



ASSESSMENT | JULY 2017



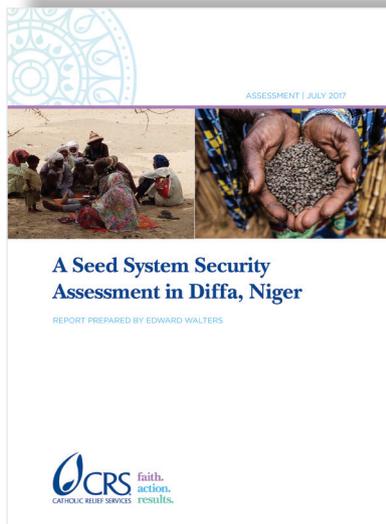
# A Seed System Security Assessment in Diffa, Niger

REPORT PREPARED BY EDWARD WALTERS



**USAID**  
FROM THE AMERICAN PEOPLE





## COVER

CRS undertook a seed system security assessment in Toumour commune of Diffa, Niger, to identify issues of seed access and availability to determine whether seed fairs would be an appropriate response. It also looked at the seed system in Diffa and its links to the overall Niger seed system.

*Photos by Michael Stulman/CRS*

Report prepared by Edward Walters, Technical Advisor: Agriculture and Markets, Humanitarian Response Department, Catholic Relief Services

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# Acronyms & Abbreviations

<b>ACF</b>	Action Contre la Faim
<b>BRACED</b>	Building Resilience and Adaptation to Climate Extremes and Disasters
<b>CAIMA</b>	Centrale d'Approvisionnement en Intrants et Matériels Agricoles
<b>CBSS</b>	community-based seed system
<b>CFW</b>	cash for work
<b>CRS</b>	Catholic Relief Services
<b>DEMI-E</b>	Développement pour un Mieux Etre
<b>ERASeD</b>	Emergency Response and Sanitation in Diffa
<b>FESA</b>	Ferme Semencière Amate
<b>FAO</b>	UN Food and Agriculture Organization
<b>FGD</b>	focus group discussion
<b>Ha</b>	hectare
<b>ICRISAT</b>	International Crops Research Institute for the Semi-Arid Tropics
<b>IDP</b>	internally displaced person
<b>INRAN</b>	Institut National de la Recherche Agronomique du Niger
<b>kg</b>	kilogram
<b>MOA</b>	Ministry of Agriculture
<b>NFI</b>	non-food item
<b>NGO</b>	nongovernmental organization
<b>PASAM-TAI</b>	Programme d'Appui à la Sécurité Alimentaire des Ménages-Tanadin Abincin Iyali
<b>OFDA</b>	Office of US Foreign Disaster Assistance
<b>SSSA</b>	seed system security assessment
<b>USAID</b>	United States Agency for International Development
<b>WASH</b>	water, sanitation and hygiene

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# Executive Summary

The Diffa region has been extremely hard hit by the Boko Haram crisis. Since the first Boko Haram attacks in 2015, half of the population of the region has been displaced, with refugees from neighboring Nigeria and internally displaced people now sheltering in more secure areas. The commune of Toumour has recently absorbed more than 40,000 displaced people, more than doubling its population.

A poor harvest, sharing of limited food stocks, and reduced buying power due to market disruption have led to food insecurity in Toumour. A deteriorating hygiene and sanitation situation further exacerbates the crisis.

In order to address these issues, CRS has extended the current OFDA-funded project Emergency Response and Sanitation in Diffa (ERASeD 2) to focus on Toumour and include construction of latrines and hand-washing stations, hygiene and sanitation promotion activities, unconditional cash to buy non-food items, direct distribution of hygiene kits to vulnerable women and girls, goat fairs for women, and providing cash for work to establish firebreaks. In addition, CRS plans to provide seeds and tools to resource-poor farmers through fairs.

Prior to launching the seed fairs, CRS undertook a seed system security assessment (SSSA) in Toumour commune to identify issues of seed access and availability, to determine whether seed fairs would be an appropriate response. It also looked at the seed system in Diffa and its links to the overall Niger seed system.

North Toumour is predominately a livestock-rearing zone. Millet is the primary crop, followed by cowpea, with harvests generally only lasting a few months.

Results of the fieldwork showed that, in response to the crisis, farmers planned on planting more in the next season because of more mouths to feed, and to take advantage of the increased labor available.

The assessment results showed that seed is available in Toumour, mainly through the market. Most households have depleted their saved seed. Access remains the chief challenge for households, with the crisis having reduced overall household assets. The planned seed fairs will address the access issues, reinforce the local market where plentiful seed reserves still exist, and offer farmers more choice.

The seed fairs should tap into the existing supply of local seed, and should also provide an opportunity for farmers to test improved varieties. These varieties should be made available in small packets for testing. In addition, higher nutrition, women-controlled crop seed (such as sorrel, okra, groundnut and squash) should also be made available.

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**CRS undertook a seed system security assessment in Toumour commune to identify issues of seed access and availability to determine whether seed fairs would be an appropriate response.**  
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In terms of the Diffa seed system, improved crop seed is virtually nonexistent on the market in Diffa. The current crisis is not only a challenge for the seed system, but also an opportunity. The large amounts of money being spent by relief organizations on buying seed could be used to leverage the introduction of improved seed into the commercial system. By working through local agro-dealers and insuring that farmers have the opportunity to receive—either through distributions or fairs—small amounts of improved seed to test, the relief community will encourage demand for the seed.

In terms of improved seed supply, individual farmers and farmer groups are already producing local seed for relief operations. Commercial producers can tap into the existing skills to contract farmers for more systematic seed production to be sold through agro-dealers.

In the long term, improved seed can be made available on a more widespread basis by including local shops as sales points for such seed.

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# Introduction



A farmer in Diffa. Photo by Michael Stulman/CRS

40,000

people displaced by Boko Haram attacks have settled in Toumour commune, more than doubling its population

## BACKGROUND ON THE DIFFA CRISIS

Boko Haram launched its first attack in the Diffa region of Niger in February 2015. Since then, close to 140 attacks have taken place in the region, displacing almost 302,300 people, approximately 50 percent of the population. In June 2016, an attack on Bosso town and Yebi displaced 40,000 people, many of whom settled in the neighboring commune of Toumour. Those displaced have lost their homes and livelihoods, and need shelter, food, and non-food items. Host communities are under stress from supplying food and shelter to those who are displaced. Normal trade routes have been disrupted. Transportation and security constraints create deteriorating terms of trade for cereal, resulting in a decline in buying power for many agricultural households, which—when compounded by reduced production and sharing of limited food stocks—contributes to widespread food insecurity. In addition, some intercommunal conflicts have emerged as herders and displaced people compete for limited water resources.

Exacerbating the food insecurity are deteriorating water, sanitation and hygiene conditions due to inadequate facilities to absorb the pressure from the refugees and displaced people.

To address these issues, CRS has initiated a cost extension to its current OFDA-funded ERASeD 2 project. The extension will focus on Toumour and include construction of latrines and hand-washing stations, hygiene and sanitation promotion activities, unconditional cash to buy NFIs, direct distribution of hygiene kits to vulnerable women and girls, goat fairs for women, and providing cash for work to establish firebreaks. In addition, CRS plans to provide seeds and tools to resource-poor farmers through fairs.

CRS plans to provide seeds and tools to resource-poor farmers through fairs.

## NEED FOR A SEED SYSTEM SECURITY ASSESSMENT

Before embarking on any seed assistance intervention, an assessment of seed security should be undertaken. It should examine the availability of, access to, and utilization of seed – both under normal conditions, and as affected by the shock. This can inform how best to assist the farmers while minimizing harm to existing seed systems.

Traditional responses to disasters in an agricultural context include direct seed distributions. The logic of this strategy is that the distributed seed will replace seed lost in the disaster and will enable farming communities to rapidly regain their livelihoods. Nevertheless, this strategy frequently weakens the very livelihoods the activities are meant to sustain. In many cases, local sources of seed remain undamaged by the disaster, and direct distribution of external seed undermines the local market. Repeated distributions can have profound long-term negative effects on local markets and producers.

The complexity of seed systems and the diverse contexts in which emergencies unfold require a range of responses. There are a number of possible seed-related interventions, including food aid to protect seed, direct seed distribution (including the variant of local commodity purchasing), provision of vouchers or cash to farmers, seed fairs (with or without vouchers), local seed production, support to local grain traders and markets, access to or development of better varieties, and improving farmers' seed quality. Selection of the appropriate intervention should be guided by objective criteria.

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**The complexity of seed systems and the diverse contexts in which emergencies unfold require a range of responses.**  
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**Table 1. Seed system problems and appropriate responses<sup>1</sup>**

PARAMETER	ACUTE	CHRONIC
Unavailability of seed	Direct distribution of seed	Rarely happens
Farmers do not have access to seed	Vouchers and cash (with seed fairs)	Income-generating activities; agro-enterprise development
Seed of poor quality	Seed fairs with quality control  Direct distribution of test samples of quality seed	Programs to improve seed quality <ul style="list-style-type: none"> <li>• Strengthen seed companies</li> <li>• On-farm seed production (community-based seed systems)</li> <li>• Engage local markets</li> </ul>
Lack of appropriate varieties/crops	Limited introductions of new varieties	Introduce new varieties/ with technical support  Variety selection/ breeding

Appropriate seed-based interventions can have impacts beyond seed delivery, including strengthening of the local seed system; stimulating entrepreneurial activity; empowering farmers, traders and rural communities, including women; and making use of and maintaining agricultural biodiversity. Effective seed relief activities should build on the coping capacities of communities and avoid creating dependency on repeated input-based relief.

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 .....

1. Sperling, Louise. *When disaster strikes: A guide to assessing seed system security*. Cali, Colombia: International Center for Tropical Agriculture. 2008.

# Methodology

The methodology for the seed security assessment was adapted from the seed security assessment guide, *When Disaster Strikes*, by Louise Sperling.<sup>2</sup> Data collection tools were modified from those found on the seed system website, [seedssystem.org](http://seedssystem.org). The assessment focused on seed security in Northern Toumour, and Diffa seed and grain markets. The national seed system was examined insofar as it related to Diffa's seed system.

For the community information gathering, CRS—in conjunction with its local partner Développement pour un Mieux Etre (DEMI-E)—recruited an experienced team of three enumerators, two focus group facilitators, one controller and one data entry operator. The team was led by Edward Walters, a CRS U.S.-based technical advisor. A 1-day workshop was conducted presenting the theoretical basis for SSSA and the tools. A field test was conducted in Kourou Selleri, a village near Diffa town where CRS has an ongoing project. The team spent 3 days (May 26 – 28) collecting information in three villages in Toumour commune. Due to security restrictions, the team leader was unable to accompany the team to Toumour.

In each community, 20 household interviews were conducted, a general focus group discussion was held, and another focus group conducted specifically for women. The community work focused on gathering quantitative data on seed sourcing and seed use for the 2016 season as well as plans for the upcoming 2017 season. Further qualitative information was gathered on crop profiles and trends, evaluation of seed sources, and perceptions of seed security, and crop and seed innovations. In addition, interviews were conducted in Diffa with agro-dealers, Ministry of Agriculture officials, the FAO, and NGO representatives. Because of security concerns, no interviews were conducted outside of Diffa town, and agro-dealers were invited to the office for interviews, rather than interviews being conducted with them in the market. The security situation limited both the scope and number of those interviewed. Being unable to visit local markets in Toumour, where farmers buy seed, limited the study team's capacity to fully understand the functioning of the grain and seed markets at the local level in Toumour.

Interviews were also conducted in Niamey, the capital, to obtain information on the overall Niger seed system. Ministry of Agriculture officials, staff of the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and commercial seed producer managers were interviewed. A variety of proposals, needs assessments, and studies were also reviewed.



Household interview, Djaricho.  
Photo by Laouli Amadou/CRS

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**Being unable to visit local markets in Toumour, where farmers buy seed, limited the study team's capacity to fully understand the functioning of the grain and seed markets at the local level.**  
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2. Sperling, Louise. *When disaster strikes: A guide to assessing seed system security*. Cali, Colombia: International Center for Tropical Agriculture. 2008.

**Table 2. SSSA data collection activities, Diffa, Niger**

ACTIVITY	PURPOSE/SOURCE
Literature review	
Key informant interviews	MOA FAO ICRISAT NGOs (CARE, ACF)
Focus group discussions <ul style="list-style-type: none"> <li>Mixed groups (3)</li> <li>Women’s groups (3)</li> </ul>	Community and women’s FGDs aimed at: <ul style="list-style-type: none"> <li>Agriculture and variety use and trends</li> <li>Seed sources by crop</li> <li>Women’s crop/seed constraints and opportunities</li> <li>Livelihood/coping strategies</li> </ul>
Farmer interviews (60) Gender of household head: Male – 60, Female – 0	<ul style="list-style-type: none"> <li>Seed source patterns</li> <li>Input use</li> <li>Seed aid and new variety access</li> </ul>
Agro-dealer/seed supplier interviews (2)	<ul style="list-style-type: none"> <li>Seed types and other input supplies</li> <li>Pricing</li> <li>Availability of key commodities</li> <li>Capacity of vendors to support increased demand</li> </ul>
Seed/grain market analysis	Assessment of: <ul style="list-style-type: none"> <li>Crop variety supplies on the market</li> <li>Sourcing areas and pricing patterns</li> <li>Seed quality management</li> </ul>

Purposeful sampling was used to select participants in the household survey. Because of the dispersed nature of the villages, in order to facilitate access to households, volunteers were invited to a community meeting where they were then selected for interviews. This probably introduced a certain bias to the process by selecting people who were motivated to come to the meeting. Nevertheless, communities were assumed to be relatively homogenous.

Other biases introduced into the data included the potential of people to over-report losses or under-report assets.

## SELECTED ZONE AND FARMING SYSTEM

Ten villages in Northern Toumour have already been targeted for seed fairs in the project. Three of these—Djariho, Fourdi, and Gagorgce—were selected for the surveys. The area is homogenous in terms of agroecological conditions, ethnicity, and livelihoods. Considering those factors as relatively constant, the main criteria for village selection was to reflect varying situations with respect to returnees and IDPs. Both Djariho and Fourdi had substantial numbers of returnees and IDPs. Gagorgce had no IDPs and few returnees.

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 .....

The main ethnic group in Northern Toumour is Peul. Livestock is the primary source of livelihoods in the area. Unlike nomadic Peul, these families are sedentary, with only minimal movement of livestock on village lands. Cultivation of rainfed crops, millet and cowpea, is a secondary activity and usually only supplies a few months of food.

Most farmers cultivate more than 1 hectare, with 42 percent cultivating more than 2 hectares. All households reported planting millet, with 65 percent planting cowpea, and 20 percent planting sorghum. Other minor crops are groundnut, okra, sorrel, and squash. The secondary crops are usually intercropped with the millet.

**42%**  
of the farmers cultivate more than 2 hectares of land

Millet cultivation is dominated by men, while women concentrate on the secondary crops of cowpea, groundnut, okra, squash, and sorrel. Women usually cultivate less than 10 percent of all land area for their crops. All these crops are used for both consumption and sale. For crops that women sell, a proportion of the proceeds goes to the husbands and a proportion is kept by the women. In Gagorgce, women reported that they were not involved in the selling of crops at all because of the long distance to markets.

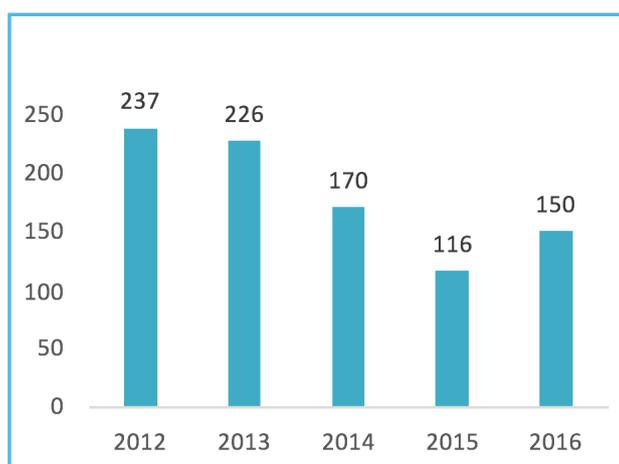
Annual rainfall in Diffa is extremely low, and averaged 180 mm in the previous 5 years. It is also extremely variable, ranging from 116 mm to 237 mm during that period. The low and variable rainfall makes crop production a risky proposition, and requires that farmers focus on drought-tolerant crops with short growing seasons. The growing season is June to October. Crops in this area have shorter growing cycles than elsewhere in Niger.

The low and variable rainfall makes crop production a risky proposition, and farmers focus on drought-tolerant crops with short growing seasons.

**Table 3. Area cultivated by household**

Area cultivated	No. of HHs	%
< 0.5 ha	0	0
0.5 - 1.0 ha	15	25
>1.0-2.0 ha	20	33.3
> 2.0 ha	25	41.7
<b>Total</b>	<b>60</b>	<b>100</b>

**Figure 1. Diffa annual rainfall 2012-2016 (mm)**



<https://us.worldweatheronline.com/diffa-weather-averages/diffa/ne.aspx>

## USE OF INPUTS

Use of commercial inputs was minimal in the zone. Chemical fertilizer use was almost nonexistent (two farmers used fertilizer on sorghum, and one on okra). Seventeen percent used pesticides, 55 percent used compost or manure on their fields, and only 5 percent reported using seed storage chemicals.

# Seed Systems in Niger: A Brief Overview

## THE FORMAL SEED SYSTEM

Research is the initial link in the supply chain for improved seed. In Niger, research and breeding of new varieties is overseen by the Institut National de la Recherche Agronomique du Niger (INRAN). The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) complements the work of INRAN, conducting research and crop breeding. The Comité National des Semences of the Ministry of Agriculture approves the varieties allowed to be multiplied and to enter the commercial and extension system. Selected varieties are listed in the *Annuaire National de Disponibilité en Semences Améliorées au Niger* released annually. If varieties are not included in the *Annuaire*, they cannot be extended or produced commercially.

INRAN produces the foundation seeds and can also produce the first generation of seed. Commercial seed companies such as Manoma and Ferme Semencière Amate (FESA) also multiply the foundation seed and produce the first generation of seed (G-1). Only two or three private seed producers in Niger are licensed to produce G-1. For cross-pollinated crops, like most cereals, only up to the second generation (G-2) can be sold as seed. Production beyond the second generation can only be sold as grain. For self-pollinating crops, up to the third generation is considered seed-quality.

The current system of quality control for seed production lacks the oversight of more rigorous systems elsewhere. In fact, in Diffa, the departmental-level Ministry of Agriculture refuses to accept seed imports from other regions of Niger for government seed distributions because it cannot ensure the quality of the seed. Instead, it uses local farmers and farmer groups to multiply local varieties for any planned distributions by the government.

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The current system of quality control for seed production lacks the oversight of more rigorous systems elsewhere.  
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For formal seed multiplication, three field visits are stipulated for MOA seed inspectors, but the inspectors usually only visit once or twice during the season. There are nominally two seed inspectors per region, although Diffa only has one. Seed multipliers are registered in the *Annuaire*. There is no government post-harvest quality control of the seed.

Private commercial seed producers such as Manoma and FESA often contract individual farmers and farmer groups to multiply seed. For Manoma, the fields are inspected by seed company inspectors three times during the season. Farmers can sell the harvest to the seed company or condition the seed themselves (at a local agro-dealer) and sell through the agro-dealer. Manoma provides packaging to the farmers in which to sell their seeds. For seed marketing, the seed companies have partner networks that distribute the seeds to agro-dealers.

Two CRS projects are working at improving the commercial seed system in different regions of Niger. The Programme d'Appui à la Sécurité Alimentaire des Ménages-Tanadin Abincin Iyali (PASAM-TAI) project works in Maradi and Zinder with FESA, which works with local shops to sell improved seed. CRS has helped increase the demand for improved seed by distributing it through local seed fairs.

The Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) project in Tillaberi collaborates with the seed enterprise, Manoma, to establish decentralized distribution points of improved seed. Manoma has also recruited and trained seed multipliers to supply the network.

In Diffa, no improved varieties are being multiplied, and access to such varieties is mainly through NGO distributions. Agro-dealers generally do not carry improved seed for rainfed crops. INRAN has isolated the local Diffa millet strain, Moro. This variety has been selected and catalogued, and is available for multiplication. The government would like to reintroduce the purified variety into the zone, because, over time, the local variety has degenerated. While some report that there are multiple local varieties of millet in Diffa, others assume that they are simply local variants of the Moro variety.

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**In Diffa, no improved varieties are being multiplied, and access to improved varieties is mainly through NGO distributions.**  
 .....

## SEED DISTRIBUTION / SEED AID

In Toumour, new varieties are mainly received through NGO distributions. About 40 percent of the interviewed households had obtained new varieties in the previous 5 years.

The main source of these new varieties was NGO/FAO direct distributions or seed fairs, while some had received the seed from social networks (that probably originally obtained them from NGOs). Most reported receiving more than one new variety. Many reported receiving improved seed from a direct distribution by Samaritan's Purse in 2015. Farmers were pleased with the performance of the short-season millet variety received. There are no agro-dealers in the North Toumour zone.

.....  
**40%**  
 .....

**of interviewed households had obtained new seed varieties in the previous 5 years**  
 .....

**Table 4. Sources of new varieties obtained in the past 5 years**

Source	No.	%
Friends, neighbors, relatives	3	7.0%
Local market	1	2.3%
Agro-input dealer	0	0.0%
Community-based seed groups	0	0.0%
Government	0	0.0%
NGOs / FAO	39	90.7%
Contract seed growers	0	0.0%
Other	0	0.0%
Total	43	100.0%

**Table 5. Farmers still sowing introduced seed**

Crop	Recipients	% still sowing
Millet	24	62.5%
Cowpea	18	72.2%
TOTAL (of those who received millet or cowpea or both)	42	69.0%

Some 62 percent of those receiving improved millet reported still sowing the variety, while 72 percent were still sowing the improved cowpea variety. For cross-pollinated crops such as millet, there was a dual concern as the genetic quality of the saved seed degenerates with cross-pollination with the local variety(ies); also, the crossing of the improved and local variety(ies) may result in unfavorable local crosses. With cowpea, a self-pollinated crop, the saved seed should remain relatively pure for several years.

National statistics have showed improved millet yields 36 percent above traditional varieties. Improved cowpea more than doubled yields. Reported millet yields in Diffa were about 80 percent of the national average.

**Table 6. Yields of improved versus traditional varieties, Niger<sup>3</sup>**

Crop	Yield: Improved varieties 2010 (kg/Ha)	Yield: Traditional varieties (National average) 2010 (kg/Ha)	Production gain (kg/Ha)
Millet	605	443	162
Cowpea	307	143	164

In Toumour, farmers reported average millet yields of about 350 kilograms per hectare.

## DIFFA SEED MARKETS

The informal seed system in Diffa has been largely transformed by the crisis over the past 3 years. Not only have normal seed flows been interrupted, but widespread seed distributions by different emergency actors have altered the seed landscape.

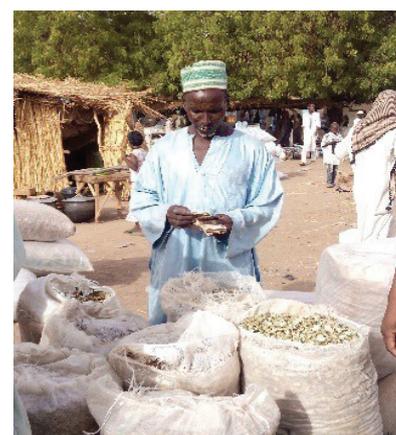
The commercial vegetable seed market had been functioning effectively prior to the crisis, with high demand from vegetable producers along the river and in irrigated basins. Multiple agro-dealers in Diffa carry packaged vegetable seed along with pesticides and tools. The market has expanded greatly with the crisis, as NGOs buy seeds to distribute to farmers (or conduct seed fairs or voucher programs). While some vegetable seed is produced locally, most seed is sourced from Niamey, with some coming across the border from Nigeria.

Traditionally, farmers have only resorted to buying from markets when their own seed stock is depleted and they cannot obtain seed from social networks. In local markets, there are no seed sellers per se, just grain sellers. Farmers will buy the best grain that they consider seed-quality.

Prior to the crisis, little staple crop seed was carried in Diffa markets. The huge demand for seed for distributions during the crisis has essentially spawned the market for staple crop seed. There are now farmers expressly multiplying seed aimed at the emergency market. Those agro-dealers selling seed to NGOs or the government have a network of farmers and farmer groups to supply them with seed. To be approved for distribution, the lots of seed need to be inspected by the government.

Prior to the emergency, those farmers with surpluses would either exchange with neighbors, sell in the market, or sell to grain merchants. The influx of seed aid has also introduced new varieties into the area.

The demand from seed aid has created a market on the supply side, but is also enhancing the market on the demand side. One agro-dealer reported that after seed fairs, many beneficiaries would come to the dealer to buy the same varieties of seed. The dealer estimated that, in 2016, 70 percent of sales were to NGOs and 30 percent to individual farmers. Interestingly, he also sold a locally produced, early-maturing cowpea variety to a dealer in Niamey.



Okra seller.  
Photo by Edward Walters/CRS

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**The influx of seed aid has introduced new varieties into the area.**  
 .....

3. Miko, Ilya. *Multipliation de Diffusion des Semences de Qualité des variétés améliorées et adaptées au changement climatique*. FAO juin 2013

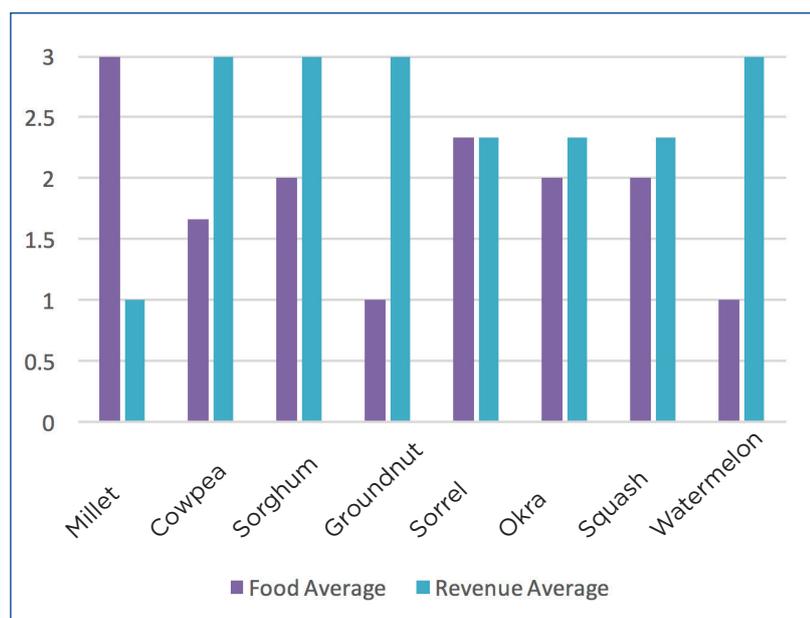
# Household and Community Seed Assessment Results

Millet predominates cropping, covering between 75 to 85 percent of cultivated area. This is followed by cowpea, ranging from 10 to 15 percent of cultivated area. Sorghum is much less important, covering less than 5 percent of the area. Minor crops are groundnuts, okra, sorrel, squash, and watermelon. Looking at trends reported by focus groups over the past 5 years, the proportion of area for millet increased in all the villages, while the proportion of land dedicated to other crops fell. This demonstrates that, in response to the crisis, families have been concentrating on their main staple crop to make more food available for consumption. Millet provides more calories per unit of land area than other rainfed crops. Household interviews show that for the upcoming season, farmers plan on increasing millet sown by 12 percent, and cowpea by 59 percent. Increasing millet cultivation is probably constrained by land limits. Cowpea, typically intercropped with millet, can potentially expand to the entire millet area. The planned increase in cowpea production shows that households are now taking a dual strategy: expanding millet for household consumption, and cowpea for sale.

Communities scored crops according to their value for sale or consumption (See Figure 2 below) (3 being the highest possible score). Millet is primarily used for consumption purposes, and sorrel, sorghum and squash are also valued for consumption. Cowpea, despite its nutritional benefits, is seen more as a cash crop. Groundnut and watermelon are also planted primarily as cash crops.

.....  
 In response to the crisis, families have been concentrating on millet, their main staple crop, to make more food available for consumption. Millet provides more calories per unit of land area.  
 .....

**Figure 2. Community valuation of crops: Food versus revenue**



**Table 7. Change in seeding amounts planned for upcoming season**

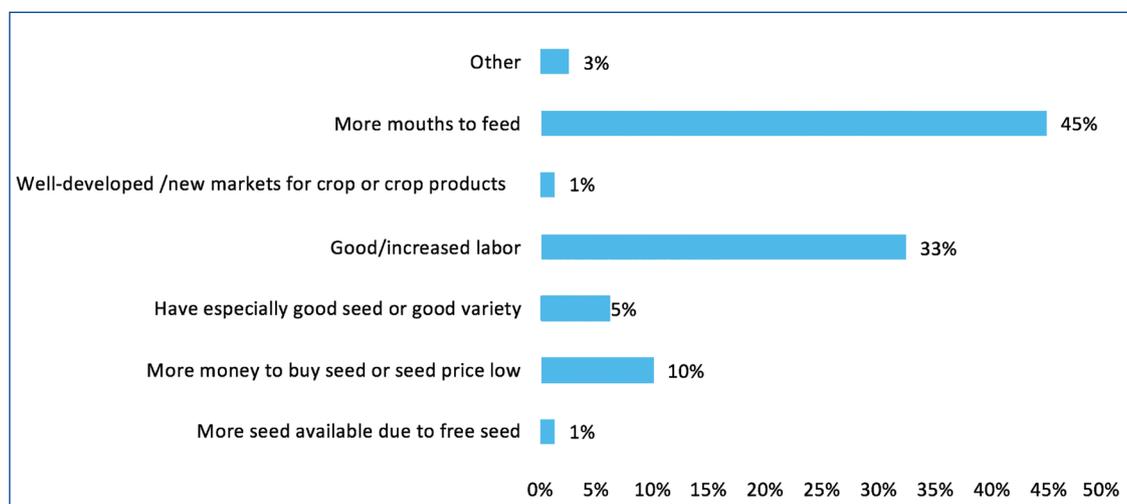
Crop	% of households*		
	MORE	SAME	LESS
Sorghum	66.7	25.0	8.3
Millet	58.3	23.3	18.3
Groundnut	55.6	11.1	33.3
Cowpea	57.7	26.9	15.4
<b>TOTAL</b>	<b>58.8</b>	<b>23.6</b>	<b>17.6</b>

\* Percentages rounded up/down to one decimal point

As shown in the above table, households are also expanding the overall amount of seed planted (and thus area cultivated) for major crops this upcoming season. For millet, farmers planted, on average, about 7 kilograms pre-crisis. Last season that increased to almost 9 kilograms, and farmers are planning to increase to almost 10 kilograms this upcoming season (a 40 percent increase over normal). For cowpea, average planting has increased from the pre-crisis 4 kilograms to almost 5.5 kilograms, a 36 percent increase. This too, can be seen as a response to the influx of IDPs and returnees and the subsequent dual effect of pressure on households to produce more, but also an increase in the availability of labor in the community (see below).

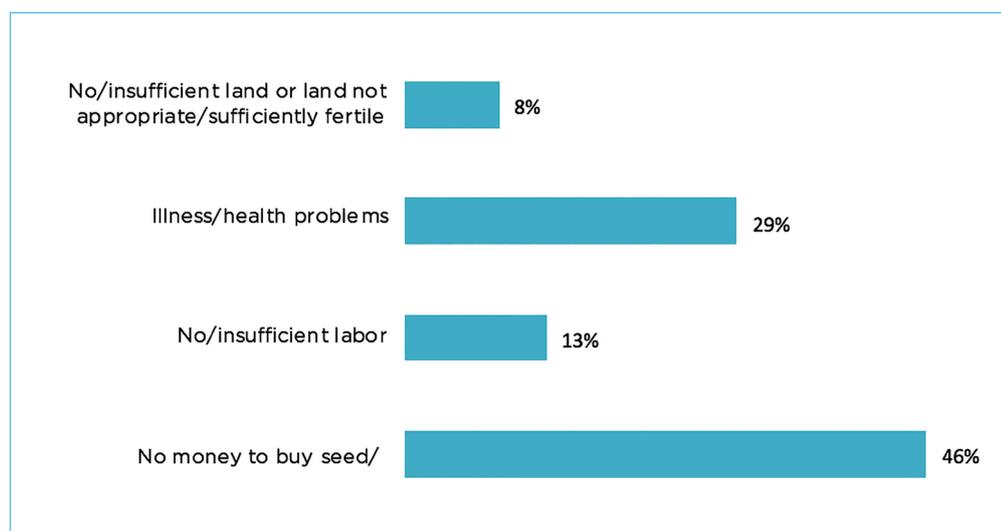
10 kg  
 of millet will be planted per farmer in the upcoming season, 40 percent more than before the crisis

**Figure 3. Reasons 59 percent of farmers gave for planting more than normal next season**



While 59 percent were planning on planting more in the next season, 18 percent were planning on planting less. Those planting less cited inadequate finances as the main reason for reducing the area cultivated. These households were seed insecure due to issues of access. Without assistance to procure seeds, they will be forced to plant less, leading to reduced production further eroding their food security.

**Figure 4. Reasons 18 percent of farmers gave for planting less than normal next season**



The below table shows the estimated average spending by household on seed last year. Seed from neighbors is considered free, so only seed from the market had a cost associated with it.

**Table 8. Analysis of spending on seed from markets for three most important crops (2016)(in CFA)**

Most important crops	No. growing this crop	Average kg purchased/HH	Seed cost/kg (CFA)	Average HH market expenditure (CFA)	% of total amount spent
<b>Millet</b>	60	3.6	450	1,598	61%
<b>Cowpea</b>	39	1.6	550	894	34%
<b>Sorghum</b>	12	0.5	300	143	5%
<b>Total</b>				<b>2,634</b>	<b>100%</b>

Compared with last year, spending on seed has risen by more than 100 percent (see below). The increase encompasses the increased sowing amounts and the increased cost of seed. Note that more farmers are planting cowpea, the seed that costs most per kilogram, also adding to the increase in total expenditures. The proportion of seed costs has also changed with a dramatic rise in cowpea and corresponding decrease in millet.

**Table 9. Analysis of spending on seed from markets for three most important crops (2017)(in CFA)**

Most important crops	No. growing this crop	Average kg purchased/HH	Seed cost/kg (CFA)	Average spending/HH in local market (CFA)	% of total amount spent
<b>Millet</b>	60	4.5	600	2,700	49.4%
<b>Cowpea</b>	52	3.4	750	2,531	46.2%
<b>Sorghum</b>	12	0.6	400	240	4.4%
<b>Total</b>				<b>5,471</b>	<b>100%</b>

## SOURCES OF SEED

The primary source of seed for farmers in the Toumour area is the local market, followed by their own saved seed. Cowpea is mainly sourced from the market. Farmers reported storage problems from weevil infestations for cowpea and so plan on consuming or selling the crop within a couple of months of harvest. Millet is not as susceptible to storage pests, so there is a higher proportion of the seed being sourced from the farmers' own supply. Only 5 percent of households reported losses in millet storage.

**Table 10. Proportion of seed supplied by source for each crop (2016)**

Crop	Total kg sowed	% of total*				
		Home saved /own stock	Friends, neighbors, relatives	Local market	Government	NGOs / FAO
Maize	9.0	66.7	0.0	33.3	0.0	0.0
Sorghum	54.0	22.2	25.0	52.8	0.0	0.0
Millet	525.0	51.1	1.7	40.6	0.0	6.6
Groundnut	21.0	14.3	0.0	85.7	0.0	0.0
Cowpea	174.0	28.4	13.8	56.0	0.0	1.7
Sesame	1.5	0.0	100.0	0.0	0.0	0.0
Okra	6.0	0.0	0.0	100.0	0.0	0.0
Green veg	6.0	50.0	0.0	50.0	0.0	0.0
<b>TOTAL</b> (kg all crops / kg individual crops)	<b>796.5</b>	<b>42.9</b>	<b>6.0</b>	<b>46.3</b>	<b>0.0</b>	<b>4.7</b>

\* Percentages rounded up/down to one decimal point

The planned sources of seed for the upcoming season are similar to the past season.

**Table 11. Proportion of seed supplied by source for each crop (2017)**

Crop	Total kg sowed	% of total*				
		Home saved /own stock	Friends, neighbors, relatives	Local market	Government	NGOs / FAO
Maize	6.0	0.0	0.0	100.0	0.0	0.0
Sorghum	58.5	25.6	12.8	61.5	0.0	0.0
Millet	589.5	52.7	1.5	45.8	0.0	0.0
Groundnut	37.5	8.0	0.0	92.0	0.0	0.0
Cowpea	277.5	20.5	6.5	73.0	0.0	0.0
Sesame	3.0	100.0	0.0	0.0	0.0	0.0
Okra	6.0	0.0	0.0	100.0	0.0	0.0
Green veg	6.0	50.0	0.0	50.0	0.0	0.0
<b>TOTAL</b> (kg all crops / kg individual crops)	<b>984.0</b>	<b>39.8</b>	<b>3.5</b>	<b>56.7</b>	<b>0.0</b>	<b>0.0</b>

\* Percentages rounded up/down to one decimal point

Note that the proportion of millet seed from the farmers' principal source, their own stock, remains virtually the same. Expected seed from NGOs/FAO has declined to zero, thus adding to seed which must be supplied from the market. Total cowpea planting has jumped 59% but both own seed and neighbors' have declined as sources with the commensurate increase in the market as a supplier. While government programs supply seed to those deficit areas, no distributions occurred last year in the surveyed villages. Farmers were not anticipating distributions from either the government or NGOs this year in their planning. Considering this, any future seed intervention should be timely, as farmers will already have procured seed if interventions arrive late.

The amount of cowpea seed planted has jumped by

**59%**

Farmers reported that millet seed sold in the local markets originated from local farms. The original source of cowpea seed is unknown.

As far as seed sourcing is concerned, most seed sources result in average yields. Yields for seeds received through social networks are higher in general. This is most likely because people will seek out seed from those individuals who are known to produce seed of good quality. The local market has the most poorly rated seed, which is logical, since traders are buying grain instead of seed, and the grain may not be seed-quality. NGO/FAO seed, while generally average, has provided both good and poor seed.

**Table 12. Evaluation of yield by seed source**

	No.	GOOD	AVERAGE	POOR
<b>Home saved /own stock</b>	45	20.0%	80.0%	0.0%
<b>Friends, neighbors, relatives</b>	9	55.6%	44.4%	0.0%
<b>Local market</b>	71	25.4%	60.6%	14.1%
<b>NGOs / FAO</b>	12	8.3%	83.3%	8.3%
<b>Total (all sources)</b>	<b>137</b>	<b>24.1%</b>	<b>67.9%</b>	<b>8.0%</b>

\* Percentages rounded up/down to one decimal point

## SEED AVAILABILITY AND ACCESS

Several methods were used to determine seed security in the target villages. Triangulation of these sources provides a mixed picture of seed security. Seed security is defined as either seed being available from farmers' own supply or available to buy on the market. If either condition is met, the household is considered seed secure for that crop.

**Table 13. Seed reserves from own stock 2017 (focus groups)**

	DJARIHO	FOURDI	GAGORGCE
<b>Millet</b>	Low	Medium	Medium
<b>Cowpea</b>	Low	Low	Low
<b>Sorghum</b>		Medium	Medium
<b>Sorrel</b>	Medium		

Reports of saved seed reserves from focus groups showed that, other than in Djariho, millet reserves appeared to be sufficient. Sorghum and sorrel seed stocks were also sufficient. Cowpea reserves were inadequate, but generally, because of susceptibility to pests, stocks were not kept from one season to the next. Note: Only in Djariho is sorrel among the top three crops and sorghum is not a principal crop there.

This is confirmed by results of the household interviews where 52 percent of respondents reported that they would source millet seed from their own stock, with only 25 percent and 20 percent respectively obtaining sorghum and cowpea seed from their own stock (see Table 11). The sorghum figure is lower than what is cited by the focus groups.

Community members were asked in focus groups about household seed security for each crop. In Djariho and Fourdi less than a quarter of households were reported to be seed secure for millet, contradicting the other results.<sup>4</sup> In Gagorgce, a community that had received no displaced people, more than 50 percent of households reported being secure for millet seed. The results show the effect that hosting the displaced was having on the other two communities.

52%  
 of respondents reported that they would source millet seed from their own stock, with only 25 percent and 20 percent respectively obtaining sorghum and cowpea seed from their own stock

**Table 14. Percentage of seed secure households, by crop (focus groups)**

	DJARIHO	FOURDI	GAGORGCE
Millet	22%	20%	52%
Cowpea	30%	0%	20%
Sorghum		11%	15%
Sorrel	100%		

4. The lower figures for millet contradict both what was reported in the household interviews regarding seed sourcing for the upcoming season and the focus group question regarding seed reserves. Household interviews for Fourdi show 40 percent will rely on their own stock for millet while Djariho reported 45 percent. Figures for cowpea correlated among the various information methods.

# Conclusions and Recommendations

The assessment shows that, in Toumour, seed is available – either from own stocks, social networks, or in the market (sold as grain) – but seed access is an issue as the crisis has drained household resources. While focus groups reported higher seed insecurity for millet than revealed in the household interviews, the results of the individual surveys are probably more reliable, because people’s responses wouldn’t have been influenced by other members of a focus group. Nevertheless, household interviews showed that half of households did not have sufficient seed stock in millet. Overall, less than 30 percent of households were seed secure in cowpea. In addition, costs for planned seeding for the upcoming season have doubled since last year with price inflation, increases in planting, and shifts in crop mix.

To cope with the pressures the crisis is putting on the household economy, families are expanding production. In particular, they have been expanding millet production. Millet is the primary food security crop. In the upcoming season, farmers plan on also significantly increasing production of cowpea, their primary cash crop. This demonstrates that farmers are now taking a dual approach in their farming strategies, increasing both food and cash crop production. The increased production is in response to more mouths to feed, but also takes advantage of the additional labor to cultivate more land.

Distributions of cash would most readily alleviate access issues and provide beneficiaries the flexibility to determine purchases according to their household priorities. Thus, cash could be used to fulfill both food and seed needs, in addition to other household needs. However, cash presents an excessive risk in a volatile security context and is thus not a viable option.

For a voucher program, limited vendors in each locality reduce competition and choice. Thus, seed fairs, bringing in a large number of vendors to the fair sites, are the recommended option. The planned seed fairs will address the access issues, reinforce the local market where plentiful seed reserves still exist, and offer farmers more choice.

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The assessment shows that, in Toumour, seed is available but seed access is an issue as the crisis has drained household resources.  
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## RECOMMENDATIONS FOR SEED FAIRS

- Seed (grain) is available locally in Toumour and across Diffa. Virtually all the available millet seed is of local origin. Improved seed is unavailable commercially in the commune. The Ministry of Agriculture has ceased distributing improved seeds originating in other regions because it cannot guarantee the quality. On the other hand, the FAO is planning to distribute solely improved seed because it says the local seed varieties have degenerated. Supplies of improved seed from the leading seed companies in Niger are reputable. Seed fairs should concentrate on locally available seed. However, improved seed should be made available for farmers to test.

- For improved seed, unavailable in Diffa, vendors could be urged to obtain small packets (e.g. 500 grams) of improved seed adapted to the zone to sell at fairs from reputable sources in Maradi or Zinder. For example, the early maturing millet variety, SOSAT – C48, is well adapted to the low-rainfall conditions of Diffa. Small packets of the improved varieties would enable farmers to invest small amounts of money in order to try them on a small portion of their fields.
- Seed fairs are an excellent opportunity to expand use of higher nutrition crops and women-controlled crops (sorrel, okra, groundnut, squash). These seeds should be included in the mix offered.
- Seed coming from Diffa and outside the region will need to be inspected by the Ministry of Agriculture prior to the fairs. For those suppliers coming to the fairs from within Toumour, there is a need to establish an on-site visual inspection system with Ministry of Agriculture officials and include the local seed fair committee.
- Vendors should organize seed amounts that correspond to coupon values.
- Given the outstanding question over the level of seed insecurity in the zone, any post-fair assessment should look at whether farmers planted, exchanged, or consumed the seeds they received. That will provide a better idea of whether farmers had sufficient seed stock remaining to plant this season.

.....  
**Seed fairs are an excellent opportunity to expand use of higher nutrition crops and women-controlled crops.**  
 .....

## RECOMMENDATIONS FOR IMPROVING ACCESS

The assessment demonstrates that seed access, not seed availability, is the principal problem. Host families need to be able to deal with increased stresses associated with the crisis. Displaced people require their most basic human needs to be met.

There are two options for the relief community:

- Consider that the crisis is temporary and continue to provide emergency goods and services to the displaced and host communities.
- Treat the crisis as long-term and assume that displaced people will be present for an extended period. Address issues of housing and livelihoods. If displaced people have access to land, provide support to enable them to farm and start restocking herds.

.....  
**Host families need to be able to deal with increased stresses associated with the crisis. Displaced people require their most basic human needs to be met.**  
 .....

In Toumour, livestock is the main livelihood, surpassing agriculture. Initiate the restocking of herds with small livestock (e.g. goats). Ensure that livestock interventions do not exceed forage capacity and do not exacerbate tensions with farmers.

## RECOMMENDATIONS FOR IMPROVING SEED QUALITY

With the increasing unpredictability of rain, farmers need fast-maturing, drought-tolerant varieties. Locally available seed is degenerating over time and—with no established supply chain to obtain pure, improved varieties—yields will stagnate.

Niger, through INRAN and ICRISAT, has developed varieties that are appropriate for Diffa. Formal seed systems have been established in other regions of the country, bringing seed developed through research to the market. Diffa lags behind these other regions. The crisis presents both a challenge and an opportunity for the introduction of improved varieties. While the crisis has disrupted existing markets, widespread

relief seed distributions have created both a demand for, and supply of, seed (not simply grain). Networks are already established for vegetable seed, but now the supply chain for staple crop seed needs to be encouraged. The success in other parts of Niger can be replicated in Diffa. This will require the intervention of the Ministry of Agriculture and those organizations involved in seed fairs and distributions in Diffa. The Diffa Food Security cluster should discuss the issue and come to a consensus strategy regarding improved seed.

**Short term:** With seed distributions continuing throughout the region, those organizations managing the seed distributions and fairs should allocate a certain percentage of seed distributed to improved varieties. The improved varieties should have been tested in Diffa and shown to perform better than traditional ones. The improved seed should be made available in small packets so farmers can test it on small parcels on their farms. If the improved varieties do not perform well, farmers will not have invested a significant amount of time or resources in the production process. If farmers appreciate an improved variety, it will encourage them to buy it on the market the next season. Farmers need to be educated that seeds, particularly for open-pollinated crops, cannot be recycled without losing some of their characteristics, and thus need to be replaced periodically. If NGOs use fairs to supply seed to farmers, then seed vendors (agro-dealers) can be contracted to make available a certain percentage of the total seed in improved varieties. A nominal amount of a farmers' seed vouchers can be set aside for improved seed.

Once agro-dealers have made the initial procurement of improved seed through reputable commercial seed producers, the link will have been forged and they can procure the improved varieties in the future in response to anticipated demand.

**Medium term:** A next step would be to produce improved seed locally in Diffa. Farmers and farmer groups are already multiplying seed for sale to the emergency distribution market. These groups could be contracted and trained by commercial seed producers to furnish improved seed for the Diffa market. ICRISAT is also a potential partner, having already done farmer trainings in seed production throughout Niger.

In addition, INRAN has isolated the local millet variety, Moro. It should be multiplied locally and brought onto the market.

**Long term:** Access to improved seed needs to extend beyond the large towns. Most farmers in Diffa do not have access to agro-dealers, who are mainly located in the larger towns. Here, connections need to be made with small shops in outlying villages that can carry improved seed. CRS' PASAM-TAI and BRACED projects have successfully piloted these links between commercial seed producers and small village shops and could share lessons learned with projects in the Diffa region.

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If NGOs use fairs to supply seed to farmers, then seed vendors (agro-dealers) can be contracted to make available a certain percentage of the total seed in improved varieties.  
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Access to improved seed needs to extend beyond the large towns.  
.....

# Annex A: Assessment Participants

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## KEY INFORMANTS

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- Malam Kiari - Seed and Agricultural Input vendor and seed producer
- Tchiandj Aboubakar - Seed and Agricultural Input vendor
- Adamou Mohamed - Chef de Antenne Régional Diffa, FAO
- Cissé Yacouba - CRS Head of Office, Diffa
- Daouda Boukari - ACF, Diffa
- Djalo Ari - Président Fédération de Coopératives Maraichères de Niger, Section Diffa
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- Issaka Aboubacar - Directeur General, Manoma

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