in improved varieties, may be more important to commercial farmers. Smallholder farmers, while desiring higher production, may strive foremost to ensure their production stability. For example, for bean farmers in Rwanda, varietal purity was not of prime concern (Sperling et al., 1996):

- Planting a varietal mixture increases production stability.
- Different maturity dates is not a problem as farmers hand harvest.
- There is no market premium for a uniform product.

In short, there seems to be an unquestioned consensus that seed of improved varieties will have a dramatic impact on small farm productivity and profitability — but farmers may sometimes see such 'improvements' in another light. This is true particularly during emergency periods, when farmers want and need to be particularly risk averse (ODI Seed and Biodiversity Programme, 1996).

In the next section, we use this seed security framework to contextualise the seed voucher and fair approach that CRS has been developing. We show how this approach addresses the specific availability, access and utilisation concerns just elaborated.

CRS seed vouchers and fairs: methodology and overview

CRS works in northern Uganda where persistent insecurity caused by the Lord's Resistance Army (LRA) insurgency has had a devastating impact on agriculture. In early 2000, an incursion of Karamojong pastoralists into Kitgum and Lira districts of northern Uganda resulted in the displacement of many families. CRS responded with immediate emergency assistance but also submitted a proposal to USAID's Office of Foreign Disaster Assistance (OFDA) for funds to assist families returning home to access seed of their choice through a seed voucher programme. Seed vouchers were first proposed in an evaluation of the seed aid response to the Rwanda disaster which found that the farmer bean and sorghum seed systems were resilient (Sperling, 1997). Seed vouchers are coupons or certificates with a guaranteed cash value that can be

exchanged for seed from approved sellers. Seed sellers can then redeem their vouchers for cash from the issuing agency.

After addressing OFDA seed quality concerns, the seed voucher project was approved and implemented in July 2000 — well after the onset of the rains. One of the problems encountered proved critical to the development of the CRS seed voucher and fair methodology. This was the insistence by grain traders that the exchange of vouchers for seed take place at a scheduled time and place. It was apparent that the objective of the traders was to control the voucher exchange process. CRS realised, however, that these events resembled development seed fairs that are growing in popularity in east and southern Africa. Seed fairs, similar to agricultural field days, provide an opportunity for farmers to share information on local land races and traditional varieties that they own and perhaps exchange seed (Nathaniels and Mwijage, 2000; ITDG, 1999). Bringing voucher holders and seed sellers together in Uganda allowed for better coordination and turned the process into a public event. This was the first time that seed vouchers have been used in east Africa and led directly to the CRS seed voucher and fair approach.

CRS implements seed vouchers and fairs by first identifying disaster-affected families through the World Food Program or other government beneficiary lists. Heads of families are given a set of small-denomination vouchers to be exchanged for seed at special seed fairs. Concurrently, CRS informs prospective seed sellers of the date, location and modality of the seed fairs. On the day of the fair, a seed fair committee recommends a fair sale price for seed of different crops, registers seed sellers and redeems vouchers that were exchanged for seed at the end of the fair. CRS maintains a database on voucher holders, seed sellers, crop and variety quantity exchanged and pricing and carries out an ex post evaluation with a sample of voucher holders and seed sellers. Since that first event in northern Uganda, CRS has continued to use and improve the methodology (see Table 2).

The seed voucher and fair methodology has allowed CRS to reach more affected families more efficiently. The cost per beneficiary household ranged from a low of only $4.41/HH in south Sudan to $11.02 in Tanzania. The high cost in Tanzania

Table 2 Overview of CRS seed voucher and fairs in east and central Africa

Country and year	*Locations (no.)*	*Project value ($)*	*Disaster*	*Households receiving vouchers*	*Voucher and fair donors*
Uganda (2000)	2	121,800	Conflict	12,000	OFDA
Kenya (2000)	3	48,000	Drought	8,027	CRS, FAO and SIDA
Kenya (2001)	6	224,000	Drought	27,000	CRS, FAO and DFID
Tanzania (2001)	3	150,000	Drought	13,615	CRS
S. Sudan (2001)	3	22,302	Conflict	3,785	CRS and FAO
Burundi (2001)	1	3,120	Conflict	521	OFDA
Burundi (2002)	7	59,507	Conflict	9,828	OFDA

Table 3 Data on seed sellers participating in CRS seed vouchers and fairs

Country	*Value of voucher ($)*	*Seed sellers (%)*		*Seed sellers to voucher holders ratio*	*Average gross per seed seller ($)*
		Male	*Female*		
Uganda (2000)	10	53	47	1: 400	3,757
Kenya (2000)	5.5	25	75	1: 29	152
Sudan (2001)	4 to 8	50	50	1: 2	12
Burundi (2001)	6	87	13	1: 25	130
Tanzania (2001)	7.5 – 18	16	84	1: 33	153[a] 13,447[b]
Kenya (2001)	6 to 8	47	53	1: 16	118
Burundi (2002)	5.5	82	18	1: 27	157

[a] There were 337 seed sellers in Tanzania
[b] There were six stockists in Tanzania

was due to the setting of the seed voucher value in Mbulu at $18 to allow beneficiaries to access commercial seed and sufficient seed of wheat (with a seed rate of 120kg/ha). Unlike seeds and tools, the majority of project funds are spent in the communities affected by disaster. This ranged from 65 per cent of funds in Kenya to 80 per cent in Burundi.

Discussion of voucher and fair seed sellers

The seed voucher and fair methodology provides beneficiaries a choice of crops, varieties and seed quality. It is an open process in which commercial seed companies, stockists (input supply shopkeepers), market grain traders and small farmers can all participate (see Table 3).

Across the five countries, traditionally the primary source of seed is own saved seed. In Burundi, Kenya, Uganda and Tanzania, farmers usually obtain seed to complement own saved seed from the grain market. However, this is not the case in Sudan, where, following the war, a vibrant grain market does not now exist. In Kenya and Tanzania, commercial seed companies are also very active.

In Sudan, the ratio of one seed seller to two voucher holders indicates the absence of grain traders and markets and that seed was exchanged farmer-to-farmer. This fact required CRS to devote up to three weeks in planning and communicating to ensure that there was sufficient supply to meet the demand. On occasion, CRS/Sudan had to limit the value of vouchers distributed to ensure that supply could meet demand and avoid price distortion. The average gross per seed seller in Sudan was $12, which is a significant amount given the current absence of a cash economy in southern Sudan.

In Uganda, the market in the first-ever seed fair in Uganda was captured by large grain traders. Each trader exchanged with an average of 400 voucher holders and grossed an average of $3,757. Fourteen of the 30 grain traders in Uganda were women. In Tanzania, six stockists, all men, grossed $80,681 of the $132,152 total value of vouchers exchanged. These six grossed an impressive $13,447 each to capture 61 per cent of the total market. The remainder of the seed sellers were primarily women market grain traders who grossed an average of $153.

In Kenya, men are equally as active as women in grain trading. Whereas in 2000, 75 per cent of the seed sellers were women, this dropped to 53 per cent in 2001.

Table 4 Seed sold by Western Seed Company at FAO/DFID-funded seed fairs carried out in eastern Kenya in 2001

Crop	*Variety*	*Amount of seed sold (MTs)*	*Value of seed sold ($)*	*Percentage*
Bean	GLP 92	3.45	2,270	15.7
	Mwitemanu	0.77	507	3.5
Maize	Katumani	7.59	9,987	69.3
Millet	ICMV 221	0.50	329	2.3
Sorghum	Gadam	0.25	164	1.1
Pigeon pea	ICPL 81091	0.88	1,158	8.0
Total			14,415	100

This drop in the percentage of women participating was thought to be due to better communication and promotion of the seed fairs, enticing larger traders and men to participate. At the same time, however, the value of gross sales dropped from $152/seller to $118/seller. One of the sellers, Western Seed Company, grossed $14,040 or 7 per cent of the total market (see Table 4).

Clearly, the demand for commercial seed was for maize and beans, accounting for 88.5 per cent of Western Seed total sales. There was virtually no demand for commercial seed of sorghum and millet (3.4 per cent of total sales). There was a significant demand for the improved ICRISAT pigeon-pea variety ICPL 81091.

As in Kenya and Tanzania, seed sellers in Burundi were market traders. Their gross if $130 was similar to Kenya in 2000 ($152) and in 2001 ($118) and in Tanzania ($153).

In conclusion, small farmers who sold seed in Sudan grossed $12 each. Market grain traders in Tanzania, Burundi and Kenya grossed from $118 to $153 or 10 times more. Commercial seed companies and stockists grossed about $14,000 or 10 times more than market grain traders. In general, small farmer seed sellers were women, market grain traders were mixed and stockists and seed companies were men. Seed vouchers and fairs provide equal opportunity to a wide range of potential seed sellers. Not surprisingly, gross value of sales increases from farmer seed sellers to market grain traders to commercial seed companies and dealers.

Seed fair crop and varietal diversity

More crops were exchanged than in a typical seeds-and-tools distribution. The number of crops ranged from five in Burundi and six in Sudan to 10 in Uganda and Tanzania. Beans, sorghum, and maize were exchanged in each of the five countries (see Table 5).

Due to the fact that the 2001 seed fairs in Kenya covered six districts, there was the greatest number of varieties exchanged among the fairs (eight varieties of bean, seven of cow pea and six of sorghum exchanged). Reflecting the sorghum diversity in southern Sudan, seven different varieties were exchanged at one location only.

Often the crops selected were unanticipated but could be explained after the fact. For example, farmers in Uganda chose principally bean and sesame. The reason for this was that the fairs occurred in the middle of the rainy season, too late for long-cycle crops to be planted but timely for short-duration crops such as bean or crops such as sesame that mature on residual moisture after the cessation of the rains.

Table 5 Crop and variety diversity of seed exchanged for vouchers in the five countries where seed fairs were implemented

Crop	*No. of Varieties Exchanged*				
	Burundi	*Kenya*	*Uganda*	*Sudan*	*Tanzania*
Beans	5	8	4	3	3
Sesame			4	3	
Sorghum	2	6	4	3	6
Millet		2	3	2	1
Cowpea		7	1		1
Pigeon pea		4			
Groundnut	2		2	3	1
Maize	1	5	1	2	5
Sunflower	1		2		1
Rice			2		2
Green gram		2	1		1
Wheat					2

Seed vouchers and fairs provide farmers with the flexibility to chose the crops and varieties that they need according to their preference, own stock of seed and the timing within the agricultural calendar that the fairs take place.

Ex post evaluation of CRS seed vouchers and fairs using the seed security framework

There was adequate seed availability across all countries and locations except in Rumbek, southern Sudan. This was the first seed fair organised in Sudan and the time required for planning and communication was underestimated. This resulted in a lack of availability of seed, especially of sorghum. This was determined to be both spatial and temporal unavailability as seed was not available at the site of the seed fairs on the day of the fair. From this experience, CRS/Sudan added more time for planning and communication to subsequent fairs. This experience also led to the practice of adjusting demand to meet supply by only issuing a portion of the vouchers to correspond to the seed supply.[4] The remaining vouchers are then issued the next day, providing more time for sellers to be informed and to decide to participate. In conclusion, though seed was not available, this unavailability was transitory and solved through more effective communication.

Was there a need for seed at all? In relief assistance, there is perhaps no commodity less fungible than commercial seed. Consisting of small quantities of treated seed, its resale value is low — especially when it is of varieties unknown, unwanted or not needed. Its use as food is compromised by the fact that it is treated with pesticide.

In contrast, seed vouchers are fungible. Although intended to provide farmers with the means to access seed, the vouchers can be sold for a percentage of the face value to speculators who can then seek full reimbursement from CRS. Because seed sourced at the seed fair is untreated, it is fungible to the degree that it can be consumed or resold as grain. Conventional wisdom would indicate that the relative lack of fungibility of commercial seed is a strength: farmers are unable to sell or consume

Table 6 Farmer perception of quality of seed sourced through CRS seed for work and seed fairs (ICRISAT and CRS, 2002)

Crop of which seed exchanged	*Western Seed Company through seed for work*	*Market grain through CRS seed fairs*
	Beneficiaries rating seed as inferior to own saved seed (%)	
Maize	na	19
Sorghum	27	7
Pearl millet	12	7
Bean	5	18
Cowpea	10	31
Pigeon pea	29	12
Green gram	9	12

commercial seed. However, it is clear that families affected by disaster have competing needs and need a degree of flexibility.

Feedback from seed fair participants was that seed quality was either average or good. For example, 90 per cent of the respondents in Bor, southern Sudan rated seed quality as good and 92 per cent did so in 2001 in Kenya during exit interviews. However, beneficiary evaluation of seed quality differed by crop and seed source in Kenya in 2000 (see Table 6).

In this comparison, seed from Western Seed Company was provided to participating farmers in a CRS seed-for-work project. Commercial seed of bean and cowpea was rated as higher quality than seed sourced from the market. Though commercial maize seed was not available through this particular programme, market maize seed obtained through the seed fairs was poorly rated. Farmer rating of seed quality helps explain why farmers chose commercial seed of maize and beans and market seed of sorghum and pearl millet — when given the choice — as was the case in the 2001 Kenya seed vouchers and fairs.

Varietal quality is and will remain a topic of heated discussion. The seed voucher and fair methodology presents a 'level playing field' upon which the commercial seed sector (seed companies and stockists) and the farmer seed system (farmers and market traders) can compete. However, the playing field can be easily tilted in favour of the commercial sector by lecturing farmers on the superiority of commercial seed of improved varieties, as was the case at one location in Tanzania. It can also be tilted towards the farmer seed system by encouraging voucher holders to buy locally so as to prevent the proceeds from the sale leaving the community — as was the case at sites in Kenya in 2001.

In Kenya, market-sourced seed of the dryland crops (sorghum, millet, cowpea, green gram, pigeon pea) was all of local origin as these crops were not included in general food distribution programmes. However, 70 per cent of the maize in the market is imported or comes from the maize-growing areas of Kenya. In spite of this maize diversity, farmers were adept at differentiating local land races, improved open-pollinated varieties, hybrids and relief grain.

Across disasters, countries and cropping systems, farmers are interested in evaluating new varieties. In Kenya, farmers purchased seed of improved maize, bean and pigeon-pea varieties (ICRISAT and CRS, 2001). In south Sudan, farmers adopted

the improved groundnut variety Red Beauty, while rejecting the improved sorghum variety Serena. Seed vouchers and fairs present an opportunity to facilitate farmer access to seed of improved varieties of a wide range of crops. However, it is important that participants are allowed a choice and that seed of improved but unproven varieties are given in small test packets to minimise risk.

The advantages of seed vouchers and fairs over seeds and tools are impressive:

- Strengthen farmer seed systems.
- Strengthen traditional market systems.
- Strengthen role of women in seed and market systems.
- Are cost efficient.
- Have a multiplier effect as the proceeds from seed sales stay in communities.
- Are straightforward to plan, implement, evaluate and report.
- Are not subject to delays.
- Allow commercial seed company involvement.
- Provide an opportunity to promote improved varieties for farmer evaluation.
- Empower disaster-affected communities.
- Serve as a connector between host and displaced communities.

Opportunities and challenges

The CRS seed vouchers and fairs methodology is not a panacea. However, it is a means of moving beyond repetitive seeds and tools. There are important challenges and opportunities that need to be addressed.

Seed vouchers and fairs are based on assumptions that seed is available from the farmer seed system and it is of good quality; but that there is a problem of access. This assumption of an access problem is currently based on secondary information, which is that the target communities have been affected by disaster, that this has resulted in a significant loss of assets; and that donor agencies are responding through the provision of food and non-food assistance. There is a need for better understanding the seed security of target seed systems and particularly to clarify 'access' concerns.

Rather than a static model, seed vouchers and fairs can serve as a nexus between relief and development, between research and extension, and between the farmer seed system and the commercial seed sector. With competent, experienced and proactive management, seed vouchers and fairs can provide farm families with a choice between farmer and formal seed, as well as access to small quantities of seed of new varieties. More attention needs to be paid to ensuring equal opportunity for all potential seed sellers, whether they be large or small, farmer or commercial.

Seed vouchers and fairs have served as a connection between host and displaced communities (Anderson, 2000). Participation and interaction of different communities has been most dramatic in southern Sudan where host and displaced communities are coexisting. The opportunity for farmers in the host communities to participate as seed sellers enables them to benefit from the sale of seed and to contribute specific knowledge of crops and varieties. For example, in the Rumbek fairs in Bahr-el-Ghazal, south Sudan the Nuer were displaced 400km from their homes where they cultivate maize on black cotton soils, to an agro-ecology where the Dinka

cultivate sorghum and groundnuts on sandy soils. The CRS seed vouchers and fairs enabled the Nuer to access seed of the appropriate crops and varieties and knowledge about how to cultivate these crops.

As communities recover, it is important to reduce the number and value of vouchers. Vouchers should be limited to the chronically insecure. At the same time, fair participants can be given coupons that can be exchanged for small packets of seed of new and promising varieties as part of an agriculture technology promotion campaign. With a system of continuous evaluation and iteration, the seed and voucher approach can continue effectively and efficiently to assist farm families and communities recover from disaster and enhance both seed and food security.

Notes

1. Certified seed is a seed class in a certification scheme, produced from Foundation, Registered or Basic Seed (Almekinders and Louwaars, 1999). It is guaranteed to be relatively free of disease and to have little inert material, such as pebbles or weeds.
2. Diagnosis is the art of identifying a disease from its symptoms. It is used frequently in medicine, automobiles and computers, but is also routinely used in farming systems analysis. It is used here for seed systems.
3. Utilisation or use (to put into action or service) includes aspects of quality and preference.
4. It was quickly learned to issue a set of smaller denomination vouchers to allow recipients to split their purchases between sellers and crops/varieties.

References

Almekinders, C. and N. Louwaars (1999) *Farmers' Seed Production: New Approaches and Practices.* Intermediate Technology Publications, London.

Anderson, M.B. (2000) *Options for Aid in Conflict. Lessons from Field Experience.* Local Capacities for Peace Project. Collaborative for Development Action, Cambridge.

Bay, A.P.M. (1998) The Seed Sector in Sub-Saharan Africa: Alternative Strategies. Proceedings of the Regional Technical Meeting on Seed Policy and Programmes for Sub-Saharan Africa, FAO, 23–7 November, Abidjan.

Chemonics and USDA (1996) Seeds for Disaster Mitigation and Recovery in the Greater Horn of Africa. USAID/G/ENV DESFIL Project.

CIAT and CRS (2001) Assisting Disaster-affected and Chronically Stressed Communities in East and Central Africa: Focus on Small Farmer Seed Systems. International Center for Tropical Agriculture proposal submitted to USAID/OFDA.

CRS (1998) Increasing the Effectiveness of Emergency Seed Aid Programs in Enhancing Seed Security in the Greater Horn of Africa. Catholic Relief Services Proposal submitted to USAID/OFDA.

FAO Seed and Plant Genetic Resources Service (1997) Developing Seed Security Strategies and Programmes for Food Security in Developing Countries. In Proceedings of the International Workshop on Seed Security for Food Security 30 November– 1 December, Florence.

—— (1998) Proceedings of the International Workshop on Developing Institutional Agreements and Capacity to Assist Farmers in Disaster Situations to Restore Agricultural Systems and Seed Security Activities, FAO, 3–5 November, Rome

FAO (2001) Food Supply Situation and Crop Prospects in Sub-Saharan Africa. See www.fao.org.giews/.

Friss-Hansen, E. and D. Rohrbach (1993) SADC/ICRISAT 1992 Drought Relief Emergency Production of Sorghum and Pearl Millet Seed; Impact Assessment. International Crops Research Institute for the Semi-Arid Tropics, Southern and Eastern Africa Region Working Paper 93/01, Nairobi.

ICRISAT, CRS and ODI (2001) Seeds for Survival: Increasing the Effectiveness of Emergency Seed Aid Programmes in Enhancing Seed Security in the Greater Horn of Africa. Fifth quarterly report submitted to USAID/OFDA.

ICRISAT and CRS (2002) Mbeere and Tharaka Seed Sector Study: Local Seed Resources Base and Farmer Feedback on Emergency Seed Programmes (draft). ICRISAT and CRS, Nairobi.

ITDG-Kenya (1999) The Ginkgo Seed and Cultural show. See www.ukabc.org/gikongo99.pdf.

Joost van der Burg, W. (1998) Sustainable Seed Security: The Need for a Differentiated Seed Technology Research and Development Approach. Proceedings of the Regional Technical Meeting on Seed Policy and Programmes for Sub-Saharan Africa, 23–7 November, Abidjan.

Longley, C. and P. Richards (1999) Farmer Seed Systems and Disasters. Proceedings of the International Workshop on Developing Institutional Agreements and Capacity to Assist Farmers in Disaster Situations to Restore Agricultural Systems and Seed Security Activities, FAO, 3–5 November 1998, Rome.

Louwaars, N.P. and R. Tripp (1999) Regulatory Aspects of Seed Security. Proceedings of the International Workshop on Developing Institutional Agreements and Capacity to Assist Farmers in Disaster Situations to Restore Agricultural Systems and Seed Security Activities. FAO, 3–5 November 1998, Rome.

Nathaniels, N. and A. Mwijage (2000) *Seed Fairs and the Case of Marambo Village, Nachingwea District, Tanzania: Implications of Local Informal Seed Supply and Variety Development for Research and Extension.* Network Paper No. 101, AgREN, Overseas Development Institute, London.

ODI Seed and Biodiversity Programme (1996) *Seed Provision During and After Emergencies.* RRN, Good Practice Review 4, Overseas Development Institute, London.

Scowcroft, W.E. and C.E. Polak Scowcroft (1997) Seed Security: Disaster Response and Strategic Planning. Proceedings of the International Workshop on Seed Security for Food Security, 30 November–1 December 1997, Florence.

Sperling, L. (1997) *The Effect of the Rwandan War on Crop Production and Varietal Diversity: A Comparison of Two Crops.* Network Paper No. 75, AgREN, Overseas Development Institute, London.

—— , U. Scheidegger and R. Buruchara (1996) *Designing Seed Systems with Small Farmers: Principles Derived from Bean Research in the Great Lakes Region of Africa.* Network Paper No. 60, AgREN, Overseas Development Institute, London.

Tripp, R. (2001) *Seed Provision and Agricultural Development.* Overseas Development Institute, London.

USAID (1995) Food Aid and Food Security Policy Paper. Bureau for Program and Policy Coordination. USAID, Washington.

Address for correspondence: Tom Remington, CRS East Africa Regional Office, PO Box 49675 Nairobi, Kenya. E-mail: <<tremington@crsearo.org>>