SEED SYSTEM SECURITY ASSESSMENT

EASTERN AND COASTAL KENYA

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EXECUTIVE SUMMARY

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The insights of many people shaped this work: men and women farmers, government ministry personnel, crop and livelihood specialists, local seed producers, seed companies, agro-dealers, traders, agro-enterprise specialists, humanitarian relief personnel, and others. Thanks to all for helping to sharpen the results.

Finally, we do aim for this assessment to lead to practical action in the short and medium-term. The positive opportunities for seed system, marketing and livelihood support need to be seized upon soon and with vigor.

Acronymns

CIAT	International Center for Tropical Agriculture
CBSP	Community-based seed production
CD	Catholic Diocese
CRS	Catholic Relief Services
DSD	Direct Seed Distribution
HH	Household
IDP	Internally Displaced Population
NGO	Non-governmental organization
FAO	Food and Agriculture Organization (also UN-FAO)
G	grams
GoK	Government of Kenya
Kg	Kilos
Ksh	Kenya Shilling
LR	Long Rains (February to June)
MT	Metric Tons
OPV	Open Pollinated Variety
SR	Short Rains (October to January)
SSSA	Seed System Security Assessment
SVF	Seed Vouchers and Fairs
WV	World Vision

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Comments and updates are welcome by the SSSA team. Please contact the assessment coordinators at l.sperling@cgiar.org and mwende.kusewa@crs.org.

EXECUTIVE SUMMARY

This report presents the results of a Seed System Security Assessment in Eastern and Coastal Kenya, implemented September 2011, several weeks prior to the time of planting. The assessment focused on result of Long Rains (LR) 2011, and immediate projections for Short Rains (SR) 2011 planting.

A seed system security assessment (SSSA) reviews the functioning of seed systems which farmers use, both formal and informal. It assesses whether seed of adequate quality is available and whether farmers can access it. The approach also promotes strategic thinking about the relief, recovery or development vision needed. For instance, during the stress period, should aid aim to restore the system as it was, *ex ante,* or aim to strengthen it? A SSSA goes well beyond a conventional seed needs assessment as it hones in on specific seed security problems communities face, and then steers response to actions which alleviate specific constraints, and often improve systems. (For full description of method, see http://www.ciat.cgiar.org/africa/pdf/sssa_manual_ciat.pdf).

Three sites were chosen for the assessment : in Kathonzweni, Tharaka North and Magarini. The sites include zones where participating non-governmental organizations (NGOs) have been prepared to address seed security-related constraints and opportunities. The three selected sites also represent well the cross-section of the regions in which drought-stressed agriculture and seed aid continue to unfold. Within Tharaka North, a fourth site, was also assessed, tied specifically to Internally-Displaced Persons (IDPs) suffering from prolonged land disputes.

This report presents the seed security findings and recommendations across all four sites. Site-specific reports and recommendations tailored for each site have been posted separately and can be obtained through Catholic Relief Services (Mwende.Kusewa@crs.org). Here, we focus on the across-site results as these may have broader relevance to drought-prone areas in Eastern and Coastal Kenya where seed security responses are being planned in the short (1-2 seasons) and medium-term (3-5 seasons).

Note that this assessment coincided with a period when preparations by the Government of Kenya to disperse an estimated 1000 MT of Direct Seed Aid (DSD), particularly destined for the lower Eastern Province zone (D. Karanja, personal communication) and including maize, sorghum, cowpea and greengram. A preliminary assessment of seed needs had been coordinated by the UN-FAO, but delays in data provision meant that official action plans were laid before assessment results could be analyzed so as to inform programming.

Select SSSA results are reported below, in two sections: a) Acute Seed Security Findings, and b) Chronic Seed Security Findings and Emerging Opportunities.. Recommendations then follow.

Summary: Acute Seed Security Findings

1. The LR 2011 was a poorly performing one across crops, with yields judged poor in 30-65% of cases. So it was a stressful season . However, in terms, of seed security issues, quantities sowed only modestly dipped (- 2%). Some farmers planted less anticipating that the rains would not be sufficient (so why waste seed), but money constraints were the major reason for their planting less (45% of cases). Farmers simply did not have the resources to buy seed. Seed availability itself was not identified as a constraining issue to use. Note that maize seed use especially declined.

2. Farmers in the SR 2011, aim to plant the same or more in 73% of cases (monitoring crop by crop), although increase in the overall kgs to be sown is modest (+1.25%). For those planting more, the main drivers are access to : new varieties, better developed markets and more land. For those planting less, the key constraint is poor finances (no money, seed price too high).

3. Farmers do not see themselves as victims needing outside seed aid. For LR2011, seed aid provided less than 6% of their seed sown. For SR 2011, farmers anticipate about 4% of their needs to be met through seed aid. They are not factoring in free seed aid to meet their seed needs in any significant way.

4. In terms of seed source strategy, it is useful to compare the LR 2011 and SR 2011 seasons. To compensate for low home stocks, farmers are increasing their use of local markets for seed, from providing 39% of their total seed supply in LR 2011 to 55% of seed to be sown in SR 2011.

5. Comparing LR 2011 and SR 2011, a relatively bigger change for farmers is anticipated in terms of agro-dealer use. In LR 2011, agro-dealers provided 14% of the seed farmers sowed (mostly maize and cotton.) In SR 2011, farmers indicate 27% will come from agro-dealers. Maize and cotton will still predominate, but farmers also seek greengrams and cowpea certified seed from agro-dealer shops. Farmers want more legumes, and they want new varieties of legumes, and they indicate a willingness to pay for them.

In main issue in SR 2011 therefore revolved around markets. Can markets deliver? and can farmers afford to buy the supplies on hand?:

Can markets deliver seed?

6. Agro-dealers themselves indicated no shortage at all of supplies to be put on offer. While many in the regions had not yet received stocks from various centralized storage depots at the time of the SSSA, there was no indication that overall supply could not meet farmer demand.

7. For seed supply from formal agro-dealers, other constraints emerged:

   i. geographic access to shops was far. Places like Tharaka North have no formal stockists at all. The nearest are in Meru town, 50 km or 2 to 3 hours away by bus. (although note that Kenya Seed for instance was planning to put an agent in Mikinduri, 24 km away).

ii. specific varieties desired were sometimes not on offer (for non-maize) .Agro-dealers put mostly maize on offer, along with horticultural seed packets. Farmers complained about not finding desired varieties of sorghum (like gadam) and a range of desired greengram and cowpea varieties.

8. For supply of seed from local grain markets , trader assessments, mapping of actual supplies, and mapping of potential seed flows and deliveries indicated there would be no availability problem. While immediate stocks seemed short in several areas at the time of the SSSA, traders were hoarding stocks elsewhere until prices rose steeply for critical sowing periods .

Can farmers afford to buy the supplies on hand?

9. SR 2011 seed costs will rise higher than LR 2011 costs by 26-103%.

   Costs are high for three reasons:

   i. For SR 2011 Farmers are buying more seed overall. (Own stocks provided 36.6% of seed sown LR 2011 but only 10.5% of SR 2011 seed sown).

   ii. For SR 2011, farmers are intensifying use of certified seed, which per kg is 200 to 500% more expensive than seed of same crop obtained from market.

   iii. More generally, certified seed is packaged in relatively large packs. At least for the legumes, 2 kg bags, often the smallest size, can cost some 350 Ksh. (smaller packs: 100 , 250 500 g would be more affordable—and desired.)

   Stress on finances will be a significant problem for many. In Kithuki, for instance, the average farmer expects to spend 3711 Ksh for seed in SR 2011, or about the equivalent of a medium-sized goat.

10. For IDPs, rises in seed costs will be 59% from LR 2011 to SR 2011. This general assessment of money stress, is in addition to other ongoing concerns that make them especially vulnerable in the farming areas of Ntoroni. There households report that they 'farm with fear'. They might not plant due to threats, they might abandon fields due to insecuirty, some say, they are chased away at harvests (for example in 2009). Parcels rented to them may also be expensive (e.g. 5000 Ksh year, 2000-3000 season) as well as of poor fertility.

Community assessments

11. Even in this context of stress, communities (in focus groups) assessed themselves as 80 to 100% seed secure, across crops and sites. They are partly shaping strategies to compensate for seed lost in harvest LR 2011 and to take advantage of new opportunities (such as enhanced use of agro-dealers, and especially seeking out new varieties of legumes – especially of cowpea and greengram.

    This positive statement needs to be tempered for the IDPs in Ntorini. They are not counting on outside aid, but project that sowing levels will be down by some 7% in SR 2011.

Summary: Chronic Seed Security Findings + Emerging Opportunities

The review of longer term trends in seed security in Eastern and Coastal Kenya shows both positive moves forward- as well as ongoing bottlenecks.

1. There has been some dynamism in seed sources, but particularly for maize. Other 'new sources' for seed of many of the legumes or cereals tend to be subsidized ones, non-sustainable ones.

2. New variety access has been impressive, with over 70% of households (71.3%) indicating having accessed a new variety in the period 2006-2011, principally of maize, cowpea, greengram and sorghum. For maize, there are multiple channels for new introductions (agro-dealers, government, NGOs) , but for the legumes, and especially new varieties of greengram and cowpea, it is hard for farmers to find specific desired varieties. Lack of access to the white sorghum varieties (grown for the brewing industry) also was cited as a problem.

3. Organic fertilizers (manure/compost) have been employed by 70-75% of the population and particularly on cowpeas, greengrams and maize. Overwhelmingly, animal manure is applied, with nearly no use of crop residue or kitchen refuse. In contrast, 6-10% of farmers use mineral fertilizers (and only on the same three crops. Most find they are too expensive, not necessary, or they do not know how to use them.

4. Pesticide use is fairly high (62-79% of farmers per season), again on maize, greengrams and cowpea. It would have been higher had the rains not come late (and plants withered before application became possible). Such widespread use reflects the high constraints farmers face with continual insect damage, especially on greengrams.

5. Farmers are eager for market development, but currently there is very little agricultural transformation in rural communities: flours, chips, but not much more. This means that farmers cannot reap the benefits of value addition from their raw agricultural products.

6. Seed aid, that is free distribution of seed (under emergency and development initiatives) has been conducted on a large scale, with 73.1% of the sample having received such aid a mean of 1.6 times in the last 5 years. Such aid can promote dependency: some households have received seed assistance 6 times in 6 years.

7. Female-headed households do not seem to face dramatically worse seed security concerns than those that are male-headed, although there are modest indications that they are planting relatively less for the SR 2011. (Such gender-differentiated insights might require further investigation.)

So, all in all, there has been some dynamism in seed/farming systems in a short five-year period. However, it is time (past-time) for some of the non-maize seed access and general marketing bottlenecks to be alleviated.

RECOMMENDATIONS

Seed Security Emergency Response: General Overview

1. Seed Availability of seed *per se*, was not identified as the major problem in any of the assessed sites. Rather access to seed was a compelling issue in all zones, due to a) relatively greater quantities of seed being purchased, and b) farmers' putting relatively greater emphasis on certified seed use, for maize, greengrams and cowpea. **Recommendation** In this context, emergency 'seed-related' interventions might best be designed to increased access/purchasing power of farmers.

2. Most seed security problems encountered in all assessment sites were not short-term ones. **Recommendation:** Any response in the short term should aim to be linked to longer-term recovery and development. As one example, this might including linking farmers more efficiently to sources of new varieties, especially and legumes even in the early recovery phase.

3. The site-specific SSSAs have shown that 'one size does not fit all'. The four sites assessed (including the IDPs) had different problems and challenges. A blanket response, such as giving free seed or conducting standard seed vouchers and fairs, may not solve problems with the specificity needed. **Recommendation.** Interventions need to be tailored to specific seed security constraints and opportunities **(**see Annex for specific action plans).

4. Emergency seed aid is becoming repetitive. **Recommendation**: In zones where emergency seed aid has been implemented three seasons in a row, decision-makers (donors, GoK, NGOs and other humanitarian partners) should program a formal review so as to determine the necessity of the aid.

Seed Security: Immediate Responses Needed

The major urgent problems at each site center around farmers having access to seed (point #1 above). Emergency inventions should be geared to addressing access problems.

5. Vouchers linking farmers to local markets and agro-dealers and direct cash transfers are important immediate aid options which give farmers increased access to crops and varieties of their choice. Given the specific constraints found in Eastern and Coastal Kenya, vouchers and fairs which also give farmers access to innovations should be encouraged (point #2 above: linking relief to development).

Specific Recommendations Linked to #5 and use of voucher and fair programs

5.1 Two sets of vouchers would useful, those which focus on access to informal sector seed and those specifically designated for formal sector (certified) seed from agro-dealers. In terms of the latter, agro-dealers should be required to pack seed in especially small quantities (50g, 100g) so farmers can test varieties and quality seed through voucher purchase.

5.2 Given farmers' high interest in legume seed, special efforts should be made to ensure that seed of greengram, cowpea and pigeon pea are especially on offer.

5.3 More generally, efforts should be made to bring significant crop diversity overall into the voucher and fair programs so to encourage greater production stability.

5.4 Linked to 5.3, Maize should be banned from the voucher and fair programs as its continued use has compromised farmers these drought-prone regions .

5.5 To oversee the quality of seed put on offer from informal sector, a range of actions should be put in place.

i. A Screening Committee (farmers, NGO representatives, others) should vet all seed being put on offer;

ii. Traders participating in fairs should show that they used adequate basic storage methods. (Having special storage facilities is even better).

5.6 To follow-up on the quality of seed put on offer from the formal sector and agro-dealers, farmers should be advised to keep packs and receipts so as to be able to address any complaints.

Seed Security: Medium-term Responses Needed

There is need for a broad-based rethinking on how to improve the seed security of small holder farmers in drought-prone regions. We suggest a first set of areas for priority action.

Formal Seed Sector

6. Production of foundation seed needs to be scaled up across of range of non-commercial crops, to form the base of an extensive, decentralized, seed production system. For the drought-prone regions, focus should be put especially on the legumes. Items such as forage seed, key for farming system stability in drought-prone areas, might also be considered. While the production of such foundation seed currently rests with the national research institution KARI, additional private sector multipliers (under the guidance of KARI) might be considered to increase quickly and on a large scale.

7. As a general recommendation**,** incentives need to be put in place to encourage agro-dealers to become more smallholder farmer client oriented.

Linked to #7

7.1 Agro-dealers should pack farmer- preferred crops varieties and fertilizers in 'test sizes' and 'affordable use' sizes.

7.2 Agro-dealer placement has to be expanded to serve also those in more remote areas. Networks of centralized trade agent might be facilitated to complement the network of bigger agro-input stores. GIS mapping might help guide placement of stores so as to reach a maximum number of farmers.

7.3. Farmers need to become more aware of the means by which they can redress grievances with agro-dealers (e.g., around quality of product). Awareness campaigns educating farmers in redress possibilities might be considered.

Integrated and informal seed sectors

Decentralized seed production needs to become a more strategic and effective force in serving farmers as the formal seed sector will never be able to handle a) the range of crops needed for drought-prone zones; nor b) the range of varieties. At this point, the decentralized seed multiplication initiatives seems to be having very modest (near nil) impact in drought-prone zones. It is also being propped up by institutional buyers, rather than from demand from smallholder farmer clients.

8. As a general recommendation, sustainable decentralized seed production models need to be confirmed for the drought-prone zones, especially for the legumes.

Linked to #8

8.1 Decentralized seed multiplication groups need to develop an assessment of the cost-effectiveness of their organization and delivery strategy. They should be encouraged to produce only if a) viable markets are identified and b) their own agro-enterprise and marketing skills have been enhanced.

8.2 Links need to be specifically catalyzed to tie decentralized seed producers with continuing and new sources of germplasm.

9 Mechanisms for giving all farmers regular access to new varieties need to be intensified. Sale through agro-dealers (#7.1) provides only one venue. Sale in regular country stores (dukas), open markets (also point #11 below) or even supermarkets (with proper labeling) might be considered.

10 Storage losses on-farm need to be combated in multiple ways: triple bagging or small seed silos are options to be considered for technical and social suitability.

11 Given that local markets (and their traders) are important for farmers' seed supply, more attention should be given to encouraging that these open seed/grain markets supply the kinds of potential seed farmers need. As one point of departure, seed/grain traders could be powerful partners in helping to move *new modern varieties* widely, within and among farming communities. Traders might also be linked to options for safeguarding and improving the quality of seed they put on offer. This could involve: linking traders to credible sources of good quality seed; working with them on techniques of seed bulking; recommending options for separate and improved seed storage.

Agro-enterprise development: market chains

Seed security in Eastern and Coastal Kenya, as well as food and livelihood security generally, are linked to the financial capacity of farmers. Rural agro-enterprises are mechanisms of potential impact that are currently severely underdeveloped. Farmers are selling their agricultural produce in raw form or only slightly modified as in the case of maize and cassava, sold as flour in the case of maize and manioc. Significant market chain prospecting needs to be carried out and agroenterprise development needs to be strengthened at the local and regional levels. In this vein, the following first set of measures is recommended:

12. Profitable business models that serve local markets with good-quality produce, especially in collaboration with existing formal and informal market actors, need to be catalyzed. Transformation of cassava has been but one market chain tested in drought-prone areas.

13. Market information needs to be further promoted to become more timely and trustworthy, providing information on volumes, prices and products at local and regional scale. This can be facilitated especially through the use of radio and cell phone information systems.

Finally, in terms of specific technical recommendations it may be appropriate to state the obvious: drought- prone regions need better roads and more irrigation. As one government official interviewed during the stated: "There are 5+ major rivers in Tharaka. Instead of seed aid, yet again, why not invest in irrigation development?"

Promoting Accurate Seed System Security Assessments

Classic seed need assessments inevitably conclude that 'seed is needed' and, in Eastern and Coastal Kenya usually advise that the response should be a direct seed distribution. While innovative at their inception (as they distinguished seed aid need from food aid need), such assessments are now outdated and need to be sharpened. Understanding of what happens to seed systems during disaster has become markedly more refined in the last five years: experience shows that *distinguishing among seed security constraints is key for recovery*.

14. As a general recommendation, we suggest that current seed security assessment methods, focusing just on counting seed, be significantly revamped.

Specific recommendations linked to #14.

14.1 ` National and regional formats for assessing seed security status should shift from those which calculate simplistic 'seed needs' to frameworks which recognize different types of seed security problems, and which tailor responses accordingly. These problems might include diverse constraints of seed availability, seed access and seed quality, which are distinguished by their presence in the short and in the long term

14.2 Seed security assessment capacity needs to be built at regional and local levels. Technical tools already exist to help NGO and government agricultural officials move forward on seed security assessments.

14.3 Given the complexity of the stresses in drought-prone areas, 'emergency' seed aid-related work has to think strategically and longer-term. Assessments related to seed security, can and should incorporate more developmental elements, including issues related to system stability, opening and strengthening of markets, and equity concerns.

14.4 This expanded focus suggests that the 'skill set of those assessing seed security' has to be broadened. Minimally SSSA requires inputs from formal and informal seed sector specialists, farming system specialists, marketing professionals, and gender/ livelihood analysts. Nutritional expertise might be considered as an added bonus. Hence: multidisciplinary teams should be mobilized for seed system security assessments.

14.5 More generally, a political environment for 'real seed security assessment' has to be established. This is no easy task. *Technical advances in methods alone will not lead to more accurate assessments.(political will needs to change)*

Strong seed security frameworks at a national level and strong leadership ensuring that seed security assessment is given focus (as distinct from food security and other non-food item assessments), can enable seed assistance in Kenya to become more demand and problem driven. More accurate assessments will bolster the ability of seed- related assistance to address farmers' compelling seed security problems and to seize on important, emerging opportunities.