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Annotated Bibliography

Roles of the Formal Research Sector and Private Sector Seed Companies in Humanitarian Seed Relief

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Feed the Future Consortium Partners in the Feed the Future Global Supporting Seed Systems for Development activity:

Humanitarian Seed Relief and the Roles of the Formal Research Sector and Private Sector Seed Companies[1]

1. McGuire, S., & Sperling, L. (2013). Making seed systems more resilient to stress. *Global Environmental Change*, *23*(3), 644-653.

This article discusses seed system security in relation to building resilience to climate stresses and shocks. Provides case study data in contexts of political and civil conflict (Zimbabwe and South Sudan), earthquake (Haiti) and drought (Kenya). It highlights a new toolkit i.e. the Seed System Security Assessment (SSSA), examines what actually happens to seed systems during crises and shows specific features that foster or undermine resilience. It shows that seed systems prove to be relatively resilient, at least in terms of meeting farmers' planting needs for the upcoming season. Altering crop profiles, making use of multiple delivery channels, and innovating (for example, with new barter mechanisms) all become key, as does mobilizing cross-scale seed supply linkages. Key is that formal seed systems will play a catalytic but supporting role, with the onus on resilience response lying within informal systems, and especially with local markets and their traders. It further defines seed system resilience, identifies eight principles linked to processes that build such resilience, and makes 15 practical recommendations for enhancing seed system resilience in the short and medium term. Finally, drawing insights from seed systems, processes central for building resilience in other development sectors are highlighted.

2. Simfukwe M. (2006) "Relief Seed Trade in Zambia" FANRPAN

The Zambia Relief Seed Trade study was part of a 4-country study (Malawi, Mozambique, South Africa and Zambia) commissioned by the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) to determine the importance and share of relief seed in the overall national and regional seed trade. It also aimed to assess opportunities for improving the contributions of relief seed programmes to commercial seed market development. Seed market development is part of the broader regional objective of improving agricultural inputs and outputs markets as a trigger for increased agricultural production and growth in the region. The motivation for the study was that governments need to recognize the significance of relief seed in the national and regional markets and hence the need for a clear policy on relief seed. The main thesis of the study was that relief seed has become a major component of many national and regional seed markets - especially for crops other than maize and there is, thus, need for governments to make more effective use of the huge investment in relief seed programmes. Also, there is need for establishing minimum standards for the purchase of seed by seed companies (and NGOs/relief agencies) as a way of ensuring the quality and health of seed distributed. The volume and quantity of relief seed trade is also believed to affecting the structure and conduct of seed markets. The study was aimed at presenting options for a higher payoff for this investment.

The specific quest was 4-fold:

1. Determining the size and share of relief seed trade, for all major crops, as a proportion of total seed trade;
2. Determining how the supply and distribution of relief seed is affecting the structure and performance (or evolution) of domestic seed markets;

[1] This bibliography – focusing on seed relief and the private sector -- was compiled by Noel Templer, Jean-Claude Rubyogo and Louise Sperling. It builds on another bibliography which has a broader scope: analyzing the literature on seed systems and seed relief more generally. *Seed systems and seed relief: an annotated bibliography. 2004* Compiled by Jean-Claude Rubyogo, Louise Sperling and Tom Remington. CIAT, CRS and CARE. Published by CIAT: Nairobi. Updated 2020.

3. Understanding the structure and performance of regional seed trade as a result of greater use of relief seed;
4. Identifying opportunities for improving the development impacts of relief seed trade.

For purposes of the study, relief seed was defined as all seed distributed through non-commercial channels - including government and NGO food security and farmer support programmes. Relief seed in this study, thus, refers to seed distributed outside the commercial wholesale and retail channels, even beyond periods of crisis.

3. DFID (2012). Project completion review: Emergency supply of maize seeds to drought-affected farmers in Tanzania. 12 pp.

Evaluation of a project to distribute relief seed (UK provided GBP 2.3 million ≈ US$3.5m to FAO) and describes how plans had to shift because FAO could not procure all the maize seed required. Phase III of the project shifted away from maize to drought tolerant crops. Phase I: 425 tons of seed given to 42,490 HHs in 9 districts (27% of original target). Phase II: 919 tons (as 398 tons maize, 420 tons sorghum, and 121 tons paddy rice) given to 229,049 HHs in 34 districts. Phase III: with remaining US$570k, targeted 20,000 HHs with seeds of drought tolerant crops, using seed fairs and existing agro-input dealers instead of direct delivery of seed by NGOs.

4. Rohrbach, D. D., Mashingaidze, A. B., & Mudhara, M. (2005). Distribution of relief seed and fertilizer in Zimbabwe: Lessons from the 2003/04 season.

This study summarizes the impacts of input relief programs in Zimbabwe, based on data from surveys conducted in 2004, following two consecutive drought years. The analysis reveals substantial opportunities for improving these programs. First, targeting of beneficiary households must be improved. Many households received inputs from more than one NGO. Targeting can be improved through better sharing of information, and by using simpler selection criteria (e.g, ownership of livestock) to identify beneficiaries. Contrary to common perceptions, farm communities tend to be reasonably successful at maintaining seed stocks even after multiple years of drought. Correspondingly, the delivery of free seed did not contribute to an increase in planted area. Also contrary to common perceptions, distribution of small quantities of fertilizer offered substantially higher returns than distribution of seed. The application of as little as 10 kg of nitrogen per hectare contributed substantially to food security in drought-prone regions. This study also compared three alternative input distribution methods: direct handouts of seed and fertilizer, seed fairs, and the use of vouchers redeemable at retail shops. While direct handouts are logistically the easiest method (and the most widely used), voucher-based programs linked with retail shops potentially offer the greatest development impacts.

5. McGuire, S., & Sperling, L. (2016). Seed systems smallholder farmers use. *Food Security*, *8*(1), 179-195.

Seed can be an important entry point for promoting productivity, nutrition and resilience among smallholder farmers. While investments have primarily focused on strengthening the formal sector, this article documents the degree to which the informal sector remains the core for seed acquisition, especially in Africa. Conclusions drawn from a uniquely comprehensive data set, 9660 observations across six countries and covering 40 crops, show that farmers access 90.2 % of their seed from informal systems with 50.9 % of that deriving from local markets. Further, 55 % of seed is paid for by cash, indicating that smallholders are already making important investments in this arena. Targeted interventions are proposed for rendering formal and informal seed sector more smallholder-responsive and for scaling up positive impacts.

6. Louise Sperling, H David Cooper & Tom Remington (2008) Moving Towards More Effective Seed Aid, The Journal of Development Studies, 44:4, 586-612.

Seed aid is increasingly applied as an emergency response throughout Africa. This article describes its rise, its goals and the seed security principles which should shape it. Drawing on evidence of the effects of disaster, the article reviews the appropriateness of current seed aid responses and suggests ways to link the type of seed security problem with the type of response employed. Direct seed distribution, the dominant form, seems suited for a subset of conditions when farmers procure seed through formal channels and when seed is not sufficiently available in an area. Seed vouchers and fairs may be more widely applicable as this approach strengthens channels that farmers normally use (both formal and informal) and addresses the more common problem of farmers' lack of access to seed. Key for improving seed aid is a better understanding of how local seed markets function, as these provide a core of seed security in normal and stress periods.

7. ODI Seeds and Biodiversity Programme (1997). Seed Provision during and after Emergencies. Good Practice Review 4. London: Overseas Development Institute Relief & Rehabilitation Network. 134 Pages.

Descriptors: Seed systems/farmer, seed assessment/disaster, seed guidance handbook/institutional capacity building

This Good Practice Review aims to bring readers up to date on the latest developments in knowledge and techniques in seed provision during and after emergencies. It targets different types of organizations involved in seed provision (UN agencies, donor agencies, NGOs, NARS and CG centers) and distinguishes among emergencies such as armed conflicts, natural disasters or—in the worst cases—a combination of these phenomena. The book focuses on emergency seed provision (ESP) and long-term seed capacity-building activities, clearly delineating where these broad thrusts are relevant. The authors also give a summary of the directions seed provision may take in the future. In its annexes, the book provides checklists of data required for planning, monitoring and evaluating ESP and capacity-building interventions. The book's contents include the following sections:

- Emergency seed provision
- Seed capacity building after emergencies
- Future directions

8. Preston S. R. (1999). Checklist for Use by Potential Donors before Giving Seeds to Pacific Island Countries after Emergencies. Report prepared on behalf of the Secretariat of the Pacific Community and EU-funded Pacific Regional Agricultural Programme. 7 Pages.

Descriptors: Pacific island countries, seed guidance handbook/development, seed assessment/disaster, seed systems/relief

The purpose of the leaflet is to help potential donors and the recipient of seed aid to understand and avoid some of the most common pitfalls of the “seed-and-tools” approach. It is also intended to draw attention to capacity-building activities, which may have a greater and longer-term impact. The author discusses disaster management and how it is useful to think in terms of "crisis proofing" and the supply systems for seed and planting material.

9. Richards P. and L. Sperling (1999). The Silent Causalities of War. UNESCO Courier, July/August 1999.

Descriptors: seed assessment/seed security, seed assessment/disaster, seed systems/farmer

The article describes the negative effects of small-armed conflicts on local and formal seed supplies and the consequences on crop biodiversity and on the food sector in general. It describes how the informal seed sector goes through a difficult process of recovering as a result of war, an analysis that is complicated by lack of documentation and information on local varieties. This situation may be aggravated by humanitarian agencies that supply inappropriate seed materials, using "seed-and-tools" approach.

10. Scowcroft W. R. and C. E. P. Scowcroft (1998). Developing a Strategy for Sustainable Seed Supply Systems in Sub-Saharan Africa: Policies, Stakeholders and Coordination. Proceedings of the Regional Technical Meeting on Seed Policy and Programmes for Sub-Saharan Africa, Abidjan, Côte d'Ivoire, 23–27 November 1998. Rome: Seed and Plant Genetic Resources Service, Plant Production and Protection Division, Food and Agriculture Organization of the United Nations.

Descriptors: Sub-Saharan Africa, seed systems/farmer, seed systems/formal, seed assessment/security, seed intervention/formal development, seed guidance handbook/institutional capacity building

This paper highlights the relationship between seed and food security in sub-Sahara Africa (SSA), a region that is plagued by natural and man-made disasters. The paper discusses the concept of seed security. The authors also describe SSA seed systems, which are comprised of formal and informal seed sectors, and their interrelationships, so as to ensure an effective strategy for seed security. Towards the end, the authors provide elaborate guidelines for establishing a sustainable seed supply in SSA.

The paper includes:

- Issues of seed security in sub-Saharan Africa
- Aspects of seed systems in sub-Saharan Africa
- Characteristics of formal and informal seed systems
- Guidelines for a sustainable seed supply
- The role of stakeholders in sustainable seed security, their interaction and coordination

11. Mazvimavi K, Pedzisa T, Murendo C, Minde IJ, Ndlovu PV. 2012. Cost effectiveness of seed fairs relative to direct relief distribution in Zimbabwe. Development in Practice 22: 978-990

Compares data on cost effectiveness of different seed distribution methods. Seed fairs were found to be more cost effective ($5.18/pack/HH) than direct distribution of imported seed ($8.22/pack/HH). Seed fairs offered farmers more choice of crops than direct distribution (which sometimes only gave maize seed). If it is commercial seed that is to be distributed, it's most cost effective to use direct distribution of stocks obtained from seed companies (but this ignores other costs and benefits that are difficult to quantify, like ability to provide education at seed fairs).

12. Mutonodzo-Davies, C. and Magunda, D. (2011). The Politics of Seed Relief in Zimbabwe. IDS Bulletin, 42: 90-101

A decade of economic and political turmoil in Zimbabwe, as well as a period of radical land reform which reconfigured the country's agricultural sector, dramatically affected its seed system, reducing the supply of quality seeds and undermining regulatory control. The collapse of the seed system was exacerbated by seed relief programmes implemented by the government and aid agencies, which bypassed the normal market chain. In 2010, aid agencies experimented with ‘market-friendly’ input programmes which also created distortions and were vulnerable to political interference. In resource-constrained settings, subsidy programmes, no matter what design, became objects of political contestation. This article aims to understand how Zimbabwe can rebuild a seed system appropriate to the post-land reform context by

asking questions about the underlying political economy of this process, examining the implementation of the input delivery approaches.

13. Sulaiman, M. I., & Andini, R. (2013). Lessons learned from seed distribution in Nepal. *Procedia Environmental Sciences*, *17*, 20-27.

Complex emergency situation in Nepal particularly affected by political instability and natural calamities led to food insecurity. Dependency on the food import led this country affected by soaring global food prices in 2007/2008. The Food and Agriculture Organization of the United Nations (FAO) responded with distribution of improved variety of seeds along with capacity building program and technical assistant to small rural farmers in Nepal from 2009 to 2011. This paper reviewed the factors affecting the efficacy of the seed distribution to improve food security based on the surveys on beneficiaries carried out before and after the intervention, crop cutting assessment and group discussions. It was concluded that seed aid was an effective way to improve food security of small farmer's family in the remote area of Nepal under a subset of conditions. Aid has to be designed to do no harm to the existing seed supply chain (which, if compromised, would incur losses to farmers).

14. Mainville, D. Y. (2003). Disasters and Development in Agricultural Input Markets: Bean Seed Markets in Honduras after Hurricane Mitch. Disasters, 27: 154-171.

The bulk of developing countries' populations and poor depend on agriculture for food and income. While rural economies and people are generally the most severely affected by natural disasters, little is known about how disasters and subsequent relief activities affect agricultural markets with differing levels of development. The article addresses this gap, drawing evidence from bean seed markets in Honduras after Hurricane Mitch. Case studies are used to address hypotheses about a disaster's effects on supply and demand in seed markets, farmers' responses, and the performance of relief interventions in markets showing differing levels of development. The results show the importance of tailoring relief interventions to the markets that they will affect and to the specific effects of a disaster; the potential to use local and emerging seed distribution channels in a relief intervention; and opportunities for relief activities to strengthen community seed systems.

15. Sperling, Louise; Remington, Tom; Haugen, Jon M; Nagoda, Sigrid (2004). Addressing seed security in disaster response - linking relief with development. Cali, Colombia: International Center for Tropical Agriculture.

This volume contains eight case studies managed by CIAT, CRS, and CARE Norway in a project entitled, Assisting disaster-affected and chronically stressed communities in East, Central and Southern Africa: Focus on small farmer systems. The case studies were undertaken to evaluate various forms of emergency seed aid and to couple these with analyses of the broader seed and crop systems. The objectives were to understand if and how vulnerable farmers are being helped by the kinds of assistance they receive —and how to move forward on improving practice.

16. Langyintuo, A. S., & Setimela, P. (2009). Assessing the effectiveness of a technical assistance program: The case of maize seed relief to vulnerable households in Zimbabwe. *Food Policy*, *34*(4), 377-387.

The economic downturn in Zimbabwe (early to mid-2000s) impoverished the majority of households. To help vulnerable rural households improve their food security, the British Department for International Development implemented a seed relief program from 2003/2004 to 2005/2006 that emphasized recycling of maize open-pollinated varieties (OPV). Using data collected from 597 households in six districts in 2006, this study assesses the effectiveness of the program in terms of its targeting of

beneficiaries, the flow of information from participating NGOs to beneficiaries on the need to recycle the seeds, and the level of recycling done at the end of the program. The empirical results suggest that the targeting method participating NGOs use inadvertently excludes relatively vulnerable households while including large proportions of relatively well-endowed households in the program. The choice of varieties to distribute is guided more by the ecological adaptability of available commercial seeds and less by preferences of beneficiaries. Notwithstanding the fact that seed selection information is critical in encouraging beneficiaries to recycle distributed seed, not all of them received it. In conclusion, it may be stated that the program undoubtedly contributed to increased food productivity by vulnerable households but its overall effectiveness could have been enhanced through (i) the involvement of the beneficiaries in the choice of types of seed to be distributed, (ii) better targeting of beneficiaries, and (iii) improved information flow between NGOs and beneficiaries.

17. van der Walt, Wynand J. "The Role of Relief Seed and Voucher Programme in Inputs Market Development" (2006).

Distribution of relief seed following natural disaster has become a common phenomenon in the SADC region, and many member states have had government, donor and NGO support in place for decades. However, a 1999 report published by the FAO (1990) on relief seed and fertilizer systems referred to "inconsistent, incoherent and inappropriate seed approaches", and highlighted a number of lessons learned. Country researchers were therefore contracted by FANRPAN to analyze the current relief seed systems in four countries: Malawi, Mozambique, South Africa and Zambia. The results are intended to provide a baseline overview for policy makers and related stakeholders. For this study, "relief seed" is considered to represent seed donated by seed companies; seed procured and donated by governments and NGOs, and seed distributed free or partly subsidized, directly or through voucher systems.

18. Chemonics International and USDA (1996). Seeds for Disaster Mitigation and Recovery in the Greater Horn of Africa. Report prepared by Chemonics International and USDA Famine Mitigation Activity. USAID Contract Number DHR- 5438-Q-00-1091-00. Washington, DC.

Descriptors: Great Horn of Africa, seed guidance handbook/institutional capacity building, seed guidance handbook/technology transfer, seed assessment/disaster, seed systems/farmer, seed systems/security

This report provides information useful to agencies planning and implementing programs dealing with seed for disaster mitigation and recovery (SDMR) for farmers who have suffered natural or complex disasters. It focuses on the Greater Horn of Africa (GHA) and describes the social and economic dynamics of seed distribution in the GHA region. It recounts recent experiences, including lessons learned while conducting SDMR, and provides guidelines for planning SDMR interventions. It also furnishes information on potential seed sources, issues of seed quality relevant to SDMR in the region, and the opportunities and constraints for matching crop varieties to agro- ecological contexts. Annexes provide further information on seed-production techniques and on seed sourcing for the GHA.

19. CRS, ICRISAT and ODI (2002). Seed Vouchers and Fairs: A Manual for Seed-Based Agricultural Recovery in Africa. Nairobi, Kenya: Catholic Relief Services (CRS) in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and Overseas Development Institute (ODI).

Descriptors: Southern Sudan, seed intervention/seed vouchers and fairs, seed security assessment/disaster, seed systems/formal, seed intervention/community development, seed guidance handbook/institutional capacity building

This manual describes a new approach to post-emergency seed distribution in Africa, whereby farmers receive not free seed but vouchers that can be exchanged for seed at a specially organized fair. The manual highlights how "seed fairs" rely on commercial seed firms (where they are in operation), as well as local seed producers and traders. Further, it provides an overview of seed systems and their components and describes how to plan and implement the seed-voucher/seed-fair approach. Some the advantages of such seed fairs are also suggested, including that they permit farmers to choose which crops/varieties and quantities they want to access from aid, post-emergency.

This manual contains two articles:

a. Bramel P., Jones R., Remington T. and C. Longley (2002). Seed Systems and Disaster Relief: An Overview.

This article defines disaster based on its scope and scale and provides insight into the varied phases related to the disaster-relief sequence. The overview suggests the importance of acquiring prior information on agricultural systems and existing seed systems before implementing a response to seed-related disasters. The last section provides details on how to describe and diagnose a seed-security problem in order to develop a project plan.

b. Maroko J. and A. Myers (2002) Planning and Implementing a Seed Fair.

This section discusses when, where and why seed fairs can be implemented. It describes the four steps involved in conducting seed fairs: assessment, planning, implementation and evaluation. It also reflects on the constraints and challenges that might arise while conducting seed fairs. Appendices contain samples of data-collection forms and questionnaires used in conducting a seed fair.

20. Dominguez C., Rohrbach D., Longley K., Momade S. and R. Jones (2001). Organizing Seed Fairs in Emergency Situations: Improving the Efficiency of Seed Distribution. Patancheru, India: International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). 60 Pages.

Descriptors: Mozambique, seed guidance handbook/institutional capacity building, seed guidance handbook/recovery, seed guidance handbook/development, seed intervention/seed vouchers and fairs, seed intervention/community development, seed security assessment/disaster, seed systems/farmer

This manual depicts how 17 years of armed conflict in Mozambique destroyed the country's commercial seed network. The first part describes in detail the nature of seed fairs and their advantages. The second part explains how to organize seed fairs in emergency situations. This manual highlights how seed fairs may be an alternative to the free distribution of seed kits because they can respond more appropriately to the specific needs of each zone and each farmer. Therefore, emergency assistance funds are invested in the affected area instead of being used to import seed kits. The manual also focuses on how seed fairs can help to revitalize the local economy, particularly the commercial seed distribution network in the affected area. Contents include, among other themes:

- Seed fairs
- Steps for preparing a seed fair
- Identifying and assessing potential sources of seed and participants
- Preparing the day of the fair
- Promoting the fair
- Holding seed fairs
- Evaluating the seed fair
- Planning resources needed to hold a seed fair

21. FAO. 1998 Developing Institutional Agreements and Capacity to Assist Farmers in Disaster Situations to Restore Agricultural Systems and Seed Security Activities (Project GCP/INT/660/NOR). Proceedings of the international workshop, Rome, Italy, 3–5 November 1998. Rome: Seed and Plant Genetic Resources Service, Plant Production and Protection Division of the United Nations Food and Agriculture and Organization.

The document contains 13 articles:

a. Bushamuka N. V. (1998). Restoration of Seed Systems and Plant Genetic Resources after Disasters: A Synthesis of the Background Papers.

Descriptors: seed systems/farmer, seed systems/formal, seed systems/relief, seed assessment/disaster, seed assessment/security, seed guidance/institutional and capacity building, seed guidance/recovery, seed guidance/development

This paper covers the following topics: (1) disaster characterization, (2) farmer seed systems and disasters, (3) plant genetic resources and seed relief, (4) regulatory aspects of seed security, (5) seed stocks and seed multiplication in emergency situations, and (6) food and seed assistance in the recovery from crisis. The author stresses the importance of local varieties and crop diversity in agricultural systems of disaster-prone countries. He also suggests that strategies for the restoration of local varieties after disasters should be based on the understanding and farmers' perception of the importance of crop genetic diversity and how it is maintained in the farming systems.

b. FAO (1998). Seed Stocks and Seed Multiplication in Emergency Situations.

Descriptors: seed assessment/seed security, seed assessment/disaster, seed systems/formal, seed systems/relief, seed guidance/relief, seed guidance/recovery, seed intervention/community.

This paper describes activities pertaining to seed supplies, both in normal circumstances and in times of emergency/disaster situations. It emphasizes the role played by local seed sources, NARIs/IARCs and neighboring countries in assisting devastated areas in restoring crop seed systems. It also brings attention to the need for strong seed-related information systems to guide emergency operations (planning/implementing). Early warning systems and signs to monitor the seed situation are also discussed. The paper ends by describing a successful case study of FAO emergency seed operations in Afghanistan.

c. Gascon J. F. (1998). Les Distribution Gratuites d'Intrants Agricoles et les Programmes de Multiplication de Semences au Rwanda de 1994 à 1998.

Descriptors: Rwanda, seed systems/farmer, seed intervention/seed and tools, seed intervention/community development, seed guidance handbook/institutional capacity building

This paper describes emergency seed operations carried out in Rwanda until 1998 as a result of the 1994 genocide. The operations were carried out using a "seeds and tools" approach. It involved many partners, such as CGIAR members, local and international NGOs and UN agencies, and was coordinated by the Ministry of Agriculture assisted by FAO. The author provides reasons for sourcing seeds from the local market and from organizations in neighboring countries with similar agro- ecological conditions. The experience of FAO in supporting farmers' in producing certified seed is also elaborated, and details are provided on the scale of seed distribution per crop species over the four-year period. In general, the intervention is assessed as having had a positive impact on food security and the paper ends by sharing lessons and guidelines for carrying out seed interventions in emergencies.

d. Grunewald F. (1998). Characterizing Disasters.

Descriptors: seed systems/farmer, seed systems/relief, seed assessment/disaster, seed assessment/security

This paper gives a typology of various disasters (manmade and natural) and the key variables for characterizing them. The ways in which disasters affect agricultural activities and biodiversity, especially rural economies, farming and food security and seed systems, are also described. Final sections address issues of disaster preparedness and response, including early warning information and institutional collaboration.

e. Hines D, Wikrema S and L. van Straaten (1998). Food and Seed Assistance in Recovery from Crisis.

Descriptors: seed systems/farmer, seed systems/relief, seed assessment/disaster, seed assessment/food crops, seed guidance handbook/institutional and capacity building, seed guidance handbook/recovery, seed guidance handbook/development, seed guidance hand-book/genetic diversity

This paper deals with the relationship between food and seed resources, and their joint role in relief, recovery and development. It considers the complementarity between food and seed interventions and presents an overview of the issues and measures needed for more effective joint programming. Initial sections review stakeholders' roles in recovery situations and in food and seed provisioning. Lessons learned about the operational aspects of joint programming are elaborated with examples from both a literature review and case studies of three recovery situations: Burundi, southern Sudan and northern Uganda. The paper concludes with a discussion of the constraints to and opportunities for joint programming of food and seeds.

f. Hodgkin T. and A. Murthi (1998). Plant Genetic Resources and Seed Relief.

Descriptors: seed guidance handbook/institutional capacity building, seed guidance hand-book/recovery, seed intervention/relief, seed intervention/community development, seed assessment/disaster, seed assessment/security, seed systems/farmer, seed systems/formal, seed guidance handbook/genetic diversity

This paper highlights the main aims of the FAO Global Plan of Action for conserving and using plant genetic resources in food and agriculture. Using specific examples, it illustrates the potential value of the world's plant genetic resources in helping farmers and communities confront disasters and restore agricultural systems, as well as the “how to” in going about it. Ex situ conservation of some of the world's largest nationally based collections and those of CGIAR centers are described, as are general procedures for conservation of plant genetic resources and management of crop conservation information.

g. Longley C. and P. Richards (1998). Farmer Seed Systems and Disaster.

Descriptors: seed systems/farmer, seed systems/relief, seed assessment/disaster, seed assessment/security, seed guidance handbook/institutional and capacity building, seed guidance/genetic diversity, seed guidance handbook/development.

This paper focuses on farmer seed systems from a social and socio-technical perspective. Three major aspects of a farmer seed system are considered: (1) the nature of planting material in relation to local agricultural production, (2) mechanisms of seed acquisition, and (3) seed-management strategies relating to in situ conservation, local crop development and farmer breeding. The paper highlights features of vulnerability and resilience in times of stress and how appropriate assistance might be provided for

disaster mitigation and rehabilitation. Key variables for assessing the impact of disaster on farmer seed systems are presented, and the need for further local-level research is emphasized. The final section contains recommendations concerning the roles and responsibilities of the various agencies involved.

h. Louwaars N. P. and R. Tripp (1998). Regulatory Aspects of Seed Security.

Descriptors: seed assessment/seed security, seed systems/formal, seed systems/farmer, seed systems/relief.

The authors define and characterize both formal and informal seed systems. The factors predetermining crop and variety choices by farmers are explored and aspects of seed security introduced. The article also gives detailed insight into seed-regulatory issues as they touch on programs for seed security and seed emergencies in developing countries. The document ends with recommendations on issues related to formulating flexible seed regulations in seed-security programs at both the national and international levels.

i. Matos M. E. (1998). Seed and Plant Genetic Resource Restoration in Disaster and Conflict Situations in Angola: Some Experiences from over 20 Years of Conflict Situations.

Descriptors: Angola, seed guidance handbook/genetic diversity, seed intervention/seed and tools, seed systems/farmer, seed systems/formal seed systems/relief, seed intervention/com-munity development

The author describes seed interventions and how they were carried out in Angola using a "seed-and-tools" approach, elaborating on experiences preserving plant genetic resources in such a conflict context and depicting successful collaboration between the Agricultural Research Institute (ARI) and local farmers.

j. Nankam C. (1998). Agricultural Recovery and Emergency Seed Restoration in the Post Disaster Situation in Angola. A Case Study: World Vision International.

Descriptors: Angola, seed intervention/seed and tools, seed systems/farmer, seed systems/relief, seed assessment/disaster, seed assessment/security, seed guidance hand-book/institutional and capacity building, seed guidance/recovery, seed guidance/development

This paper discusses the initiatives of World Vision International (WVI) to rehabilitate the agricultural production of Angolan smallholder farm families after the war. It describes WVI experiences in restoring sustainable agricultural seed systems within farming communities, based on on-station and on-farm testing of germplasm from IARCs and on an extensive system of local seed multiplication, production and delivery.

k. Sperling L. (1997). The Effects of the Rwandan War on Crop Production, Seed Security and Varietal Security: A Comparison of Two Crops. See also AgREN Network Paper No. 75, July 1997.

Descriptors: Rwanda, potato and beans, seed assessment/disaster, seed systems/formal, seed systems/farmer, seed guidance/institutional capacity building, seed guidance/genetic diversity, seed intervention/community

This article focuses on the effects of the 1994 Rwandan war on the seed security of two major crops: beans and potatoes. It reveals that bean varieties at the household, local and national levels were not much affected by the conflict because of the farmers' dependence on local seed channels (the informal seed sector). However, the potato seed system was significantly affected, both in quantity and quality, because of the farmers' dependence on formal seed systems, which ceased functioning early in the conflict. At the end of the paper, the author draws several lessons from the Rwandan case that affect

broader issues of assessing seed security and crop variety such as suggesting that equal attention should be paid to understanding and, if possible, safe-guarding the seed channels that can re-supply germplasm. The author also shows the importance of distinguishing between farmers' absolute (a true scarcity of varieties or seed in a region) versus relative lack of varieties or seed. Remedial action in such circumstances should focus on re-introduction, seed delivery, or interventions to build seed capacity. Relative lack, the common scenario in Rwanda, however, implies a problem with accessing seed (e.g., farmers may not have adequate funds to get the seed which is on offer).

l. Temba M. M. (1998). Farmer Seed Systems.

Descriptors: seed systems/farmer seed systems/relief, seed assessment/security, seed guidance handbook/technology transfer, seed guidance handbook/genetic diversity

This paper reviews the socio-cultural and economic issues that determine the demand for seed and suggests possible organizational implications for supporting seed-supply systems to satisfy household food security. It delineates the stages needed to support local seed systems and relevant responsibilities, in particular. It also analyzes existing strengths and weaknesses of such local seed systems. A description is included of the specialized expertise and incentives of each stakeholder involved in devising strategies for strengthening local seed provisions as well as the transaction costs that characterize collaboration among different types of organizations. At the end of the paper, the author provides examples of positive interventions which might be effective in identifying and alleviating seed-related disasters in limited-resource communities.

m. Tunwaar N. S. (1998). Emergency Seed Supply in Afghanistan.

Descriptors: Afghanistan, seed systems/farmer, seed assessment/disaster, seed intervention/seed and tools, seed guidance handbook/development, seed guidance/recovery, seed guidance/institutional and capacity building

This paper describes a case study of a seed program that was implemented in Afghanistan as a result of many years of war. It describes how the project was carried out, starting from its emergency phase through to rehabilitation. At the end of the paper, the author gives some lessons learned and recommendations based on the project experience.

22. FAO (1998). International Workshop on Seed Security for Food Security. Contributions for the Development of Seed Security Strategies in Disaster-Prone Regions. Proceedings of the workshop, Florence, Italy, 30 November to 1 December 1997. Rome: Food and Agriculture Organization of the United Nations.

This document includes the three following articles:

a. Bishaw Z. and M. Turner (1998). A Regional Perspective on Seed Security.

Descriptors: seed systems/farmer, seed systems/formal, seed guidance handbook/institutional capacity building, seed guidance handbook/development, seed intervention/community development, seed security/seed assessment

The paper attempts to define seed security and describe the issues and strategies that are required to ensure farmers' access to seed in both normal and disaster years. It reviews policy and regulatory constraints in the formal seed sector that may hinder effective responses to emergency seed supplies at the national and regional levels, drawing on the experiences of the West Asia and North Africa (WANA) region. The contents include, among other themes:

- Aspects of food security
- Aspects of seed systems
- Aspects of seed security
- Initiatives for regional cooperation
- Role of public sector and NGOs

b. Scowcroft W. R, Fiebig W. and V. Bushamuka (1998). Developing Seed Security Strategies and Programmes for Food Security in Developing Countries.

Descriptors: seed assessment/seed security, seed assessment/disaster, seed systems/formal, seed systems/farmer, seed guidance/relief, seed guidance/development, seed guidance/genetic diversity, seed intervention/community

The document highlights some of the forces at work that promote seed security systems. It describes the concept of seed security and spells out possible strategies to achieve seed security goals. These strategies include protecting local diversity, strengthening the seed-supply sector at the national and regional levels, and effecting government policies that promote such security.

c. Wobil J. (1998). Seed Security Initiatives in Southern Africa.

Descriptors: southern Africa region, seed systems/farmer, seed systems/formal, seed intervention/community development, seed intervention/formal development, seed guidance hand-book/institutional capacity building

This paper describes how the use of quality seeds along with other inputs and appropriate cultural practices can increase crop production and productivity. It also suggests how to design a practical action program to entrench seed security as a permanent feature of the Southern Africa Development Community (SADC).

The paper's contents include, among other themes:

- Seed-supply systems in SADC countries
- Impact of recent climatic factors
- Challenges and issues of informal seed-sector activities in SADC countries
- Seed-security situation in SADC
- Historical background on the establishment and operation of SADC seed-security network

23. Longley C. and L. Sperling, Eds. (2002) *Special Issue*: Disasters. The Journal of Disaster Studies, Policy and Management, Volume 26, No. 4, December 2002.

This special issue contains a series of articles that together provide practical insight and interventions on how to strengthen both agricultural and social support to farmers' seed systems in times of stress, how to link shorter term interventions with longer term perspectives and how to minimize ancillary aid damage. The introductory paper illustrates how conventional seed-distribution projects often have less positive impact than anticipated. The paper also shows that interventions can decrease seed-system stability and varietal diversity, while bringing unintended negative impact into the social and political economy of recipient communities. The paper further puts forth a series of baseline practices with which to improve the effectiveness of current practice and suggests a range of interventions to supplement the predominant seed-and-tools paradigm. It also exposes the readers to designing appropriate interventions based on more informed decisions. The key message of this issue is that "seed-and-tools" approaches, as currently practiced without diagnosis, no longer seem justifiable.

The paper's highlights include:

- Enhancing relief aid through agricultural research
- Alternative programming options: seed vouchers and fairs
- Assessment of impact and need
- Right-based approaches, institution building and markets

The volume contains a series of seven articles:

a. Archibald S. and P. Richards (2002). Seeds and Rights: New Approaches to Post-War Agricultural Rehabilitation in Sierra Leone. pp. 356–367.

Descriptors: Sierra Leone, seed assessment/disaster, seed systems/relief, seed guidance handbook/recovery

This paper shows how more equitable seed distribution could contribute to fostering a culture of human rights as well as agricultural rehabilitation. The benefits and advantages of more inclusive, right-based alternative approaches to seed distribution are discussed and preliminary results from the pilot phase of CARE's right-based approach to food security are presented. The contents include:

- Introduction: seeds and social inclusion
- Needs and rights: current debates
- "Smart" assistance?
- Developing a new delivery "vehicle" for seed
- Seeds and rights-symbolizing new beginnings

b. Aubee E. and K. Hussein (2002). Emergency Relief, Crop Diversification and Institutional Building: The Case of Sesame in Gambia. pp. 369–382.

Descriptors: Gambia, sesame, seed guidance handbook/institutional capacity building, seed guidance handbook/technology transfer, seed guidance handbook/development, seed assessment/disaster, seed systems/relief

This article examines the case of the Catholic Relief Services (CRS) sesame support program in Gambia, which has spanned more than 25 years. It outlines the transformation process from relief to development and the role that the production of an agricultural commodity (sesame) has played as a key building block. The paper provides a case study of an intervention that has gone beyond the production of seeds to address agronomic research and extension, policy, marketing, and institutional issues necessary for successful crop diversification. The contents include:

- Aspects of agronomic research, extension, and input supply
- Aspects of policy and institutional environment
- Approaches to grass-roots institutional building, such as the National Women's Farmers' Association in Gambia
- Lessons learned from this case study

c. Buruchura R. A., Sperling L., Ewell P. and R. Kirkby (2002). The Role of Research Institutions in Seed-Related Disaster Relief: Seeds of Hope Experiences in Rwanda. pp. 288–301.

Descriptors: Rwanda, seed guidance handbook/technology transfer, seed guidance handbook/institutional capacity building, seed systems/relief, seed assessment/disaster

This article describes the efforts of a coalition of agricultural research centers, Seeds of Hope (SOH), in the rebuilding of Rwanda, after the genocide and war of 1994. Research involvement in emergency relief and rehabilitation was unusual at the time and SOH had to forge its unique complementary role. Focusing on crop and variety development and conservation it: provided technical advice to relief agencies on seed procurement; used its baseline ken to assess the effects of war on seed diversity and seed security; made preparations to restore specific germplasm (which, fortunately, proved unnecessary) and spent substantial effort on rebuilding human resource capacity in research as well as basic scientific facilities. The article further describes how the involvement of SOH highlighted the critical, yet very different, roles for research during emergency versus rehabilitation periods. The cost effectiveness of building in a diagnostic component (before massive seed or germplasm distributions) is also demonstrated. This article concludes with broad lessons learned and reflections on the SOH program. The contents include:

- The Rwanda war and genocide and their “posited” short-term agricultural effects
- Formation and broad aims of the SOH initiative
- Emergency phase: provision of technical information on variety sourcing and targeting
- Rehabilitation phase
- Broad lessons and reflections on SOH Rwanda

The involvement of SOH highlighted the critical, yet very different, roles for research during emergency versus rehabilitation periods and demonstrated the cost effectiveness of building in a diagnostic component — before massive seed or germplasm distributions are programmed.

d. Remington T., Maroko J., Omanga P., Charles E. and S. Walsh (2002). Getting off the "Seeds-and-Tools" Treadmill with CRS Seed Vouchers and Fairs. pp. 315–329.

Descriptors: Africa, seed intervention/seed and tools, seed guidance handbook/technology transfer

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 framework for assessing seed security for seed-system analyses or diagnoses. It also describes an alternative approach to free distribution (the so-called “seeds-and-tools" approach) in agricultural recovery, which combines the distribution of seed vouchers with the organization of seed fairs attended by a range of seed sellers and voucher holders. 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 organization 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.

The paper presents an ex post evaluation of the effectiveness of seed vouchers and fairs and closes with a discussion of the opportunities and challenges ahead. Three conceptual principles of seed security are elaborated: seed availability, seed accessibility and factors associated with seed utilization. The paper discusses:

- The persistent reliance on the formal seed sector on agricultural recovery from disasters
- Using a seed-security assessment framework for better seed-system diagnosis

- CRS seed vouchers and fairs: methodology and overview
- Ex post evaluation of CRS seed vouchers and fairs using the seed-security framework

e. Jones R. B., Bramel P., Longley C. and T. Remington (2002). The need to look beyond the Production and Provision of Relief Seed: Experiences from Southern Sudan pp. 302–315.

Descriptors: Southern Sudan, sorghum, seed systems/farmer, seed systems/formal, seed systems/relief, seed guidance handbook/technology transfer, seed assessment/disaster

This article discusses free seed distribution in Southern Sudan as a way of increasing food security instead of strengthening the already resilient local seed system. Field research in areas targeted for seed relief found that farmer seed systems continue to meet the crop and varietal needs of farmers even following the 1998 famine. Donor investments in seed multiplication of improved sorghum have not been sustained due to a lack of effective demand for the improved seed beyond that created by the relief agencies. The authors argue that, rather than imposing outside solutions, whether through seed provisioning or seed production, greater attention needs to be given to strengthening existing farmer systems and designing interventions to alleviate the weaknesses. Through the case study, the article advocates support for the process of farmer experimentation, via informed introduction of new crops and varieties that can potentially reinforce, strengthen and diversify local cropping systems. The contents include:

- Understanding seed systems: farmers and formal
- Sorghum seed systems in Southern Sudan
- Relief seed systems: common misperceptions
- Alternative interventions

f. Longley C., Dominguez C., Saide M. A. and W. J. Leonardo (2002). Do Farmers Need Relief Seed: A Methodology for Assessing Seed Systems. pp. 343–355.

Descriptors: Somalia, Mozambique, seed systems/farmer, seed systems/formal, seed systems/relief, seed assessment/disaster, seed intervention/formal, seed intervention/vouchers and fairs

This paper outlines a methodology to help agencies better determine whether relief seeds are needed by farmers affected by disaster. The article proposes the development of a seed-system profile (SSP) to understand both the socioeconomic and agro ecological aspects of farmer seed systems and presents a five-step framework for assessing seed systems in disaster situations. The authors further explain how a better understanding of farmers' seed systems facilitates the development of relief and rehabilitation interventions that effectively enhance the resilience and reduce the vulnerability of these systems. The contents include:

- Present approach to assessing seed needs
- Seed-systems profile (SSP)
- Assessing the need for seed-system support in a disaster situation
- Suggestions for practical applications

g. Sperling L. (2002). Emergency Seed Aid in Kenya: Some Case Study Insights from Lessons Learned during the 1990s. pp. 329–342.

Descriptors: Kenya, seed systems/farmer, seed systems/formal, seed systems/relief, seed assessment/disaster, seed intervention/development

This article reviews the effectiveness of seed-aid distribution in Kenya during the 1990s. It analyzes internal processes and effects, i.e., the performance of the aid itself. It also analyzes external processes

and effects, i.e., how the seed-aid intervention affected farmers' broader agricultural management strategies. During the drought emergency of 1997, Kenyan farmers favorably judged many of the immediate seed–aid features such as crop and variety appropriateness and seed quality — even through the overarching goals of the seed assistance were muddled, ranging from assistance to the poor, to generalized gift–giving to stimulating progressive farming practice. However, the longer term analyses, drawn from recollections of a decade of relief activity, showed no concrete evidence that seed aid, per se, had strengthened their farming systems nor that those who have received it once were less likely to receive it again. The author argues that repeated seed aid has been promoted to lessen the effects of "acute" stress, drought, while Kenyan farmers, in practice, have been experiencing much wider, "chronic" problems with the seed system. The article ends by discussing the diagnosis of seed systems, constraints and opportunities. The distinction between acute and chronic seed-system stress is demonstrated and the range of interventions appropriate to each are outlined.

24. Longley C., Jones R., Mohammed H. A. and P. Audi (2001). Supporting Local Seed Systems in Southern Somalia: A Developmental Approach to Agricultural Rehabilitation in Emergency Situations. AGREN Network Paper No 115, July 2001. London: Overseas Development Institute (ODI), Agricultural Research and Extension Network. 20 Pages.

Descriptors: Somalia, seed systems/farmer, seed systems/formal, seed systems/relief, seed intervention/seed and tools, seed intervention/seed vouchers and fairs, seed guidance handbook/recovery, seed guidance handbook/technology transfer, seed guidance handbook/institutional capacity building

Concerns have been raised by both implementing agencies and donors over the effectiveness of relief seed inputs and the sustainability of continued seed distributions in emergency situations. Based on a study in southern Somalia, this paper describes the impacts of insecurity, shocks and stresses on agriculture, and examines whether relief seed distributions are the most appropriate way of providing assistance to farmers affected by disaster. The paper shows that by developing a better understanding of the ways in which local seed systems function it is possible to identify how these local systems can be supported and developed. Rather than providing seed itself, the study highlights a number of ways in which the capacity of local seed systems can be strengthened as part of a strategy for agricultural rehabilitation. Suggested interventions include (i) facilitating farmers' access to seed; (ii) the introduction of appropriate agricultural technologies; and (iii) enhanced input/output marketing.

25. Sperling L. ed. (2001). Targeted Seed Aid and Seed-System Interventions: Strengthening Small-Farmer Seed Systems in East and Central Africa. Proceedings of a workshop held in Kampala, Uganda, 21–24 June 2000, funded by USAID. Kampala: Participatory Research and Gender Analysis (PRGA), International Center for Tropical Agriculture (CIAT). 112 Pages.

Descriptors: East and Central Africa, seed systems/farmer, seed systems/formal, seed guidance hand-book/institutional capacity building, seed guidance handbook/recovery, seed guidance handbook/development, seed guidance handbook/technology transfer, seed intervention/relief, seed intervention/seed vouchers and fairs, seed intervention/community development, seed intervention/formal, seed security assessment/disaster

This book presents the initial reflections of a working group on targeted seed aid and seed-system interventions. Individuals from 11 institutions joined together from June 21 to 24, 2000, to compare and contrast practical experiences supporting farmers' seed systems, particularly in times of severe stress. What united the small group (drawn from IARCs, NARS, and NGOs) was a highly practical orientation, substantial first-hand field experience, and a strong belief that seed-aid interventions have to look well

beyond the component of seed—or seed and tools—if they are to be effective on a sustainable basis. Specifically, the workshop set in motion three major objectives:

- To exchange and synthesize "better practices" among seed-system interventions in East and Central Africa
- To refine specific guidelines for seed-system interventions (these continue to build on and evaluate several existing models, as well as pushing these guidelines further)
- To develop and modify conceptual tools for more informed design of seed-system interventions, including the following: practical models of seed-system components; diagnostic tools (and indicators) to determine the "problem"/constraint and the causes of seed insecurity; and tools to determine options for strategies for seed-system interventions

The workshop included the following papers:

a. Analyzing Farmers' Seed Systems: Some Conceptual Components. By Shawn McGuire, Technology and Agrarian Development, Wageningen University.
b. Seed Systems and Their Potential for Innovation: Conceptual Framework for Analysis. By E. Weltzien and K. vom Brocke, Hohenheim University.
c. Farmer Seed Systems under Stress. By Catherine Longley, Overseas Development Institute.
d. Guidelines for Assessing the Impact of Disaster on Smallholder Agricultural Systems. By Tom Remington, Catholic Relief Services, East Africa.
e. Emergency Seed Aid in Kenya: A Case Study of Lessons Learned. By Louise Sperling, International Center for Tropical Agriculture.
f. Emergency Seed Interventions in Somalia: A Reflection on the Current Situation. By Christoph Langenkamp, European Commission, Somalia Unit, Nairobi.
g. Seed Systems of Small Farmers in Honduras: Their Relevance for Interventions. By Jon Magnar Haugen, Agricultural University of Norway.
h. Decision-Making Processes in Seed-Supply and Seed-Distribution Interventions in Emergency Situations: The Case of Honduras. By Sigrid de Barbentane, Noragric, Agricultural University of Norway.
i. Seed-System Interventions in Eastern Africa for Chronically Stressed Situations. By Soniia David, International Center for Tropical Agriculture.
j. Linking Emergency Aid with Rehabilitation and Support in Chronic Stress Situations. By Diress Mengistu, Norwegian People's Aid, South Sudan Program.
k. Increasing the Resilience of the Farmers' Seed System through Linkage with the Formal Sector. By C.J.M. Almekinders, Technology and Agrarian Development, Wageningen University.

26. Sperling L. and D. Cooper (2003). Understanding Seed Systems and Strengthening Seed Security. Background paper prepared for workshop on Effective and Sustainable Seed Relief: A Stakeholder Workshop, Rome, 26–28 May 2003. Rome: Food and Agriculture Organization of the United Nations. 32 Pages.

Descriptors: seed systems/relief, seed systems/farmer, seed assessment/disaster, seed assessment/security, seed intervention/fairs and vouchers

This background paper reviews the rationale for and goals of seed aid. It also provides an overview of seed systems, particularly the "local" or "informal" seed system that provides most farmers with seed most of the time. It also discusses the parameters of seed security, including the distinction between availability, access and use attributes. Acute and chronic emergency seed situations are further described. Lessons learned in the field, particularly in Africa, are summarized and discussed. The paper also compares and

contrasts current relief options, focusing on the two dominant responses: direct seed distribution and seed fairs and vouchers. At the end, the authors consider key challenges for moving the seed-aid field forward. The contents include:

- The rationale and goals of seed aid
- Overview of the seed systems farmers use
- Thoughts about seed security in emergency situations: some conceptual aids
- Major response options currently being used in emergencies
- Major challenges: moving forward

27. Musa M.T. (2001). Alternative Farmer Seed Intervention Systems. Local Seed Systems News, Volume 6, No. 4, August 2001. Small-Scale Seed Production Project, GTZ and SADC Seed Security Network.

Descriptors: Africa, seed assessment/seed security, seed systems/farmer, seed systems/formal, seed intervention/community development

The author categorizes both formal and informal seed sectors and defines the scope of their complementarity. The article defines the relationship between food and seed security using a food security framework for effective food production activities. Misconceptions are explored about farmer seed systems and the weaknesses of the formal seed systems for making seeds accessible to farmers.

28. USAID, Bureau for Humanitarian Response (1998). Mitigation Practitioners Handbook. Washington, DC: United States Agency for International Development. 42 Pages. [In the context of assistance, disaster prevention, mitigation, prepared-ness and planning, see section 3, pp 11-17.

Descriptors: seed intervention/seed and tools

In section 3 of this handbook, there is a discussion of the suitability of the “seed-and-tools” approach in relation to the type of disaster and type of crop species affected. It details the conditions necessary for assessing the possible use of the “seed-and-tools” approach and ends with recommendations for planning and carrying out “seed-and-tools” interventions.

29. USAID, Kenya (2002). Success Stories. Annual Report FY 2002. Nairobi: USAID, Kenya.

Descriptors: Kenya, seed intervention/seed and tools, seed intervention/formal development

The paper gives an overview of USAID-funded agro-business projects that support local communities in producing certified and packaged seeds of major food crops (maize, beans, sorghum, millet and green grams). It also narrates the positive socioeconomic impacts of such interventions at the level of both farmer seed growers and targeted farming communities.

30. Catholic Relief Services. (2017). Agricultural Fair and Voucher Manual. Baltimore, MD, USA

This manual provides the technical and operational knowledge for planning, implementing, monitoring and evaluating agriculture voucher fairs. The manual covers various types of agricultural fair and voucher programs including Seed and Voucher Fairs or SV&F, Diversity for Nutrition and Enhanced Resilience or DiNER fairs, livelihood fairs, and vouchers tied to agro-dealers. Livestock and commercialization fairs will not be covered specifically, though many of the same principles and tools covered in the manual could be applied to them. Throughout the manual, we will refer to the events by the generic term “fairs”; however, we will specify which type of fair when necessary. Keep in mind that most agricultural fairs revolve around seed, so seed choice and seed-related issues will be emphasized throughout the manual.

Although the manual will provide guidance on the technical substance and logistics related to fairs, there are numerous programmatic issues that need to be thoroughly considered, and decisions to be made, in order to move forward with the planning aspects.