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SEED SYSTEM SECURITY ASSESSMENT

OUAKA AND MBOMOU, Central African Republic



August 2023

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Acronyms

ACDA	Agence Centrafricaine de Developpement Agricole
ACTED	Agency for Techincal Cooperation and Development
AfDB	African Development Bank
BHA	Bureau for Humanitarian Assistance (USAID)
CAR	Central African Republic
CDSC	Centrafricain pour le Développement Socio Culturel
CORAF	Le Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles
CRPR	Centre Regional Polyvalent de Recherche
CPE	Construction des points d'eau
FAO	Food and Agriculture Organization
FCFA	Central Africa Currency 1 USD=c 620 FCFA
FO	Farmer Organization
GAM	Groupement des Agriculteurs Multiplicateurs
ICRA	Institut Centrafricain pour la Recherche Agronomique
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
ICRC	International Committee of the Red Cross
IITA	International Institute of Tropical Agriculture
IRAD	Institut de Recherche Agronomique et de Developpement du Cameroun
IRAM	Institut de Recherche et d'Applications des Methodes de Developpement
IRRI	International Rice Research Institute
ITRAD	Institut Tchadien pour la Recherche Agronomique pour le Developpement in Chad
NGO	Non Government Organization
OCHA	Office for the Coordination of Humanitarian Affairs
ONASEM	Office National de Semences
PADECAS	The Savannah-Based Agricultural Value Chains Development Support Project
PARSENKO	Projet d'Appui à la Résilience et à la Sécurité Alimentaire et Nutritionnelle dans les préfectures de la Kémo et de la Ouaka
PRADEC	Project to Relaunch Agriculture in the Central African Republic
QDS	Quality-declared seed
REPROSEM	Regroupement des producteurs de semences
SSF	Seed security framework
RTA	Relais Techniques Agricoles
SSSA	Seed System Security Assessment
USAID	United States Agency for International Development
VSLA	Village Savings and Loans Associations
WHH	WeltHungerHilfe

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Executive Summary

This report presents the results of a Seed System Security Assessment (SSSA) conducted in the Ouaka and Mbomou prefectures within the Central African Republic (CAR). The assessment took place in June 2023 and was focused in the regions of Bambari, Kouango, Bakala and around Bangassou.

The SSSA was conducted to identify the main factors constraining seed systems in order to make good quality seed of key cereals and crops—including maize, cassava, ground nut, sesame, and squash—available, and accessible to smallholder farmers -- and ensuring emphasis on the right varieties which can meet farmer and market preferences.

The tasks of the SSSA were as follows:

- Describe the seed systems of the crops grown in the CAR and in the main areas of intervention of the Runner Program Implemented by Mercy Corps and Concern Worldwide funded by USAID-BHA
- Analyse the different seed acquisition strategies implemented by vulnerable households.
- Explore the most appropriate types of responses to improve the seed security of vulnerable households in the event of a food crisis and also in normal times.

(For specifics on methodology, including precise tools on SeedSystem.org).

This report presents findings across the sites in OUAKA/MBOMOU in CAR. Select SSSA results are reported below in two sections: a) Acute seed security findings, and b) Chronic seed security findings and opportunities. Recommendations then follow.

Acute Seed Security Findings

Diverse indicators suggest the seed security of smallholder farmers in OUAKA/MBOMOU in the short-term is stressed. Seed systems are stable, but functioning at a very low level. The short-term findings draw from analyses of two main seasons, from April to September, 2023 and 2024.

From the farmer point of view, 2023 and 2024

1. For the current season and for all crops, Most farmers (82,5%-98,2% of cases) were planting less of a given crop and none are planting more. The overall degree of seed use change ranged downward, from minus 37.92% with rice and to minus 58.08% with squash. The seed use declines were particularly marked for those crops in which seed access is dependent on purchase.
2. During the season 2023, own stocks and the local markets proved to be the main pillars for smallholder farmers' seed security, but social networks were also important, especially for maize and cassava.
3. For the current season 2023, seed sourcing from agro dealers and community-based seed producers and government were both non-existent. That means that farmers have limited options for sourcing seed.

4. The reasons farmers have been planting less are because they don't have money to buy seed and/or seeds are very expensive. This constraints have to do with their lack of purchasing power, Very few farmers (1,1%) used less seed because of variety or quality concerns (in 2023) . No farmer indicated the household was planting less due to seed not being available.
5. Farmer projections for 2024 season similarly show decreases in seed of use (overall decreases of 47,45% to 28,82%), The reasons are mainly because farmers don't had money to buy seed, have financial difficulties or seed prices are too high. Very few farmers indicated that : seeds would not be available on the market ; seeds/cuttings would not be available from neighbors; or that there are problems with seed quality. Some farmers indicated that they used less seed due to problems with labor or health.

On the supply side, 2024

Since farmers rely on local markets for much of their seed stocks, important questions for seed security in the 2024 season revolve around markets. Can local markets provide sufficient and acceptable seeds? Can farmers afford the seeds on offer?

1. **Seed availability positive trends.** Several sources of information show that seed availability will not be a problem in the area of assessment for the 2024 season.
 - Seed flow mapping demonstrates that there are multiple sources of seed/grain for all the major crops. All major supply routes remained open at the time of the SSSA. Local markets are also functioning.
 - Farmers assessed that the 2023 Season had been an average or good season in 72% of crop cases assessed . These production gains translate to more seed being available for the upcoming season (2024) as farmers regularly save seed from prior harvests.
 - Various wholesalers supply the prefecture of Ouaka in Bambari from the close surroundings within a radius of 30-40 km. In the event of a stock shortage, wholesalers indicated they can manage to obtain supplies from Chad, Cameroon, and the DR Congo. The crops distributed are maize, groundnuts, cowpeas, sesame, white beans, squash, and paddy. For 2024, wholesalers foresee an increase in supply ranging from between 10 to 30%.

Seed availability negative trends. No agro-dealer company exists in Bambari or Bangassou,; only in Bangui. A single company was interviewed from Bangui. The products sold are imported vegetable seeds, insecticides, fertilizers, and other laboratory materials. SSSA analyses showed main challenges of agro-dealers to be the availability of qualified human resources. The opportunities are the high prices of competing organizations and the absence of local production.

2. **Seed quality.** While the SSSA team did not conduct objective seed quality assessments, the team did gather farmer and trader qualitative insights. There was no evidence that the current quality of seed and other planting material, across crops, was different from the norm, or was particularly 'bad'. In fact, the opposite, the quality was deemed quite good.
 - From the farmer point of view, the quality of seed sown 2023 was generally good (74% of cases) or average (12% of cases), with seed specifically sourced from the market

assessed as 'good' and 'average' in 70% and 27% of cases, respectively. Hence, there was no real difference in farmers' assessment of seed quality from all sources versus seed specifically sourced from the local markets). The two crops where there were some seed quality (poor), Groundnut (4,8%) and Rice (5,7%).

3. **Seed price/access issues.** The prices practiced last season were 300 F/kg for maize, 800-1000 F/kg for groundnuts, 1000 F/kg, Sesame 800 F/kg, Paddy at 400F/ kg in will increase an increase of almost 35%. Peak periods when demand peaks between November and December. Farmers said that seed is very expensive.

In sum, for the analysis of market seed, quantities seem to be available across a range of crop and the quality on offer was acceptable to farmers. BUT farmers needed cash to get seed from local market , and the prices of seed were predicted to increase the next season (2024).

From community point of view: acute situation

In Bakala sub-prefecture, the communities of Village of Borno stated they were 70% seed secure in current season 2023 (for groundnuts, cassava and squash) and projected they will be 90% seed secure next season. The Community of Gaoda Village stated they were 60% seed secure current season 2023 for (groundnut, cassava-cutting and squash), and they project a decrease to 40% next season – so much seed insecurity. In sub-prefecture of Bambari, the communities of Village Akio they were 70% seed secure for cassava current season 2023, and will increase next to 80% seed security. In the Sub-prefecture of Kouango, the communities of Village Gabon stated they were seed secure in current season 2023 at 20% for cassava, 5% squash, and that seed security will increase next season, 2024 to 100%, for cassava and squash. Hence, in the short-term, for season 2023 to upcoming season 2024 is assessed by communities as variable by locales.

Overall, The situation of seed security seems to be stable in the short-term: farmers are sourcing seeds from their normal sources from their own saved stocks. The production was and is projected to be good and locale markets are function. That said, farmers are overwhelming planting less because of money problems.

Note that the situation in remote areas may be different. in areas like Hippy and Bangassou. The SSSA could not assess these areas. Physical access was difficult and the security situation was unstable.

Chronic Seed Security Findings

The review of medium-term trends in seed security among smallholder farmers in OUAKA/MBOMOU showed very little dynamism or innovation of any sort. Below are identified some bottlenecks, and a few opportunities.

Community focus groups (mixed male and female): chronic stress insights

1. Community focus groups indicated that a range of crops is grown. Those most common include maize, cassava, groundnuts, rice, beans, squash, sesame, market garden crops and coffee.

In terms of their specific use:

- Cassava, maize, groundnuts, and rice are mainly grown for food security.
 - Cassava, maize, rice, groundnuts, sesame, squash, and coffee are grown to generate income.
 - Cassava, groundnut, rice, and sesame are grown for nutritional reasons.
 - Cassava, maize, rice, yam, squash, sesame, beans, and vegetable crops are grown to cope with climate change.
2. Seed system channels have remained static over the least five years for all crops. There has been virtually no outside innovation. Seed is still sourced from local channels- from home stocks, neighbors/friends, and local markets. Even seed aid does not exist as an important innovation source.
 3. Access to new improved varieties could help improve crop productivity for small stakeholders. However, not one of the farming household surveyed in SSSA declared having received new varieties within the last 5 years. In contrast, farmers did report having received seed aid: 40.5% of the households surveyed but for one time only. (Perhaps they received new varieties via aid, without obtaining information on the names of the varieties? This situation is hard to verify).
 4. It was reported that a regional center of ICRA in Bambari made it possible to connect small producers through a network of farmers multiplying maize seeds, groundnuts, cassava cuttings etc.... called REPROSEM supervised by ACDA. But this center suffered significant damage during the armed conflicts of 2012/2013. Some of these REPROSEM groups were reactivated by the ICRC in collaboration with ICRA and ACDA through training and support for seed production from basic corn, peanut and cowpea seeds. This allowed certain small producers to access quality seeds. This action which could be an interesting option to also be duplicated by MERCY Corps and Concern-Worldwide which still remains limited in its scale around Bambari.
 5. Farmers identified the main constraints to agricultural production as: the lack of financial means, epidemics and the ravages of plantations, the lack of seeds and adapted varieties, climate change, the lack of animal traction and chemical products, the destruction of fields by bush fire or animal pests, insecurity and road infrastructure problems for the evacuation of products. It is quite a range of constraints.
 6. Changes in weather were also reported. Farmers reported changes in the amount of rainfall, (with heavy rains in some places and light rainfall in others), temperature variations, and the length of the season, with a reduction in the rainy season.
 7. No new enterprises were reported but in terms of innovation, there was creation of peasant groups to meet the need for manual labor to cultivate the largest fields.
 8. Farmers generally also used very few non-seed inputs. The use of fertilizers is extremely low (0.8%) for the current season (2023), with more households planning to use fertilizers next season (27.2%) 2023. The main reason advanced for not using is unavailability in the market for 90 % of respondents. Some 25% of farmers used some organic input- but this was mostly kitchen residue. Main reasons for non-use were that it was not available (especially for manure) or that they do not know how to use this organic material. Compost currently used in the

current season is mainly obtained from livestock (44,4%) and from crop/field residues (55,6%). Increasingly, farmer will not be using manure/compost as: it is not available (85.5%-86.5%), or too expensive (2.7%-2.9%). None used storage chemicals .

Women's focus groups: chronic stress insights

1. Women and Seed Security:

- Women take charge of themselves, are heads of households in 5 of the 20 households, they cultivate their own fields;
- The majority of women are without a husband and take care of themselves, play a key role in their family's food security.
- Agriculture, in particular the cultivation of groundnuts, squash, maize, cassava, and rice allows women to meet their food needs.
- Groundnut and sesame are important food crops.
- Single women, people with disabilities and their dependents, are among the more vulnerable.
- Widows and elderly women are the most vulnerable.
- Armed conflicts, lack of financial means and instability have affected families and the practice of agriculture.
- Insecurity has made it difficult to monitor the fields, With the return of peace, the women are increasing the size of their fields, especially for maize.

In summary, there seems to be overall very little agricultural innovation in Ouaka-Mbomou. There are very few ways for farmers to access new varieties or quality seeds, and virtually no agribusinesses and few inputs other than seeds. However, these farmers are repeatedly confronted with the problems of climate change, lack of financial means, epidemics and the ravages of plantations, lack of animal traction and chemical products, the destruction of fields by bush fire or animal pests, insecurity and road infrastructure problems for the evacuation of productions. The main issue is where to start: on what interventions? and how to design them to serve all farmers in this remote and chronically stressed region.

Recommendations

The opportunity for the SSSA team to conduct assessments in two prefectures of the Central African Republic, Ouaka and Mbomou, provided field teams with a useful perspective on seed security in the short term and spurred reflection on possible medium term-developmental actions.

Overall, the SSSA did not find constraints justifying a “generalized emergency response”. The problems are very severe but are chronic and deep-rooted. Note that that the seed security (or insecurity) may be very different in Bangassou or Hippy—but the SSSA could not take place in these areas.

Recommendations are presented below. They are loosely grouped first into eight overall themes. These overall recommendations are then followed by more detailed recommendations, geared to specific seed system actors. Within the core document, a final section, draft **Action Plans** has been added after the recommendation sets so as to give further insights into how precise programming might unfold on the ground (see pages 72-89, ACTION PLAN.)

Recommendations and action plans are practical and achievable. Their implementation of should lead to positive changes-- even during the course of the RUNNER program.

Overall Recommendations

I. EMERGENCY SEED AID

The SSSA did not identify an emergency seed security situation. There were no acute problems identified in terms of seed availability or seed quality. Farmers had financial problems accessing seed, but these proved to be chronic ones and deeply rooted in widespread poverty.

Emergency Seed Assistance should only be used to respond to emergency issues, including those where seed safety may be an issue.

As a reminder good practice procedures for emergency response, if needed, have been well-established. They might best follow guidance provided in the ***Ten Guiding Principles of Good Seed Aid Practice***. (Sperling et al 2022. <https://www.youtube.com/watch?v=8X9MuKZHc4k>.)

The recommendations below focus on addressing the chronic seed security issues identified during the SSSA.

II. NEW VARIETIES: MAKING THESE MORE ACCESSIBLE: DELIVERY OUTLETS AND APPROACHES

A range of modern varieties has been released by ICRA and ACDA for the assessment region and they have been confirmed to be adaptable and acceptable to OUAKA farmers (see Table 27 for list- repeated below). This recommendation focuses on how to make these new varieties known and accessible to farmers. Farmers need regular access to outlets that can supply them with the new varieties farmers

want and need (through sales). There are several strategies and actions that might be pursued to make modern varieties accessible, along with critical associated information.

Table 27 (copied): Specific list of varieties

Common name	Scientific name	Varieties
Maize	maize zea	CMS 9015
Maize	maize zea	CMS 8806
Groundnut	Arachis hypogae	ICGV 86003
Groundnut	Arachis hypogae	JL 24
Rice	Oryza sativa	Nerica 36
Sorghum	Sorghum bicolor	Zouaye
cowpea	Vigna	Lory
Sesame	Sesamum indicum	S42

II.1 Wholesalers. Given that there are no formal seed sector outlets on SSSA sites, it would be useful to establish contacts of sale for new varieties among wholesalers of existing consumer products. (So focus on new varieties, but sold as grain/local seed).

II.2 Local agro-input stores. Outlets could be expanded to include specialized stores selling only agricultural inputs and associated tools. Rural store owners should be trained in specific seed management and seed-related information, as well as general input marketing and business skills. It would be critical to reinforce skills of local store owners for last mile delivery.

II.3 Small packets. To facilitate the logistics of diffusion and put seed in more affordable formats, packaging of modern varieties should be organized in sachets of 250 g, 500 g and 1 kg (especially for pulses). Farmer-focused small package sales could be tested in a range of locations where farmers regularly buy seeds and other goods. Seeds in small packets would be certified and sale models could be designed to allow a large number of farmer customers to access these high-quality products.

II.4 Awareness and confirmation plots. Variety trials and demonstration plots should be set up directly adjacent to the sales location. Church partners as well as local market traders could also be encouraged to establish awareness and confirmation plots. (These plots could further confirm that the varieties are really suitable for the local region, and that farmers and traders find them acceptable.)

II.5 Retail traders: . Since local markets (and their traders) are important for seed supply to farmers, more attention should be given to engaging local open markets traders in the supply of varieties demanded by farmers. Retail seed/grain traders could be powerful partners in helping to widely disseminate new modern varieties, within and between farming communities. Traders need to be equipped with precise information on the identification, attributes and management of new varieties.

II.6 Extension services with variety -specific information. Government extension services need materials that keep them up-to-date information on new, modern varieties – and the places where they can be accessed. Development of variety-specific brochures might serve as an important initial step.

II.7 Relais Techniques Agricoles (RTAs) with variety-specific information. The RTAs will need further training to help them support farmer seed producers and also to relay precise information to farmers customers. ACDA might be the key organization to train technical agents to link with RTAs.

If done intelligently, the above suggested expansion of seed sales locations, seed sales package formats, and seed-linked information. This expansion should stimulate the creation of a wider customer base, focusing demand towards direct producers (smallholder farmers) and away from dependence on large institutional buyers (such as NGOs). Since the above strategies also largely rely on the various local market channels that all farmers regularly use, transaction costs for farmers should be minimized.

III. NEW VARIETIES: ENSURING QUALITY SEEDS: MAKING THEM MORE AVAILABLE.

Seed production, and particularly decentralized seed production that can reach smallholders, must become a more strategic and effective force serving farmers. The formal seed sector will never be able to handle a) the range of crops that farmers need, nor b) the range of varieties. There is a need for multiple strategies to produce seed of new varieties-- and to maintain seed quality.

III.1 Capacity of existing agro multipliers. The capacity of the few existing agri-multipliers must be strengthened, via the REPROSEM multiplier groupings. Multipliers could be encouraged to produce a wide variety of crops and varieties that respond to farmer and market demand. Agro-multipliers should develop a profitability analysis of their operations as well as explicit implementation and marketing strategies. Seed producers should only be encouraged to produce if a) viable markets are identified and b) agribusiness and marketing skills have been strengthened. There is need to Re-dynamize REPROSEM - farmers who focus on seed multiplication. Also, for the next two season, decentralized seed production work might give priority focus to strengthening existing organizations.

III.2 Capacity of other farmer organizations (FOs) to also multiply new varieties and good seed Links with FOs could also be specifically catalyzed to link decentralized variety producers with a) ongoing and new sources of germplasm (from ICRA) and b) buyers, including localized stores.

III.3 Traders and seed quality. Since local markets are the most important source of seeds, the quality of seeds in open markets could be explicitly improved. Therefore, traders (as above) could be actively engaged in safeguarding and improving the quality of the seeds they offer. This engagement could involve actions such as: linking traders to credible sources of good quality seeds; working with them on seed management techniques; advising and supporting traders in better storage options, etc.

III.4 Work on farmers' own seed management. Since seeds produced and stored by farmers constitute the second most important source of planting material, farmers' field selection, post-harvest activities and seed/seed storage processes should be refined. This will involve extensive technical advice and support activities. Better management of home-saved seeds is a key strategic investment as it helps most farmers improve seed quality at the primary source.

In summary, seed production recommendations suggest first building on existing decentralized production and delivery efforts. Further, a multi-directional approach to supporting seed quality is recommended, which can affect seed quality on a large scale: Beyond the production of certified seed by specialists - efforts should focus on how best to improve the quality of seeds available on local

markets and in farmers' stocks. Activities might be programmed explicitly to work with traders and farming households on seed selection and maintenance.

IV. FARMER-CENTERED INFORMATION SYSTEMS: AWARENESS AND DEMAND: RANGE OF IMPROVED TECHNIQUES

Ouaka and Mbomou farmers currently receive little information on improved techniques for sustainable and profitable agricultural production. SSSA teams noted a lack of knowledge not only of new varieties, but also of basic 'good practice' farming techniques, e.g., crop rotation and manure use, improved storage possibilities. There is an urgent need to stimulate a) an environment of learning and experimentation, particularly in rural areas; b) an environment that provides a wealth of technical information; and c) information channels that promote feedback mechanisms – quickly and directly.

Several recommendations appear below related to informational innovation. The goal here is to enable small farmers to benefit from much-needed innovations, make more informed choices among multiple agricultural options, and provide feedback to those who help drive advances in research and development.

IV.1. Overall communication strategy in communities (cascading strategy). Overall, the agricultural information gap within communities is so wide and deep that the main recommendation here might be to develop (from scratch) a comprehensive two-way communication strategy that encompasses stakeholders at different levels and allows dynamic interactions (and ongoing corrections). The term 'waterfall strategy' or 'cascading strategy' has been suggested for such a process.

IV.2. Community-based experiential learning. Face-to-face on-farm experimentation models must be catalysed within communities; experimental community fields or farmer field schools are just two models. It is important that women and youth (especially those returning from mines) are included in these interactive learning processes.

IV.3. Technical information, precise materials, and dissemination related to agriculture. Technical information related to agriculture must also be transmitted through various media. Some farmers (and traders) have access to mobile phones and concrete SMS messages could be essential to convey concrete information on varieties and seeds) The effectiveness of existing grassroots communication mechanisms, through schools and faith-based organizations, could also be explored to share information on good practices and available innovations. Even more traditional information methods, such as the creation of 'new posters and various illustrations', would be an important addition.

V. NON-SEED INPUTS: STRENGTHENING AVAILABILITY, ACCESSIBILITY AND INFORMATION

To respond to the low or no use of fertilizers, manure/compost and pesticides or biopesticides or integrated pest management, there is a need to adopt a multipronged approach.

V.1 Work with Agro-dealers. Explicit work (connections) should be done with agrodealers operating in Bangui to encourage them to make fertilizers and pesticides more available – both to programs such as

RUNNER but also to farmers directly. Technical outreach by the services offered by ACDA, for instance, could be crucial. .

V.2 Development of extension materials. Technical service extension, provided by ACDA in collaboration with NGOs such as Mercy Corps should be put in forms must comprehensible to farmers (similar to IV.3). Subjects might focus on : soil fertility management (how to promote the use of organic amendments for crop needs ; composting techniques with harvest or household residues, how we use manure), pest and disease management (what treatment to use in the event of what attack of pests or diseases both at field level or to preserve the harvest.).... Etc.

V.3 Reinforcement of RTAs (as above with seed, II.7). The focus here would be on strengthening capacity of RTAs to also guide farmers technically in addressing non-seed input issues.

VI. MONEY /MICROFINANCE: MAKING THIS AVAILABLE AND ACCESSIBLE TO SMALLHOLDERS

While the SSSA did not specifically look at financing options, farmers' money issues – or lack of money – loomed large as the key constraint shaping farmers' current seed insecurity problems. Even if seed is available (whether high quality or just local market seed), many farmers would not be able to afford to buy the amounts they need.

The future of farmers' seed security in the these regions of CAR will be as linked to raising farmers' buying power as it is linked to specific seed issues. There are several avenues to explore here that that merit signaling (and further testing): Below are modest suggestions. Microfinance specialists might take the lead here in furthering an action plan.

VI.1 Expansion/intensification of existing Village Savings and Loans Associations (VSLAs). VSLA programs are 'accumulating savings and credit programs' that allow farmers to generate funds In a relatively short time (12 – 24 months). The VSL funds are also often large enough to allow members to borrow enough money to access key agricultural inputs such as seed or storage chemicals. This type of farmer group-managed assistance needs to be expanded. Beyond establishment, some of the tasks focus on: providing financial literacy and management training to VSLA members, empowering them to make informed financial decisions and developing novel income-generating activities.

VI.2 Formation of New VSLAs: There should be a strong push to stimulated the creation of new VSLAs in underserved areas by offering training, technical support, seed capital, and expanding access to financial services.

VI. 3. Explore VLSA Linkages with financial Institutions: It may be key to explore (further?) partnerships with local banks and microfinance institutions to facilitate access to formal financial services for VSLA members, such as bank accounts and microloans.

VI.4 Rice groups as special focus of finance and micro-credit?

VII. WOMEN AND SEED SECURITY: UNDERSTANDING SPECIFIC CONSTRAINTS AND TARGETING SOLUTIONS

Initial insights from women's only focus groups suggest that seed security constraints of female-headed households particularly merit more general attention and specific analysis. Note that almost 45% of households in the SSSA sample were identified female-headed. Many are short of funds at critical sowing periods. Female-headed HH also may require, and need to hire, outside help for some of the heavy agricultural tasks.

VII.1 Commission a specialized study on female-headed households and seed security challenges. As a start, commission focused analysis of female-headed HH and seed security issues. Ensure that seed security specialists and gender specialists work jointly- not in isolation.

VIII. CAR SEED SECURITY SECTOR: ENHANCING COORDINATION AT MULTIPLE LEVELS: WORKSHOP

Across this region of CAR, the seed security of smallholder farmers is severely compromised. There are well-defined problems on the supply side, and an equally extensive set of challenges from the community and farming households' point of view (linked to the demand side).

More practically, there are few ongoing means to introduce, multiply, access or market new varieties and higher quality seed (whether certified, QDS, or just good farmer seed). Also concerning, is that the level of seed security among southern farmers is not just static – it seems to be on the decline.

It might be time for a major reflection of seed security strategy for the CAR and the holding of a workshop (national? Regionwide?) might be one important key step.

Some of the guiding principles for such a workshop, might be the following:

1. The solutions have to be practical and realistic, taking account of the unusual challenges in the the SSSA zones and in conflict-ridden zones;
2. The vision should be for resilient systems. (not just any commercial system);
3. Both the seed supply side and demand side (communities, farming households) should be considered with equal rigor;
4. Strategies developed might best leverage all the seed systems farmers' use: including the informal (the current dominant source), formal, informal, and intermediary. Catalyzing an Integrated Seed Sector and identifying specific points of integration might be among the goals;

Actors who might to be invited include: government, plant breeder, formal seed sector and Intermediary sector specialists, NGOs, private sector, local seed and grain traders, climate and nutritional specialists, gender specialists, and more. It will be important to go beyond seed actors and include those with more holistic, resilience thinking. (see Action plan for more precise operational steps)

The workshop might have as one major aim the setting up of a coordination mechanism aims to develop and sustain a common seed security strategy, coordinate activities, monitor progress, foster partnerships, and advocate for supportive policies in the seed sector.

Recommendations to Specific Seed System Actors: initial set

Here the SSSA suggests some actor-specific actions that are needed. The list below is an initial set. It has been elaborated mainly to suggest the importance of : a) many actors contributing to an overall seed security program within the CAR; and b) each actor having detailed (and coordinated) functions that need to be effected to spur functioning seed systems for smallholder farmers.

1. Government (ICRA, ACDA, ONASEM)

1.1 ICRA: Collaborate with ICRA /CRPR at Prefecture level so that:

- DG ICRA – to continue supporting the relaunch of the CRPR intended activities.
- CRPR - to relaunch , with the support of Mercy Corps/Concern, the production of basic seeds of crops and varieties to be linked with REPROSEM in order to cover the needs of target households in agroecological areas of the RUNNER program.

Basic seed production might be catalyzed at CRPR BAMBARI and then moved to decentralized production the groups of multiplier farmers of REPROSEM (in 3-5 intervention sites of the RUNNER program.)

The supply should meet the demand of households in target areas, which means an emphasis on the important crops and the varieties already adapted and preferred by the farmers: Groundnut, maize, cassava, sesame and squash as priority crops.

1.2 ACDA. Collaborate with ACDA/ DR4 ACDA so that:

- Mercy Corps/Concern to strengthen the technical capacities of technical supervisory agents (RTAs) intended to provide practical information to smallholder farmers and support seed multiplier groups. Also, there is a need to increase the competence of RTAs via further organization of farmer field schools.

1.3 ONASEM

- ONASEM to assign staff who will ensure the control and certification of seeds produced in the Ouaka and Mbomou regions.

2. INGOs (international non-governemental organizations)

Mercy Corps/Concern to collaborate with ONASEM in diverse ways to support smallholder farmers:

- **Sharing of expertise:** MC/Concern to support strengthening the capacities of ONASEM and ICRA in terms of selection, production, and control/certification of improved seeds by drawing on the expertise of regional institutions or experts. This may include technical training on good plant breeding, production and seed testing/certification practices, as well as advice on varieties suited to local conditions;

- **Support for seed production:** MC/Concern to support ONASEM to mentor farmer multiplier groups in the production of good quality seeds by providing them with appropriate training and as well agricultural inputs such as quality seeds, fertilizers and pesticides. This will increase the availability of quality seeds for smallholder farmers;
- **Access to markets:** MC/Concern to help ONASEM facilitate smallholders' access to markets for the sale of their seeds. This can include training on seed marketing, establishing partnerships with agribusinesses and organizing agricultural fairs;
- **Proper storage:** MC/Concern to inform farmers on good grain storage practices so as to avoid losses due to moisture, insects, ect... Explore with farmers the use proper of storage bags and the storing grain in cool, dry places;
- **Monitoring and evaluation:** MC/Concern to regularly follow up with farmers so as to assess the effectiveness of seed supplied from diverse sources. Collect farmer feedback on seed performance and use this information to improve the quality of seed supplied in the future.

3. UN agencies; FAO/WFP/OCHA- NGOS involved in seed

Mercy Corps/ Concern to share with humanitarian seed aid actors (members of the Food Security Cluster) relevant findings of SSSA-CAR:

- **Action Plan.** Develop with all stakeholders an action plan to address key gaps and provide technical and market-link support to seed producers;
- **Coordination.** Increase coordination to monitor access to seed security assistance in an effective and sustainable manner.

4. Grain wholesalers/Traders

- MC/Concern to help identify key grain wholesalers/traders who serve the target region with good quality local seed/grain. Such traders should then be engaged in the multi-stakeholder seed security discussions
- MC/Concern- along with gov't institutions enhance trader knowledge about a range of seed security practices: *inter alia* new variety information; good seed source multipliers; better storage practices.

5. Private sector seed suppliers

- **Private sector suppliers need to be engaged in last mile delivery.** MC/Concern to explore with agro-dealers (Bangui based) how these suppliers might link to rural areas. Options such as mobile vendors or private input service providers might be considered.

The select recommended actions above need to be elaborated much more extensively and together with the core set of stakeholders. A initial regionwide (and possibly nationwide) seed security workshop is but a first step. Ongoing, impact-oriented collaborations need to be developed among actors on both the demand and supply sides to alleviate the seed security bottlenecks and ensure that smallholder farmers have access to the right seed and right varieties, and on time. There are multiple challenges but there are also multiple promising paths that can lead to real solutions. (Draft action plan is posted in Chapter VIII, pages 72-79.)

I. Introduction

This report presents the result of the Seed System Security Assessment that was conducted from June 13 to 24, 2023 in the Ouaka and Mbomou prefectures. The overall purpose has been to collect and analyze information on the seed system/sector in the project area and to propose strategic solutions for future programs aimed at improving smallholder farmers' immediate seed security. This involves improving the availability and access of farmer preferred and market acceptable crops and varieties, including those needed for the household's own consumption and income generation, and including those which address both male and female farmer priorities.

Deliverables of fieldwork included key information on:

- Preferred or cultivated key crops: are there any crops/varieties specific to women (men)?
- Sources of seed supply for major staple and cash crops (men and women farmers).
- Certified and non-certified seed supply chain, challenges and opportunities.
- Local production and availability of certified seeds of improved (and quality) varieties in the RUNNER zone and analysis.
- Availability of foundation seeds of new varieties at the research level and connection with seed producers and extension services in the RUNNER area.
- Geographical and financial barriers to accessing seeds of new varieties.
- Analysis of the enabling environment for seed activities in the CAR (policies, laws) and opportunities for sustainable seed intervention in the RUNNER zone.
- Farmers and households need seeds considering nutrition and income.
- Analysis of the gaps on the actors involved in the area and the modes of intervention.
- Analysis of the involvement of the private sector for access to quality seeds.

Team members and their roles were broadly as follows:

Name	Roles
Shongo Diowo Roger- lead consultant	<ul style="list-style-type: none">• Interviewer training• Field data collection• Interview with local actors• Restitution
Louise Sperling- overall methods support	<ul style="list-style-type: none">• Design• Quality assurance• Report approval
Patrick Gallagher-data support	<ul style="list-style-type: none">• Programming• Data processing and tabulation

II. Background to Seed Security + Response

This chapter reviews quickly the necessary background to understand a seed system security assessment (SSSA). Distinguishing seed security from food security is relatively new in development and relief circles and the methodology for doing so is only 15 years old. An SSSA is not about counting seeds and then deciding how much seed aid to give. Rather, the assessment aims to figure out if seed systems are functioning—on the supply and demand sides—and, if not, how to identify the exact problems and design specific strategies that alleviate the targeted constraints. This chapter describes the basic concepts linked to seed systems and seed security. It also distinguishes between acute and chronic stresses and presents a framework for choosing immediate response and longer-term action.

Seed systems farmers use

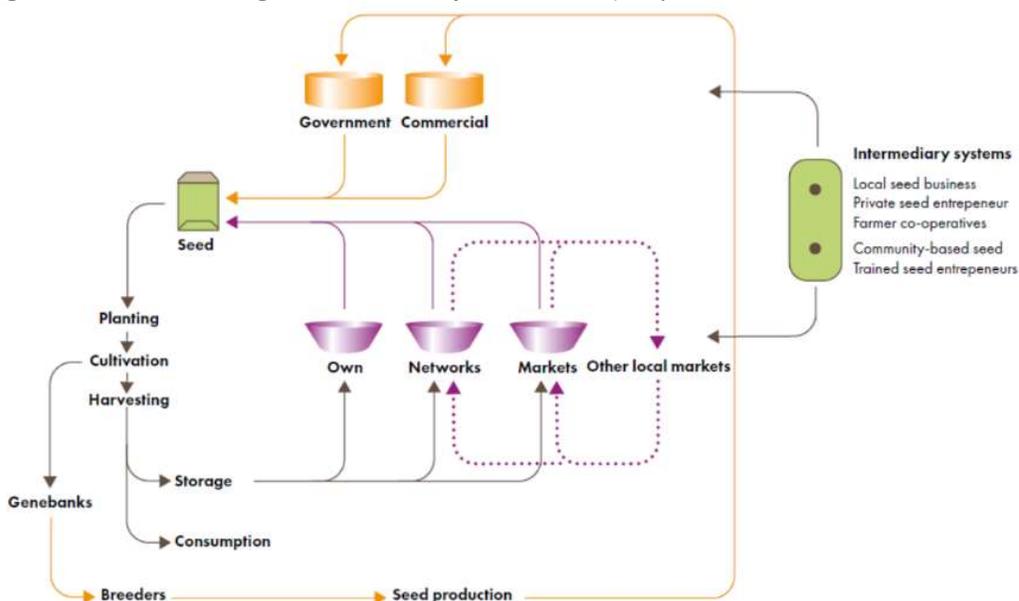
Smallholder farmers use multiple channels for procuring their seed.

The formal seed system provides farmers with new ‘modern’ varieties that are offered as certified or sometimes quality-declared seed (QDS). Formal channels normally include government bodies and commercial companies. Within formal systems, seed and grain are produced differently, with clear standards dictating what may be labeled as seed.

The informal seed system centers on farmer or local varieties, but it also routinely moves modern (‘improved’) varieties. The informal system includes the ways farmers themselves produce, disseminate, and procure seed: from their own harvest; through barter or sale among friends, neighbors, and relatives; and through local grain markets and traders. In the informal system, local seed is also produced, but as an integral part of grain production, not as a discrete enterprise.

Intermediary seed systems refer to various small-scale, often local enterprises, between formal and informal seed systems. They might include community-based seed producers or farmer cooperatives or NGOs producing seed (see Figure 1 for charting of seed system types and their interactions).

Figure 1: Channels through which farmers procure seed. (Adapted from Almekinders and Louwaars, 1999).



Recent global evidence shows smallholder farmers access over 90% of their seed from the informal system with local markets being particularly important – providing about 50% of seed. The formal system accounts for only about 3% of seed sown (dominated by maize) and the intermediary system's share is less than 0.5% (McGuire and Sperling, 2016).

In this CAR SSSA targeted area (Ouaka and Mbomou) 93% of seed farmers sourced last season (2023), came from the informal seed sector, from : own saved seed (41%), local market (38%), and social networks (15%) . The rest, 7%, came from NGO and FAO aid. No seed was sourced from any formal sector source.

Concept of seed security

Seed security exists when men and women within the household have sufficient access to quantities of available good quality seed and planting materials of preferred crop varieties at all times in both good and bad cropping seasons (FAO 2016). Helping farmers to obtain the planting materials they need (considering all possible seed channels) enables them to produce for consumption and sale.

Achieving seed security is quite different from attaining food security, despite their obvious links. One can have enough seed to sow a plot but lack sufficient food to eat, for example, during the 'hungry season' prior to harvest. Conversely, a household can have adequate food but lack access to appropriate seed for planting. Despite these important differences, determinations of seed security are normally food security-based. This is incorrect and indicates a lack of understanding of basic seed security issues.

The dimensions of seed security

The concept of seed security embodies several fundamental elements. Differentiating among these is crucial for promoting those features that foster seed security as well as for anticipating the ways in which seed security might be threatened.

A seed security framework (SSF) outlines the four fundamental elements of seed security that are critical for smallholder farmers:

1. Seed has to be **available**.
2. Diverse groups of farmers need to be able to **access** it.
3. **Seed health** (quality) must be sufficient to promote good production.
4. The varieties on offer have to be adapted and acceptable to male and female smallholder farmers and other groups aiming to use the seed (**variety quality/suitability**)

While features 3 and 4 are sometimes grouped together under the heading 'seed quality', they concern quite distinct aspects of seed: the first focuses on health/sanitary aspects, the second on genetics/variety traits. Table 1 summarizes the features, with further explanation below. In situations of stress, it is rare to have constraints in all four seed security elements at the same time. The challenge is to identify the real problem(s) and then target actions to alleviate them.

Table 1: Seed Security Framework, basic elements

Element	Seed Security Feature
Availability	Defined narrowly as whether enough seed of target, adapted crops is present within reasonable distance to farms (spatial availability) and in time for critical sowing periods (temporal availability). It is essentially a geographically-based parameter, and is independent of farmers' socioeconomic status.
Access	A parameter specific to farmers or communities. It largely depends upon the assets of the farmer or household in question: whether they have the cash (financial capital) or social networks (social capital) to purchase or barter for appropriate seed and have physical access to multiple seed sources.
Seed health/quality	Seed is healthy: i.e., has good physical, physiological, and sanitary attributes (such as germination rate and the absence of disease, stones, sand, broken seed or weeds).
Variety quality/suitability	This consists of genetic attributes, such as plant type, duration of growth cycle, seed color and shape. It also includes user preferences, such as the preferences of men and women farmers, traders, and those variously geared to direct use or market sale.

Source: Adapted from Sperling et al., 2022

Acute and chronic seed insecurity

Analysis of seed security also requires consideration of the duration of the stress – whether it is ‘acute’ or ‘chronic’ – while recognizing that the divisions are not absolute. In most cases where humanitarian or developmental assistance is being given repeatedly, there tend to be both acute and chronic seed insecurities;

Acute seed insecurity is brought on by distinct, short-lived events that often affect a broad range of the population. It may be spurred by an extreme flood or drought, or unusual insect attacks, like crickets. While in normal times households may have various degrees of seed security, all may be affected by an acute event.

Chronic seed insecurity is independent of an acute stress or disaster, although it may be exacerbated by it. Chronic seed insecurity may be found among groups who have been marginalized in different ways: *economically* (for example, due to poor, inadequate land or insufficient labor); *ecologically* (for example, in areas of repeated drought and degraded land); or *politically* (in insecure areas, or on land with uncertain tenure arrangements). Chronically seed insecure populations may have ongoing difficulties in acquiring off-farm seed due to lack of funds; or they may routinely use low-quality seed and unwanted varieties. The result is households with built-in vulnerabilities. That is certainly case for the Ouaka and Mbomou.

In cases where seed-related assistance is frequently repeated – in drought-prone areas, for example – acute problems are nearly always superimposed on chronic problems rooted in poverty.

More refined analyses leading to more targeted responses

Table 2, gives examples of how identification of a specific seed security constraint should lead to a targeted response, as we are aiming to do in this CAR-OUAKA/MBOMOU assessment.

For example, if 'seed availability' is assessed as the problem in the short term, seed-based interventions such as seed importation (for acute shocks) may be appropriate. (Seed availability problems rarely persist over the long term, except if one is focusing also on quality, such as on lack of performing varieties or good quality seed.)

In contrast, if 'seed access' is the identified problem, this might wisely trigger a holistic analysis of livelihood strategies. In the acute phase, providing farmers with cash or vouchers to get their desired seed might be effective. However, if seed access problems are identified on a chronic basis, practitioners might look well beyond seed and seed security constraints. The inability to access necessary goods on a repeated basis is usually linked to problems of basic poverty; thus, initiatives to help farmers generate income and strengthen their livelihoods base would be essential.

'Seed quality' problems, whether they relate to concerns with the varieties or with seed health *per se*, are rarely short-term. Responses usually require significant development programs, linked to plant breeding or seed quality programs, depending on the specific constraint identified.

As will become apparent in the case of the CAR -OUAKA and MBOMOU, all of the seed security elements seem to be compromised, and this is happening both in the short and long term (so acute and chronic stress). A comprehensive seed security support program is urgently needed.

Table 2: Types of seed security problems and broadly appropriate responses

Seed Security Element	Response options for <u>Acute</u> seed insecurity	Response options for <u>Chronic</u> seed insecurity
Unavailability of seed	Direct distribution of seed	(Happens rarely overall. There may be constraints in availability for performing varieties or quality seed)
Farmers lack access to available seed	Vouchers Cash (sometimes linked to seed fairs)	Income generation activity Agroenterprise development (value chains) Micro-finance programs
Poor seed quality unhealthy seed	Seed fairs with quality controls Direct distribution of test samples of quality seed	Program to improve seed quality <ul style="list-style-type: none"> • With seed companies • On-farm (selection and storage) • On-farm (community based seed producers) • In local markets (with traders)
Lack of appropriate varieties/crops	<u>Limited</u> introductions of new varieties	Introduce new varieties and give technical support Variety selection / breeding (better if participatory)

Seed security program goals

Finally, it bears mention that **seed security programs and related seed initiatives may strive towards diverse goals**. Each specific goal should shape program design and implementation.

Increasingly, seed security vision, structure, and programming are moving beyond the basic goal of helping farmers to obtain enough seed to sow, harvest, and achieve food security. Depending on the government vision, the implementer and especially on farmers' visions and needs, seed security programs might also have other goals such as to bolster household nutrition, family income, and farming system resilience. These goals should be set explicitly and each specific goal should shape seed system design, including, among other things, the kinds of crops and varieties put on offer and their specific varietal traits. Table 3 outlines some of these connections and suggests practical options for moving forward.

Table 3: Select design features of seed security programs with different goals

Goal	Crop/variety issues: broad choices	Varietal features	Awareness-raising, information strategy
Food production (classic approach)	Major staple crops Crops/varieties responsive to inputs	Preferred agronomic traits (e.g., high yield, early maturity, resistance to specific stresses) Preferred end user traits for consumption, especially postharvest processing and cooking qualities Preferred end user traits for market acceptance	Use of 'classic channels' <ul style="list-style-type: none"> • agricultural extension visits • posters • field days • rural radio Might increasingly use social networking, mobile phones, SMS
Nutrition	Focus beyond calories to include nutritive elements Varieties biofortified with micronutrients Crops contributing to dietary diversity Specialty crops: leafy vegetables, orange-fleshed sweetpotatoes	Key agronomic acceptance traits as well as targeted nutritional traits such as high micronutrient content Diet-diverse germplasm set, maybe including indigenous crops, leafy greens, legumes, and biofortified varieties and crops	Information strategy geared to showing value of the 'invisible' nutrition and guidance on food preparation (cooking demonstrations) Targeting decision makers on food consumption and nutrition including men (determining expenditure on more nutritious food) and women (determining who eats what) Sophisticated demand-creation techniques (possibly to reach an unconventional buyer: malnourished, vulnerable)

Goal	Crop/variety issues: broad choices	Varietal features	Awareness-raising, information strategy
Climate resilience (being 'climate smart')	Crops that tolerate abiotic stress: <ul style="list-style-type: none"> • heat tolerant crops/variety • water efficient crops/variety Crops that add value or diversity to resource base <ul style="list-style-type: none"> • legumes to fix nitrogen • fodder crops 	Diversity that is 'useful': allows for staggered sowing; is robust to challenging conditions Varieties that are adapted to stresses (e.g., moisture, heat, pests, low fertility) Possibly crops that are bundled to encourage better rotational systems, improved soil health and water management	Information geared to zone 'crop portfolio-management' scenarios. Use of decision-making tools focused on real-time farming system scenarios and analysis of adaptation zones
Income generation	Crops geared to markets ('high value crops') Crops linked to value-added/processing chains Crops linked to nonfood livelihood activities (e.g., fiber production)	Varieties/crops that meet rigorous market requirements, including uniformity (note that varieties may be suboptimal in agronomic terms)	Sophisticated demand creation techniques across full value chain (including processors as well as users and buyers of raw products) Successful branding of seed product and packaging

Source: modified from Sperling and McGuire 2012

Resilience

Achieving greater resilience has become central to seed systems operations in climate-stressed zones. Planners aim not just to help diverse populations build back (recover), but also to build back better for the long term. The features of resilience programming in seed system support are still being debated and refined. Climate variability requires special consideration, and some basic elements of resilient seed systems are listed in Box 1. Certainly, this list of features can and should be expanded for CAR-OUAKA and Mbomou.

Box 1. Features of seed systems which aim for resilience

1. Stress tolerant crops and stress-tolerant varieties are identified as performing, adapted, and accepted.
2. A wide portfolio of crops and varieties (linked to #1) is identified so that farmers* can alter their planting profiles according to fluctuating conditions.
3. Seed of stress-tolerant crops and varieties is multiplied with seed production scaled up. Seed is available.
4. Delivery mechanisms are spurred that give farmers access to needed crops and varieties. Multiple channels may be needed so as to reach different kinds of farmers, including those at the last mile, and including those in stress zones.
5. Delivery formats (prices, pack sizes...) are developed that enable even poorer farmers to obtain, or purchase the seed they need.
6. Information systems are fostered in ways that strengthen farmers' ability to strategize and deal with fluctuating conditions. Farmers need to be helped to make more informed choices.

**For ease of reference: 'farmers' always refers to diverse farmers: male/female; subsistence and more commercially-oriented; of different wealth levels.*

III. Context of the seed system security assessment

III.1. Rationale for the conduct of SSSA

For several years, Mercy Corps has provided support to the CAR, with food and seeds, to affected vulnerable internally displaced returnees and other host communities. Recently under the Mercy Corps Runner program, assisted vulnerable people were supported with seeds and tools by way of agricultural fairs. Concern, for its part, has distributed directly seeds and tools. All these efforts have been made in support of government organizations such as ACDA.

The objective of the assessment is to improve the food security and livelihoods of vulnerable small-scale producers by identifying strategies to address any acute and/or chronic seed insecurity problems.

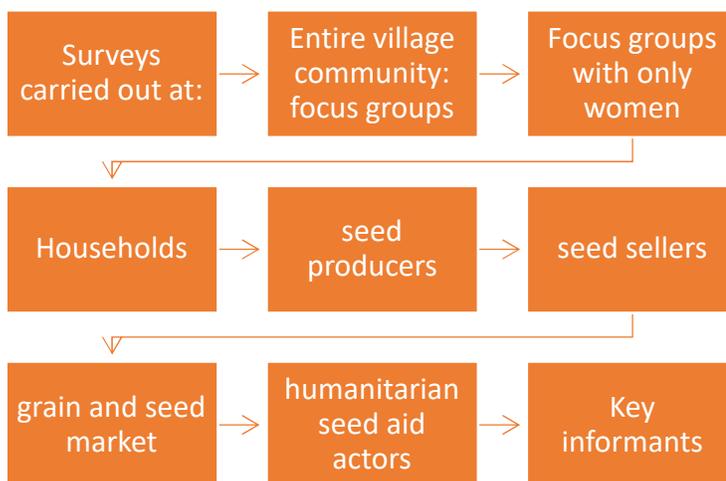
Note that agriculture is a key sector in the CAR since around 76% of the total population is devoted to it. Agriculture is an essential link in the Central African economy with a contribution to more than half of the Gross Domestic Product (GDP) and around 40% of total export revenues.

III.2. Methodology

The methodology used draws from the overall methodology set out in the publication “When Disaster Strikes: A Guide to Assessing Seed System Security” (Sperling, 2008) with the specific tools posted on: <https://seedsystem.org/assessments-and-e-learning-course/seed-system-security-assessment/>

The methodology for carrying out the study relied on data collection tools that were geared to different stakeholder (listed below) and are attached in the appendix.

Figure 2. Tools used in SSSA



III.3. Training

The training took place from 06/15/2023 to 06/17/2023 in the location of Bambari. There were initial training sessions in a classroom setting to : get background information, discuss concepts of seed security, terminology, and measures and also to introduce and practice use of the field instruments. For the full first week, there was also back-up training in the field and the tools were implemented among the various stakeholders.

Figure 3: Training goal of SSSA

USAID
FROM THE AMERICAN PEOPLE

CONCERN
worldwide

MERCY
CORPS

seed
system

Introduction to the use of Seed System Security Assessment tools

Training Goals

Understanding Seed System Security Assessment

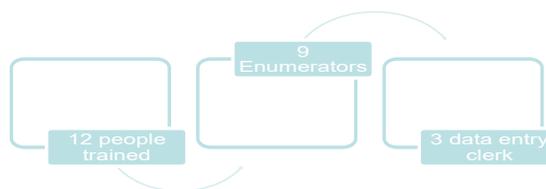
Be able to participate in and manage the implementation of the seed system study

Content

Figure 4: Training Content

Training					
First part	theoretical reminder	Day 1	Second part	Practical work in the field	Day 2
session 1	Introduction	before noon	session 4	Introduction local authorities	
				Household survey	
				Local market survey	
				Community discussion group (male/female)	
				Community focus group (female)	
				Key informants (government, humanitarians)	
				Multiplier farmers	
				Agro-dealers	
				Feed back	
				Database	
session 4	field work simulation	afternoon			

Figure 5: Training team



III.4. Sampling/sampling frame

A reasoned sampling¹ was carried out in the 5 axes of the Ouaka and Mbomou prefectures in relation to the populations targeted by Mercy Corps and Concern in relation to the objectives of RUNNER 2 (Bambari, Bakala, Bangassou and Kouango/Grimari). A random draw was carried out at the level of 26 villages.

Table 4: Sampling Frame

No	Organization	Project targets	Axes	Villages in SSSA	Households in SSSA
1	Mercy Corps	2200	Bambari	10	40
2		256	Bakala	2	40
3		1211	Bangassou	2	20
4	Concern	3675	Kouango/ Grimari	12	50
5	Total			26	150

III.5. Description of the agro-ecological zones of the study area

The CAR country is subdivided into 4 agro-ecological zones. This division distinguishes according to the dominant systems. The typology includes the following systems: i) Food crop – Livestock, ii) Cotton - Food crop – Livestock, iii) Forest – Coffee, iv) Hunting – Tourism. The study area is made up of the prefectures of Ouaka and Mbomou, which are between the cotton-food-livestock and forest-coffee ecological zones.

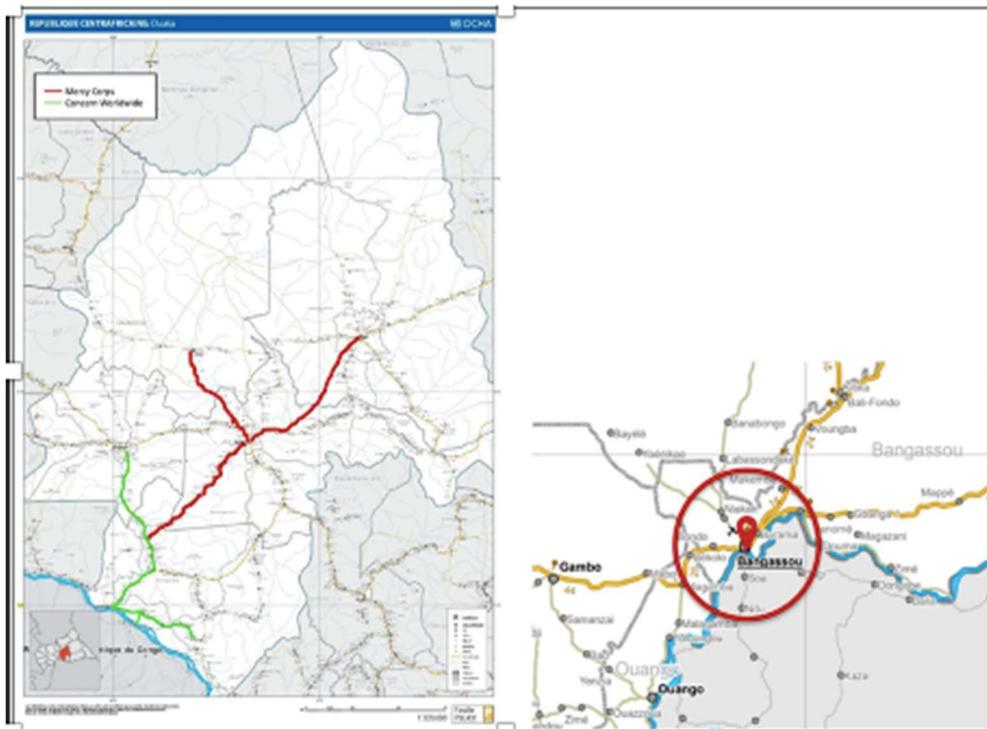
The “cotton-foodstuffs-livestock” zone called “Sudano-Guinean zone” extends from the Center-East to the North-West of the country and covers 5 prefectures including Ouaka, i.e., an area of 124,300 km². The annual rainfall is between 1200 and 1500 mm of rain with a plant growth period varying from 180 days to 240 days. It is characterized by three months of dry season, three months of off-season and six months of rainy season from April to September. Located in the savannas, this area is conducive to the production of cotton, cereals (sorghum, millet, maize, paddy), grain and protein legumes (peanuts, cowpeas, sesame, squash), cassava, fruit crops, sugar cane and potato. Onions and soybeans are

¹ The sampling is selected as representative of targeted area of Runner program by axes deliberately chosen – to avoid bias.

alternative or opportunity crops. Livestock breeding is also practiced thanks to extensive and rich pastures.

The “forest-coffee” zone, known as the “forest or equatorial zone”, extends to the south-west, south-central and south-east of the country and covers 7 prefectures including southern Ouaka and Mbomou. It is the extension of the equatorial zone of the Congolese basin and covers an area of 192,596 km². Rainfall, of the monomodal type, exceeds 1600 mm per year and allows a plant growth period of 270 days with lush vegetation. This zone is characterized by one month of dry season, two months of off-season and nine months of rainy season from April to December. It is the production zone for perennial crops (coffee, cocoa, oil palm, pepper, kola), root and tuber plants (cassava, taro, yam), bananas and plantains, fruits (pineapple, avocado, etc.), potato, tobacco, cereals (maize, paddy), groundnut, onion and pepper. This area is characterized by significant forest, wildlife and mining resources.

Figure 6: Map of Assessed area through the Central African Republic



Crops: overall profile

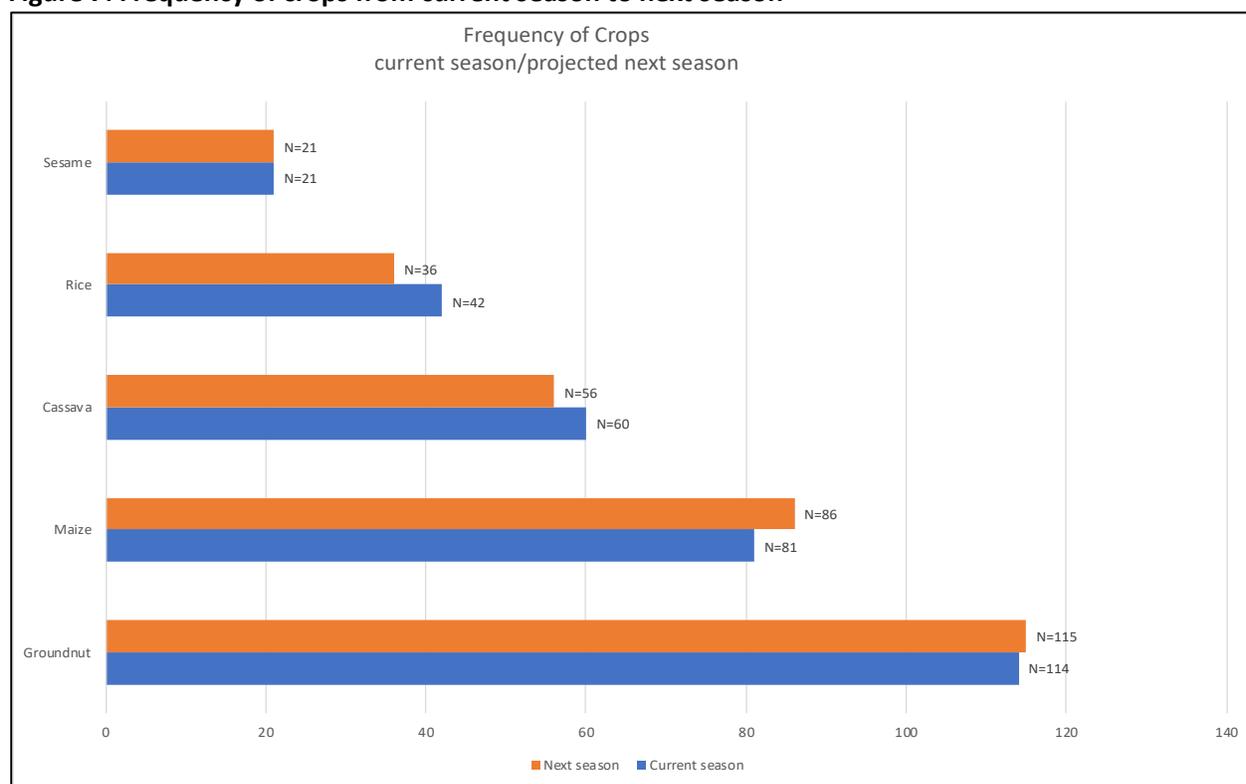
A very wide range of crops are mentioned as grown in the agroecological zones targeted by the SSSA in Ouaka and Mbomou. In addition, during this study, the households themselves designated priority crops according to their own criteria during the current season (2023) and next season (2024) (Table 5). This prioritization only concerned annual crops, not perennial crops. Five crops were cited by households both for the current season and next season: 1/ Groundnut 2/ Maize 3/ Cassava 4/ Rice and 5/ Sesame.

Table 5: Importance of Crops from Current season to next season

Current season (2023)			Next season (2024)		
Crop	Nbr HH	% HH	Crop	Nbr HH	% HH
Groundnut	113	89,7	Groundnut	114	90,5
Maize	80	63,5	Maize	84	66,7
Cassava	56	44,4	Cassava	52	41,3
Rice	40	31,7	Rice	34	27,0
Sesame	21	16,7	Sesame	21	16,7

Figure 7 confirms the importance of select crops. Crop priorities were the same over the two seasons.

Figure 7: Frequency of crops from current season to next season



III.6. Conduct of the Survey

The survey took place from June 13 to 24 2023, in 21 villages. The team included nine enumerators and three data entry agents who used the tools listed in Table 6: Individual farmer interview, key informants' questionnaires for government and humanitarian, focus groups discussions both with male and women together and focus group discussion with only female, grain merchant wholesalers.

Table 6: Tool type and sample sizes in the CAR SSSA June 2023

Tools	Town, City	Villages
Individual farmer interview N=126		21 villages ABAHOUTOU Lakandja AKIO1 Lindao AKPE 2 Makembe ATONGO Ndara1 AWAL NGADJIAKOTO BORNO NGAODA CHENDA NGBANGALAWADE Gabon NGOULINGA GOUSSEMA NZAPAMALE KPAGBA II OUANDALONGO Togo
Key Informants N=10	Bangui ² ICRA ACDA ONASEM Concern Worldwide Mercy Corps Bambari ³ (Prefecture/Ouaka) CRPR DR. ACDA Tear Fund CICR Mercy Corps- Bambari	
Focus Groups: mixed (M=120) (F=113) N= 12		12 villages 1.Lindao 7.ATONGO 2.Ndara1 8.Togo 3.Lakandja 9.Gabon 4.borno 10.NZAPAMALE 5.NGAODA 11.AWAL 6.AKIO1 12.Makembe
Focus Groups: female only N=4		4 villages 1.Gabon 2.Pende 3.Siou 4.Pende
Grain/local seed merchants wholesalers N=7	BAMBARI 1. CDSC 2. Ets les KOMAS 3. Ets GUINAMABOKE 4. Ets KOTAFILS 5. SUPER BOUTIQUE DE BAMBARI 6. Ets PARIS BOUTIQUES 7. ONG LE PROGRES	
Agrodealer N=1	Bangui Bioalphachimie	

² Bangui is a city which is the capital of the CAR

³ Bambari is the city which is the capital of the Ouaka prefecture

III.7. Household selection and profile

In terms of method, a central element of the SSSA methodology was to conduct quantitative interviews at the household level. To avoid bias, households were chosen by first creating a numbered list of households, then randomly selecting them at the level of each (village). The number of 20 to 40 agricultural households per site led to a survey sample of 126 agricultural households.

Table 7 below summarizes several characteristics of the selected households. It should be noted that almost 45% of the total 126 households were headed by women and that, within the sample, the majority of households (73.0%) cultivated areas one hectare or less.

Table 7: Household (HH) sample characteristics (n=150)

Feature	Description	% Sample
Type of HH	Adult headed	95.2
	Grandparent headed	0.8
	Child headed	4.0
Sex of HH head	Male	55.6
	Female	44.4
Average age of HH head	40.4 years	
Average of size of HH	6.7 persons	
Migration status	Resident	100.0
	Displaced	0.0
Area cultivated	< 0.5 ha	21.4
	0.5-1.0 ha	73.0
	> 1.0-2 ha	5.6
	> 2 ha	0.0

IV. Field findings: focus on farmers

This chapter presents the field findings of the SSSA work carried out in June 2023 during the immediate growing season (which began in April 2023 and whose harvest was expected in August/September 2023.)

This findings focus first on the acute seed security situation and then examine the medium term seed concerns, including possible chronic seed security problems and the resulting opportunities.

Acute Seed Security Findings: Household interviews

This involved asking questions about the seed security of households in the short term by asking them how they obtained their seeds for the current season (April-September 2023), Did they plant a normal quantity seed for 2023 and how do they seed the prospects for seed security for the next 2024 season? To assess the stability and resilience of the seed systems, it is always wise to examine several consecutive seasons.

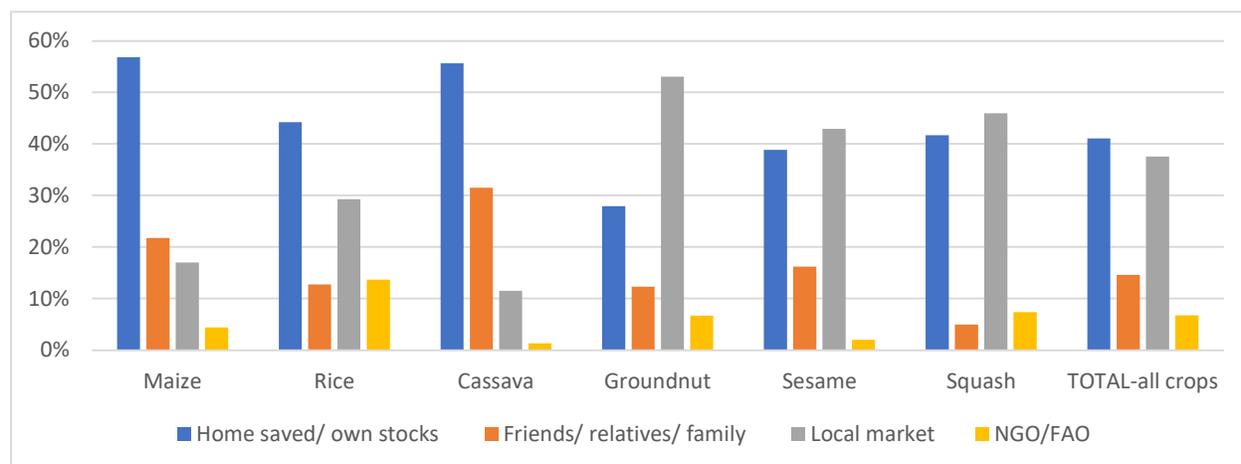
Seed sources and quantities planted, 2023 current season

For the current season, households sourced their seeds for all crops mainly from the stocks they produced themselves, then from the local market, then from the social network and lastly seed aid (NGOs/FAO (Table 8 and figure 8). Own stocks and the local markets are the main pillars for seed security, but social networks are also important, especially for maize and cassava. Note that seed sourcing from agro dealers and community-based seed producers and government were non-existent.--- so they don't even appear in the Table 8 or figure 8.

Table 8: Seed (%) planted and sources farmers used across CAR, 2023

Crop	kg planted	Home saved/ own stocks (%)	Friends/ relatives/ family (%)	Local market (%)	NGO/FAO (%)
Maize	3992,8	57	22	17	4
Rice	2098	44	13	29	14
Cassava	221,9	56	32	12	1
Groundnut	5552,1	28	12	53	7
Sesame	1032	39	16	43	2
Squash	1833,5	42	5	46	7
TOTAL-all crops	14730,3	41	15	38	7

Figure 8: Farmers' seed sources, all major crops across CAR-2023



Seeds planted by means of acquisition: most recent, current season

Accessibility to seed depends on the means of acquisition. The seed that comes from its own fields is automatically acquired: it is taken from the immediate production. Another category of seeds that may be free is that received from a friend, neighbor or relative as a gift (although it may be occasionally purchased even within social networks). Another category is that which can generally come from aid. Finally, there is seed that comes from the market, that requires payment.

During the current season, most households supplied themselves with seed though part of their production. Then, the means of acquisition which comes after is the purchase at the local market which will be followed by gifts from friends, neighbors or relatives and finally by aid. The largest quantity supplied from own stocks and as gifts is recorded on maize. The largest recorded quantity acquired through purchase is groundnut (Table 9).

Table 9: Seed planted by mean of acquisition current season.

Crop	Total Planted		SOURCES							
			own stocks		gift		purchase		aid	
	kgs	%	kgs	%	kgs	%	kgs	%	kgs	%
maize	3.993	100	2.266	57	869	22	678	17	177	4
rice	2.098	100	928	44	286	14	597	28	287	14
Cassava	218	100	121	56	69	32	25	11	3	1
groundnut	5.452	100	1.524	28	671	12	2.892	53	365	7
sesame	1.032	100	401	39	154	15	456	44	21	2
squash	1.833	100	764	42	101	5	833	45	135	7
TOTAL-all crops	14622	100	6.004	41	2.149	15	5.481	37	987	7

Quantity of seed planted: current season (2023) and next season: (2024) same? less? more?

The quantities of seed households planted for each crop were also explored. To understand possible vulnerability, farmers were asked to compare the 2023 quantities of seed sowed, by crop, with what they would normally sow at the same time each year. Basically, the question was this: Were the 2023 amounts 'normal' (same) or 'different' (more or less) than what farmers usually sowed.

For the current season and for all crops, farmers overwhelmingly planted less seed than usual (minus 82,5%-98,2% per crop type) , with very few planting the same amounts 1,8%-17,5%) and none planting more (Table 10). The lowest overall change was minus 37,92% with rice and the highest change as minus 58,08% with squash. The seed use showed deep declines, (with seed declines linked to crops normally being dependent on seed purchase).

Table 10: Quantity of seed plant in current season (2023) compared to normal

Crop	N# household	% of household			Change for all that plant this crop MEAN %
		MORE	SAME	LESS	
Maize	80	0,0	5,0	95,0	-57,34
Rice	40	0,0	17,5	82,5	-37,92
Cassava	56	0,0	1,8	98,2	-38,25
Groundnut	113	0,0	7,1	92,9	-42,03
Sesame	21	0,0	9,5	90,5	-52,79
Squash	56	0,0	3,6	96,4	-58,08
TOTAL-all crops	366	0,0	6,6	95,1	

The same question was pursued for the next season 2024: table 11. For a second season in a row, seed use will be significantly in decline overall.

Table 11: Quantity of seed to be planted in 2024 season, compared to normal

Crop	N# household	% of household			Change for all that plant this crop MEAN %
		MORE	SAME	LESS	
Maize	84	0,0	11,9	88,1	-42,34
Rice	34	0,0	17,6	82,4	-32,66
Cassava	52	1,9	7,7	90,4	-28,82
Groundnut	114	0,9	8,8	90,4	-36,11
Sesame	21	0,0	9,5	90,5	-45,47
TOTAL-all crops	305	0,7	12,1	108,9	

Seed quality: most recent (current) season 2023

Farmers also assessed seed quality crop by crop (Table 12) . Few big problems were identified. Most thought the quality good (74.3%) or average (22.3%. Very few highlighted problems or assessed quality as poor.

Table 12: Quality of seed used by crop most recent season.

CROP	Total N	Quality of seed used?		
		GOOD (%)	AVERAGE (%)	POOR (%)
Maize	139	72,7	23,0	4,3
Rice	70	70,0	24,3	5,7
Cassava	99	79,8	20,2	0,0
Groundnut	188	76,1	19,1	4,8
Sesame	30	66,7	33,3	0,0
Squash	88	72,7	25,0	2,3
TOTAL-all crops	614	74,3	22,3	3,4

Table 13 draws from the same quality data but analyzes it by source. Overall figures have roughly the same trends. Only NGO/FAO seed was identified as having significant quality problems (11.6%). It would be useful to learn more. Were these problems linked to seed quality per se, or the variety (so issues with variety suitability?).

Table 13: Quality of seed used by combining crops and by source current season.

Source	Total N	Quality of seed used?		
		GOOD (%)	AVERAGE (%)	POOR (%)
Own stock kept at home	197	76.1	22.3	1.5
Friends, neighbours, dependents	88	73.9	20.5	5.7
Local market	280	70.7	27.5	1.8
NGO / FAO	69	72.5	15.9	11.6
Total all sources	634	73.0	23.7	3.3

Production: most recent (current) season 2023

Farmers were also asked to evaluate production, by crop. (Table 14) . Overall, 72.3% of production cases were scored as good. Even the individual crop assessments were generally deemed good.

Table 14: Production evaluation for all sources of seeds by crop

CROP	Total N	How was the production		
		GOOD (%)	AVERAGE (%)	POOR (%)
Maize	139	66,9	30,2	2,9
Rice	70	70,0	24,3	5,7
Cassava	99	75,8	23,2	1,0
Groundnut	188	76,6	19,1	4,3
Sesame	30	63,3	36,7	0,0
Squash	88	72,7	25,0	2,3
TOTAL-all crops	614	72,3	24,6	3,1

The parallel assessment, looking at crop assessment by seed source also seems promising- with 71% positive overall. The lowest value, market seed, still was quite promising with, 98% either good or average . Interestingly, the poorest rating for seed use as linked to production results was tied to seed from humanitarian sources. (8,7%) in table 15.

Table 15: Production evaluation for all crop by source of seed.

Source	Total N	How was the production		
		GOOD (%)	AVERAGE (%)	POOR (%)
Own stock kept at home	197	73.1	24.9	2.0
Friends, neighbours, dependents	88	70.5	25.0	4.5
Local market	280	69.6	28.6	1.8
NGO / FAO	69	72.5	18.8	8.7
Total from all sources	634	71.1	25.9	3.0

In brief, this assessment of seed sources (and quality, product, etc) is an odd mix. Farmers are definitely planting less, which is a high signal of stress. That said, the seed farmers did source was deemed of generally good quality with the production results being generally rated good. The single exception might have been seed from NGO/FAO (i.e., seed linked to assistance) which did have somewhat poorer ratings. We did pursue the issues of specific stress below—at least in the short-term.

Specific potential problem areas

Following up on some of the farmers seed trends, The SSSA specifically explored further the issue of why farmers were planting less- significantly less—and over both seasons monitored (Table 16).. Overwhelmingly, farmers are planting less because they don't have money to buy seed and/or seeds are very expensive. The constraints has to do with their lack of purchasing power, Very few farmers (1,1%) used less seed because of variety or quality concerns (in 2023) . No farmer indicated the household was planting less due to seed not being available.

For other concerns like factors of production not related to seed (10%), a few farmers cited health problems. All other constraints were not cited as being primary ones that caused less seed use.

Table 16: Reason given for owing less than normal current season.

Reasons given for sowing LESS than normal	N	% of answers
RELATED (or indirectly related) TO SEEDS		
<i>Seed availability</i>		
No seeds available on the market	0	0.0
No seeds/ cuttings available from neighbors	0	0.0
<i>Seed access</i>		
No money to buy/ financial difficulties or seed price too high	287	82.5
<i>Seed quality</i>		
The seeds available are not of good quality or the variety is not appreciated	4	1.1
Subtotal: Seed-related	291	83.6
Non-seed production factors (limits)		
No/too little manpower	0	0.0
Illness/ health problems	18	5.2
No/too little land or the land is not suitable/fertile enough	3	0.9
Lack of tools / tractor / other machines for cultivation	4	1.1
insects/ plant diseases make production impossible	4	1.1
animals/ predators make production impossible	5	1.4
Problem with non-seed inputs: Lack, low quality, high cost of other inputs: controlled supply of water/ irrigation or fertilizer or pesticides	3	0.9
unfavorable weather/precipitation	0	0.0
insecurity (e.g. theft)	0	0.0
Subtotal: factors of production	37	10.6
OTHER PRIORITIES/ STRATEGIES		
markets for crops or crop products are not well developed	0	0.0
change in crop profiles or priorities	0	0.0
other priorities than agriculture (e.g. have a shop)	0	0.0
new farming methods allow lower seeding rate	0	0.0
other specify)	0	0.0
Subtotal: OTHER PRIORITIES/ STRATEGIES	0	0.0
TOTAL	348	94.3

Farmers' access to special seed inputs

We now move to special seed issues- new varieties and seed aid.

Access to new varieties for households

Access to new improved varieties--those that are better adapted to local conditions and desired by producers-- constitutes one of the key options for improving crop productivity for small stakeholders. Table 17 shows the number of farmers having received new varieties with the last 5 years. Unfortunately, none have—not a single one of the 125 households surveyed.

Table 17: Household having received new varieties within the last 5 years

Number of households	Received new varieties? (%)			Household that received	Number varieties received the last 5 years			
	yes	No	total		average	Dév Std.	Min	Max
125	0,0	100,0	100,0	0	0		0	0

Households having received seed aid in the last 5 years.

In contrast, farmers did report having received seed aid: 40.5% of the households surveyed in table 18, but for one time only. (Perhaps they received new varieties via aid, without obtaining information on the names of the varieties? This situation is hard to verify.)

Table 18: Households received seed aid within the last 5 years

N# of households	Received seed aid ? (%)			N# Yes	N# of times ?			
	Yes	No	Total		Moyenne	Dév Std.	Min	Max
126	40,5	59,5	100,0	51	1,0	0,00	0	1

Of those farmers (households) surveyed, 91% declared having received seed aid in 2023, 5% in 2022 and 2% in 2021. So seed aid seems to be relatively recent. Seed aid was provided entirely by NGO/FAO. The crops by given via seed aid are mainly maize (44.0%) and groundnut (41.3%) (table 19.)

Table 19: Seed crop received by seed aid when, by organization, and crop

When?			Through which Organization?		
year	No.	%	Organization	No.	%
2023	137	91	Government	0	0.00
2022	8	5	NGO/FAO	153	100.00
2021	3	2	Other	0	0.00
2020	3		Total	153	100.00
2019	0				
2018	0				
total	151				

Which crop?		
Crop	No.	%
Maize	33	44.00
Rice	3	4.00
Cassava	1	1.30
Groundnut	31	41.30
Cucumber	4	5.30
Squash	2	2.70
salad	1	1.30
TOTAL-all crops	75	100.00

Gender and Seed

As a special issue, the SSSA gender issues, as they related to seed. We assessed a few special aspects , recognizing that a much more in-depth study is undoubtedly warranted. Below, a few of the select findings are listed to spur reflection:

- The probability that the household managed by a man or a woman will receive aid is practically the same for 55% of heads of household managed by a man compared to 45% of households managed by woman.
- 69% of female-headed households and 66% of male-headed received aid last 5 years).
- Male-headed households planted more area of 1,0-2,0 and >2,0 ha plots than female than Female who generally planted plots of < 0,5 ha

It is the last observation, that male-headed households plant significantly more area than female which is probably the most pronounced gender-linked finding.

Non-Seed Inputs: Manure/Compost, Fertilizer, Pesticide + Storage Chemicals

The SSSA also examined non-seed inputs and practices. We assessed the use of improved cultural practices such as good management of soil fertility, the use of mineral fertilizers or organic manure, the use of pesticides or biopesticides to protect against both crops and stocks if this proves necessary. Non-seed issues such as these may influence the productivity of smallholder production systems.

The overall use of mineral fertilizer, storage chemical, manure/compost and pesticides in this current season and next season are summarized in Table 20 and comments on each appear below.

Table 20. Using of Input in current season and next season

Input	In CAR (Ouaka et Mbomou)	
	Current season 2023 (%)	Next season (%)
Mineral fertilizer	0.8	27.2
Storage chemical	0.0	100.0
Manure/compost	12.7	17.5
pesticides	2.4	11.1

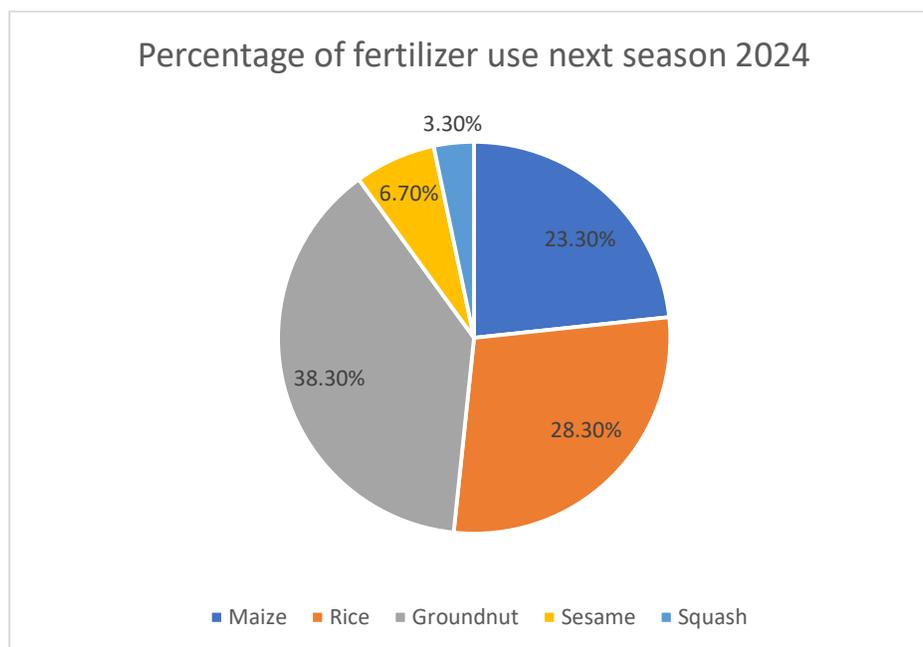
Mineral Fertilizer use

The use of fertilizers is extremely low (0.8%) for the current season, with more households planning to use fertilizers next season (27.2%). The main reason advanced for not using is unavailability in the market for 90 % of respondents in Table 21. Some give the reasons for the too high price of these (4.8%-6.7%) and others because they do not know the products or do not know how to use them. The kinds of chemical fertilizer used in current season and that will to be used in next season were not specified. The proportion of households that will use fertilizer is around 20-30% for groundnut, rice and maize in figure 9.

Table 21: Reasons for not using fertilizer

Reason	Current season		Next season	
	Nb	%	Nb	%
Not available	117	93,6	82	91,1
Not necessary (fertile soils)	0	0,0	0	0,0
Too expensive	6	4,8	6	6,7
I don't know them/don't know how to use them	2	1,6	2	2,2
They are not profitable for me	0	0,0	0	0,0
Not allowed to use them	0	0,0	0	0,0
No equipment (e.g. sprayer)	0	0,0	0	0,0
Use integrated/organic methods	0	0,0%	0	0,0%
toxic / harmful	0	0,0%	0	0,0%
Other	0	0,0%	0	0,0%
Total	125	100,0%	90	100,0%

Figure 9: Percentage used fertilizer by crop, 2024



On the supply side, 2024

1. Seed availability positive trends. Several sources of information show that seed availability will not be a problem in the area of assessment for the 2024 season.
 - Farmers assessed that the 2023 Season had been an average or good season in 72% of crop cases assessed. These production gains translate to more seed being available for the upcoming season (2024) as farmers regularly save seed from their harvests.
 - Various wholesalers supply the prefecture of Ouaka in Bambari from the close surroundings within a radius of 30-40 km. In the event of a stock shortage, wholesalers indicated they can manage to obtain supplies from Chad, Cameroon, and the DR Congo. The crops distributed are maize, groundnuts, cowpeas, sesame, white beans, squash, and paddy. For 2024, wholesalers foresee an increase in supply ranging from between 10 to 30%.
2. Seed availability negative trends. No agro-dealer company exists in Bambari or Bangassou, only in Bangui. A single company was interviewed from Bangui. The products sold are imported vegetable seeds, insecticides, fertilizers, and other laboratory materials. SSSA analyses showed main challenges of agro-dealers to be the availability of qualified human resources. The opportunities are the high prices of competing organizations and the absence of local production.
3. Seed quality. While the SSSA team did not conduct objective seed quality assessments, the team did gather farmer and trader qualitative insights. There was no evidence that the current quality of seed and other planting material, across crops, was different from the norm, or was particularly 'bad'. In fact, the opposite, the quality was deemed quite good.

From the farmer point of view, the quality of seed sown 2023 was generally good (74% of cases) or average (12% of cases), with seed specifically sourced from the market assessed as ‘good’ and ‘average’ in 70% and 27% of cases, respectively. Hence, there was no real difference in farmers’ assessment of seed quality from all sources versus seed specifically sourced from the local markets). The two crops where there were some seed quality (poor), Groundnut (4,8%) and Rice (5,7%).

4. Seed price/access issues. The prices practiced last season were 300 F/kg for maize, 800-1000 F/kg for groundnuts, 1000 F/kg, Sesame 800 F/kg, Paddy at 400F/ kg in will increase an increase of almost 35%. Peak periods when demand peaks between November and December. Farmers said that seed is very expensive.

Storage Chemical Use – 2023 and 2024 seasons

Nobody used storage chemical this current season: No reason is given for not using storage chemicals.

Manure/Compost Use

For all crops, most households, 87.3%, didn’t use compost/manure the current season and 82.5% did not intend to use the next 2024 season. Those using compost/manure will increase application in groundnut (30.0%- 42.3%), Rice (5.0%-15.4%) from current season to next season and decrease for maize (35,0%-30.8%), for Cassava (20.0%-11.5%) and for squash (10.0%-0%) in table 22.

Table 22: Using Compost for each crop

If using compost, on which crops				
Crop	The most recent (current) season		The next season	
	Nb	%	Nb	%
Maize	7	31,8	8	29,6
Rice	1	4,5	4	14,8
Cassava	4	18,2	3	11,1
Groundnut	6	27,3	11	40,7
Squash	4	18,2	1	3,7
TOTAL-all crops	22	100,0	27	100,0

Compost currently used in the current season is mainly obtained from livestock (44,4%) and from crop/field residues (55,6%). Increasingly, farmer will not be using manure/compost as: it is not available (85.5%-86.5%), or too expensive (2.7%-2.9%). A very few , (0.0%-1.0%) stated they did not use as they lacked equipment; used integrated methods (0.0%-1.0%), or judged their soils sufficiently fertile.

Table 23 : Reasons for not use the compost/manure

Reasons for not use the compost/manure
--

Reason	The most recent season		The next season	
	Nb	%	Nb	%
not available	94	85,5	90	86,5
not necessary for me (ex. fertile soils)	1	0,9	0	0,0
too expensive	3	2,7	3	2,9
I don't know them / don't know how to use them	12	10,9	9	8,7
No equipment (e.g. sprayer)	0	0,0	1	1,0
use of integrated methods/biological control	0	0,0	1	1,0
total	110	100,0	104	100,0

Pesticide use

Very few households used pesticides in current season (2.4%), with the number projected to rise slightly the next (11.1%). Pesticides are mainly not used as they are not available (86,6% and 83.9 % of reasons for each of the two seasons. Additionally, some farmers just don't know how to use them (9.8% of responses), and a tiny segment prefer integrated /biological methods (0.8%-0.9% of responses) in Table 24.

For those few using pesticide, preference is given to maize (66.7%-40.0%) and groundnut (33.3%-40.0%) (Table 25). The type of pesticide used was not specified

Table 24: Reasons not to use pesticides

Reasons not to use pesticides				
Reasons not to use pesticides	most recent season		next season	
	N	%	N	%
Unavailable	106	86.2	94	83.9
not necessary (fertile soils)	1	0.8	0	0.0
too expensive	3	2.4	6	5.4
I don't know how to use them	12	9.8	11	9.8
Use integrated/biological methods	1	0.8	1	0.9
Total	123	100.0	112	100.0

Table 25 : Using pesticide and which crop

If you use pesticides, on which crops?				
Crop	most recent season		next season	
	N	%	N	%
Maize	2	66.7	4	40
Cassava	0	0.0	2	20
Groundnut	1	33.3	4	40
TOTAL-all crops	3	100.0	10	100

Summary: Acute Seed Security Findings

Diverse indicators suggest the seed security of OUAKA/MBOUMOU in the short-term is stressed. Seed systems are stable, but functioning at a very low level. The short-term findings draw from analyses of two main seasons, from April to September, 2023 and 2024.

From the farmer point of view, 2023 and 2024

1. For the current season and for all crops, Most farmers (82,5%-98,2% of cases) were planting less of a given crop. and none are planting more. The overall degree of seed use change ranged downward, from minus 37.92% with rice and to minus 58.08% with squash. The seed use declines were particularly marked for those crops in which seed access is dependent on purchase..
2. During the season 2023, own stocks and the local markets proved to be the main pillars for smallholder farmers' seed security, but social networks were also important, especially for maize and cassava.
3. For the current season 2023, seed sourcing from agro dealers and community-based seed producers and government were both non-existent. That means that farmers have limited options for sourcing seed.
4. The reasons farmers have been planting less are because they don't have money to buy seed and/or seeds are very expensive. This constraints have to do with their lack of purchasing power, Very few farmers (1,1%) used less seed because of variety or quality concerns (in 2023) . No farmer indicated the household was planting less due to seed not being available.
5. Farmer projections for 2024 season similarly show decreases in seed of use (overall decreases of 47,45% to 28,82%), The reasons are mainly because farmers don't had money to buy seed, have financial difficulties or seed prices are too high. Very few farmers indicated that : seeds would not be available on the market ; seeds/cuttings would not be available from neighbors; or that there are problems with seed quality. Some farmers indicated that they used less seed due to problems with labor or health.

From community point of view:

In Bakala sub-prefecture, the communities of Village of Borno stated they were 70% seed secure in current season 2023 (for groundnuts, cassava and squash) and projected they will be 90% seed secure next season. The Community of Gaoda Village stated they were 60% seed secure current season 2023 for (groundnut, cassava-cutting and squash), and they project a decrease to 40% next season – so much seed insecurity. In sub-prefecture of Bambari, the communities of Village Akio they were 70% seed secure for cassava current season 2023 and will increase next to 80% seed security. In the Sub-prefecture of Kouango, the communities of Village Gabon stated they were seed secure in current season 2023 at 20% for cassava, 5% squash, and that seed security will increase next season, 2024 to 100%, for cassava and squash.

Overall, The situation of seed security seems to be stable: farmers were sourcing seeds from their normal sources including own saved stocks and markets. The production was and is projected to be good. That said, farmers are overwhelming planting less (decreasing seed use) and this is mainly due to money problems.

The case of the remote areas may be different., areas such as Hippy and Bangassou. The SSSA could not assess these areas. Physical access was difficult, and the security situation was unstable.

Chronic seed system concerns + emerging opportunities

The SSSA also examined more systemic longer-term agricultural trends. Community-level assessments were done at all sites: community meetings, special focus group discussions with women, key informant interviews (with government leaders, business men, NGO staff and others), and market analyses. The varied methods allowed for cross- verification and assessment of medium-term trends and examined issues of: crop diversification, dynamism in use of seed sources, and agro-enterprise within communities.

Community meetings

From 16 to 21 June, 12 discussion groups were organized in the prefectures of Ouaka and Mbomou, bringing together 233 people, including 120 men and 113 women. The discussions took place in the sub-prefectures of Bambari, Kouango, Grimari, Bakala and Bangassou in Table 26.

Table 26: Conducting of focus Groups

No	Date	Prefecture	Sub-prefecture	Village	note taker	N	Men	Women
1	6/21/2023	Ouaka	Kouango	Lindao	Zoumara	20	7	13
2	6/20/2023	Ouaka	Bambari	Ndara1	Ngazayo	20	10	10
3	6/22/2023	Ouaka	Grimari	Lakandja	TAGABA ENONC	16	9	7
4	6/20/2023	Ouaka	Bakala	borno	DIEU BENI	20	10	10
5	6/20/2023	Ouaka	Bakala	NGAODA	DIEU BENI	20	10	10
6	6/19/2023	Ouaka	Bambari	AKIO1	Gazato le Parfait	20	12	8
7	6/20/2023	Ouaka	Bambari	ATONGO	KROUTABALET Jaddo	20	13	7
8	6/21/2023	Ouaka	Bambari	Togo	KROUTABALET Jaddo	20	10	10
9	6/20/2023	Ouaka	Kouango	Gabon	NGBETERE	18	7	11
10	6/16/2023	Ouaka	Bambari	NZAPAM ALE	ZOUMARA Lemile	11	4	7
11	6/16/2023	Ouaka	Bambari	AWAL	KROUTABALET	20	12	8
12	6/21/2023	Mbomou	Bangassou	Makembe	KOGBAKO Urbain BABA Antoine	28	16	12
Total						233	120	113

Cultivated crops: range and use

Community focus groups indicated that a range of crops are grown. Those most common include: maize, cassava, groundnuts, rice, beans, squash, sesame, market garden crops and coffee.

In terms of their specific use:

- Cassava, maize, groundnuts, and rice are mainly grown for food security.
- Cassava, maize, rice, groundnuts, sesame, squash, and coffee are grown to generate income.

- Cassava, groundnut, rice, and sesame are grown for nutritional reasons.
- Cassava, maize, rice, yam, squash, sesame, beans, and vegetable crops are grown to cope with climate change.

Evaluation of last 3 seasons in terms of main crops and crop profile changes

Community focus groups also described the last three seasons of production, starting with the most recent (2023), then that prior (2022), then the one still before (2021).

- The general production trend for the crops grown is good for the current season (April 2023).
- The previous season (April 2022) saw a drop in production compared to the previous season.
- The season before the previous season (April 2021) also saw a drop in production, Maize since then production has been gradually improving.

There seem to have been important changes in the proportions of crops planted in communities over the past five years:

- The areas planted with crops such as cassava, groundnut, squash, sesame and coffee have increased due to their profitability and ability to solve family problems.
- The areas planted with groundnuts, sesame and rice have decreased due to the lack financial means (To buy seeds, lack of labour, etc....) to achieve larger areas .

Constraints and opportunities to agricultural production over the past five years

- Community focus groups stated that the main constraints to agricultural production have been the lack of financial means, epidemics and the ravages of plantations, the lack of seeds and adapted varieties, climate change, lack of storage facilities, the lack of animal traction and chemical products, the destruction of fields by bush fire or animal pests, insecurity and road infrastructure problems for the evacuation of products. After a crisis, the lack of cuttings was also mentioned. In brief, there are many and quite diverse compelling constraints.
- The opportunities identified have the creation of groups, the acquisition of seeds, training in new production techniques and the existence of large areas of cultivable land, particularly in forest areas.

Weather conditions for the last five years

- Changes in the amount of rain have been reported, with heavy rains in some places and light rainfall in others.
- There were temperature variations.

- The length of the season has also changed, with a reduction in the rainy season.

The answers of the participants have not allowed to draw clear conclusions on the effect of the conflict on the agricultural practices.

Mapping of seed sources

To understand the dynamics of seed systems within communities, the SSSA mapped the general sources of seed for each major crop and then the current sources were compared with those found five years ago.

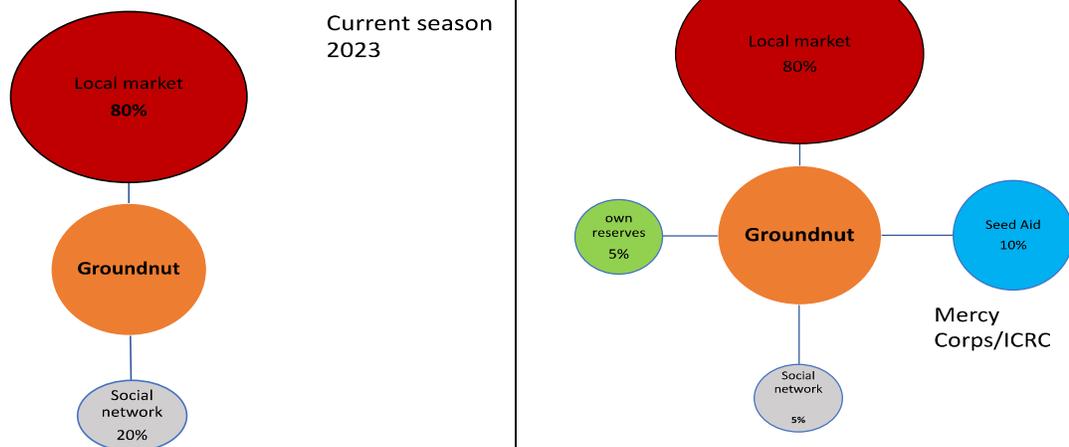
According to the focus group discussions, seed for the three most important species --cassava, maize and groundnuts—are now mainly sourced from the local market followed by own reserves, then by the social network and finally by the seed aid. Within the five year period, there has basically been no main change in seed sourcing. For illustration purposes, several maps of seed sources are given below in figure 10-13.

In this village Nzapa Male located on the outskirts of Bambari, the mapping of groundnut seed sources shows that the number of sources has decreased since 5 years ago (4 sources) compared to the current season (2 sources). The local market remains the main source of seeds with 80% and the social network the secondary source which increases from 5% to 30%. This was attributed in the group discussion to the expansion of the crop which offers significant quantities on the local market and then to social cohesion which facilitates solidarity between families. This decrease in sources 5 years ago compared to the current season can be explained by low assistance for those who are under stress and get their supplies from their neighbors or friends and on the local market in the figure 10.

Figure 10 : Mapping of Seed Sources in Nzapa Male Village in 2018/2023

FOCUS GROUPS-ANALYSIS OF SOURCES

VILLAGE: NzapaMale #M: 10 #F:10



In another village around Bambari called Ndara1 , seed mapping was done for crops of Maize, Groundnut and Cassava. Figure 11 compares the current sources with those five years ago. The number of sources remains constant at three. Seed sources for maize on the local market remain dominant, then comes own

source. There was no seed aid five years ago for maize although it appeared as a source in the current season in 2023. The social network present in 2018 is no longer present in 2023.

Figure 11: Mapping source of maize seed in Ndara1 village in 2018/2023

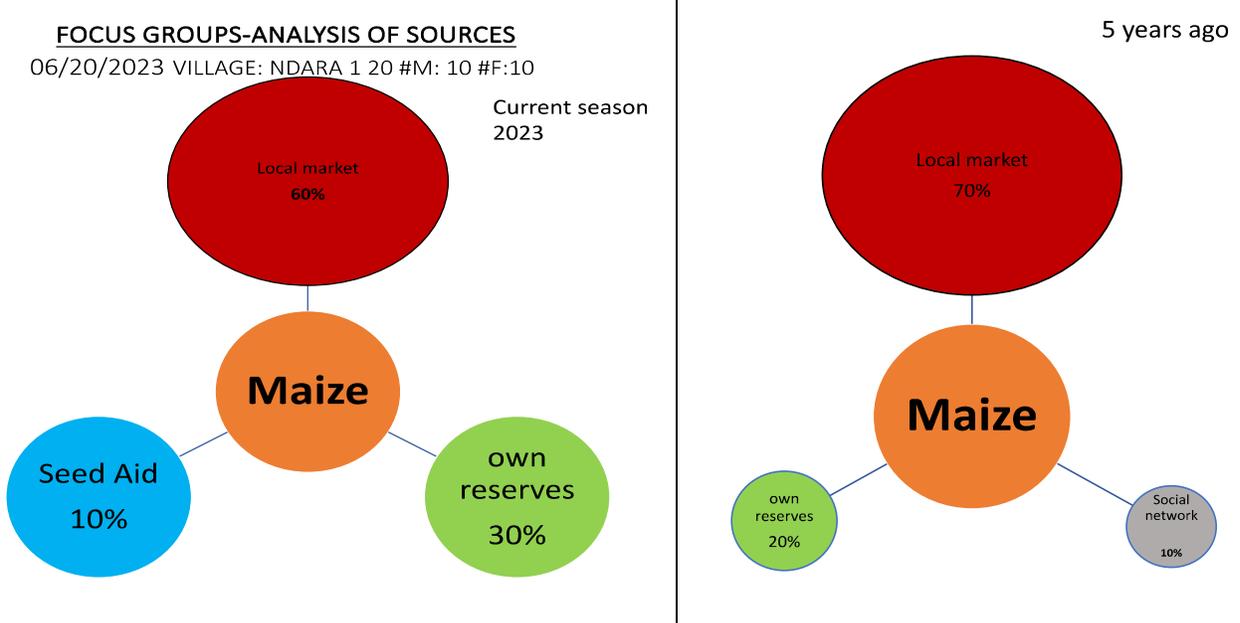


Figure 12 maps seed sources for groundnut in the same Ndara village. The number of sources remains constant at three. Seed sources for groundnuts on the local market remain dominant, then comes own source. There was no seed aid 5 years ago for Groundnuts, although this appears as a source in 2023. The social network present in 2018 is no longer present in 2023.

Figure 12: Mapping source of groundnut seed in Ndara1 village in 2018/2023

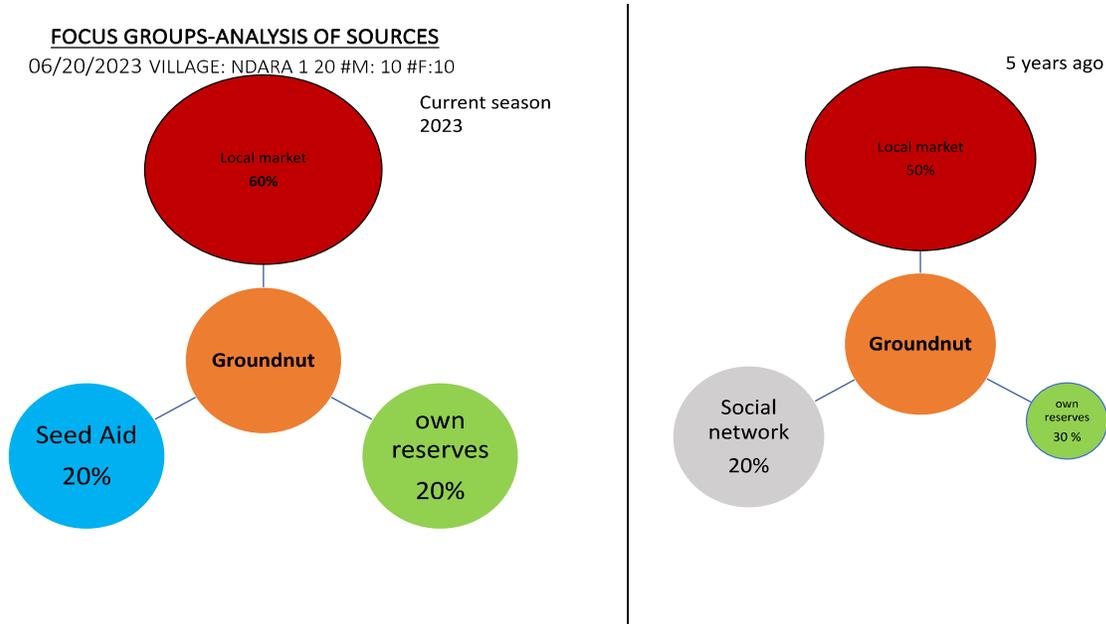
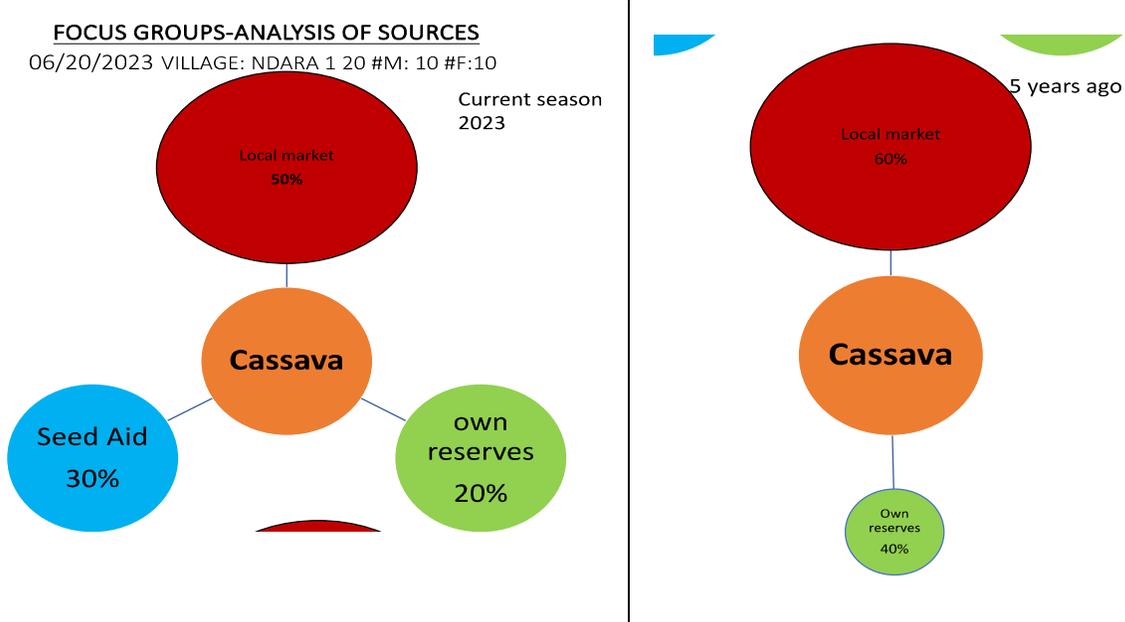


Figure 13 looks at cassava cuttings, also in Ndara1. The local market is the main source and after this own saved. Sources for seed aid in cassava cuttings that were absent five years ago appear in current season 2023.

Figure 13: Mapping Cassava cuttings source in Ndara1 village in 2018/ 2023



So all in all, seed aid is on the rise. Social network use has gone down. There have been no major sources of new innovation.

Women-specific level focus groups

The SSSA work also included women’s only focus groups in four distinct villages. Brief findings are presented below.

1. Village Gabon:

- Women take charge of themselves and are heads of households in 5 of the 20 households.
- Agriculture, in particular the cultivation of groundnuts, squash and maize, allows women to meet their food needs.
- Single women, people with disabilities and their dependents are vulnerable.
- Armed conflicts, lack of financial means and instability have affected families and the practice of agriculture.

2. Pende Village:

- Many women are heads of households and cultivate their own fields.

- Widows and elderly women are the most vulnerable.
- Insecurity has made it difficult to monitor the fields, With the return of peace, the women are increasing the size of their fields, especially for maize.

3. Siou Village:

- The majority of women are without a husband and take care of themselves.
- Widows, displaced persons and heads of households are the most vulnerable.
- The main crops for food security are cassava, groundnuts, maize, squash and rice.

4.Senga Village:

- Most women are heads of households and play a key role in their family's food security.
- The elderly are the most vulnerable.
- Groundnut and sesame are important food crops.

SUMMARY OF FINDINGS: WOMEN'S FOCUS GROUPS

- Women take charge of themselves, are heads of households in 5 of the 20 households, they cultivate their own fields;
- The majority of women are without a husband and take care of themselves, play a key role in their family's food security.
- Agriculture, in particular the cultivation of groundnuts, squash, maize, cassava, and rice allows women to meet their food needs.
- Groundnut and sesame are important food crops.
- Single women, people with disabilities and their dependents, are vulnerable.
- Widows and elderly women are the most vulnerable.
- Armed conflicts, lack of financial means and instability have affected families and the practice of agriculture.
- Insecurity has made it difficult to monitor the fields, With the return of peace, the women are increasing the size of their fields, especially for maize.

Summary: Chronic Seed Security Findings

The review of medium-term trends in seed security in OUAKA/MBOMOU showed very little dynamism or innovation of any sort. Below are identified some bottlenecks, and a few opportunities

Community focus groups (mixed): chronic stress insights

1. Community focus groups indicated that a range of crops is grown. Those most common include maize, cassava, groundnuts, rice, beans, squash, sesame, market garden crops and coffee.

In terms of their specific use:

- Cassava, maize, groundnuts, and rice are mainly grown for food security.
 - Cassava, maize, rice, groundnuts, sesame, squash, and coffee are grown to generate income.
 - Cassava, groundnut, rice, and sesame are grown for nutritional reasons.
 - Cassava, maize, rice, yam, squash, sesame, beans, and vegetable crops are grown to cope with climate change.
2. Seed system channels have remained static over the last five years for all crops. There has been virtually no outside innovation. Seed is still sourced from local channels- from home stocks, neighbors/friends, and local markets. Even seed aid does not exist as an important innovation source.
 3. Access to new improved varieties could help improve crop productivity for small stakeholders. However, not one of the farming household surveyed in SSSA declared having received new varieties within the last 5 years. In contrast, farmers did report having received seed aid: 40.5% of the households surveyed but for one time only. (Perhaps they received new varieties via aid, without obtaining information on the names of the varieties? This situation is hard to verify).
 4. It was reported that a regional center of ICRA in Bambari made it possible to connect small producers through a network of farmers multiplying maize seeds, groundnuts, cassava cuttings etc.... called REPROSEM supervised by ACDA. But this center suffered significant damage during the armed conflicts of 2012/2013. Some of these REPROSEM groups were reactivated by the ICRC in collaboration with ICRA and ACDA through training and support for seed production from basic corn, peanut and cowpea seeds. This allowed certain small producers to access quality seeds. This action which could be an interesting option to also be duplicated by MERCY Corps and Concern-Worldwide which still remains limited in its scale around Bambari.
 5. Farmers identified the main constraints to agricultural production as: the lack of financial means, epidemics and the ravages of plantations, the lack of seeds and adapted varieties, climate change, the lack of animal traction and chemical products, the destruction of fields by bush fire or animal pests, insecurity and road infrastructure problems for the evacuation of products. It is quite a range of constraints.
 6. Changes in weather were also reported. Changes were reported in the amount of rainfall, (with heavy rains in some places and light rainfall in others), temperature variations, the change on length of the season, with a reduction in the rainy season.
 7. No new enterprises reported but in terms of innovation, there was creation of peasant groups to meet the need for manual labor to cultivate the largest fields.

8. Farmers generally also used very few non-seed inputs. The use of fertilizers is extremely low (0.8%) for the current season, with more households planning to use fertilizers next season (27.2%). The main reason advanced for not using is unavailability in the market for 90 % of respondents. Some 25% of farmers used some organic input- but this was mostly kitchen residue. Main reasons for non-use were that it was not available (especially for manure) or that they do not know how to use this organic material. Compost currently used in the current season is mainly obtained from livestock (44,4%) and from crop/field residues (55,6%). Increasingly, farmer will not be using manure/compost as: it is not available (85.5%-86.5%), or too expensive (2.7%-2.9%). None used storage chemicals .

Women's focus groups: chronic stress insights

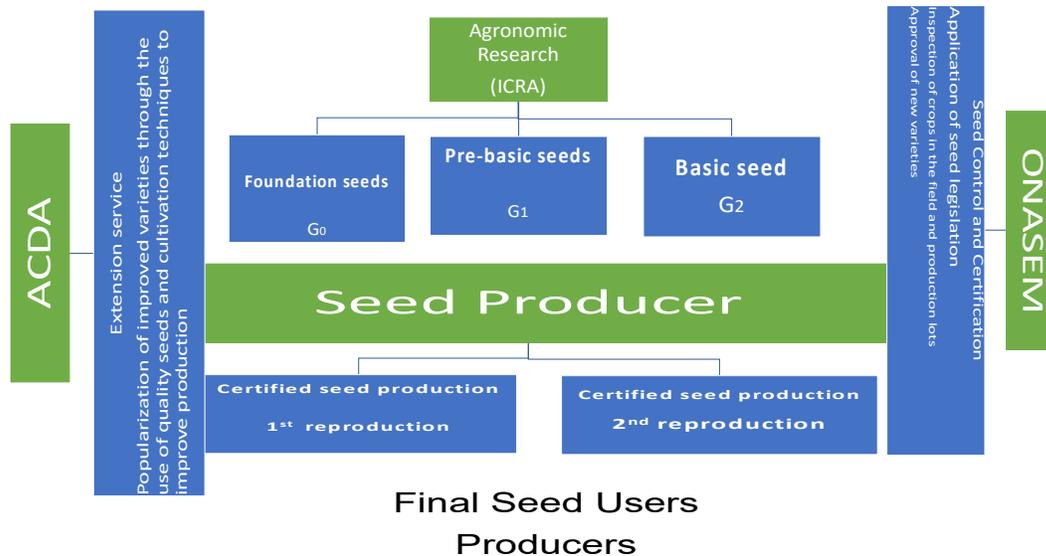
9. Women and Seed Security:
- Women take charge of themselves, are heads of households in 5 of the 20 households, they cultivate their own fields;
 - The majority of women are without a husband and take care of themselves, play a key role in their family's food security.
 - Agriculture, in particular the cultivation of groundnuts, squash, maize, cassava, and rice allows women to meet their food needs.
 - Groundnut and sesame are important food crops.
 - Single women, people with disabilities and their dependents, are among the more vulnerable.
 - Widows and elderly women are the most vulnerable.
 - Armed conflicts, lack of financial means and instability have affected families and the practice of agriculture.
 - Insecurity has made it difficult to monitor the fields, With the return of peace, the women are increasing the size of their fields, especially for maize.

In summary, there seems to be overall very little agricultural innovation in Ouaka-Mbomou. There are very few ways for farmers to access new varieties or quality seeds, and virtually no agribusinesses and few inputs other than seeds. However, these farmers are repeatedly confronted with the problems of climate change, lack of financial means, epidemics and the ravages of plantations, lack of animal traction and chemical products, the destruction of fields by bush fire or animal pests, insecurity and road infrastructure problems for the evacuation of productions. The main issue is where to start: on what interventions? and how to design them to serve all farmers in this remote and chronically stressed region.

V. Seed Systems in the Central African Republic

The SSSA analysis now moves to the supply side. The seed system in the Central African Republic faces many challenges. Figure 14 charts we can all the major players in the seed value.

Figure 14: Central African Republic Seed System



V.1. Formal seed system

The Central African national system has been the victim of repeated conflicts in 2006, 2013 and 2019 respectively. Upstream, the Institut Centrafricain de Recherche Agronomique (ICRA) has the prerogatives to develop varieties, maintain them and produce pre-basic and basic seeds for food crops. Important namely maize, groundnuts, paddy, Sesame and cassava. In the study area, the ICRA had a multi-purpose Centre Regional Polyvalent de Recherche (CRPR) center in Bambari for the prefecture of Ouaka which was completely looted in 2020. From this center, there also came an impulse to animate the observation points in the Mbomou. There is also Agence Centrafricaine de Developpement Agricole - ACDA's directorate 4 for Ouaka and directorate 5 for Mbomou, responsible for popularizing and supervising small producers to adopt improved techniques. It also supported the groups of seed multipliers grouped in the Regroument des producteurs des semences (REPROSEM). Since 2021 with the adoption of the law in the National Assembly, Office National de Semences (ONASEM) has been created, the mission of which is to regulate seed production. However, this new service is being set up, it is not yet established in Ouaka and Mbomou. This service still operates from Bangui but given its limited staff its effects are not yet felt. However, it has a well-equipped semen laboratory and equipped technical staff.

V.2. Informal seed system

In the absence of improved seeds, small producers use part of their harvest as seeds. If the harvest is not sufficient, they resort to their neighbor to supplement, otherwise they are obliged to obtain planting supplies on the local market.

V.3 Market analyses: Grain Wholesale Market

A sample of four wholesalers were individually interviewed and the eight others were brought together in a focus group. At the end of these exchanges, a current synthesis was made.

The start of their activities dates from 2008 to 2019. These various wholesalers supply the prefecture of Ouaka from the close surroundings within a radius of 30-40 km and even further towards Kemo, and Mala. However, in the event of a stock shortage, they manage to obtain supplies from Chad, Cameroon, and the DR Congo. The species distributed are maize, groundnuts, cowpeas, sesame, white beans, squash, and paddy. The tonnages marketed on an annual basis were between twenty tons to seventy tons the previous season. An increase for next season projected to rise between 10 and 30%.

The prices practiced last season were 300 F/kg for maize, 800-1000 F/kg for groundnuts, 1000 F/kg, Sesame 800 F/kg, and Paddy at 400F/ kg. The projections for next season suggest increase in prices: for maize, 1250 F/kg for groundnuts, 1000 F/kg, Sesame 800 F/kg, Paddy at 450 kg.

Sourcing grain-seed from wholesalers is beneficial for farmers because because it helps many international organizations (FAO, ICRC, etc.), NGOs (Mercy Corps, Concern, etc.), and government programs to meet their needs in local seeds. This is a business opportunity for wholesalers. Peak demand periods fall between November and December. Wholesalers and other traders are often confronted with the difficulties of displacement given the bad state of the roads during the rainy periods. They also mentioned the difficulties in processing and packaging their stocks. Most of them have transport trucks and storage warehouses.

V.4 Market analyses: Agrodealers

No agrodealer company exists in Bambari or Bangassou, only in Bangui. Only one company was interviewed from Bangui, namely Agrobiopharma. This company has existed since 2016. The products sold are imported. The company has benefited from technical and financial support, in particular from the NGO ACTED in terms of management.

Agribiopharma has the authorizations required by the State. It has a single point of sale in the form of a boutique. Its main clients are NGOs and individuals. The main products sold in the current year are respectively vegetable seeds (25kg) from February-December 2023, insecticides (100 liters), from March to December 2023 and fertilizers and other laboratory materials (450kg), mainly mineral fertilizers. . The projections for the quantities produced next year (2024) are respectively, vegetable seeds (30 kg) from February-December 2022, insecticides (150 liters), from March to December 2023 and fertilizers and other laboratory materials (500kg) mainly mineral fertilizers. The evolution of its turnover in the first two years was up to 13,000,000 FCFA but during Covid-19 experienced a drop of up to 5,000,000 FCFA. The agrodealer/company has a storage store and an artisanal seed packaging unit.

Factors such as climatic stress or political conflicts have affected the business because these events influence the customers who are the NGOs. The strategy adopted to procure raw products is to rely on orders, the quantities of which are expressed according to need. Those interviewed suggested that the main challenge of this organization was lack of qualified human resources. The opportunities were seen as good-- including high prices of competing organizations and the absence of local production.

VI. KEY INFORMANTS

Continuing on the supply side, focusing on providers, we report the results of key informant interviews

Key informant interviews : government-linked

Institut Centrafricain de Recherche Agronomique

Polyvalent Regional Research Center (CRPR) is an entity of the ICRA in Bambari.

This station was supposed to cover the Ouaka prefecture and some observation points in Mbomou. This entity suffered great damage during the conflicts that made it unoperational. All infrastructure has been looted and vandalized. There was even an invasion of its field sites by the populations. Repair work is in progress.

The status reports were carried out for all of the ICRA's stations and CRPRs after the events in a 2017 assessment. Rehabilitation work has started in the other stations, except the Bambari CRPR, because of its inaccessibility due to insecurity. These units were supported by PADECAS, WHH, ICRC and the IRAM/Fond Bêkou project.

The work in these stations has focused on the rehabilitation of the offices, the laboratory, the installation of a cold room, the acquisition of tractors and the reconstitution of the seed stocks. The reconstitution concerns 1/Reintroduction of degenerated or lost improved varieties for the species (maize, cowpea, groundnut and rice) using regional organizations such as Le Conseil Ouest et Centre Africain pour la Recherche et le Développement Agricoles (CORAF), International Institute of Tropical Agriculture (IITA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), International Rice Research Institute (IRRI) and research centers in neighboring countries, the Institut de Recherche Agronomique et de Développement du Cameroun(IRAD) in Cameroon, Institut Tchadien pour la Recherche Agronomique pour le Développement (ITRAD) in Chad. 2/ the collection of local ecotypes with a view to their characterization of 44 maize accessions, groundnuts. This should serve to select the best genotypes to stabilize and introduce for propagation. It is therefore important to define a coherent selection strategy. A team is working on setting up the zero catalog starting from the Communauté Economique et Monétaire des États de l'Afrique Centrale(CEMAC) catalog.

The CAR conducted a mission in response to the known damage to CRPR Bambari, support is provided by a project financed by the African Development Bank (AfDB) called Projet d'Appui à la Résilience et à la Sécurité Alimentaire et Nutritionnelle dans les préfectures de la Kémo et de la Ouaka (PARSENKO). This project envisages the rehabilitation of infrastructures, in particular the construction and equipping of a genetics laboratory as well as support for the revival of technical activities. To this end, two agents have

been assigned by the ICRA, a director and his deputy to relaunch the activities. It is planned to relaunch the activities of production of pre-basic and basic seeds on the species, maize, groundnut, sesame, cassava, rice on six hectares. Unfortunately the varieties and provenances are not specified. Tenders have been launched for the acquisition of seeds of G3 categories from institutions: ICRISAT, IITA, IRAD etc....

The varieties and species formerly used in this region before the events are listed in table 27

Table 27: Varieties and species used in CAR

Common name	Scientific name	Varieties
Maize	maize zea	CMS 9015
Maize	maize zea	CMS 8806
Groundnut	Arachis hypogae	ICGV 86003
Groundnut	Arachis hypogae	JL 24
Rice	Oryza sativa	Nerica 36
Sorghum	Sorghum bicolor	Zouaye
cowpea	Vigna	Lory
Sesame	Sesamum indicum	S42

In terms of research and development according to the ICRA and the former head of the CRPR station, the preferences of farmers are: 1/ groundnut 2/ cassava 3/ maize 4/ cowpea 5/ sesame 6/ rice.

Agence Centrafricain de Developpement Agricole (ACDA) (Central African Agency for Agricultural Development)

Direction 4 of the ACDA of Ouaka is composed of a director, 11 agricultural technical advisers (in Bambari, Hippy and Kwango) and four heads of sectors.

ACDA shared broad insights on agriculture. It is clear that agriculture in the Central African Republic has been on the decline due to the successive crises. These stresses have caused the income of small producers, especially the most vulnerable, to decline significantly. State institutions, including the ACDA, have also been affected adversely.

With 75% of THE CAR population dependent on agriculture, perennial crops such as coffee and cotton have particularly in decline and selling agricultural products prove to be a major challenge for farmers. ACDA considers the most important crops to be cassava, maize, groundnuts, beans, cowpeas, sesame, paddy and squash and suggests that the areas of cassava and maize are increasing, mainly due to the price and the lack of quality seeds. The influx of Sudanese refugees from the People's Republic of China has also had an impact on agriculture.

Before the crises, the ACDA worked in collaboration with farmers' organizations and associations of efficient producers to support the structuring of small producers into cooperatives. However, some projects and organizations that provided valuable support, such as REPROSEM, have disappeared or have been hijacked by individuals.

Organizations such as the Welthungerhilfe (WHH) have continued to support agricultural groups and successful producers in multiplying rice and maize seeds. However, seed quality is not stable and some

low-quality seed distributions have been carried out. There are also projects that support farmer groups through partnerships with organizations such as FAO, AfDB and WB. These projects aim to identify good agricultural practices and provide support in terms of seeds, motorization and support to groups. However, production remains low compared to previous levels.

As described by ACDA, the main challenges facing the agency are the availability and quality of agricultural inputs, their arriving on time (to allow smallholder farmers to plant according to their agricultural calendar) and the low production of quality seeds. Efforts are underway to structure producers into cooperatives and to avoid duplication between the different actors involved in the agricultural sector.

Office National des Semences (ONASEM) (National Seed Agency)

ONASEM is the National Seed Office in the Central African Republic. It has recently been made operational with the establishment of its management team, laboratory technicians and seed inspectors. ONASEM has a well-equipped laboratory for seed quality control, as well as staff trained with the support of the ICRC. However, ONASEM is not yet represented at the level of the prefectures and sub-prefectures and operates mainly from its headquarters in Bangui to intervene inside the country.

ONASEM has undertaken a first phase of sensitization of its team in order to promote interaction with stakeholders in the seed sector. Seed production and quality control standards, as well as appropriate procedures, have been developed. During the transition, ONASEM works with the standards of ICRA (Central African Institute for Agricultural Research) and ACDA (Central African Agency for the Development of Agriculture).

In the field, ONASEM collaborates with ACDA and works with the sector heads of this agency, due to a lack of sufficient personnel, in particular seed inspectors. ONASEM benefits from the support of PRADAC (Project to Relaunch Agriculture in the Central African Republic) financed by the World Bank, which provides for the acquisition of equipment and the operation of ONASEM.

The question of monitoring seed is complex, because the production circuit is not controlled at producer level and is not regulated. ONASEM works in collaboration with the ICRC and Central African Rural Development group. ONASEM cites quality problems with traders who do not have specific seed knowledge, but who, having financial resources, buy grain on the market to resell it as seed. ONASEM sees as imperative the promoting awareness of producers on the distribution of seeds, so that farmers have the minimum information on the varieties and the quality required to guarantee good production.

ONASEM works with Groupement des Agriculteurs Multiplicateurs (GAM) to guarantee seed quality. There is a distribution of intervention areas between ICRA and ONASEM. ICRA works with GAMs located near its stations, while ONASEM works with those far from the stations. ONASEM focuses mainly on the control of seed production and marketing.

The seed requirements are not yet precisely known, because everything has to be started over. The strains introduced by the ICRA have not been stored properly, failing to ensure their maintenance and conservation.

Personnel at ONASEM have expressed their main challenges as follows:

1. Lack of qualified human resources: ONASEM needs qualified personnel, especially seed inspectors, to ensure seed quality control. However, there is a shortage of trained personnel in this area, which limits ONASEM's ability to carry out its activities effectively.
2. Absence of representation at the local level: ONASEM operates mainly from its headquarters in Bangui and is not yet represented at the level of the prefectures and sub-prefectures. This limits its ability to effectively oversee and control seed production and marketing throughout the country.
3. Uncontrolled production circuit: The seed production circuit in the Central African Republic is not regulated and is not controlled at producer level. This leads to seed quality problems, as uninformed traders buy grain on the market to resell it as seed, without guaranteeing its quality.
4. Raising producers' awareness: It is essential to raise producers' awareness of the importance of seed quality and of the varieties adapted to their needs. This requires sensitization and training efforts to inform producers on good seed production and distribution practices.
5. Unknown seed needs: Due to the unstable situation in the Central African Republic, seed needs have not been accurately assessed. It is therefore difficult to plan and respond effectively to the demand for seeds in the country.
6. Conservation of strains: Conservation of seed strains introduced by CIFAR is also a challenge. Due to lack of resources and capacity, these strains have not been properly conserved, limiting their availability to farmers.

Mercy Corps can collaborate with ONASEM in several ways to support small producers to have good seeds of improved varieties. Here are some collaboration suggestions:

1. Sharing of expertise: Mercy Corps can strengthen the capacities of ONASEM and ICRA in terms of selection, production, and control/certification of improved seeds by using the expertise of regional institutions or experts. This may include technical training on good breeding, production and seed testing/certification practices, as well as advice on varieties suited to local conditions.
2. Support for seed production: Mercy Corps can support ONASEM to mentor farmer multiplier groups in the production of improved seeds by providing them with appropriate training and providing them with agricultural inputs such as quality seeds, fertilizers and pesticides. This will increase the availability of improved seeds for small producers.
3. Access to markets: Mercy Corps can help ONASEM facilitate smallholders' access to markets for the sale of their seeds. This can include training on seed marketing, establishing partnerships with agribusinesses and organizing agricultural fairs.

Key informant interviews: NGO staff from the humanitarian sector

Mercy Corps

Mercy Corps is one of the contractors of this SSSA (Concern being the other). Mercy Corps has been working in CAR since 2011 in the area of water and sanitation (WASH) and food safety. Their current project, the Runner Program—focuses on the Bakala, Bambari, Hippy axes in the Ouaka prefecture and around Bangassou in the Mbomou prefecture. It targets 18,300 households, including 11,000 households by Mercy Corps and 7,250 by Concern. Runner1 was scheduled to run from July 2022 to July 2023 and had four main crops targeted --, namely: cassava, maize, squash and sesame—and also a range of market garden vegetables (Amaranth, Solanum, Spinach, Cucumber, Eggplant, Cabbage, Carrot and Lettuce).

Agricultural technical referents (RTA) have been recruited by Mercy Corps to help target agricultural producers and were trained by ACDA. RTAs have been selected at the locality level, according to criteria such as: knowing how to read and write, people respected in the villages and people of good character. RTAs receive a lump sum of 25,000 f/month for 5 months. For the Ouaka and Bangassou prefectures, there are 67 RTAs for 4000 target producers. This corresponds to 60 producers per technical referent. Interventions have included seed fairs for the acquisition of seeds and tools; and seed protection rations linked for food distribution. In reference to the fairs, needs were assessed for 1,100 beneficiaries, and included i.e., 8 kg groundnut pods, 5 kg maize, 2 kg sesame and 2 kg squash. Seed-seed suppliers were pre-identified and seed samples were taken by Mercy Corps for the germination tests at the ACDA level. A post-fair satisfaction survey was also conducted.

Concern Worldwide

Founded in Ireland in 1968, Concern Worldwide is the leading Irish humanitarian organization, with international headquarters in Dublin, London, New York and Seoul. Concern is also a contractor of this SSSA and particularly focuses on security in the Ouaka prefecture, more specifically in Kouango. Concern has been operating in the area for 5-7 years.

Concern has been present in the CAR since 2014 and today has a team of around 150 people, 129 of whom are national collaborators. Concern's programs in CAR aim to meet the humanitarian needs, alleviate the suffering and strengthen the resilience of communities affected by poverty and conflict. Concern's main areas of intervention in CAR:

1. Respond to emergency needs, improve livelihood systems, and support economic recovery.
2. Improve access to quality health, nutrition and WASH services.
3. Reduce the vulnerability of the poorest groups (particularly women and girls) and promote community-based and peaceful conflict management.

More specifically, Concern aims to reach 110,100 beneficiaries in the regions of Kouango, Grimari, Mobaye. The organization has given food assistance and agriculture aid : distribution of food, seeds and agricultural tools, technical support for beneficiaries on technical agricultural itineraries. Concern has also effected extensive work around WASH : 3-day training for new committee members and refresher training for existing RECOs; Provision of equipment, incentives, training and supervision; Promotion of

Hygiene: demonstration latrines using local materials to encourage local people to build them; Water supply activities: construction of 5 boreholes and rehabilitation of water points; Concern will conduct or support water analysis and testing and provide training and support for the CPE.

Comite International de la Croix Rouge (CICR) (International Committee of the Red Cross)

The ICRC provides economic security, assistance with food and essential goods to households in emergencies and support in agriculture and livestock. They have been working in the CAR since 2020-2021. Among other activities, the ICRC aims to give farmers access to seeds. Given that the crisis which does not allow for the import of seeds, this possible provision has become increasingly difficult and expensive.

The ICRC had identified some possible areas to produce seeds, i.e., the more stable areas and the ICRC has developed an approach which supports groups of multiplier farmers (GAMs). The ICRC intervenes at the level of the offices of the sub-delegation of Kaga bandoro and Bouar and in the areas close to Bambari on the axis Ouabe, Bambari-Grimari within a radius of 30 km. In 2020-2021, 12 GAM (farmer multiplier groups) were supported, in collaboration with ICRA for quality research with ACDA in follow-up to producers. ICRA agents came from Bangui to provide the training. Humanitarian organizations made assessments in specific areas using secondary information from OCHA ..

In term of seed activity, the ICRC provides basic seeds of improved varieties and gives GAM training and select tools and other. At the harvest, the ICRC buys most of the seeds back are bought back, leaving the GAM (farmer producers) with a part of the production free.

Note that the ICRC supports seed activities in stable areas and also provides emergency support in unstable areas.

Tearfund

The TearFund organization has been operational since 2020 and carries out several main activities, including the Social Emotional Learning (SEL) project, vegetable crops and the WASH Echo program. In 2021 and 2022, Tearfund combined the Echo and Wash programs. In 2023, they plan to distribute food in collaboration with the WFP for displaced people who have already integrated the communities but face problems accessing land. The displaced come from different regions, including Alindao, Bria, Hippy and Kaga Bandoro. In 2022, Tearfund implemented 1,115 WASH projects and worked in agriculture and access to land.

One of the problems Tearfund faces is the lack of quality seeds. They only have low quality seeds and must work with intercrops. They distributed vegetable seeds in 2020, such as amaranth, tomato, spinach, and okra, as well as food crops such as maize, groundnuts, cowpeas, beans and squash. They also work with groups of people who use their own seeds. Tearfund provides technical advice and has distributed NPK fertilizers and urea for vegetable crops. The project is funded by ECHO in consortium with International Medical Corps (IMC), which provides specific support to victims of sexual violence, including money transfers and the purchase of seeds abroad.

Tearfund emphasizes gender equality and works primarily with women. For example, most work is done by women, such as clearing brush, preparing land and distributed food in exchange for work. Funding is used to specifically support female-headed households.

Tearfund 's vision for the future is to provide technical support and training to specialized groups, working in collaboration with the state structures ACDA and ICRA. In the long term, they want the groups to become autonomous and to be able to produce enough to fight against hunger. Tearfund also encourages the promotion and transformation of local products and offers professional training in areas such as catering, soap making, sewing, baking, pastry and decoration for members of the groups.

Tearfund suggested some of their main challenges as:

1. Lack of quality seeds: Tearfund faces a lack of quality seeds, which limits crop productivity. They have to work with inferior seeds and associated crops.
2. Weather disruptions and crisis in Ukraine: Weather disruptions and the crisis in Ukraine have led to an increase in the price of petroleum products, which has an impact on production costs. In addition, the closure of the borders with Cameroon has led to an increase in food prices.

Suggested solutions:

1. Distribution of vegetable and food seeds: Tearfund distributed vegetable and food seeds to the communities, such as amaranth, tomato, spinach, okra, maize, groundnut, cowpea, beans, and squash. This improves agricultural productivity and fights hunger.
2. Collaboration with other organizations: Tearfund works in collaboration with other organizations, such as the World Food Program (WFP) and the IMC consortium, to distributed food to displaced people and support victims of sexual violence. This collaboration maximizes resources and provides more effective assistance.
3. Training and technical supervision: Tearfund provides technical supervision and training to specialized groups, working in collaboration with the state structures ACDA and ICRA. The objective is to make the groups autonomous and able to produce enough to fight against hunger.
4. Valorization and transformation of local products: Tearfund encourages the valorization and transformation of local products by offering professional training in areas such as catering, making soaps, sewing, baking, pastry, and decoration. This allows group members to acquire skills and create economic opportunities.

In summary, the main challenges Tearfund faces are the lack of quality seeds, climatic disruptions and instability in the country. To deal with it, they offer solutions such as the distribution of seeds, collaboration with other organizations, training, and technical supervision, as well as the valorization and transformation of products.

VII. Recommendations

The opportunity for the SSSA team to conduct assessments in two prefectures of the Central African Republic, Ouaka and Mbomou, provided field teams with a useful perspective on seed security in the short term and spurred reflection on possible medium term-developmental actions.

Overall, the SSSA did not find constraints justifying a “generalized emergency response”. The problems are very severe but are chronic and deep-rooted. Note that that the seed security (or insecurity) may be very different in Bangassou or Hippy—but the SSSA could not take place in these areas.

Recommendations are presented below. They are loosely grouped first into eight overall themes. These overall recommendations are then followed by more detailed recommendations, geared to specific seed system actors. Within the core document, a final section, draft **Action Plans** has been added after the recommendation sets so as to give further insights into how precise programming might unfold on the ground (see pages 72-79, Action Plan.)

Recommendations and action plans are practical and achievable. Their implementation of should lead to positive changes-- even during the course of the RUNNER program.

Overall Recommendations

I. EMERGENCY SEED AID

The SSSA did not identify an emergency seed security situation. There were no acute problems identified in terms of seed availability or seed quality. Farmers had financial problems accessing seed, but these proved to be chronic ones and deeply rooted in widespread poverty.

Emergency Seed Assistance should only be used to respond to emergency issues, including those where seed safety may be an issue.

As a reminder good practice procedures for emergency response, if needed, have been well-established. They might best follow guidance provided in the ***Ten Guiding Principles of Good Seed Aid Practice***. (Sperling et al 2022. <https://www.youtube.com/watch?v=8X9MuKZHc4k>.)

The recommendations below focus on addressing the chronic seed security issues identified during the SSSA.

II. NEW VARIETIES: MAKING THESE MORE ACCESSIBLE: DELIVERY OUTLETS AND APPROACHES

A range of modern varieties has been released by ICRA and ACDA for the assessment region and they have been confirmed to be adaptable and acceptable to OUAKA farmers (see Table 27 for list- repeated below). This recommendation focuses on how to make these new varieties known and accessible to farmers. Farmers need regular access to outlets that can supply them with the new varieties farmers

want and need (through sales). There are several strategies and actions that might be pursued to make modern varieties accessible, along with critical associated information.

Table 27 (copied): Specific list of varieties

Common name	Scientific name	Varieties
Maize	maize zea	CMS 9015
Maize	maize zea	CMS 8806
Groundnut	Arachis hypogae	ICGV 86003
Groundnut	Arachis hypogae	JL 24
Rice	Oryza sativa	Nerica 36
Sorghum	Sorghum bicolor	Zouaye
cowpea	Vigna	Lory
Sesame	Sesamum indicum	S42

II.1 Wholesalers. Given that there are no formal seed sector outlets on SSSA sites, it would be useful to establish contacts of sale for new varieties among wholesalers of existing consumer products. (So focus on new varieties, but sold as grain/local seed).

II.2 Local agro-input stores. Outlets could be expanded to include specialized stores selling only agricultural inputs and associated tools. Rural store owners should be trained in specific seed management and seed-related information, as well as general input marketing and business skills. It would be critical to reinforce skills of local store owners for last mile delivery.

II.3 Small packets. To facilitate the logistics of diffusion and put seed in more affordable formats, packaging of modern varieties should be organized in sachets of 250 g, 500 g and 1 kg (especially for pulses). Farmer-focused small package sales could be tested in a range of locations where farmers regularly buy seeds and other goods. Seeds in small packets would be certified and sale models could be designed to allow a large number of farmer customers to access these high-quality products.

II.4 Awareness and confirmation plots. Variety trials and demonstration plots should be set up directly adjacent to the sales location. Church partners as well as local market traders could also be encouraged to establish awareness and confirmation plots. (These plots could further confirm that the varieties are really suitable for the local region, and that farmers and traders find them acceptable.)

II.5 Retail traders: . Since local markets (and their traders) are important for seed supply to farmers, more attention should be given to engaging local open markets traders in the supply of varieties demanded by farmers. Retail seed/grain traders could be powerful partners in helping to widely disseminate new modern varieties, within and between farming communities. Traders need to be equipped with precise information on the identification, attributes and management of new varieties.

II.6 Extension services with variety -specific information. Government extension services need materials that keep them up-to-date information on new, modern varieties – and the places where they can be accessed. Development of variety-specific brochures might serve as an important initial step.

II.7 Relais Techniques Agricoles (RTAs) with variety-specific information. The RTAs will need further training to help them support farmer seed producers and also to relay precise information to farmers customers. ACDA might be the key organization to train technical agents to link with RTAs.

If done intelligently, the above suggested expansion of seed sales locations, seed sales package formats, and seed-linked information. This expansion should stimulate the creation of a wider customer base, focusing demand towards direct producers (smallholder farmers) and away from dependence on large institutional buyers (such as NGOs). Since the above strategies also largely rely on the various local market channels that all farmers regularly use, transaction costs for farmers should be minimized.

III. NEW VARIETIES: ENSURING QUALITY SEEDS: MAKING THEM MORE AVAILABLE.

Seed production, and particularly decentralized seed production that can reach smallholders, must become a more strategic and effective force serving farmers. The formal seed sector will never be able to handle a) the range of crops that farmers need, nor b) the range of varieties. There is a need for multiple strategies to produce seed of new varieties-- and to maintain seed quality.

III.1 Capacity of existing agro multipliers. The capacity of the few existing agri-multipliers must be strengthened, via the REPROSEM multiplier groupings. Multipliers could be encouraged to produce a wide variety of crops and varieties that respond to farmer and market demand. Agro-multipliers should develop a profitability analysis of their operations as well as explicit implementation and marketing strategies. Seed producers should only be encouraged to produce if a) viable markets are identified and b) agribusiness and marketing skills have been strengthened. There is need to Re-dynamize REPROSEM - farmers who focus on seed multiplication. Also, for the next two season, decentralized seed production work might give priority focus to strengthening existing organizations.

III.2 Capacity of other farmer organizations (FOs) to also multiply new varieties and good seed Links with FOs could also be specifically catalyzed to link decentralized variety producers with a) ongoing and new sources of germplasm (from ICRA) and b) buyers, including localized stores.

III.3 Traders and seed quality. Since local markets are the most important source of seeds, the quality of seeds in open markets could be explicitly improved. Therefore, traders (as above) could be actively engaged in safeguarding and improving the quality of the seeds they offer. This engagement could involve actions such as: linking traders to credible sources of good quality seeds; working with them on seed management techniques; advising and supporting traders in better storage options, etc.

III.4 Work on farmers' own seed management. Since seeds produced and stored by farmers constitute the second most important source of planting material, farmers' field selection, post-harvest activities and seed/seed storage processes should be refined. This will involve extensive technical advice and support activities. Better management of home-saved seeds is a key strategic investment as it helps most farmers improve seed quality at the primary source.

In summary, seed production recommendations suggest first building on existing decentralized production and delivery efforts. Further, a multi-directional approach to supporting seed quality is recommended, which can affect seed quality on a large scale: Beyond the production of certified seed by specialists - efforts should focus on how best to improve the quality of seeds available on local

markets and in farmers' stocks. Activities might be programmed explicitly to work with traders and farming households on seed selection and maintenance.

IV. FARMER-CENTERED INFORMATION SYSTEMS: AWARENESS AND DEMAND: RANGE OF IMPROVED TECHNIQUES

Ouaka and Mbomou farmers currently receive little information on improved techniques for sustainable and profitable agricultural production. SSSA teams noted a lack of knowledge not only of new varieties, but also of basic 'good practice' farming techniques, e.g., crop rotation and manure use, improved storage possibilities. There is an urgent need to stimulate a) an environment of learning and experimentation, particularly in rural areas; b) an environment that provides a wealth of technical information; and c) information channels that promote feedback mechanisms – quickly and directly.

Several recommendations appear below related to informational innovation. The goal here is to enable small farmers to benefit from much-needed innovations, make more informed choices among multiple agricultural options, and provide feedback to those who help drive advances in research and development.

IV.1. Overall communication strategy in communities (cascading strategy). Overall, the agricultural information gap within communities is so wide and deep that the main recommendation here might be to develop (from scratch) a comprehensive two-way communication strategy that encompasses stakeholders at different levels and allows dynamic interactions (and ongoing corrections). The term 'waterfall strategy' or 'cascading strategy' has been suggested for such a process.

IV.2. Community-based experiential learning. Face-to-face on-farm experimentation models must be catalysed within communities; experimental community fields or farmer field schools are just two models. It is important that women and youth (especially those returning from mines) are included in these interactive learning processes.

IV.3. Technical information, precise materials, and dissemination related to agriculture. Technical information related to agriculture must also be transmitted through various media. Some farmers (and traders) have access to mobile phones and concrete SMS messages could be essential to convey concrete information on varieties and seeds) The effectiveness of existing grassroots communication mechanisms, through schools and faith-based organizations, could also be explored to share information on good practices and available innovations. Even more traditional information methods, such as the creation of 'new posters and various illustrations', would be an important addition.

V. NON-SEED INPUTS: STRENGTHENING AVAILABILITY, ACCESSIBILITY AND INFORMATION

To respond to the low or no use of fertilizers, manure/compost and pesticides or biopesticides or integrated pest management, there is a need to adopt a multipronged approach.

V.1 Work with Agro-dealers. Explicit work (connections) should be done with agrodealers operating in Bangui to encourage them to make fertilizers and pesticides more available – both to programs such as

RUNNER but also to farmers directly. Technical outreach by the services offered by ACDA, for instance, could be crucial. .

V.2 Development of extension materials. Technical service extension, provided by ACDA in collaboration with NGOs such as Mercy Corps should be put in forms must comprehensible to farmers (similar to IV.3). Subjects might focus on : soil fertility management (how to promote the use of organic amendments for crop needs ; composting techniques with harvest or household residues, how we use manure), pest and disease management (what treatment to use in the event of what attack of pests or diseases both at field level or to preserve the harvest.).... Etc.

V.3 Reinforcement of RTAs (as above with seed, II.7). The focus here would be on strengthening capacity of RTAs to also guide farmers technically in addressing non-seed input issues.

VI. MONEY /MICROFINANCE: MAKING THIS AVAILABLE AND ACCESSIBLE TO SMALLHOLDERS

While the SSSA did not specifically look at financing options, farmers' money issues – or lack of money – loomed large as the key constraint shaping farmers' current seed insecurity problems. Even if seed is available (whether high quality or just local market seed), many farmers would not be able to afford to buy the amounts they need.

The future of farmers' seed security in the these regions of CAR will be as linked to raising farmers' buying power as it is linked to specific seed issues. There are several avenues to explore here that that merit signaling (and further testing): Below are modest suggestions. Microfinance specialists might take the lead here in furthering an action plan.

VI.1 Expansion/intensification of existing Village Savings and Loans Associations (VSLAs). VSLA programs are 'accumulating savings and credit programs' that allow farmers to generate funds In a relatively short time (12 – 24 months). The VSL funds are also often large enough to allow members to borrow enough money to access key agricultural inputs such as seed or storage chemicals. This type of farmer group-managed assistance needs to be expanded. Beyond establishment, some of the tasks focus on: providing financial literacy and management training to VSLA members, empowering them to make informed financial decisions and developing novel income-generating activities.

VI.2 Formation of New VSLAs: There should be a strong push to stimulated the creation of new VSLAs in underserved areas by offering training, technical support, seed capital, and expanding access to financial services.

VI. 3. Explore VLSA Linkages with financial Institutions: It may be key to explore (further?) partnerships with local banks and microfinance institutions to facilitate access to formal financial services for VSLA members, such as bank accounts and microloans.

VI.4 Rice groups as special focus of finance and micro-credit?

VII. WOMEN AND SEED SECURITY: UNDERSTANDING SPECIFIC CONSTRAINTS AND TARGETING SOLUTIONS

Initial insights from women's only focus groups suggest that seed security constraints of female-headed households particularly merit more general attention and specific analysis. Note that almost 45% of households in the SSSA sample were identified female-headed. Many are short of funds at critical sowing periods. Female-headed HH also may require, and need to hire, outside help for some of the heavy agricultural tasks.

VII.1 Commission a specialized study on female-headed households and seed security challenges. As a start, commission focused analysis of female-headed HH and seed security issues. Ensure that seed security specialists and gender specialists work jointly- not in isolation.

VIII. CAR SEED SECURITY SECTOR: ENHANCING COORDINATION AT MULTIPLE LEVELS: WORKSHOP

Across this region of CAR, the seed security of smallholder farmers is severely compromised. There are well-defined problems on the supply side, and an equally extensive set of challenges from the community and farming households' point of view (linked to the demand side).

More practically, there are few ongoing means to introduce, multiply, access or market new varieties and higher quality seed (whether certified, QDS, or just good farmer seed). Also concerning, is that the level of seed security among southern farmers is not just static – it seems to be on the decline.

It might be time for a major reflection of seed security strategy for the CAR and the holding of a workshop (national? Regionwide?) might be one important key step.

Some of the guiding principles for such a workshop, might be the following:

5. The solutions have to be practical and realistic, taking account of the unusual challenges in the the SSSA zones and in conflict-ridden zones;
6. The vision should be for resilient systems. (not just any commercial system);
7. Both the seed supply side and demand side (communities, farming households) should be considered with equal rigor;
8. Strategies developed might best leverage all the seed systems farmers' use: including the informal (the current dominant source), formal, informal, and intermediary. Catalyzing an Integrated Seed Sector and identifying specific points of integration might be among the goals;

Actors who might be invited include: government, plant breeder, formal seed sector and Intermediary sector specialists, NGOs, private sector, local seed and grain traders, climate and nutritional specialists, gender specialists, and more. It will be important to go beyond seed actors and include those with more holistic, resilience thinking. (see Action plan for more precise operational steps)

The workshop might have as one major aim the setting up of a coordination mechanism aims to develop and sustain a common seed security strategy, coordinate activities, monitor progress, foster partnerships, and advocate for supportive policies in the seed sector.

Recommendations to Specific Seed System Actors: initial set

Here the SSSA suggests some actor-specific actions that are needed. The list below is an initial set. It has been elaborated mainly to suggest the importance of : a) many actors contributing to an overall seed security program within the CAR; and b) each actor having detailed (and coordinated) functions that need to be effected to spur functioning seed systems for smallholder farmers.

1. Government (ICRA, ACDA, ONASEM)

1.4 ICRA: Collaborate with ICRA /CRPR at Prefecture level so that:

- DG ICRA – to continue supporting the relaunch of the CRPR intended activities.
- CRPR - to relaunch , with the support of Mercy Corps/Concern, the production of basic seeds of crops and varieties to be linked with REPROSEM in order to cover the needs of target households in agroecological areas of the RUNNER program.

Basic seed production might be catalyzed at CRPR BAMBARI and then moved to decentralized production the groups of multiplier farmers of REPROSEM (in 3-5 intervention sites of the RUNNER program.)

The supply should meet the demand of households in target areas, which means an emphasis on the important crops and the varieties already adapted and preferred by the farmers: Groundnut, maize, cassava, sesame and squash as priority crops.

1.5 ACDA. Collaborate with ACDA/ DR4 ACDA so that:

- Mercy Corps/Concern to strengthen the technical capacities of technical supervisory agents (RTAs) intended to provide practical information to smallholder farmers and support seed multiplier groups. Also, there is a need to increase the competence of RTAs via further organization of farmer field schools.

1.6 ONASEM

- ONASEM to assign staff who will ensure the control and certification of seeds produced in the Ouaka and Mbomou regions.

2. INGOs (international non-governmental organizations)

Mercy Corps/Concern to collaborate with ONASEM in diverse ways to support smallholder farmers:

- **Sharing of expertise:** MC/Concern to support strengthening the capacities of ONASEM and ICRA in terms of selection, production, and control/certification of improved seeds by drawing on the expertise of regional institutions or experts. This may include technical training on good plant breeding, production and seed testing/certification practices, as well as advice on varieties suited to local conditions;

- **Support for seed production:** MC/Concern to support ONASEM to mentor farmer multiplier groups in the production of good quality seeds by providing them with appropriate training and as well agricultural inputs such as quality seeds, fertilizers and pesticides. This will increase the availability of quality seeds for smallholder farmers;
- **Access to markets:** MC/Concern to help ONASEM facilitate smallholders' access to markets for the sale of their seeds. This can include training on seed marketing, establishing partnerships with agribusinesses and organizing agricultural fairs;
- **Proper storage:** MC/Concern to inform farmers on good grain storage practices so as to avoid losses due to moisture, insects, ect... Explore with farmers the use proper of storage bags and the storing grain in cool, dry places;
- **Monitoring and evaluation:** MC/Concern to regularly follow up with farmers so as to assess the effectiveness of seed supplied from diverse sources. Collect farmer feedback on seed performance and use this information to improve the quality of seed supplied in the future.

3. UN agencies; FAO/WFP/OCHA- NGOS involved in seed

Mercy Corps/ Concern to share with humanitarian seed aid actors (members of the Food Security Cluster) relevant findings of SSSA-CAR:

- **Action Plan.** Develop with all stakeholders an action plan to address key gaps and provide technical and market-link support to seed producers;
- **Coordination.** Increase coordination to monitor access to seed security assistance in an effective and sustainable manner.

4. Grain wholesalers/Traders

- MC/Concern to help identify key grain wholesalers/traders who serve the target region with good quality local seed/grain. Such traders should then be engaged in the multi-stakeholder seed security discussions
- MC/Concern- along with gov't institutions enhance trader knowledge about a range of seed security practices: *inter alia* new variety information; good seed source multipliers; better storage practices.

5. Private sector seed suppliers

- **Private sector suppliers need to be engaged in last mile delivery.** MC/Concern to explore with agro-dealers (Bangui based) how these suppliers might link to rural areas. Options such as mobile vendors or private input service providers might be considered.

The select recommended actions above need to be elaborated much more extensively and together with the core set of stakeholders. A initial regionwide (and possibly nationwide) seed security workshop is but a first step. Ongoing, impact-oriented collaborations need to be developed among actors on both the demand and supply sides to alleviate the seed security bottlenecks and ensure that smallholder farmers have access to the right seed and right varieites, and on time. There are multiple challenges but there are also multiple promising paths that can lead to real solutions. (Draft action plan is posted in Chapter VIII, pages 72-79.)

VIII. ACTION PLAN (DRAFT)

This action plan is but an initial draft. The action plan suggests practical and concrete ways that the recommendations formulated might be implemented by involving the various stakeholders at the national and local level in a participatory manner. Without wishing to replace the stakeholders, we propose some initial avenues of action.

The suggested responsibility (leadership) for implementing these actions might lie with the respective organizations mentioned in each action point.

STEP 1 : WORKSHOP TO SHARE SSSA-CAR OUAKA and MBOMOU WITH MAIN STAKEHOLDERS

The SSSA report should be shared with seed security stakeholders on both the emergency and development sides. It might be used to spur a broader regionwide or nationwide seed security workshop. (see Operation Plan, point VIII).

STEP 2: OPERATIONAL ACTION PLAN

I. EMERGENCY SEED AID

-A. Short-term:

- 1.A.1 Establish criteria and protocols for emergency seed assistance. (Responsibility: Government agencies, humanitarian organizations) (see [SERT](#) and [10 Principles](#) as resources)
- 1.A.2 Provide training on seed security interventions. (Responsibility: NGOs, government - agencies)

-B Long-term:

- 1.B.1 Coordinate with stakeholders to ensure timely response to emergencies. (Responsibility: Government agencies, humanitarian organizations)
- 1.B.2 Foster collaboration and knowledge sharing among humanitarian organizations. (Responsibility: NGOs, government agencies)

II. MAKING NEW VARIETIES THESE MORE ACCESSIBLE : DELIVERY OUTLETS AND APPROACHES

-A. Short-term

- II.A.1 Identify potential sellers of existing consumer products in rural areas and establish partnerships with them. Provide training to store owners on seed management, seed-related information, input marketing, and business skills. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.A.2 Develop packaging formats for small packets of seeds in affordable sizes (250g, 500g, 1kg). Test farmer-focused small package sales in various locations where farmers regularly buy seeds. (Responsibility: Seed producers, agricultural extension services, ACDA)

- II.A.3 Set up variety trials and demonstration plots adjacent to sales locations. Encourage church partners and local market traders to establish awareness and confirmation plots. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.A.4 Engage local market traders in supplying new varieties of certified seeds. Provide training to seed traders on the identification, attributes, and management of new varieties. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.A.5 Strengthen extension services with variety-specific information. Provide training to extension workers on the characteristics and benefits of new varieties. (Responsibility: Agricultural extension services, ACDA)
- II.A.6 Monitor the expansion of seed sales locations and formats. Evaluate the impact on customer base and transaction costs for farmers. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.A.7 Assess the technical profile of Relais techniques agricoles (RTAs) and identify areas for improvement. Collaborate with ACDA to train endogenous agents with the necessary technical level to relay agricultural advice. (Responsibility: ACDA, agricultural extension services)

- B Long-term:

- II.B.1 Monitor the performance of sales outlets and evaluate their effectiveness in reaching rural communities. Provide ongoing support and guidance to store owners. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.B.2 Evaluate the success of small package sales and make adjustments as needed. Ensure the availability of certified seeds in small packets. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.B.3 Monitor the performance of variety trials and demonstration plots. Gather feedback from farmers and traders on the suitability and acceptability of the varieties. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.B.4 Foster collaboration and knowledge sharing between seed producers and seed traders. Monitor the availability and distribution of new varieties in local markets. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.B.5 Strengthen extension services with variety-specific information. Provide training to extension workers on the characteristics and benefits of new varieties. (Responsibility: Agricultural extension services, ACDA)
- II.B.6 Develop educational materials and resources on variety-specific information. Ensure extension workers have access to up-to-date information on new varieties. (Responsibility: Agricultural extension services, ACDA)

- II.B.7 Continuously improve and adapt seed sales locations and formats based on feedback and evaluation. Foster a customer-centric approach to seed sales. (Responsibility: Seed producers, agricultural extension services, ACDA)
- II.B.8 Monitor the performance and effectiveness of trained endogenous agents. Provide ongoing support and capacity-building to RTAs. (Responsibility: ACDA, agricultural extension services)

III. NEW VARIETIES/ ENSURING QUALITY SEEDS: MAKING THEM MORE AVAILABLE.

- A Short-term:

- III.A.1 Identify existing agro-multipliers and assess their capacity and production capabilities. Provide training and technical support to strengthen their skills in seed multiplication techniques. (Responsibility: ICRA, ONASEM, ACDA)
- III.A.2 Establish linkages between traders and credible sources of good quality seeds. Provide training and support to traders on seed grouping techniques and better storage options. (Responsibility: ICRA, ONASEM, ACDA)
- III.A.3 Provide technical advice and support to farmers on field selection, post-harvest activities, and seed storage processes. Promote better management of home-saved seeds. (Responsibility: ICRA, ONASEM, ACDA)

-B Long-term:

- III.B.1 Support agro-multipliers in developing profitability analysis and implementation strategies for their operations. Encourage them to produce a wide variety of crops based on market demand assessments. (Responsibility: ICRA, ONASEM, ACDA)
- III.B.2 Monitor the quality of seeds offered by traders in local markets. Provide ongoing guidance and support to traders in improving seed quality. (Responsibility: ICRA, ONASEM, ACDA)
- III.B.3 Monitor and evaluate the impact of improved seed management practices on seed quality at the primary source. Continuously provide guidance and support to farmers in seed selection and maintenance. (Responsibility: ICRA, ONASEM, ACDA)

IV. FARMER-CENTERED INFORMATION SYSTEMS: AWARENESS AND DEMAND: RANGE OF IMPROVED TECHNIQUES

- A Short-term:

- IV.A.1 Develop a comprehensive two-way communication strategy that involves stakeholders at different levels, including farmers, traders, community leaders, and agricultural extension services. Conduct workshops and training sessions to introduce and implement the communication strategy. (Responsibility: ICRA, local agricultural extension services, community leaders)

IV.A.2 Identify and engage with community leaders and organizations to establish on-farm experimentation models such as experimental community fields or farmer field schools. Provide training and technical support to ensure the active participation of women and youth, including those returning from mines. (Responsibility: ICRA, local agricultural extension services, community leaders)

IV.A.3 Develop and implement a mobile phone-based communication system to send SMS messages with technical information on varieties and seeds to farmers and traders. Explore partnerships with schools and faith-based organizations to disseminate information on good practices and innovations. (Responsibility: ICRA, local agricultural extension services, mobile network providers, schools, faith-based organizations)

- B Long-term:

IV.B.1 Monitor and evaluate the effectiveness of the communication strategy in bridging the information gap and promoting dynamic interactions. Continuously adapt and improve the strategy based on feedback and ongoing corrections. (Responsibility: ICRA, local agricultural extension services, community leaders)

IV.B.2 Monitor and evaluate the effectiveness of the on-farm experimentation models in improving agricultural practices and productivity. Continuously provide training and support to ensure the sustainability of these models and their inclusion of women and youth. (Responsibility: ICRA, local agricultural extension services, community leaders)

IV.B.3 Evaluate the effectiveness of the mobile phone-based communication system and other grassroots communication mechanisms in reaching farmers and traders with technical information. Continuously improve and expand these communication channels to ensure widespread dissemination of information. (Responsibility: ICRA, local agricultural extension services, mobile network providers, schools, faith-based organizations)

V. NON-SEED INPUTS : STRENGTHENING AVAILABILITY, ACCESS and INFORMATION

- A. Short-term:

V.A.1 Organize meetings and workshops with agrodealers operating in Bangui to raise awareness about the importance of making fertilizers and pesticides available. Provide them with information on the demand for these products and the potential market opportunities. (Responsibility: ACDA, Mercy Corps, agrodealers)

V.A.2 Develop extension materials in collaboration with ACDA and Mercy Corps that include information on fertility management and the promotion of organic amendments for crop needs. Train supervisory agents on how to effectively use these materials and deliver the information to farmers. (Responsibility: ACDA, MERCY-CORPS, supervisory agents)

V.A.3 Strengthen the capacity of Research and Technology Application (RTA) centers to produce and distribute quality seeds. Provide training and technical support to RTA centers on seed production techniques and quality control. (Responsibility: ACDA, Mercy Corps, RTA centers)

-B Long-term:

- V.B.1 Establish partnerships with agrodealers to ensure the consistent availability of fertilizers and pesticides. Develop a system for agrodealers to respond to orders from farmers, accompanied by exhibitions and demonstrations of proper use by technical services such as ACDA. (Responsibility: ACDA, Mercy Corps, agrodealers)
- V.B.2 Continuously update and improve the extension materials based on feedback and ongoing research. Monitor and evaluate the effectiveness of the materials in promoting the use of organic amendments and proper treatment of pests and diseases. (Responsibility: ACDA, Mercy Corps, supervisory agents)
- V.B.3 Monitor and evaluate the performance of RTA centers in producing and distributing quality seeds. Continuously provide training and support to ensure the sustainability and effectiveness of RTA centers in meeting the seed needs of farmers. (Responsibility: ACDA, Mercy Corps, RTA centers)

VI. MONEY /MICROFINANCE: MAKING THIS AVAILABLE AND ACCESSIBLE TO SMALLHOLDERS

- A Short-term

VSLA

- V.A.1 Savings and Loan Associations (VSLA) Intensification at a Larger Scale: Training and Capacity Building: Nevolut's team will collaborate with local trainers and experts to develop and deliver financial literacy and management training to VSLA members within the next 3 months.
- VI.A.2 Formation of New VSLAs: Nevolut's team will identify underserved areas and work with local community leaders to establish new VSLAs within the next 6 months.
- VI.A.3. Linkages with Financial Institutions: Nevolut's team will initiate discussions with local banks and microfinance institutions to explore partnership opportunities within the next 3 months.

MICRO-LOANS from Banks for Rice Groups

- VI.A.4. Partnership with Banks: Nevolut's team will initiate discussions with local banks to understand their requirements and design microloan products tailored to the needs of rice groups within the next 3 months.
- VI.A.5. Donor Fund Guarantee: Nevolut's team will seek donor funding for the guarantee fund within the next 6 months.

VI.A.6. Capacity Building for Rice Groups: Nevolut's team will develop and deliver training programs for rice groups on financial management and loan application processes within the next 3 months.

-B Long-term

VSLA

VI.B.1 Training and Capacity Building: Nevolut will establish a sustainable training program for VSLA members, ensuring continuous access to financial literacy and management training.

VI.B.2 Formation of New VSLAs: Nevolut will continue to support the creation of new VSLAs in underserved areas, aiming to establish at least 50 new VSLAs within the next 2 years.

VI.B.3 Linkages with Financial Institutions: Nevolut will establish formal partnerships with local banks and microfinance institutions, ensuring long-term access to financial services for VSLA members.

(for VSLA) Responsibility: Nevolut's team will be responsible for implementing the short-term and long-term action plans, with support from local trainers, community leaders, and financial institutions.

MICRO-LOANS

VI.B.4 Partnership with Banks: Nevolut will establish formal partnerships with local banks, ensuring a sustainable and ongoing provision of microloans to rice groups.

VI.B.5 Donor Fund Guarantee: Nevolut will secure long-term donor funding for the guarantee fund, ensuring continued support for rice groups in accessing microloans.

VI.B.6C Capacity Building for Rice Groups: Nevolut will establish a training program for rice groups, providing continuous support to enhance their financial management skills and loan application processes.

Responsibility: Nevolut's team will be responsible for implementing the short-term and long-term action plans, with support from local banks, donors, and rice group leaders.

VII. WOMEN AND SEED SECURITY: UNDERSTANDING SPECIFIC CONSTRAINTS AND TARGETING SOLUTIONS

-A. Short term

VIII.A.1 Commission a specialized study on female-headed households and seed security challenges. As a start, commission focused analysis of female-headed HH and seed

security issues. Ensure that seed security specialists and gender specialists work jointly-not in isolation.

-B. Long-term

(action plan based on study findings)

VIII. CAR SEED SECURITY SECTOR COORDINATION: ENHANCING COORDINATION AT MULTIPLE LEVELS: WORKSHOP.

A seed security workshop should be organized among varieties stakeholders. Such a workshop should aim to strengthen coordination between the different actors in the seed sector, such as NGOs, FAO, WFP especially the Food Cluster, the official agricultural research institutions (ICRA), and government authorities (MDR, ACDA, ONASEM, PERSENKO, prefecture officials, representing beneficiaries from the different affected areas.

To strengthen seed security coordinations, several actions might unfold (catalyzed by the workshop):

1. Establish a platform for collaboration: Create a platform or working group that brings together representatives from NGOs, agricultural research institutions, and government authorities involved in the seed sector. This platform will serve as a forum for sharing information, discussing challenges, and coordinating efforts.
2. Conduct regular meetings: Organize regular meetings of the platform to discuss seed-related issues, exchange knowledge and experiences, and develop joint strategies and action plans. These meetings can be held quarterly or biannually, depending on the needs and availability of the stakeholders.
3. Share information and resources: Facilitate the sharing of information and resources among the different actors in the seed sector. This can include sharing research findings, best practices, and lessons learned, as well as sharing access to seed banks or germplasm collections.
4. Develop a common strategy: Collaboratively develop a common strategy for improving seed access and seed availability in the Ouaka and Mbomou areas. This strategy should take into account the specific needs and preferences of the local farmers, as well as the agro-ecological conditions of the region.
5. Coordinate seed production and distribution: Coordinate the production and distribution of quality seeds of preferred varieties adapted to the Ouaka and Mbomou areas. This can involve identifying seed producers and ensuring they have access to the necessary inputs and technical support. It can also involve coordinating the distribution of seeds to farmers, ensuring that they reach the target beneficiaries in a timely manner.
6. Strengthen capacity building efforts: Collaborate on capacity building initiatives to enhance the skills and knowledge of farmers, seed producers, and extension workers in seed production, storage, and management. This can include organizing training workshops, field demonstrations, and study tours.

7. Advocate for supportive policies: Work together to advocate for policies and regulations that support the production, distribution, and use of quality seeds in the Ouaka and Mbomou areas. This can involve engaging with government authorities and other relevant stakeholders to raise awareness about the importance of quality seeds and the need for supportive policies.

By strengthening coordination among and between the different actors in the seed sector, it should be possible to ensure a coherent and complementary approach to improving seed access and availability of quality seeds of preferred varieties adapted to the Ouaka and Mbomou areas. This will ultimately contribute to enhancing agricultural productivity, food security, and the livelihoods of the local farming communities.

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