



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



## Seed and Market Systems of the Eastern DRC:

### A Fragile State Case Study



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**Activity Title:** Feed the Future Global Supporting Seed Systems for Development activity

**Activity start date and end date:** Aug 24, 2018 – Aug 23, 2023

**Cooperative agreement number:** 7200AA18LE00004

**Document title:** Seed and Market Systems of the Eastern DRC: A Fragile State Case Study

**Publication date:** September 2022

**Citation:** Templer, N., Birachi, E., and Rubyogo, J.C. 2022. Seed and Market Systems of the Eastern DRC: A Fragile State Case Study. A Feed the Future Global Supporting Seed Systems for Development activity (S34D) report.

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**Activity Goal:** Improved functioning of the high-impact integrated seed systems

**Language of document:** English

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## Acknowledgments

We sincerely thank everyone from the private sector companies, relief agencies, development organizations, government, and research sector for providing insights into this case study. Sincere gratitude to the INERA staff who supported the data collection and transcriptions, especially during this challenging time of the COVID-19 pandemic.

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### DISCLAIMER

This report was made possible by the generous support from the American people through the U.S. Government's Feed the Future Initiative and the United States Agency for International Development through Cooperative Agreement 7200AA18LE00004. The contents are the responsibility of Catholic Relief Services and do not necessarily reflect the views of USAID or the United States Government.

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



## Acronyms and Abbreviations

AGRA	Alliance for a Green Revolution in Africa
Alliance-PABRA	Alliance of Bioversity International and CIAT
CIAT	International Centre for Tropical Agriculture
CONASEM	National Seed Council (Conseil National Semencier)
COPROSEM	Provincial Seed Council (Conseil Provincial Semencier)
COVID-19	Coronavirus Disease 2019
DRC	Democratic Republic of Congo
EGS	Early Generation Seed
FAO	Food and Agriculture Organization of the United Nations
FAOSTAT	Food and Agriculture Organization Corporate Statistical Database
IFAD	International Fund for Agricultural Development
IFDC	International Fertilizer Development Corporation
IFPRI	International Food Policy Research Institute
IITA	International Institute for Tropical Agriculture
INERA	National Agriculture Research Institute
INEAC	National Institute for Agricultural Studies
INGOs	International Non-governmental Organizations
KII	Key Informant Interview
MT	Metric Tonnes
NGOs	Non-governmental Organizations
PABRA	Pan African Bean Research Alliance
S34D	Feed the Future Global Supporting Seed Systems for Development activity
TASAI	The African Seed Access Index
WASH	Water Sanitation and Hygiene
WFP	World Food Program of the United Nations

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## 1. Background: Seed system development in fragile states

This report presents one of three case studies undertaken as part of a broader study to explore and develop models for the emergence of enhanced and resilient seed systems in fragile state contexts. Such contexts provide a particular challenge for seed system development. Existing formal seed sector development models are not viable in fragile states due to a severe lack of capacity, insecurity, and ongoing political and economic instability. The formal seed sector is either weak or non-existent in fragile states, and farmers necessarily rely on the informal seed sector. Many also receive seed and related support through emergency interventions. Donor-funded emergency seed provisioning aims to support farmers with access to seed in the short term but often does little to support the emergence of sustainable seed systems in the long term. The question persists of how humanitarian and development actors can work together to enhance the formal, informal, and emergency seed sectors in ways these three components support and strengthen each other in fragile states.

Definitions and indicators vary, but – according to USAID – the term ‘fragile state’ refers to countries where the legitimacy of the government is in question. The State may be unable or unwilling to adequately assure security and essential services to a significant portion of its population (ILO, 2016). USAID’s definition of fragile states includes a broad range of failing, failed, and recovering states. The Fragile States Index (The Fund for Peace, 2021) usefully provides an annual ranking of 178 countries across 12 indicators of the risks and vulnerabilities faced by individual nations. DRC ranks fifth (out of 179 countries) with a score of 108.4 in the Fragile States Index (FSI).

The context of fragility – which is often combined with natural disasters such as drought and floods, pests such as locusts and fall armyworms, and now COVID-19 – necessitates resilient seed systems. Various approaches and unanswered questions exist about how seed systems should be developed and be resilient in fragile states. Governance arrangements between government, private sector, NGOs, international organizations, and donors are vital, and the division of power and decision-making between actors is central (Rietberg, 2014). In general, the emergence (or re-emergence) of private seed enterprises in fragile states almost entirely depends on serving the needs of donor-driven emergency seed provisioning. The private sector’s reliance on emergency seed provisioning for seed sales makes it difficult to transition to more sustainable business models, especially when farmers are accustomed to receiving seed for free through humanitarian interventions.

Given the many challenges outlined above, humanitarian and development agencies working in fragile states need guidance in designing support to seed systems consistent with USAID’s resilience agenda and appropriate to the humanitarian-development-peace nexus. The broader study for which this case study was undertaken will contribute to resilience-building among farmers by proposing ways in which seed systems can provide farmers in fragile states with access to quality seeds of appropriate varieties. It will contribute to resilient seed systems by proposing models for the (re-)establishment of new, more robust seed systems that can adapt and transform to withstand the various shocks and stresses that characterize fragile states. The interventions that will be proposed must necessarily bridge the divide between humanitarian and development assistance to ensure that short-term, emergency seed interventions do not undermine longer-term development objectives within seed systems. As this case study shows, the role of informal traders is critical; their engagement with researchers, processors, producers, humanitarians, and the government can provide the impetus for more impactful market-based interventions.

## 2. The Eastern DRC case study

The Democratic Republic of the Congo (DRC) is a country with a vast landmass, a large population (100 million), and extensive natural resources. Its fragility is defined by weak governance, failing infrastructure, conflict, and climate change. The recurrent strife, corruption, and insecurity have resulted in displacement and reduced incomes, with households dependent on food aid and other emergency programs (World Bank 2019; World Bank 2020; Geenen and Marysse 2016; Bak et al. 2019). On the Human Development Index (HDI), the DRC ranks 176<sup>th</sup> out of 189 countries. It has also been a recipient of sustained, long-term Official Development Assistance (ODA) inflows of over US\$ 2 billion per annum<sup>1</sup>.

### 2.1 A region struggling under conflict, weak structures, and corruption

The DRC is still recovering from over 18 years of war, which involved widespread loss of life and property, farmer displacement, and the destruction of infrastructure. The war has led to low capacities in government administration and public services (USAID, 2019), severely hindering the development of agriculture and other sectors. The capacity of the private sector is equally low and further affected by the legacy of corruption that prevails at all levels (IFAD, 2019). The agriculture sector fails to provide food and nutrition security, which remains a priority for emergency and development actors.

DRC is administered through a federal system characterized by limited provincial government intervention capacity and weak rural organizations. South Kivu is a province affected by recurrent conflicts that have negatively affected governance and led to uncertainty on the part of the farming communities. Specifically, there has been a question of how well local organizations and groups relate to conflict and post-conflict governance situations. Compared to North Kivu, the situation is no different. A sense of loss and distrust pervades. In a conflict situation, the issue of a community receiving external backing continues to lead to distrust when local governance is considered. However, local governance mechanisms do not disappear entirely – they are readily available to become re-established when there's stability. North Kivu Province is prone to conflict and ongoing insecurity caused by a desire to control land – for production and mining activities. Furthermore, in instances where the state is less involved in the major sectors of the economy – agriculture, health, roads and education – local actors and organizations coalesce to offer “state services.” The situation in North Kivu can thus be described as governance by substitution, with humanitarian aid organizations at the forefront.

### 2.2 The agriculture sector

Agriculture in the DRC employs most of the population, even though the mining industry remains a significant contributor to the country's GDP (World Bank 2020). Most of the production is at the subsistence level, even as the government and development partners work towards production self-sufficiency. The main crops grown include cassava, plantain, maize, rice, groundnuts, and beans (FAO-GIEWS 2020; Jean-Pierre et al. 2019; Kibriya et al. 2016; PABRA 2018b; Mabaya et al., 2019).

Located within the larger Eastern DRC, North and South Kivu provinces are major food production hubs, with more than 12 million people. North Kivu provides 90% of beans in the DRC, producing 260,000 MT/year on 476,000 ha. South Kivu is among the top cassava production zones, producing 50 million MT/year on 5 million ha (FAOSTAT, 2019). In addition to conflict and insecurity, North and South Kivu

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<sup>1</sup> Net ODA inflows of \$2.4 billion (2014), \$2.6 billion (2015) and \$2.1 billion (2016) were registered by The Organisation for Economic Co-operation and Development (OECD).

are affected by climate variability, pests and diseases (East African Cassava Mosaic Virus, banana bacterial wilt, cassava brown streak disease), pandemics (Ebola, COVID-19), and declining soil fertility. Additional risks posed by the variable climate mean that agricultural production suffers due to soil erosion, pest pressure, disease, landslides, and floods.

Agricultural sector investments in the DRC have been variable. The lack of private capital and a decline in public financing due to an unfavorable business environment has existed since the 1990s. Since 1998, and as part of post-war emergency interventions by various DRC partners, there has been a slight upturn in investments in agriculture, thus reviving the sector's financing. Agricultural research and development infrastructure rehabilitation is critically needed but dependent on the volatile donor community. While the government has tried to fund research staff salaries, funding for research programs has still been comparatively low, despite overall government funding improvements (Mabaya et al., 2017; IFPRI-ASTI, 2021).

In contrast, private sector funding and investment potential remain largely untapped. This private sector funding capacity can be realized when a more enabling policy environment in terms of tax incentives, protection of intellectual property rights, and regulatory reforms encourage global technologies' spill-in. For example, the low investment levels in agricultural research contradict the ambitious goals set in the country's 2014–2020 National Agricultural Investment Plan (IFPRI-ASTI 2021). The government is committed to robust collaboration between its agencies (e.g., INERA) and private sector companies, especially in developing and delivering cassava, rice, maize, and banana varieties (Mabaya et al., 2019).

### 2.3 The formal seed sector

Farmers have limited access to improved seeds and accompanying technical information. The dominant seed system in the DRC is the informal seed sector. However, the formal seed sector has been growing, despite the challenges of civil war and low state capacity. The National Institute for Agricultural Studies (INEAC) was set up in the early 1930s to conduct agricultural research to support farmers and is currently known as National Agriculture Research Institute (INERA). The current organization of the formal seed system in the DRC is such that early generation seed is acquired from the breeders at INERA and international research centers. This seed is then made available to private seed companies or community-based multipliers to multiply sufficient quantities for sale to farmers (Mabaya et al., 2016, 2017 and 2019; USAID, 2019). Seed is certified by the National Seed Services (SENASAEM)<sup>2</sup>. The crop variety release is a mandate held by the Technology Commission for the Admission into the Catalogue (CTAC) under SENASEM.

In 2006, the DRC Government approved a seed sector policy framework by ministerial decree<sup>3</sup>, but the seed policy and seed law are still in draft form awaiting approval by parliament. A national seed law and implementing regulations are absent. This absence leaves a legal vacuum, uncertainty, and unpredictability that affects the private sector and key state agencies like the SENASEM. The net effect is a lack of the proper wherewithal to regulate the seed sector. This outcome is part of the existing informality with which the seed system currently operates (Mabaya et al., 2019; USAID, 2019), including the presence of

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<sup>2</sup> SENASEM is an arm of the Department of Production and Plant Protection (DPPV) in the Ministry of Agriculture, Livestock and Fisheries (MOALF).

<sup>3</sup> No042/CAB/MIN AGRI/2006/02/09.



counterfeit seeds and the limited transparency in the emergency seed supply. The stakeholders at national and provincial levels lack a unified voice to drive and speed reforms.

In recent years, the Belgian Development Agency (BTC) has collaborated with the Ministry of Agriculture to reorganize the seed sector. It started by setting up national and provincial seed councils in Kinshasa and the provinces in 2014 and 2015. All seed actors form the seed council and meet quarterly (at most) to discuss and define appropriate actions on seed production, certification, and distribution at the national and provincial levels (Mabaya et al., 2017).

Formal seed production in the DRC differs from other countries in the region. More players are involved, i.e., a combination of individual seed producers, associations, and seed companies (Mabaya et al., 2017). The seed systems tend to be similar in the two provinces with a) presence of some private seed companies, b) the existence of informal traders specializing in seed and planting material sales, and c) emergency seed supply arrangements. The informal seed system still shows the ability to support a large smallholder farmer pool with potential seeds<sup>4</sup> (also called informal seeds) as they produce and supply grain, cassava, and other related commodities to markets (Birachi et al., 2021).

#### 2.4 Approach and methodology

The DRC case study involved a literature review, a stakeholder mapping exercise, and two rounds of key informant interviews. The literature review focused on the historical and current context of state fragility, rural livelihoods, food and cropping systems (including food security challenges), the country's seed system, and donor and development agency-based seed sector interventions.

Box 1 provides the research questions that the case study addressed. This case study draws from field interviews with key informants from humanitarian and development organizations, research and government organizations, donor agencies, and the private sector. It is important to note that the findings presented here complement a separate study report that assessed the role of market pull in enhancing the resilience of seed systems in South and North Kivu (Birachi et al., 2021).

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<sup>4</sup> In this study, "Potential or Informal seed" refers to the seed that farmers and traders manage themselves. They do this by selecting from harvests, and sorting out from market stocks. It is a subset of grain that is selected, adapted and managed so as to be useful for planting. Also referred to as informal seeds. We use the terms interchangeably

### **Box 1. Research questions addressed by the case study.**

1. What are the lessons that can be learned from each of the case studies and historical experiences?
  - a. Who are the key actors in seed sector development and emergency seed provisioning?
  - b. What are the opportunities and constraints faced by private seed companies in the case study countries?
2. Are there any examples of (or missed opportunities for) integration or synergy between seed sectors (formal, informal, emergency provisioning, also public, private, and donor-funded sectors), or where different seed sectors have supported (or worked against) each other?
3. What types of funding mechanisms have been used to support seed system development in fragile states? What have been the successes and challenges in terms of funding and donor engagement?
4. Is there a sequencing of steps that need to be followed to support the emergence of resilient seed systems in fragile states? Describe if so. What are the respective roles of the State, the private sector, and NGOs?
5. How can understandings of resilience and vulnerability be incorporated into models for seed system development in fragile states, based on the broader political and security environment and multi-faceted notions of vulnerability that include ethnicity, gender, youth, disability, and powerlessness?

Individual key informants were identified from among the following stakeholder categories: a) Senior agricultural researchers, b) Senior government officials who are familiar with the seed sector, c) Key donors who are knowledgeable about the seed sector, d) Key FAO Technical Advisors, e) Coordinator of Food Security Cluster/Agriculture Working Group, f) Key Technical staff in crucial NGOs involved in seed interventions, g) Key agro-input suppliers/importers, h) Private seed companies, i) Informal traders who are known to deal with seed, and j) Other individuals with knowledge of the seed sector/interventions, e.g., consultants/researchers; IFDC; AGRA; WFP; IFAD, and World Bank. Forty-eight remote key informant interviews (18 in Round 1 plus 30 in Round 2) were conducted together with researchers from INERA using two interview guides, as presented in Annex 2.

The selected respondents were interviewed based on a structured guide according to their organization type, i.e., seed company, NGO or research institution, or government. The interviews were conducted face to face in French (with recording), then transcribed and translated into English. Additional quantitative data provided by the key informants or sourced online was also reviewed to complement existing literature and primary data from the key informant interviews.

A validation workshop with key stakeholders in DRC was conducted. The workshop allowed the stakeholders (including informal traders, researchers, and government and non-government actors) to provide feedback on any gaps, factual errors, or misrepresentations in the research findings.

### 3. Findings

#### 3.1 Different actors and diverse actions for seed system development

Actors within the seed systems of North and South Kivu include the Ministry of Agriculture, the Provincial Government, National Agricultural Research Organization (INERA), Seed Regulatory Authority (SENASA<sup>5</sup>), International Agricultural Research Centres (e.g., Alliance-PABRA-Harvest Plus, IITA), Private seed companies (e.g., Agriforce), and Community seed producers among others. Key emergency, humanitarian, and development organizations supporting farmers' seed access are the Food and Agriculture Organization of the United Nations (FAO), Mercy Corps, World Vision International, Food for the Hungry, and Catholic Relief Services. Informal traders dealing in seed and planting material are also critical in making seed available to smallholder farmers. This study focuses on all these categories.

#### Informal traders of seeds and planting materials

Informal traders are a vital connector of people in local or cross-border markets. They link supply and demand for grain and other commodities, including seeds and planting material, in different markets. This capacity is demonstrated in their ability to move commodities consistently in a) remote and hard-to-access markets and b) urban or developed markets. Informal traders deal in seed and planting material and are crucial in availing the much-needed seed (beans) and planting material (cassava). Their connectedness with farmers who are regular customers for grain, cassava, and associated products gives them a wider reach. This reach has the potential to extend information on multiple production aspects as well.

A recent S34D/Alliance-PABRA study on informal traders as drivers of seed security (cassava and beans) in the DRC found that male traders sold cassava planting materials to NGO programs undertaking seed system interventions. In other cases, the NGO would make basic seed purchases from the research center and distribute them to local seed multipliers, who would then sell the multiplied planting materials amongst their community. A critical aspect of the collaboration comes from the NGO-SENASA-Seed multiplier engagement. However, there is an expressed need by the NGOs to have informal traders (if they are interested in collaborating with NGOs) organized into legally-recognized cooperatives (for farmers and farmer traders) and associations (for traders). These elements are enablers of their participation in seed interventions, especially in crises. Associations are more loosely organized and require strengthening for effective participation and intervention support. This need was highlighted by the informal traders and some NGO actors.

Opportunity exists to work closely with humanitarian organizations, informal traders, INERA, and INGOs. The connection comes not only in the seed and market work but also in resilience building in the communities. When traders coalesce into an association or farmers are organized into cooperatives, it becomes easy to discuss elements related to how the livelihoods of vulnerable populations can be supported. One specific aspect raised during discussions with stakeholders is that farmers could be better linked to seed sources than they are now. This linkage could also involve their capacity building in seed and grain production (including cassava and associated products). This process need not operate in isolation but with informal traders selling informal seed and planting material, leading to a sustainable business. These businesses – seed, grain, planting material, and processed cassava products - can arise and empower the communities to recover quickly in times of hardships and emergencies.

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<sup>5</sup> SENASEM is the National Seed Service

Further, aspects of value addition in which some of the traders interviewed participate could benefit from increased demand. The significance of value addition stems from farmers realizing increased food production and processing capacities, thus improving dietary diversity. Traders will also secure better access to credit and increase their income generation potential. For grain, local seed, and other commodities like cassava, traders felt a need to be part of an integrated information system that allows knowledge sharing and collective action. The traders have been at the forefront in responding to local farmers' variety needs, e.g., adaptability, yield, and market preference. The traders show promise as dependable information exchange points for farmers, researchers, relief organizations, and private sector actors. Their local knowledge of varieties and markets, including farmer and customer preferences, can be mapped to guide the development of sound go-to-market products/varieties.

Alliance-PABRA's work on the corridor model and recent work in the Supporting Seed Systems for Development (S34D) project in the North and South Kivu provinces present opportunities to guide investment decisions. Informal traders can be part of the better response in emergencies, working with multiple stakeholders. Some traders can reach smallholders in far-flung areas in regular and stressful periods. The humanitarian community is also lauded for its speed in response and ability to work with the formal and informal seed sectors when seed needs arise. Training and capacity building is essential in fragile states like the Democratic Republic of Congo to achieve resilience in their production systems.

#### Government and Public researchers: INERA and SENASEM

The National Seed Service and Agricultural Research System rely on funding from the State. The inadequate funding has led to the institutions' low capacities (human capital and infrastructure). The reliance on external financing to plug in the deficits is equally unsustainable and often project-based with a small finite reach. INERA and SENASEM play a crucial role in seed provision and oversight when seed production is involved. A private seed company would arrange to acquire production land, notify both agencies and be available for regular visits and certification.

Further, in this study, the private sector actors noted that seed production is not extremely expensive. However, the lack of and inadequate early generation seed makes the process ineffective. This assertion is observed when INERA holds unique relationships for basic seed production and supply with international and national NGO projects, thus creating a virtual monopoly. Nonetheless, there have been efforts by INERA, Harvest Plus, or Agriforce (a private seed company)<sup>6</sup> to avail basic or pre-basic seeds. Still, the quantities do not suffice for the private sector.

SENASEM is undertaking steps toward delivering its mandate for the formal seed system. It is responsible for certifying seeds, plays a critical role in the crop variety release process, and is a crucial stakeholder in seed law and regulations discussions. Collaboration with different provincial-level actors is taking shape as a structure to shape holistic seed support activities. For example, in North Kivu, a decree had been passed to establish the Provincial Seed Council, COPROSEM.

#### Private Seed Companies

There is a growing private seed sector spurred by the support provided by AGRA's Partners for Seeds in Africa (PASA) program (funded by Howard G. Buffett from 2013 to 2016) and ELAN RDC (funded by UKAID from 2014 to 2018). In North Kivu and South Kivu, interventions by ELAN brought about the

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<sup>6</sup> Agriforce is a private seed company that started as an NGO. The transition was supported by AGRA in 2017.

nascence of public-private seed sector linkages and discussions, which have been particularly strong in North Kivu. There now exists a young but growing private seed sector in eastern DRC (see Maina, 2022). Their leaders understand the importance of marketing good quality seeds for the industry's long-term sustainability.

**Agriforce**, is an example of a private seed company that works in the agribusiness chain and specializes in producing, improving, and marketing agricultural inputs. Since its inception in 2014, it has been on a mission to avail and make accessible quality agricultural inputs in response to farmers' needs. In 2017, following support from AGRA, it transitioned from being an NGO into a seed company working with individual seed producers and seed producer organizations. Agriforce targets its seed production of maize, soybean, common bean, rice, and potatoes (Irish and Sweet) for sale to humanitarian organizations and smallholder farmers. Large concession owners purchase part of the seed produced while the rest is retained at the producer organizations. The seed sales are managed through an agrodealer network they have established.

TASAI Country Report 2017 cited the existence of 11 seed companies in DRC in 2016, seven of them from North and South Kivu. All those seven companies are still producing and selling seed, albeit in small quantities: 46% of surveyed companies' total annual seed volumes fall between 21 - 50 MT for all crop seeds for which they sell seed, followed by 101-200 MT (23%) and 51-100 MT (15%). Additional information about these companies is provided in a separate S34D report (see Maina, 2022).

#### [The Provincial Seed Council \(Conseil Provincial Semencier\)](#)

This legal entity draws representatives from the public and private sectors and is mandated to coordinate seed sector activities. It presents an excellent opportunity for articulating issues from the three critical seed systems that smallholder farmers rely on, i.e., formal, informal, and emergency. As a platform, COPROSEM allows seed industry players to identify the priority issues constraining the industry. It also develops plans for their resolution. COPROSEM emerged after many seed producers were recognized in the South Kivu province and were necessary due to the lack of governing and regulatory structures.

A summary of a COPROSEM's roles and powers is as follows:

- Promotion of seed sector activities and ensuring stakeholders' interests are protected
- Mapping of seed sector actors
- Creating awareness of the legal instruments regulating the seed sector
- Conducting studies to identify the needs relating to basic seeds
- Formulating and sending proposals to decision-makers relating to the policies and orientations underpinning an improved development of the seed sector
- Improving the quality of services provided by the actors involved in the sector
- Grievances collection on behalf of the seed sector actors
- Supporting seed actors to access resolutions of their grievances.

The COPROSEM South Kivu, for example, becomes crucial when humanitarian actors in Eastern DRC want to coordinate the seed relief market, i.e., seed purchase and delivery activities. They can coordinate with a direct link they have established with the private seed companies and the Food Security Cluster. Strategically, three issues that have been considered for action include a) putting into practice a Quality Declared Seed (QDS) standard, b) making the exemption process for seed importers widely applicable and



not dependent on a Kinshasa-based approval process, and c) simplifying the process of a new variety registration in the national variety catalog.

### The National Government

The National Government must continuously work on an improved policy environment that incentivizes all actors. For example, the country's lack of coherent seed policy means that private seed companies are burdened with administrative and tax frauds and a lack of tax exemptions. Addressing these challenges can strategically shift the private sector's contribution to making the DRC seed system vibrant. Similarly, open collaboration between stakeholders like researchers, farmers, NGOs, traders, and seed companies (with agrodealer outlets) can also be a step in encouraging new infusions of varieties from informal to formal and vice versa. These two systems can complement a stage-gate, i.e., phase-by-phase design of building farmer interests in a given crop variety.

### Humanitarian agencies

Development partners and humanitarian organizations have been at the forefront of responding to the two provinces' chronic food insecurity. They address the problem of food insecurity by delivering seeds directly to smallholder farmers. In the DRC case, and while responding to chronic food insecurity, development actors have had seed distribution over time in their programming cycle. The distribution has resulted in seeds of varying quality reaching target smallholders as a short-term emergency intervention. Some humanitarian agencies have built a framework of community-based seed multiplication to guarantee local seed access within the community. Additionally, some have purchased cassava planting material from informal seed traders, ensuring a more stable supply for the target beneficiaries.

Humanitarian organizations also provide training to farmers on various aspects. These training sessions have included nutrition, good agronomic practices, group dynamics (e.g., collective action), and go-to-market strategies for produce. A sustainable best-case scenario would require the practices to be linked to a market systems approach that allows farmers' willingness to pay for seed to come into play. Specifically, access guarantees at either formal or informal channels can help increase farmer choices and access to seeds of improved varieties. For example, for a farmers' organization to produce for a specific common bean or cassava market, they must be linked to a trader, off-taker, or processor. When farmers can receive returns on their investments, there will be a higher demand for seed or planting material that guarantees a certain quality. Working in close coordination with farmers and traders means some of them can opt to focus on seed or planting material as a business. Others may take on the grain and associated value-added products as a business.

## 3.2 Opportunities and constraints faced by private seed companies

In an ideal setting, private seed companies are set up to sell certified seeds to smallholder farmers. The expectation is that their significant target client, i.e., the smallholder farmer, reaps the benefit of using quality seed. However, in the Eastern DRC, the agrodealer network which would help deliver seed to farmers is weak. This situation means seed companies have to either recruit their sales promoters as seed sellers or depend on emergency seed aid and intervention programs that make large seed purchases. Challenges include the proliferation of counterfeit seeds, limited access to basic seeds, lack of a seed law, and unclear engagement rules in seed tenders. Some seed companies from the Eastern DRC also felt that the formal seed systems were suffering due to misrepresentation from "other seed producers and merchants" who were not formally recognized by law.

### Procuring basic seeds is a challenge

The main challenge of seed companies operating in the Eastern DRC is access to early generation seed to sustain their production regimes. Further, given their target markets, i.e., humanitarian organizations with seed programs, unanticipated orders often come up. Inability to service some of these orders is equivalent to missed opportunities for growth as a business on their part. Nonetheless, private seed companies also work with INERA to procure basic seeds for further multiplication. In South Kivu, INERA Mulungu maintains and produces pre-basic seeds of some developed varieties. Beans have been their primary crop in this regard. HarvestPlus, a part of the CGIAR, produces basic seeds for a particular set of biofortified maize and bean varieties.

There are opportunities for collaboration between seed companies and INERA. An example is a maize seed production project implemented by ELAN RDC in Haut-Katanga Province, which led to an active seed producers' association and a provincial COPROSEM. This project enabled basic seed production activities to be transferred from INERA to private seed establishments. More professionalized seed producers were involved – through training on effective seed production and marketing techniques. Despite these achievements, limited demand for the varieties offered by domestic seed producers resulted in a high percentage of the seed remaining unsold. Following efforts to make the seed system of DRC more formal, there has emerged a focus on priority crops, i.e., maize, beans, rice, cowpea, and soybean, even though the seed system remains largely informal. In this scenario lies the often-cited challenge of low farmer return on purchased certified seed due to the availability of informal seed in local markets. This situation arises due to the ability of farmers to select, sort, and replant.

### Seed tenders/distribution by aid agencies and associated sales challenges

A distortive impact related to seed distribution tenders was noted. While private sector companies participate, they feel the magnitude of these tenders (often floated by humanitarian organizations) presents a profit motive among seed actors<sup>7</sup>. These tenders are often floated on short notice, making it hard for fair participation and guaranteed quality as quantities may be very high or inspection by authorities and organizations challenging. Further, the competition presented by the lucrative nature of the tender makes it harder for seed companies to effectively bid based on “known quality and cost of seed.” Informal traders have been cited as the key competitors and shrewd when the counterfeit seed is mentioned. This statement may bear a universal condemnation on the informal traders even though some have been in the informal seed and planting material business for many years. The lack of transparency in the tendering process and, at times, the inability to verify seed quality pre-delivery to farmers is an ongoing concern.

### Problems of counterfeit seeds and the need for traceability

The seed law provides clarity on the need for traceability. It will be critical to see reduced or no informal or illegal seed imports undermining the industry's competitiveness. Most private sector companies felt robust documentation and tracking modalities are needed at the SENASEM level, in-country, or ports of entry, especially regarding certified seed. These measures will help curb any potential illegalities at ports of entry and points of the seed trade. Their concerns were equally around how traders dealing with informal seeds could be on a platform that allows for traceability.

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<sup>7</sup> For this discussion, the seed actors include but not limited to seed traders, seed producers, local NGOs, and international NGOs.

### Lack of a seed law

As recent as 2021, seed legislation in the DRC was absent, albeit a draft is under consideration. This absence is a significant constraint, especially when looking at formal processes in a seed system. However, the Eastern DRC smallholder farmers still rely on the informal seed system or emergency and relief seed initiatives to access planting material. With seed legislation in place, legal protections will be available and contribute to an improved quantity and quality of seed. Further, certification and control procedures at the national regulatory authority would also get more efficient. A formal system would incentivize more regional trade and agricultural transformation in the DRC. That said, since the draft seed law is not in place, it is unclear to what extent the draft a) is coherent and b) considers the real needs of the Kivus and their various seed actors.

### 3.3 Organizational approaches to seed production and distribution

As noted above, a feature of the DRC seed sector that is different from other Eastern and Southern African countries is that seed production is carried out by a combination of individual seed producers, associations, and seed companies. Three organizational approaches described in the sections that follow were found to predominate seed production and distribution, namely:

- i). Public research, private sector seed production and distribution, with linkages to relief organizations;
- ii). Development organizations supporting community-based seed production, and;
- iii). Researchers and emergency aid interventions tap into the network of informal traders dealing in seed and planting material.

#### Public research, private sector seed production and distribution, with linkages to relief organizations

The research entity, INERA, works with seed companies to multiply varieties with desired attributes that can be commercialized<sup>8</sup>. Seed companies participate in procurement bids to supply seeds for distribution by relief organizations. Direct sales by seed companies to smallholder farmers continue to happen in the Eastern DRC. Challenges cited include the cost-inhibitive nature of the certified seed and lack of certainty on the part of farmers to access seed when needed, which is tied to low or insufficient volumes of basic seed available to private seed companies. Private sector companies wish to develop the formal seed sector and network further. They are in the frontline of conversations with SENASEM on the seed law and regulations. They believe the strength lies in collaborative efforts.

From private sector company experience, the NARS (INERA), whose mandate is in variety development, should work closely with seed producers and companies, informal traders (men, women, youth), NGOs (development, relief), and government to drive meaningful progress. Specifically, the experience documented with a functional relationship between informal traders (seed, grain, and cassava planting material and commodities) is an excellent addition to the knowledge pool. Additional work undertaken by S34D through Alliance-PABRA in the Eastern DRC will help document capacity strengthening and test two key seed delivery models involving INERA, formal and informal traders (see Figure 1 and Figure 2).

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<sup>8</sup> Commercialization of seed is the process by which a new seed “variety” or “product” is introduced into and available the general market.

**Model 1** targets seed supply involving INERA, formal seed companies, decentralized seed shops (agrodealers), culminating into farmers and or informal traders. Key elements will draw on the perspective of women traders, existing opportunities, and ways to improve their participation as women in the value chains while expanding growth opportunities (similar to men). This model's choice of seed companies seeks to tap into opportunities beyond the regular seed company operation space. Additionally, and drawing from male traders' views, a review of credit and cash support modalities for seed businesses as a means of growth will be critical to document. It will seek solutions to the challenges of variety prioritization, access to early generation seed, and technical backstopping.

*Figure 1: Proposed model of seed delivery involving INERA and formal seed companies.*

The private seed company network in the North and South Kivu provinces of Eastern DRC is not well developed in all aspects. There have been challenges accessing the right quantities of early generation seed (EGS) from the national agricultural research center. Additionally, most have not followed the usual “formal” distribution channel through agrodealers, but seed aid programs, especially when the seed is available. Given the fragility of the DRC, this situation has created a dependence on seed relief which often does not factor in farmer follow-up with technical backstopping as desired in the market systems support setting. Seed projects have been in place for quite some time across the provinces. Their funding source is often through development partners in different funding windows, i.e., short-term emergency or relief, long-term development, and resilience.

#### Development organizations supporting community-based seed production

Humanitarian and development agencies have made efforts to support the increased production and availability of seed of micronutrient-rich crops through seed multiplication by trained seed producer groups within the community. Their approach involves purchasing basic seeds for beans, maize, cassava, and sweet potato, provided mainly by INERA, which are then availed to community-based seed multiplication groups. The multiplied seed is then distributed as seed aid to farmers affected by emergencies. Some organizations have followed up with training on good agronomic practices, nutrition, and marketing.

#### Researchers and emergency aid interventions tap into the network of informal traders

In South and North Kivu, traders are working with INERA to share information from and to smallholder farmers who are their customers. These traders have become information points that researchers from INERA, for example, can study to understand different aspects of seed security (e.g., gender, income, nutrition, and economics). Similarly, their growing interface with NGOs working in the emergency, humanitarian, and resilience space presents new opportunities for their growth. Some NGOs have also seen the opportunity to utilize the traders' farmer network and knowledge in selecting planting material adapted to the agroecologies they are intervening in. Local NGOs in both Kivus have gone ahead to understand farmer perceptions on the planting material of cassava supplied. Working with informal traders has enabled further insights into what varieties are suitable for use as tubers, milling, or leaves. Some organizations have selected informal (cassava) planting material sources. Their network of traders can consistently source good-quality planting material. The organizations seek to support interventions requiring specific farmer-preferred cassava varieties.

## Potential for further development

The Alliance-PABRA study found potential areas of collaboration between NGOs and informal traders. Some traders interviewed on what roles the NGOs should focus on mentioned credit provision and facilitative support to value chains, as in Figure 1, as some of the potential support areas. The interviewed traders desired to be part of robust farmer-trader-researcher knowledge exchange on several crop-seed and crop-variety-related issues. In the Alliance-PABRA study (Birachi et al., 2021), many traders mentioned needing support in training and knowledge on seed quality management. Some of these would touch on better storage capacity, information systems on improved traits, seed quality identification, and diversified quality restrictions which recognizes their trade.

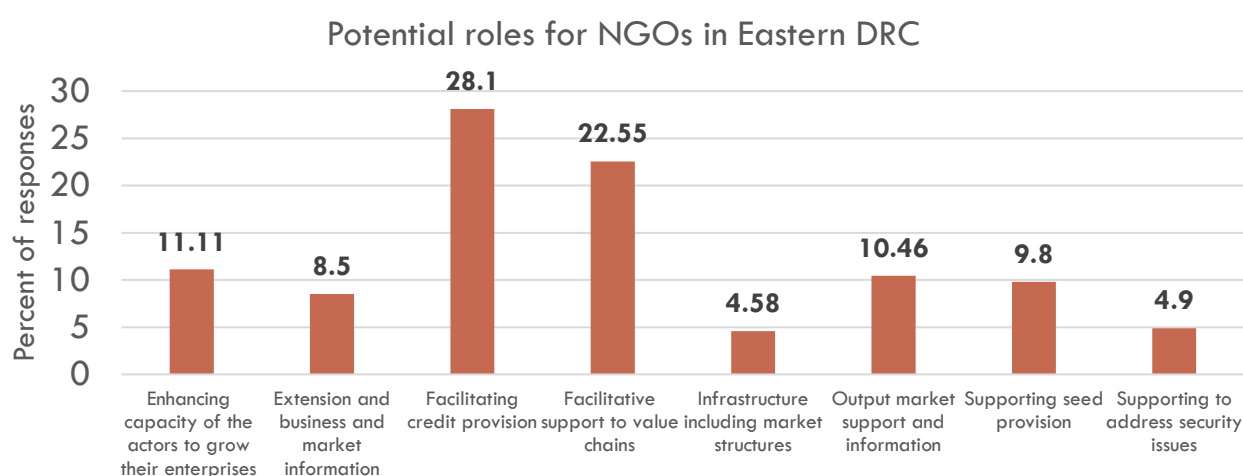


Figure 2: Potential roles of NGOs as reported by informal seed and planting material traders.

Potential areas of collaboration also exist between seed sector actors, i.e., government state agencies, development partners, informal traders, and researchers. In one way or another, these actors have carved a niche in meeting smallholder farmers' seed and planting material needs and availing information on varietal attributes. There is great potential to explore the strengths of seed delivery models which guarantee sustainable and timely access to quality seeds of preferred varieties by male and female smallholder farmers. This potential draws from working with INERA and other like-minded stakeholders in allowing the various informal traders (bean seed, cassava planting materials) to create an exchange platform. This platform can establish a framework for developing joint strategies for growth for their commodity production and sale activities while pulling seed and planting material as the market demands. Smallholder farmers, traditionally, have close links with traders selling informal seed and planting material. The most informal seed business is highest in periods preceding planting seasons, providing critical signals for engagement in seed supplies. For both models, and as confirmed by some key informant interviews, NGOs could support interventions such as better organization and traders' training, including enhancing collective action.

The work by INERA to date involves collaboration with seed companies, research organizations, traders, and value-added partners. There is a need to go beyond and test the possibilities of seed delivery models where local, community-based seed entrepreneurs can avail enough seed to the farmers. If this is done in



their proximity, it will increase the production of high-yielding, farmer-preferred, and market-demanded beans and cassava (see Figure 2).

**Model 2** targets a seed supply chain involving INERA, local informal or non-registered seed entrepreneurs, and informal seed/planting material traders culminating in farmer use. Most traders (48%) in the Birachi et al., 2022 study considered support for entrepreneurship through training and equipping youth to empower them in bean and cassava enterprises. This model builds on traders' specific variety needs and seed demand coupled with related information and knowledge. Critical components in testing the efficiency of this model include exploring support mechanisms for the youth to engage in commodity supplies, exports, and value addition (processing). Provision of leadership skills, seed support, extension services, and information and other capacity enhancements are part of factors of success in this model.

*Figure 3: Proposed model of seed delivery involving INERA and local community-based seed sellers.*

Additionally, when producers and traders of these crops pool prices through collective action, small producers will have a chance to access the commodities at a competitive price, allowing them to purchase quality seeds for the next season. There is a clear need to enable women and youth to access crop management and decision-making training and coaching that is critical for seed and variety choices.

Some projects establish connections between humanitarian organizations, seed companies, and INERA. World Bank continues to scale its activities in some provinces like Mongala and Ubangi (South and North), which are in the North-Western part of the country. Some of the notable interventions have been supporting the capacities of producer groups. This process has enabled these groups to purchase seeds from the local seed multipliers and ensure that seed marketing is strengthened in the region. Other activities include rebuilding seed production capacity by having more private sector participation and investing more in state agencies: INERA and SENASEM (World Bank DRC-ARRP, 2017).

Studies conducted by TASAï and Élan RDC<sup>9</sup> (Mabaya et al., 2017) in the past further show a desire to improve the seed system. The DRC study by Alliance-PABRA through the S34D has highlighted an important role that informal traders (of potential seed and cassava planting material) could play in seed supply. While seed system development activities by development programs in the Eastern DRC have focused on making the seed system “more formal,” private sector seed companies and relief agencies have played an essential role in several ways. Firstly, the private sector enterprises have prioritized seed acquisitions (locally and imported) and working within tendering frameworks with the humanitarian aid organizations, supplying where possible. Additionally, their concerns have been integrated into meetings seeking a working seed policy in the country, working with the government and other actors. Moreover, some companies have stepped up efforts of seed marketing by recruiting sales agents as the overall agrodealer network in the DRC is still nascent.

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<sup>9</sup> Funded by UKAID Direct and Adam Smith International, Élan RDC was a private sector development program, aimed at improving the functioning of markets in the Democratic Republic of the Congo (DRC). It wound up its activities in July, 2021.

### 3.4 Resilience and vulnerability in seed system development models

The strength of informal seed systems hinges on informal traders who buy and sell local seed and planting material. Understanding the elements and mechanics driving seed access at the local level can be a starting point to build on models that guarantee a broader reach in seed delivery to smallholder farmers. Knowledge systems could be integrated into informal trader outlets to help dispense and share information essential for market systems development. This state is possible if they are well trained and equipped. Variety and agronomic information can be produced and reproduced following mutual interactions of farmers (customers), traders (rain, planting material), and researchers.

In our review of information in both provinces, farmers were keen to have information about varietal attributes to guide their local seed purchases. For example, they would often ask for shorter cooking times, early maturity, and market-preferred bean varieties which they can buy. Cassava varieties with low cyanide levels, market-preferred, great for cassava leaves and milling, are needed by farmers. The preferences here provide clear pointers on where research, the private sector, and NGOs could seek collaborations in models to develop sustainable seed systems.

Further, in these observed preferences is the implied need for more interactions, i.e., farmer-to-research, NGO-to-research, and farmer-to-NGO. These interactions can culminate in more closely-knit development impacts on cross-cutting issues like gender. It is unclear when DRC's comprehensive legal framework will be fully implemented. This state means that all seed interventions in the eastern DRC will rely on development projects that do not necessarily have a full mandate, i.e., creating a sustainable seed system to avail seed and make it accessible to smallholder farmers. The absence of this mandate will thus result in a sustained reactive approach by seed actors that help thrive the emergency seed supply instead of a more sustainable and resilient seed system.

Proper frameworks and Government strategy will encourage more proactiveness in incorporating the actors keen to see sustainability and resilience in formal and informal seed systems. It is widely accepted that the three seed systems can (and do) coexist. However, the co-existence should be in ways enriching one another. In the Eastern DRC, some private seed companies could participate in tenders for seed going into seed distribution programs. Others were also able to sell seeds through NGOs focused on nutrition and health. This particular sales avenue was due to the organizations' need for huge volumes of maize, beans, or soybean. NGOs have partnered with INERA and farmer-producer organizations for seed production. The varieties targeted were, in some cases, the biofortified ones, e.g., pro-Vitamin A maize, cassava, or sweet potato, and the high iron and zinc beans. The process has naturally followed an incentivization mechanism for producers to get basic seeds for multiplication. The resulting seed is later available for farmer groups who can use it for grain production. This apparent pull for seed is also linked to a market that could require beans, cassava, soybean, or maize to process various products.

It is important to note that the draft seed law provides for a National Seed Council (Conseil National Semencier, CONASEM). When the law is promulgated, the establishment of CONASEM, will enable the debate on national seed policies and strategies. COPROSEMs presently provides inputs on diverse policy-related issues at the provincial level. Some of the successes recorded by COPROSEMs are the regular meetings between seed producers. The first meeting by the North Kivu COPROSEM with ten relief agencies involved in seed procurement and distribution led to one agency signing a supply contract with two seed companies in 2020. The second company made groundnut and bean seed purchases from another two companies. Another four agencies maintained an interest in making purchases.

Access to informal traders who handle potential seed and planting material might be possible through NGOs. NGOs venture out to see how their different programs can deliver wholesome value, i.e., food, income, nutrition, and health, and it can be a great place to leverage networks with farmers. Changes in regulatory frameworks at the national and provincial levels and how they affect trade can positively impact smallholder farmers. These traders offer the sustainability of access, affordability, and availability of potential seed and cassava planting material. They are known to the local smallholder farmer. Empowering them through knowledge and ensuring their views are incorporated in regulatory reforms will improve seed actor capacity in conflict-affected areas.

The role of women and youth in the trade of potential seed and cassava planting material was also noted to have growth potential, especially in production and bringing produce to markets. The two categories of stakeholders were pivotal in nutrition decisions at home and embracing technology and mechanization, respectively. In FY22, the S34D Project through Alliance-PABRA intended to test two fundamental models (see Box 2) of seed delivery, incorporating women and youth as active participants in producing and selling seeds. The first model focuses on INERA-seed company-informal traders, while the second is on INERA-local seed entrepreneur-informal traders. Both models take women and youth as an integral part. Alliance-PABRA and INERA are critical in guiding training and technical backstopping for prioritized varieties.

#### 4. Conclusions

Partnerships are critical in developing sustainable seed delivery systems in fragile states. Stakeholders need to come together and identify their strengths and areas for collaboration. Building partnerships can enable wide-scale changes in access to quality seeds of improved, farmer-preferred, and market-demanded varieties. COPROSEMs are a start of improved coordination between the private sector and humanitarian actors in the short term. Their ability to enhance the seed volumes and quality procured for emergency and relief distribution should not outlive the practicality. Their ultimate objective should be ensuring no seed market distortions arise. For example, there is a general agreement among NGOs interviewed that seed system security assessments must be considered and used to guide further intervention design and programming. Finally, some seed companies in Kivus seek to cement their agrodealer sales strategy. They offer an opportunity for much more structured collaboration in formally certified seed sales. NGOs' local development programs should lead the way in informing farmers about these seed sales outlets.

There is a big push from the nutrition side for the market uptake of commodities, especially biofortified products. While this may appear a preserve of the humanitarian and relief agencies, the government is equally invested in their research and policy work to ensure improved varieties are superior with unique attributes. The structure of COPROSEMs seeks to converge annually two-to-four times and have seed system actors strategize on appropriate actions. These actions could be related to seed production, certification, and distribution at national and provincial levels. The opportunity here is to articulate the need for varieties responsive to farmer and community needs and traders.

The next layer of seed systems action involves NGOs supporting producer organizations to produce commodities such as grain and tubers for markets. For example, work by some NGOs in training and capacity building on good agronomic practices, nutrition, and village saving and lending schemes needs to go a notch higher. Commercialized or market-oriented agriculture as a pull means that productivity has to be higher while guaranteeing grain and commodity/product quality. Well-structured engagements between the government, researchers, informal traders, private seed companies, provincial councils, and NGOs can open avenues for more robust seed, grain, and cassava (and commodities) production and trade.

Similarly, more formalized seed production through community-based production continues to gain ground and could give rise to local seed enterprises and improve variety access. This model can be reviewed alongside others where INERA, equipped with i) sufficient quantities of early generation seed (EGS), can supply down the chain to seed multipliers and ii) adequate staffing and infrastructural capacity to support the value chain actors in the seed system. Similarly, COPROSEMs can further explore their coordination role and how it provides a structure that embraces informal traders dealing with informal seeds and planting materials. Their outcomes should mirror sustainability in and integration of seed systems. All these challenges could be better surmounted with the seed law in place. The law should provide more autonomy and financial independence for SENASEM to function optimally. At present, they are underfunded, rely on donor projects, and are unable to deliver on their mandate.

The quality of EGS is indeed a constraint in the DRC. Some traders sell seed and planting material to NGOs for re-distribution, and others sell directly to farmers. Since informal traders handle local and improved varieties, they could be a critical asset in a model with private sector enterprises or other local seed entrepreneurs dealing with bean and cassava planting material. The data collected from traders in the Eastern DRC also reveals a need to look at their role in the seed value chain strategically. A representative

portion of the respondents dealt with potential seed and planting material for cassava in addition to grain and processed cassava products. This pool of stakeholders serves many farmers and is thus critical to seed sector development.



## 5. Recommendations

This section identifies some implications for the ongoing evolution of the partnership arising from the country case study of seed systems in the DRC. These points apply to the collaboration and any funded programs that may occur in the future. The following actions are recommended:

1. INERA should systematically emphasize the need for country-led processes for functional seed systems. The largely informal seed systems do not eliminate growth possibilities for formal, emergency-driven, or market-based seed systems. Testing new models of seed delivery with INERA and other critical players (as proposed in Figure 1 and Figure 2) will help identify factors of success that might be applied in other fragile states.
2. Development and humanitarian actors have made considerable efforts to strengthen national seed systems to become vibrant. There is an urgent need to intensify technical assistance to young women and men farmers willing to venture into the seed sector within the communities. They could be interested in taking up seed and planting materials enterprises, and food commodities. INERA has previously worked with individual and community seed multipliers and can further see what informal traders can aid in driving improved variety access and dissemination. NGOs have provided information on food aid – they have the potential to also step up market-based interventions for seed, especially working with women and youth in the communities.
3. There is a clear need for capacity building on multiple aspects of seed sector development. More partners, e.g., NGOs, Government, civil society, private seed companies, and research teams, can be part of efforts to address the need for capacity development of critical actors in the seed value chain. Supporting the development of relevant training materials for seed production, sale, and access is vital. Additionally, coordinating with SENASEM and INERA and partners like the CGIAR and NGOs (humanitarian development) can be pivotal for sustained change in seed supply mechanisms. This multistakeholder approach recognizes the strengths of different stakeholders and actors and is necessary for sustainable interventions in the emergency-based seed sub-sector.
4. In supporting the emergence of resilient seed systems in the Eastern DRC (and the country), the focus needs to shift to local seed councils, collaboration with informal traders, and active work with private sector seed companies, and humanitarian actors, in a coordinated manner. Cooperation and impact are possible through coordinating the actions of diverse actors. For example, relief agencies could improve their understanding of the private sector actors by participating in the COPROSEM meetings.

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## 7. Annexes

### Annex 1: Stakeholders interviewed

Organization	Position	Category	Province
ACTED	Coordinateur de Zone Adjoint	Humanitarian	
ADEA	Coordinator	Seed Traders/Inputs Supplier	South Kivu
ADECOB	Director	NGO	North Kivu
ADEVEVI	President	Seed Traders/Input Supplier	North Kivu
AGRIFORCE	Director	Seed Traders/Inputs Supplier	South Kivu
AGROPRO	Coordinator	Seed Company	South Kivu
CARITAS GOMA	Chef de Programme	Humanitarian	North Kivu
Catholic Relief Services	Program Manager	Humanitarian	South Kivu
Direction de la Production et Protection des Végétaux <sup>10</sup>		Government	South Kivu
ENTH Business	Director	Seed Company	
ETS BARAKA	Field Manager	Seed Company	
ETS MNM	Director	Seed Traders/Inputs Supplier	South Kivu
ETS SHAMAVU	Director	Seed Traders/Inputs Supplier	South Kivu
FHI	Charge de Programme Securite Alimentaire	Humanitarian	
Food and Agriculture Organization (FAO)	Charge de Programme Securite Alimentaire	Humanitarian	South Kivu
Food and Agriculture Organization (FAO) - Goma	Chef de Programme	Humanitarian	North Kivu
Harvest Plus	Coordinator	Government and Research	
IITA	Field Manager and Researcher	Research	South Kivu
IITA	Breeder and Researcher	Research	South Kivu
INERA – Research	Breeder and Researcher	Government and Research	
INERA – Research	Research Coordinator	Government and Research	South Kivu
INERA – Research	Director	Government and Research	South Kivu
INERA – Seed Breeding Department	Bean Breeder	Government and Research	South Kivu
INERA – Seed Breeding Department	Cassava Breeder	Government and Research	South Kivu
IPAPPEL	Seed Inspector	Government	South Kivu
KAWAKABUYA Coop	Director		
Louvain Development		Humanitarian	
Mercy Corps	Charge de Programme Securite Alimentaire	Humanitarian	South Kivu
Mercy Corps	Team Leader/LM	Humanitarian	South Kivu

<sup>10</sup> DPPV

Ministry of Agriculture - Extension	Coordinator	Government	South Kivu
PABU	Field Manager		South Kivu
PASA-NK	R4D/AGRO	Donors	North Kivu
Provincial Government	Provincial Coordinator	Government	North Kivu
Provincial Government	Agricultural Advisor	Government	North Kivu
SARCAF	Field Monitor/Agro	Donors	South Kivu
SENASEM	Seed Inspector and Manager	Government	South Kivu
SENASEM	Seed Inspector and Manager	Government	North Kivu
SENASEM	Provincial Coordinator	Government	South Kivu
SENASEM - Goma	Coordinator	Government	North Kivu
SISIMUKA	Director	NGO	South Kivu
SYDIP	Field Manager - Masisi	NGO	North Kivu
SYDIP	Field Manager - Lubero	NGO	North Kivu
SYDIP	Office Manager - Goma	NGO	North Kivu
ULPGL	Breeder/Research	Researchers	North Kivu
UNIGOM	Socio-Eco/Research	Researchers	North Kivu
USAID	Field Manager	Donor	South Kivu
World Vision International	Agro Value Chain Manager	Humanitarian	South Kivu
World Vision International	Field Manager	Humanitarian	North Kivu

## Annex 2: Key informant interview guides

### Topical Questions

Topic	Interview Questions	Suitable for:
The formal seed sector – present and past	<p>What are the institutions and policies/regulations that currently exist in relation to the seed sector, and how effective are they? (e.g., relating to breeding, EGS production, seed multiplication, quality control, regulation, etc.). <b>How are they positioned in terms of the political economies of the State and/or conflict dynamics and also the aid system?</b></p> <p>Can you describe something about the history of seed sector development? Roughly when were different institutions/policies developed? Which donor(s) supported seed sector development, and through what funding mechanisms? What was the approach taken? What worked, what did not? What is left of these institutions now? How have they changed?</p> <p>Are there any interventions that aim to support private sector development in the seed sector? Describe if so, incl funding mechanisms.</p> <p>What is the level of private sector involvement in the seed sector? Who are the main private sector seed companies, <b>are they foreign or local, male- or female-owned</b>, and when/how did they get established? <b>How are they positioned in terms of the political economies of the State and/or conflict dynamics and also the aid system?</b> How big / how well-developed are they? What crops do they focus on? Who do they sell to? (Aid agencies? Other institutional buyers? Farmers?)</p> <p>Who are the main seed importers, <b>are they foreign or local, male- or female-run businesses?</b> When/how did they get established? <b>How are they positioned in terms of the political economies of the State and/or conflict dynamics and also the aid system?</b> How big / how well-developed are they? What crops do they focus on? Where do they buy from? Who do they sell to / how do they distribute their seed?</p> <p>Are there any other key players / projects involved in the seed sector? Describe if so [Note that this might include informal and/or emergency seed sectors – keep it broad at this stage so that we do not miss anything by being too specific.]</p>	Researchers Govt Donors FAO FSC/AWG NGOs
Informal seed systems	<p>What are some of the key features of informal seed systems that you are aware of? <b>What are the gender-based differences in farmers' seed management practices?</b></p> <p>What are some of the challenges faced by farmers in saving seed and accessing seed from other farmers and local markets? <b>Are there any particular challenges women, youth and/or PWD face?</b></p> <p>Have there been any studies of informal seed systems? Are any reports available? [This question is not suitable for informal traders]</p>	Researchers Govt Donors FAO FSC/AWG NGOs Informal traders
Use of improved varieties	<p>Is there any data available on the use of improved varieties? What is the range of crops/varieties for which improved varieties are available?</p> <p>How old are these varieties, and how have they been made available to <b>male, female and youth</b> farmers (both in the past and present)?</p> <p>What are some of the successes and challenges in making improved varieties available to farmers? Provide examples of specific projects /</p>	Researchers Govt Donors FAO FSC/AWG NGOs

	approaches. <b>How have gender and youth been taken into consideration?</b>	
Seed-related support for farmers, agrodealers and traders	<p>Who are the main organizations/projects involved in seed interventions to support farmers? [<i>This can include donors, NGOs, international organizations, etc.</i>]</p> <p>What are the current modalities through which seed support is provided, and through what funding mechanisms? [<i>This might include direct seed provisioning, vouchers, cash, seed fairs, community seed multiplication, seed banks, promoting improved varieties, etc.</i>]</p> <p>Provide as much detail as possible on each of the current modalities that KII is familiar with, e.g., where is seed sourced (if direct distribution); what is the diversity of crops and varieties and provided; what are the motives behind the approach? <b>How have considerations relating to gender and youth been incorporated into the design of interventions?</b> What have been the successes and challenges?</p> <p>Have the seed support modalities changed over time? Describe if so in relation to the historical timeline and any key events (e.g., relating to disasters, displacement and political/security context).</p> <p>Are there any interventions that aim to build the capacity of <b>male, female and youth</b> agrodealers and/or traders to provide seed? Describe if so. What are the motives behind the approach? What have been the successes and challenges?</p>	<p>Researchers</p> <p>Govt</p> <p>Donors</p> <p>FAO</p> <p>FSC/AWG</p> <p>NGOs</p>
Private sector development	<p>What is the name of your company/business, and when was it established?</p> <p>For how long have you been working in the seed / agro-inputs sector? What is your level of technical knowledge/experience relating to seed?</p> <p>What do you currently supply / produce? (both seed and non-seed, including crop and varietal details)</p> <p>Describe your business model (e.g., buying from where, selling to whom, production/multiplication approaches, any processing, packaging, etc.)</p> <p><b>How many people do you employ/subcontract? How many women, men, youth, PWD? Do you consider ethnicity (with regard to political and/or conflict dynamics/insecurity) when employing/contracting people? If so, why and how?</b></p> <p>What has been successful?</p> <p>What are the main challenges?</p> <p>Have you / your business received any support from government and/or development agencies?</p>	<p>Agro-input suppliers / importers</p> <p>Private seed companies</p> <p>Informal traders who are known to deal with seed</p>
Overall perspectives and vision [ <i>Note that questions refer to 'seed systems' – this can apply to the formal or informal seed system or the support provided to farmers</i> ]	<p>In your view, what have been some of the successes of seed system development in recent years? What were the factors that contributed to these successes?</p> <p>Given the ongoing state of fragility, what is your vision for the future in terms of seed system development, given the ongoing state of fragility? <b>Are there any ways in which seed interventions and/or seed system development potentially influence or contribute towards the political economy of conflict/insecurity/instability and/or the political economy of the aid system?</b></p> <p>Given the current context, what are some of the opportunities and constraints relating to the realization of this vision?</p>	All



## Humanitarian and Development Actors' Checklist

**Please note:** This guide focuses on Development, Humanitarian, and Emergency Practitioners for Activity 2.2.3.2.

1. What seed-related activities do you undertake in your regular programmatic cycle?
2. Have you undertaken seed system security assessments before to understand challenges that must be addressed?
  - a) If yes, please describe
  - b) If yes, how have these helped you in designing your interventions? [*Prompt about how it helps design interventions to better support women or youth farmers*]
  - c) If not, why?
3. What aspect of cassava and beans are you working on?
  - a) Variety improvement
    - i. Cassava: high yield, high dry matter content, disease/pest/drought tolerance, biofortification, medium branching type, resistance to CBSD/CMD, stay green leaves, cooking time, taste
    - ii. Beans: high yield, disease/pest/drought tolerance, biofortification (Iron, Zinc), cooking time, taste
  - b) Marketing [*Prompt about marketing to different farmer segments (male farmers, female farmers, youth farmers, PLWD)*]
  - c) Training – support of seed multiplication of cassava planting sticks to the private sector (informal traders, seed companies); diffusion of innovations, e.g., through demo plots, Participatory Variety Selection (PVS), Delivery methods (last mile agents) [*Prompt about how the training incorporates issues related to gender and bean/ cassava seed and how the training engages female participants*]
  - d) Farmer structures, e.g., capacity development, group dynamics, etc. [*Prompt about specific ways they may be ensuring/ increasing women and youth active participation and leadership in the farmer structure. Any gender or age barriers observed in the farmer structure that impede them in regards to seed production or seed use*]
  - e) Input supply
  - f) Policy advocacy, i.e., evidence-based regulatory lobbying for blending (processed products); demand-driven extension services; public education and leadership development
  - g) Other, specify
4. Do you work with cassava and bean producers? 1 = Very often; 2 = Often; 3 = Not often
5. For the cassava and bean producers that you work with, what proportion would you allocate give to:
  - a) Female producers: 1 = 15-29; 2 = 30-45; 3 = 46-65; 4 = OVER 65 YEARS
  - b) Male producers: 1 = 15-29; 2 = 30-45; 3 = 46-65; 4 = OVER 65 YEARS
6. For the selected traders that you work with, are they active channels for distributing new varieties? 1 = Yes; 2 = No
7. Do the traders you work with get and spread information on where customers can get new varieties? 1 = Yes; 2 = No
8. Do you discuss market constraints with cassava and bean traders? 1 = Yes; 2 = No
9. If **Yes**, please list the main cassava/bean production and trade constraints
10. What are your estimated annual needs for the seed of either of the crops? Please categorize by seed type, i.e., basic, breeder, commercial, QDS, Other (specify)
11. Are there instances where you have made direct purchases or provided support through vouchers and/or cash? 1 = Yes; 2 = No
12. How can training support for informal traders be crafted to ensure women, men, male and female youth, and those with disabilities can access seeds during crises?
13. How do the project interventions seek to increase the affordability of seeds? [please select all that apply]
  - a) Adopts a last-mile selling point, i.e., uses community agents, village shops, mobile vans
  - b) Asks the seed dealers to pack seed in smaller portions to be affordable
  - c) Offers seed at the same price throughout the season through the seed dealers

- d) Offers seed for purchase on credit through a scheme with the seed dealers
  - e) Other [please specify]: \_\_\_\_\_
14. What do you have in place as means of input supply to farmer-beneficiaries you work with?
- a) Direct seed distribution (DSD)
  - b) Seed vouchers
  - c) Seed vouchers and fairs
  - d) Cash transfers
  - e) Other \_\_\_\_\_
15. Would you consider working with the informal (and local seed) traders to disseminate new and improved varieties to farmers? Yes/No
- a) If Yes, why?
  - b) If No, why?
  - c) If **yes**
    - i. What areas can be focused on in strengthening their business entrepreneurship skills?
    - ii. How best can you forge collaboration in better knowledge dissemination?
    - iii. What areas can be focused on strengthening these traders in tailoring their services to different client types, particularly women, male and female youth and PLWD

## Government and Research Actors Survey Checklist

**Please note:** This guide focuses on Development, Humanitarian, and Emergency Practitioners for Activity 2.2.3.2.

1. Do you work with bean and cassava producers? a) Very often b) Often c) Not often
2. Do you work with bean and cassava traders? a) Very often b) Often c) Not often
3. For the selected traders that you work with, what is the gender and age breakdown? Do you work with any traders that have known disabilities?
4. For the selected traders that you work with, are they active channels for distributing new varieties? 1 = Yes; 2 = No How are active channels for distributing new varieties designed to reach female and youth farmers?
5. Do the traders you work with get and spread information on where customers can to get new varieties? 1 = Yes; 2 = No; If yes, what methods do traders used? Prompt about methods to reach female farmers
6. What aspect of cassava and beans are you working on?
  - a) Variety improvement
    - i. Cassava: high yield, high dry matter content, disease/pest/drought tolerance, biofortification, medium branching type, resistance to CBSD/CMD, stay green leaves, cooking time, and taste
    - ii. Beans: high yield, disease/pest/drought tolerance, biofortification (Iron, Zinc), cooking time, taste
  - b) Marketing [*Prompt about marketing to different farmer segments (male farmers, female farmers, youth farmers, PLWD)*]
  - c) Training [*Prompt about how the training incorporates issues related to gender and bean/ cassava seed and how the training engages female participants*]
  - d) Farmer structures for inclusion of women in the value chains [Probe: *What efforts are being made with farmer structures for engaging women and youth with bean and cassava seed production?*]
  - e) Policy advocacy, i.e., evidence-based regulatory lobbying for blending (processed products); demand-driven extension services; public education and leadership development
  - f) Input supply
  - g) Other, specify \_\_\_\_\_
7. Do you discuss market constraints with cassava traders? 1 = Yes; 2 = No
  - a) If Yes, please list the main cassava production and trade constraints
  - b) If No, what impedes these discussions?
8. What are your capacities for early-generation seed production for either of the crops? Please categorize by seed type, i.e., basic, breeder, commercial, QDS, other (specify)
9. Would you consider working with the informal (and local seed) traders to disseminate new varieties to farmers? Yes/No
  - a) If Yes:
    - i. Why?
    - ii. What areas can be focused on in strengthening their business entrepreneurship skills?
    - iii. How best can you forge collaboration in better knowledge dissemination?
    - iv. How can training support for informal traders be crafted to ensure women, men, male and female youth, and those with disabilities can access seed during times of crises
  - b) If No:
    - i. Why?
    - ii. If No, Please list how could informal seed traders could be supported to be resilient during times of crisis so they can continue to serve their clients better