Combined findings and recommendations from SSSAs led by:

FAO & Government of Ethiopia
CRS & partners

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Background

Two large-scale Seed System Security Assessments (SSSAs) were conducted in Ethiopia between September and December 2016. The Food and Agriculture Organization of the United Nations (FAO) Ethiopia Country Office and Government of Ethiopia led one assessment, with Catholic Relief Services coordinating the other along with its partners\(^1\). As both assessments examined farmers’ seed security in detail over multiple seasons and used closely related tools, there is considerable overlap in their findings. This summary synthesizes findings and recommendations from both assessments in the areas where overlap is apparent. It focuses on the impacts for smallholder farmers of acute stress during 2016 *belg*\(^2\) and *meher*\(^3\) seasons, and projections for the 2017 *belg* season, so as to guide immediate implementation options for 2017. However, some comments around longer-term issues are also included at the end of this report.

The individual SSSA reports provide more detail than can be covered in this brief synthesis. Also, each assessment emphasizes slightly different aspects of seed systems. Individual reports are available at:

  (contact: Alemu.Manni@fao.org)

  (contact: matt.davis@crs.org)

**DISCLAIMER**

The authors’ views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

\(^1\) Partners included ISSD Ethiopia, the Relief Society of Tigray (REST), the Organization for Relief and Development in

\(^2\) Short rainy season generally between February and May.

\(^3\) Long rainy season generally between June and September.
The Seed System Security Assessments (SSSAs)

The rationale for conducting SSSAs at this time was threefold:

- In 2015, Ethiopia farmers and systems experienced one of the worst droughts in 50 years (comparable to the 1983-1985 drought) --- in large part due to El Niño (Humanitarian Requirements Document, 2015).

- The Government of Ethiopia (GoE) and other humanitarian partners responded swiftly to the crisis, distributing 32 000 tonnes of assorted crop seed during the 2016 belg and meher seasons while plans for 2017 are still under development. The SSSA aimed to assist managers and field staff assess whether immediate seed system interventions were on track, as well as to build their seed system security assessment capacity.

- Seed security issues are linked to food security issues, but also have quite distinct features. These assessments were designed to provide honed technical insight and to shape targeted interventions in the short, medium and long terms.

FAO and the Government of Ethiopia’s SSSA (henceforth SSSA-FAO) ran from 31 October 2016 to 3 December 2016. SSSA-FAO covered two zones in each of five different Regions: Tigray, Oromiya, Amhara, Southern Nations, Nationalities and Peoples Region (SNNPR), and Afar, as well as a single zone in both Somali and Gambella Regions. In total, SSSA-FAO interviewed 1 270 farming households, visited 17 markets, and undertook 45 focus group discussions. A few higher potential areas (e.g. East Gojjam Zone, Ada’a Woreda near Bishoftu) were included in the SSSA-FAO sample, as it extended beyond areas of NGO activity.

CRS and partners carried out a SSSA in Ethiopia from 28 September 2016 to 14 October 2016. This assessment (henceforth SSSA-CRS) took place in four Regions: Tigray, Oromiya, Amhara and SNNPR. In each region two woredas were selected to represent a range of agro-ecologies, meher and belg seasons, and to link with partners’ areas of operation. In total, 486 household interviews were conducted along with 46 seed trader/agro-dealer interviews, focus group discussions and community meetings in each selected region.

Thus, the combined SSSAs interviewed 1 756 farming households, the largest national sample of any SSSA performed to date. In both SSSAs, woredas and kebeles were selected to highlight diverse factors such as agro-ecology, trade or stress, and households were randomly selected for interviews. Both triangulated findings using multiple methods and established quantitative and qualitative approaches, including conducting key informant interviews with many actors involved in seed production, farmer assistance and value chains were utilized. These SSSAs reviewed the functioning of the seed systems, which farmers use, both formal and informal, and assessed whether farmers could access seed of adequate quantity and quality in the short and medium term. Specifically, the work reviewed the actual seed sources farmers used and quantities of seed for their key crops for the 2016 belg and meher seasons, and farmers’ projected seed sourcing for 2017 (belg only for SSSA-CRS, both seasons for SSSA-FAO). Both SSSAs used similar survey instruments for questions regarding seed sources, input use, seed aid experience, and access to new varieties – though SSSA-CRS explored two crops per season.

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4 Ethiopia is comprised of nine regional states: Tigray, Afar, Amhara, Oromiya, Somali, Benishangul-Gumuz, SNNP, and Harari, along with two chartered cities, Addis Ababa and Dire Dawa.
while SSSA-FAO asked about three crops per season. Except where otherwise stated, all figures in this synthesis pool nationwide results from both surveys.

Select SSSA findings are presented below, across sites, and grouped into short-term findings by season (Acute seed security findings, Belg and Meher 2016, and Belg 2017).
I. ACUTE SEED SECURITY FINDINGS: SSSA

Despite the initial shock (or shocks), diverse indicators suggest the seed security of Ethiopian farmers in the seven separate Regions has been stable for 2016 belg and meher seasons—and is projected as significantly recovering for the belg 2017 season.

Belg Season 2016

1. For belg 2016, farmers sourced the lion’s share of the seed they planted (77 percent) by themselves. The two major seed source channels were informal sector ones: home-saved stocks (40 percent) and seed purchased from local markets (35 percent). This is striking, given the important emergency seed aid activities in all but a few of the woredas sampled; seed aid provided 20 percent of the seed planted during belg 2016.

2. SSSA-CRS compared quantities sowed for each crop against normal amounts (number of comparisons=523); for belg 2016, quantities sown were in the range of normal (an overall dip of 6.0 percent). Less than half of respondents (40 percent of all cases) did sow less of a given crop in belg 2016: farming households were asked their main reason for sowing less than normal for each crop case. Among this group of potentially vulnerable farmers, three reasons were given as paramount for reducing sowing amounts. No money to buy seed (15 percent of responses), insufficient access to land for the season (20 percent of responses) and simply poor weather (37 percent) - which deterred farmers from risking sowing full amounts of the crop. A positive development was the fourth major factor cited: use of less seed due to better agronomic practices of row planting. All four regions provided similar reasons for reductions, with a lack of oxen additionally being highlighted in SNNPR. Poor seed availability (in markets, shops, with neighbors) was an insignificant reason for sowing less (less than 1 percent of responses cited this reason). Similarly, SSSA-FAO also found no evidence of constraints to seed availability. When asked if each seed source provided “enough seed”, only 12 percent responded “no” (out of 662 responses). Absolute seed unavailability is likely lower than this, as farmers use multiple seed sources.

Note: Direct distributions of seed aid normally address an absence of seed (seed not available). Evidence suggests this was not farmers’ main constraint during that season. While free seed might mitigate financial constraints, such direct seed aid would not address the two driving problems for declined seed use-- poor weather and insufficient land/field access.

3. Combining both assessments, the quality of seed by farmers was assessed as good or average (an overwhelming 97 percent of responses, from a sample of 1 583). Though it was a stressed period, farmers rated crops yields as good (34 percent of cases) or average (27 percent of cases). Therefore, over 61 percent of farmer crop cases received acceptable yields for their crops - even following the drought. The reported cases of poor yields varied by crop and region. For instance, a relatively high proportion of farmers rated wheat and barley production as poor that season, while most respondents in the Somali Region reported poor belg harvests in general. Interestingly, there was no association between poor yields and seed sources: farmers reported similar proportions of poor yield from seed sourced from a) seed aid b) home stocks or c) local markets.
Note: Last minute weather patterns and access to land/fields (which can fluctuate between seasons) seemed to affect the amount of seed farmers sowed, to a marked degree. These seemed to drive farmers’ sowing amounts, rather than whether seed was on hand. Such dynamism will be important for understanding farmers’ seed demand.

Meher Season 2016

Farmers’ point of view: demand and seed use issues

The meher season 2016 was projected to be a more stressed period than the 2016 belg season, and the majority of seed aid was delivered for this time. The quantitative findings around seed security were similar for this season as for the belg season (points 1-3 above), although are explored in greater depth for meher, as both SSSAs occurred during this season, with farming decisions and field assessments happening in real time.

Combining both SSSAs, farmers on their own sourced two-thirds (67 percent) of all the seed they planted (focusing on each farmer’s most important crops). Home-saved seed provided 41 percent of all seed planted, with local markets 24 percent. It is important to note that these two channels provided a larger percentage of seed than seed aid provided (21 percent from combined government, FAO and NGO aid).

In stress periods, local markets tend to be the source for purchasing seen to overcome seed insecurity and for obtaining the range of crops/varieties to bolster resilience. This could partly be attributed to efforts by local market traders in sourcing seed from less affected farmers and/or regions. Local market support might therefore merit greater attention.

SSSA-CRS again compared actual quantities sowed with normal amounts (from a total of 905 specific crop comparisons): Meher 2016 sowings hovered directly around normal (an overall average decrease of just 1.30 percent). For a given crop, farmers sowed less than normal in 42 percent of all cases. Among this group, the main reasons they sowed less seed than normal were the same as for belg 2016: poor weather (main reason 26 percent of the time); financial constraints (23 percent); land constraints (16 percent); and improved sowing techniques (15 percent). Barely any (1.3 percent) farmers cited a lack of available seed as a reason for sowing less. Again, the SSSA-FAO findings support the conclusion that seed availability was not a major constraint: when asked, crop-by-crop, if there was “enough seed”, only 17 percent (of 2 372 responses) said “no”. As before, ‘seed not available’ is likely to be less of an issue than implied by this figure, as farmers have multiple channels for obtaining seed, and “not enough” could reflect access rather than availability constraints.

Combining both SSSAs, farmers again judged nearly all their seed as ‘good’ or ‘average’ in terms of cleanliness and germination (98 percent of 4 305 farmer assessments of specific crops and seed sources). Yield obtained or to be obtained from the meher 2016 season was deemed promising or average for 74 percent of cases with seed from community-based groups and government/FAO/NGO aid receiving particularly high scores. Farmers raised specific quality concerns in a few cases, such as some cases of mixed wheat or teff varieties, or regarding broken maize seed supplied from local government or cooperative sources. However, these were localized cases.
Note: The need for farmers to have flexibility in what they sow, particularly during stress periods. Farmers may alter crops and varieties used according to the immediate weather patterns, fields available, or prevailing market seed prices. Factoring in farmer choice and ability to strategize could improve the results of aid responses.

Access to seed – purchase

8. Both SSSAs showed that farmers bought much of their seed in 2016. In belg 2016, 48 percent of all seed planted was purchased; in meher 2016, 58 percent of seed was purchased. Nearly all purchases were with cash, with less than two percent of seed accessed via credit. Seed purchase was common across all sites and crops, and was the most important single means of access, above self-supply from one’s own stocks, and far above exchanges with other farmers or free gifts from seed aid. That farmers, even after a stressed year, continued to get seed via cash purchase is striking. It highlights farmers’ willingness to invest in this important input, shows that markets are supplying significant volumes to farmers, and suggests future possibilities for market-led approaches to strengthen farmers’ longer-term seed security.

9. SSSA-CRS calculated seed purchase expenses for an average farmer during meher 2016, based on three major crops per site, average amounts of seed actually purchased for those crops, and current prices in local markets. These figures are indicative only, as actual amounts for each household will depend on land area and crop mixture, but they give a sense of the scale of spending. In Sire-and Dodota Woredas (Arsi Zone, Oromiya, in the Rift Valley) the average spend was 2 550 Birr for seed of teff, wheat and barley (equivalent to approximately USD 116). This reflected large farm sizes (nearly half the farmers there sowed over 2 ha), and the predominance of wheat and barley, which farmers across the drier parts of Ethiopia tend to sow at high seed rates (150 kg per hectare or more was not uncommon in several sites). In contrast, Dessie Zuria and Tehuledere Woredas (South Wollo Zone, Amhara), average spending to buy teff, wheat and field pea was 170 Birr (equivalent to approximately USD 8), in part due to smaller land sizes in this highland area (three-quarters of households there farmed less than 1 ha). The other sites were intermediate: average spending in Ofla and Alamata (Tigray) was 416 Birr (approximately US 19) and in Wolayta and Kambata (SNNPR) it was 290 Birr (roughly USD 13).

While most farmers buy some seed, these figures show how the amounts spent vary considerably by location and that any calculations for seed amount and/or cash/voucher support would also need to be tailored. Of a more general note is that costs could be a challenge for some, particularly those purchasing large quantities. In addition, fertilizer has to be factored in to the tally of input costs.

On the supply side - seed/grain traders: Can the markets deliver?

Where are farmers buying seed? Agro-dealer networks are only just emerging in Ethiopia, with a few shops in larger towns and higher-potential areas (e.g. Adama) selling hybrid maize and vegetable seed. Farmers in a few areas (e.g. West Gojjam) can also choose among a range of maize varieties in purchasing seed, as some maize seed producers have agreements with agents
or cooperatives and market directly to farmers. However, this currently only happens with maize in high-potential areas. Elsewhere, farmers can buy seed via the Bureaus of Agriculture and Natural Resources as part of an input package, often via credit. Package programs tend to focus on a small number of crops - nearly 80 percent of formal seed production by volume in 2016 - 2017 is for wheat and maize – and centralized management of seed production and supply mean farmers may not have much scope to choose among varieties.

For most crops, farmers buy much more of their seed from seed/grain markets than anywhere else. In part this reflects choice: a wide range of crops and varieties are on offer. But access is also an important factor, as these markets offer lower prices or terms of trade than formal outlets. Hence, the SSSAs focused attention on these seed/grain markets, where farmers scout out grain that is suitable for planting. For sowing material, farmers seek adapted varieties and look for grain of good quality (mature and not broken, with pebbles, dust and twigs sorted, and no pest damage). Not all grain in such markets is suitable for sowing; that which could be sowed is referred to as ‘potential seed’. These markets take a variety of forms, from open-air traders to those with permanent trading and storage premises, and operate at different scales.

Local seed/grain markets were noted as particularly important for the legumes (common beans, chickpea, cowpea, faba bean, and field pea), for some cereals (especially barley, teff and sorghum), and for local vegetables. In the 2016 meher season, local markets provided between 25 to 50 percent of the seed sown for the crops cited above.

10. The majority of seed/grain traders (totaling 116 separate supply assessments) assessed meher 2016 supplies as ‘normal’ or ‘more abundant than normal’, across a range of crops (wheat, barley, teff, common beans, sorghum and maize).

11. Not every grain trader sells potential seed, but those that do vary from small-scale open market sellers to larger-scale traders with storage and transport facilities. These vendors may take steps to enhance quality (e.g. sourcing potential seed from reputed growers or regions), and sell potential seed at a premium (10 to 18 percent) above grain prices.

12. Linked to the above, ‘potential seed flows’ from one region to another proved extensive and shortages in any one area were offset by incoming supplies from another. For instance, a trader in Korem (Tigray Region) was directly commissioned by the government to source barley (‘potential seed’) from the surrounding areas of Kombolcha and Ch’erch’er and chickpea from as far off as Adama. For the meher 2016 alone, the trader in question sold 200 MT (2000 qt) to the Korem Office of Agriculture and Rural Development. Specific adapted varieties were purchased with quality screening monitored by government staff during the transaction.

Any seed security zonal or woreda level plans might practically project for such for inter-zonal/woreda flows, acknowledging that supply dips in one region can be compensated by inflows from another. Seed security plans should also recognize the key importance of ‘potential seed’ traders. Such traders need to be identified and supported in their quest to gather or produce quality seed. Activities might be targeted to this group to enable them rapidly and efficiently move needed and appropriate seed among areas. Again, they provide important

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5 Formal production is mainly via the Ethiopian Seed Enterprise, and Regional Seed Enterprises.
amounts of seed and particularly of the legumes and minor cereals, which are poorly represented in the formal commercial channels.

13. Trader analysis of peak prices per quintal also showed relatively stability, comparing the current meher 2016 with the meher 2015 sale prices. Overall price rises were measured at +18 percent, with variable changes by crops (some, like teff or sorghum, increased more than 20 percent, others such as wheat or faba bean were actually cheaper in 2016 than in 2015).

All in all, seed/grain traders at each site viewed potential seed supplies as available, with prices changes not unusually high, at least according to the traders’ point of view.

Other key issues across seasons related to seed use: belg 2016 and meher 2016

15. Both SSSA samples show impressive levels of access to new varieties of seed. Seventy-three percent of households reported they had gained access to a new variety within the last five years. However 79 percent of these new accessions have been of maize, wheat or teff. There has been negligible access to new varieties of the legumes, which are key for nutrition.

16. New varieties were also overwhelmingly accessed via government or FAO/NGO channels (74 percent of cases), mostly coming in the form of aid, rather than through demand-driven commercial outlets that might serve farmers on a more continuing and sustainable basis.

17. Across both SSSA samples, inorganic (chemical fertilizer) was employed by 74 percent of farmers for the meher 2016 season. Usage rates were lower for the belg (41 percent, data from SSSA-CRS). In rainfall-stressed areas, farmers noted that it can be risky to use fertilizer as it ‘burns the soil if there is a lack of rain’. Fertilizer is mostly applied on maize and teff during the belg season and to wheat and teff during meher.

18. Seed aid, that is free distribution of seed as part of emergency response and development initiatives, has been conducted on a large scale, with 55 percent of the sample population having received such aid within the last five years. In lower potential areas, the proportion which received aid was higher. Aid was received in the general population 1.6 times on average within the last five years, with a high of seven times. Most of the aid cases were implemented through direct seed distribution (84 percent), with a few citing seed loans (15 percent of cases).

Aid methods which allow farmers a choice and the ability to strategize, such as cash, vouchers or seed fairs were virtually non-existent for the full sample.
Projections for **Belg 2017**

Projections for seed sourcing for the *belg* 2017 were also obtained, crop-by-crop. As the upcoming season was several months away at the time of the assessment, such figures are but speculative. Major points for the *belg* 2017 projections are:

- Farmers expect to rely on informal channels for the bulk (69 percent) of their seed for their major crops. They project own stocks to supply 33 percent, while local markets are estimated to provide 36 percent of their seed needs.

- Farmers project overall sowing rates to rise sharply compared with normal rates: an average increase of 28 percent (showing a level of optimism).

- Farmers have already factored in important government/FAO/NGO assistance for 16 percent of seed for the next season, focused especially on maize, wheat and common bean. This may represent farmers’ preference or hope (seed aid is a way to receive certified seed, and free of charge). However, it may also signal dependency in some cases, especially in locations where seed aid has become routine. For the other crops, they are counting on general self-sufficiency.

**Longer-term Issues**

Both SSSAs reviewed breeding, seed production and seed marketing systems in Ethiopia, and the full reports provide much detail of these aspects. This brief summary highlights a few salient points.

19. Ethiopia’s National Agricultural Research System has released a large number of crop varieties. As SSSA-FAO highlights, since 1991 there have been 669 varieties released in Ethiopia (530 of them since 2001), including: 322 cereal varieties (half of those wheat and maize); 196 pulse varieties (with haricot bean, field pea and faba bean predominant), 81 varieties of root crop (led by Irish and sweet potatoes), and 71 varieties of oilseed crops (mainly groundnut, sunflower, linseed, and sesame).

20. Seed production is carried out by both public and private seed enterprises, with limited seed production from select Farmers’ Cooperatives and individual farmers. Aggregate national production is estimated to be 130 000 tonnes, 90 percent of this for cereals. Other crops receive far less attention from seed multiplication efforts. Equally, not all released varieties are multiplied. The Oromiya Seed Enterprise, for example, produces a range of wheat (23) and maize (8) varieties, but only one to two varieties for most other crops. While focusing on a limited product range is understandable for these enterprises, at a systems level this means that many potentially useful crop varieties are not able to reach farmers.

21. Certified seed, produced by from enterprises or cooperatives, is typically supplied via *Woreda* Agricultural Development Offices. Issues noted here include shortage of supply of some crop seed (e.g. barley and a number of pulses) or late delivery to some locations. About 12 percent of seed production is carried over as unsold stock in the formal sector; this
highlights the challenges faced in estimating and meeting seed demand in a complex and centrally organized system.

22. Both SSSAs documented the need for innovative ways of seed production and delivery - much closer to zones where farmers plant, and offering farmers the large array of crops and varieties they require—not just for production, but also to meet their resilience and nutrition needs. Some decentralized seed production is starting to fill this gap, such as from Farmer Cooperatives which multiply seed. For these efforts to be sustainable, and provide farmers with crops and varieties choices, they need to be demand-driven with farmers as the clients (rather than institutional buyers, such NGOs or Bureaus of Agriculture and Natural Resources).

SALIENT POINTS AND REFLECTIONS:
Belg 2016, Meher 2016, Belg 2017

1. Farmers draw upon multiple seed sources in Ethiopia. During the belg 2016 and meher 2016 seasons, farmers sourced seed for their major crops largely from informal seed sources, with a focus on their own stocks and local market channels (77 percent of seed sourced from informal channels for the belg; and 67 percent informal for the meher.)

2. Overall, the quantities of seed farmers sowed in 2016 showed little change from the amounts they normally sowed.

3. Emergency seed aid during these belg 2016 and meher seasons provided around 20 percent of the seed sowed for their major crops in each season. It is not possible to calculate the absolute degree to which this aid was crucial: farmers sometimes preferred to sow the new varieties and certified seed even when they had seed in their own home-saved stocks. Certainly, the aid had some positive effect, by securing access to certified seed of new varieties, or by allowing farmers to use their money for other key purchases.

4. Focusing on the potentially vulnerable, that is, those sowing less of a given crop in either the belg or meher 2016, three main reasons were given for the reduction. No money to buy seed, insufficient access to land/fields for the season, and simply poor weather, which kept farmers from wanting to sow the full amount of seed for the crop. Lack of seed availability (in markets, shops, or with neighbors) feature insignificantly as a rationale for sowing less. Reasons for reductions were similar across all four regions, with lack of oxen additionally being highlighted in SNNPR.

Note: While providing free seed might help with financial constraints, such direct seed aid would not have solved the two driving problems for declined seed use - poor weather and insufficient land/field access.

In terms of sowing less due to financial constraints (which will be key for calculation of cash/voucher needs), this affected 6.3 percent of the total farming households during the belg 2016 and 10 percent of the total population during the meher 2016.
5. Seed grain traders, those crucial for seed security in stress periods, assessed supplies for the meher 2016 as normal or above normal and confirmed that normal trading and supply routes were open. They calculated that peak prices for potential seed overall rose 18 percent from meher 2015 to meher 2016 (although perhaps not a striking rise). Several cases were noted where seed/grain traders also became part of the government seed aid procurement process.

6. For most legume and cereal crops (with the exception of wheat and maize), local markets provided 30 to 50 percent of the seed farmers sowed during these two seasons. Seed security plans might recognize the key importance of potential seed traders. Such traders could usefully be identified and supported in their quest to gather, transport or identify quality seed.

7. Farmers purchased 48 percent of all seed sowed in belg 2016, and 58 percent in meher 2016 with the vast majority of it with cash. Varied sources were used, though local markets dominated. Purchase amounts and overall costs varied greatly by region, according to land sizes and different crop profiles. As farmers are already investing in buying seed, this suggest opportunities for using market-led approaches to offer a wider choice and good quality seed to farmers – though business models need to understand, cultivate, and serve actual local demand. Affordability may be an issue for some farmers. Understanding of local context and farming strategies will be important for understanding farmers’ overall seed purchase strategies.

8. Farmers are obtaining impressive access to new varieties, but mainly through free distributions with a focus on cereals. Legumes, which are key for nutrition, receive less attention in emergency aid. Furthermore, good quality seed remains difficult for farmers to access on an on-going basis.

9. Emergency seed aid is common, with over half of all farmers receiving aid, on average 1.6 times in the last five years. Also, direct seed distribution is the dominant form of this aid. This approach gives farmers little or no ability to strategize in stress periods. Farmers routinely alter what they sow according to the immediate weather patterns, fields available or prevailing market prices. Such flexibility might be factored into future support to increase aid effectiveness.

10. Both SSSAs investigated farmers’ projections for seed sourcing for the belg 2017, crop by crop. As the upcoming season was several months away at the time of these assessments, such figures must be considered as speculative. Farmers expect to rely on informal channels for the bulk of their seed of two major crops (69 percent of seed sown). Farmers project overall sowing amounts to be higher than normal: an average increase of 28 percent. That said, farmers in the sample also project 16 percent of their seed will come from government/FAO/NGO assistance next season, which may signal that they hope to get aid seed (due to its quality), or that they expect to (as aid has become routine).
II. RECOMMENDATIONS: Short-term

Below are key recommendations which are applicable across all sites. They emerge from an analysis of the field evidence and focus on recommendations in the short-term

1. **Direct seed aid (distribution) for 2017 should be limited.** There is little evidence of seed unavailability in home stocks and markets, and farmers do not cite seed unavailability as a reason for planting less.

   1.1 To minimize risk, any direct seed distribution should focus on crops and varieties already known and used by farmers in a given region;

   1.2 Direct seed distribution in emergencies should critically reflect the suitability of supplying technology obliging repeated re-purchase (such as hybrid maize) is suitable for the poor, seed insecure recipients, or for risk-prone locations.

2. **Vulnerable farmers should be provided means to access seed in belg 2017 (cash, vouchers, possibly through fairs).** The major seed-related reason for farmers’ planting less had to do with money. This was true for all sites and both belg and meher seasons.

   2.1 The amount of any cash/voucher transfer should best to tailored by region as seed costs vary dramatically according to land size and crop profile.

   2.2 As vouchers, cash and fairs also aim to allow farmers to strategize during periods of stress, specific efforts should be made to ensure a wide range of crops are on offer (also legumes and minor cereals).

3. **Vulnerable farmers should also be given means to access /alleviate other productive constraints.**

   Vouchers for oxen, or for farm labor, could be explored. Some analysis of vouchers for field rental would be worthy of consideration.

4. **Support for local markets during emergencies and period of stress should be considered.** Local markets provided 30 to 50 percent of the seed sown for all legumes and key minor cereals. Select seed/grain traders are also already serving to provide emergency seed stocks in key regions.

   - Seed security traders might be usefully identified in each region;

   - Seed security traders might receive support to ensuring a quality product;
     - Training on seed sourcing and selection
     - Possible credit for better storage, or incentives for accessing storage inputs, such as pallets.
RECOMMENDATIONS: Medium-Term

More broad-based thinking is required regarding methods to improve the seed security of smallholder farmers in Ethiopia. Government development efforts, as well as repeated aid, are currently driving production and delivery mechanisms. This has had significant impact on increasing the supply of certified seed of major cereal crops. Expanding farmers’ options to choose from among a wide diversity of crops and varieties, and acquire good quality seed in ways they can afford will strengthen seed security. As modest areas for wider action, several suggestions are listed below:

5. **Variety choice should be enhanced.** Government and partners should provide at least two varieties within the conventional seed distribution channels in any single delivery, thus allowing farmers greater choice. In the medium term, seed enterprises and producers, in collaboration with extension offices, should support participatory farmer’s demonstrations of new varieties at *kebele* levels for at least one to two seasons to create effective demand and avoid negative effect associated with “unknown new” varieties. Furthermore, there is a need to increase efforts in decentralized/direct seed marketing, both scaling up existing efforts, as well as expanding efforts to new regions and to crops beyond maize. In the long term, more participatory plant breeding efforts in crops such as cowpea, mung beans and grass pea are needed.

6. **Critically review capacity in seed quality management.** Regional seed laboratories need sufficient equipment and human capacities to be able to carry out their roles. If these laboratories are to support, and eventually certify, more decentralized seed production groups, they will need to be sufficiently resourced.

7. **Support a diversified seed sector to increase the availability and diversity of good quality seed for farmers.** This could be supported in a number of ways. Public/private partnerships will be important, as will adequate supply of basic seed from a wide range of crops and varieties to all seed sector actors. Improved credit services or other targeted support could help attract more private participants in the seed sector.

8. **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 stress zones; nor b) the range of varieties. Efforts need to be made to support cooperatives and organized groups to multiply crops which attract little attention from the seed enterprises, such as haricot beans, faba beans, chick pea, field pea as well as some cereals including sorghum and barley. Decentralized seed production and delivery will prove particularly important for the legumes and for the vegetatively propagated crops. At this point, the decentralized seed multiplication initiatives seem to be having modest gains. Those visited had limited crop portfolios and their expansion was hampered by the full-fledged requirement of Certificate of Competency (CoC). As a general recommendation, sustainable decentralized seed production models need to be confirmed in many regions of Ethiopia.

9. **Delivery mechanisms for giving all farmers regular access to new varieties** need to be intensified. Diversifying sale outlets beyond Farmer Cooperatives, unions and agro-dealers could help expand farmers’ choice to a wider set of crops and varieties. Sale of
diverse seed through a broader range of outlets, such as via rural shops on consignment, may help expand access. The experience of some seed producers who market their seed directly to farmers, via agents (as in West Gojjam) should be studied for lessons and possible replication elsewhere. Sale in smaller pack sizes (1 kg, 2 kg and 5 kg) may also provide opportunities for poorer farmers to access new varieties and quality seed.

10. **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 want and need on a more consistent basis, and not just in emergency. As one point of departure, seed and grain traders could be powerful partners in helping to move new modern varieties widely, within and among farming communities. Traders could also receive basic information on grain and seed quality aspects and management through trainings, leaflets and/or radio messages.**

11. **Economic development efforts should be linked.** Strengthening local financial services and, particularly around credit provision, will be useful, especially in Oromiya, Afar, Gambella and Somali Regions. Linked to this, value addition should be supported where possible, as better market opportunities enhance farmers’ purchasing power, and underpin sustained seed demand.

12. **Research for development (R4D):** Seed issues are interrelated with production challenges, and therefore addressing some of the crop production challenges will directly or indirectly affect seed security. Some of the challenges that need due attention and action include;

   - *Development of striga resistant/tolerant variety of seed.* This will minimize the impact of the weed on productivity and subsequently one’s own saved seed.
   
   - *Integrated Pest Management.* For control of major pests, there is a need to promote use of integrated pest management (IPM) practices, which may include regular monitoring and scouting of field pests, use of appropriate cultural and production practices as well appropriate application selective pesticides.

13. **Finally, the focus on quality seed for increased production could be broadened to include the goals of ‘enhanced resilience’ and ‘enhanced nutrition’.** A prime focus on cereals alone (the current *de facto* strategy) may not be sufficient to help strengthen farming systems in these times of repeated climate stress and food insecurity.