



# S34D COMPENDIUM

Compilation of technical publications produced during the “Feed the Future Global Supporting Seed Systems for Development” activity from 2018 to 2023.

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## Acknowledgments

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## DISCLAIMER

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



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## Acronyms

<b>ASAP</b>	Agricultural Seed Activity Project
<b>BHA</b>	Bureau for Humanitarian Assistance
<b>CIAT</b>	International Center for Tropical Agriculture
<b>CRS</b>	Catholic Relief Services
<b>DiNER</b>	Diversity for Nutrition and Enhanced Resilience
<b>DiNER</b>	Diversity for Nutrition and Enhanced Resilience
<b>DRC</b>	Democratic Republic of the Congo
<b>FSP</b>	Financial Service Provider
<b>FtF</b>	Feed the Future
<b>IFDC</b>	International Fertilizer Development Center
<b>NGO</b>	Non-governmental Organization
<b>PABRA</b>	Pan-African Bean Research Alliance
<b>PIA</b>	Participatory Impact Assessment
<b>RFS</b>	Bureau for Resilience and Food Security
<b>R-SSSA</b>	Rapid Seed System Security Assessment
<b>S34D</b>	Supporting Seed Systems for Development
<b>USAID</b>	United States Agency for International Development



## About S34D

### Activity Overview

Managed by Catholic Relief Services (CRS), the Feed the Future (FtF) Global Supporting Seed Systems for Development activity (S34D) is a five-year Leader with Associates award created to enhance farmers' access to a full range of seed choices and options to maximize their responsive decision-making and planning for production. CRS and its partners implement S34D in target trade corridors to promote resilient, nutritious, productive, and profitable seed systems. S34D seeks to improve the functioning of and linkages between formal and informal seed systems and emergency, humanitarian aid and resilience seed programming in Feed the Future target and aligned countries with economic growth, resilience, and emergency seed security programs. S34D collaborated with United States government implementing partners to complement their ongoing activities and investments in line with host government agriculture-led inclusive economic growth objectives. S34D's consortium of partners include Agri Experience, Alliance of Bioversity and CIAT (ABC), IFDC, Opportunity International, Pan-African Bean Research Alliance (PABRA), and Purdue University.

### Activity Quick Facts

**Life of Award:** 2018-2023

**Total Ceiling:** \$49.5 million

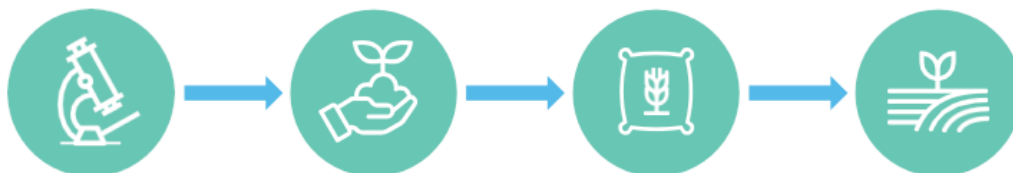
**Chief of Party:** Jason Sullivan

**AOR:** Daniel Thomson

**Donor:** Feed the Future through the Bureau for Resilience, Environment and Food Security (REFS) and by the United States Agency for International Development (USAID) through the Bureau for Humanitarian Assistance (BHA)

### S34D's Strategy & Service Areas

- **New Seed Business Models:** (i) create new financial instruments for firms and farmers, (ii) reduce bottlenecks to seed system development, availability, access, and quality, (iii) build capacity of seed companies to improve efficiency and diversify crops, & (iv) catalyze new vendors of post-harvest technologies.
- **Digital Feedback & Last Mile Delivery:** (i) develop a fee-based multi-sided AgTech digital platform of rural agents for last mile delivery, (ii) assess farmer adoption of new varieties using point-of-sale applications, & (iii) develop digital training and testing platform for seed inspectors.
- **Seed Diagnostics:** (i) identify methods to improve market forecasting; cost and demand estimation, (ii) use DNA fingerprinting to assess genetic purity of seed, & (iii) provide seed information, data, and analytical services.
- **Emergency, Humanitarian, & Resilient Seed Systems:** (i) develop rapid remote seed security assessment tool, (ii) support resiliency in seed systems and mitigate market distortions, & (iii) develop market-based humanitarian seed interventions.
- **Liberalize Seed Policies & Practices:** (i) limit free seed distribution to critical needs, (ii) implement 'stop bad seed' strategies, & (iii) support policy and regulatory reform implementation.
- **Integrate Seed Systems & Trade Corridors:** (i) analyze seed access within target grain corridors & (ii) facilitate implementation and harmonization of regional seed catalogues and protocols.



## About the Compendium

This compendium provides a comprehensive overview of the body of literature S34D has generated throughout its history and is broken into seven sections based on the areas in which S34D works, including:

- Data Information Flow
- Data and Relief
- Emergency, Humanitarian Assistance, and Resilience
- Semiformal (Formal/Informal)
- Formal
- Informal
- Policy

There are two additional sections that collate (i) the academic journal articles S34D has produced and (ii) the presentations S34D has generated over the years. Hashtags are also provided to search for any given country of interest more easily. The following are the current websites that also contain many of these resources<sup>1</sup>:

- [Agrilinks](#)
- [S34D homepage](#)

## Letter from S34D's Chief of Party, Jason Sullivan

Over the past five years, Feed the Future Global Supporting Seed Systems for Development (S34D) has had the pleasure of working alongside many talented technical professionals across the globe, from national to international experts, local partners to international consortium members, from front line government staff to senior level Ministry officials, USAID, and other international donors. It is because of this innovative activity and collaboration that we can share this compendium of resources, tools and lessons learned over the course of the S34D activity.

Working with consortium partners and experts in activities in 14 countries across Africa, Asia, and Latin America, the S34D activity produced 70 technical reports, four journal articles and close to a dozen webinars. We hope the reports and information contained within this compendium provide useful in your work in the field of seed systems strengthening both now and in the future, to better serve those in need across the globe.

With humble thanks,

Jason Sullivan  
S34D Chief of Party

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<sup>1</sup> Note that CRS' Research and Publications website will soon be host to all S34D-related materials.

## Data Information Flow

Quality and reliable data and information are critical for sustained success of seed systems interventions. To improve information on seed systems in several contexts, S34D produced country-level seed sector profiles, assessed, and built upon seed demand analyses, and promoted the use of innovative tools to reduce the supply of poor-quality seed.



### Capacity Building Training and Dissemination on Seed Demand Data Management for Staff at different Levels in Arsi Zone: Final Report (2023)

This training, which provides a questionnaire overview and identifies key variables for analysis, aims to build the capacity to be able to electronically collect data, clean, analyze and report data associated with seed demand to their respective higher bodies.

#Ethiopia #capacitystrengthening



### Forage Seed System Performance of Ethiopia: An Overview Based on Key Indicators (2022)

Published in CABI Reviews in December 2022, this study provides a template to monitor forage seed system performance in a developing country and identifies opportunities and recommendations for development partners, practitioners, national stakeholders, and decision-makers active in the Ethiopian forage sector.

#Ethiopia #forages



### Kenya Seed Sector Profile (2023)

The S34D country profile studies aim to assess specific areas of intervention in three seed systems, those being formal, informal, and emergency and to review the linkages and policy options that support improved synergies between these systems. This report is based on considerable analysis of the secondary data in Kenya alongside interviews with key informants from the various parts of the overall seed system.

#Kenya

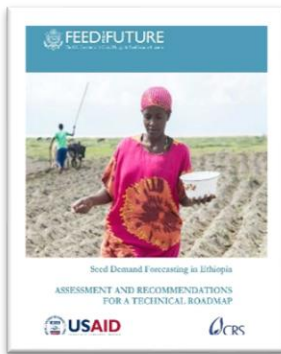


### Ripoti Mbegu Isiyo Bora (Rimi): Empowering Tanzania's Farmers to Report Low Quality or Fake Seed to the Regulator (2023)

This report showcases the various approaches undertaken to minimize the risk of low-quality or counterfeit seed in Tanzania, along with key findings and recommendations to maximize lessons learned and scale implementation.

#Tanzania

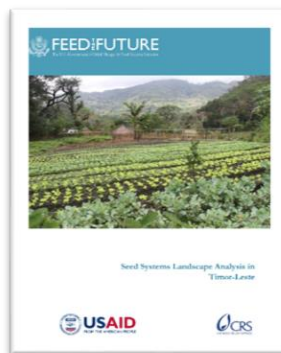
## Data Information Flow



### Seed Demand Forecasting in Ethiopia Assessment and Recommendations for a Technical Roadmap (2021)

Conducted in the Amhara and Oromia regions, this study was undertaken to assess the present seed system and methods employed to forecast demand, providing a technical roadmap on potential next steps to bridge the gap between effective and realized demand.

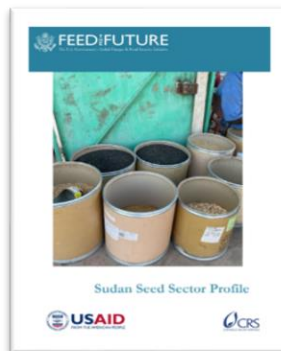
#Ethiopia



### Seed Systems Landscape Analysis Timor-Leste (2023)

This study identifies key actors involved in seed production, distribution, and support systems, government support mechanisms for strengthening the seed system, key seed system strengths, challenges, and constraints, the role of gender in seed systems and opportunities for women and youth, inputs that affect the seed system, and current and future seed research, prospects, and challenges.

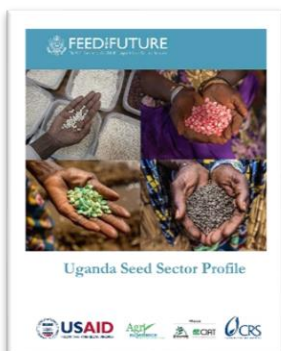
#TimorLeste



### Sudan Seed Sector Profile (2023)

This profile explores the various types of seed delivery systems within Sudan – including formal, semi-formal, and informal seed systems – as well as the use of emergency seed provisioning, examining their performance and interactions. The report also provides options for improving seed systems within the country.

#Sudan



### Uganda Seed Sector Profile (2021)

Focusing on the four seed sector elements in Uganda – formal, semi-formal, informal, and emergency seed – this report examines current strategies for seed sector development and makes recommendations for ways in which more integrated, mutually supportive seed systems can be promoted at the broad, sectoral level, to increase smallholder farmers' access to quality seed of improved varieties.

#Uganda

## Development & Relief to Resilient Seed Systems

Many of the seed-linked problem areas and opportunities unfold in regions of repeated aid where acute stresses followed by emergency interventions serve as a band-aid to deeply chronic constraints. Seed-linked aid must be linked to long-term thinking, not just in terms of promoting system resilience but also in identifying delivery responses that themselves can be maintainable and profitable. Given the criticality of such linkages for sustainability, S34D evaluated several emergency seed interventions to determine their respective benefits, drawbacks, and changing trends.



### Contextual Analysis of South Sudan's Seed Sector and Pathways for Building to Seed Sector Resilience (2022)

This country case study provides a better understanding of the current status of South Sudan's seed sector, from the South Sudanese context and food cropping systems to current seed sector development efforts – and stakeholder's perspectives thereof.

#SouthSudan



### Diversity for Nutrition and Enhanced Resilience (DiNER) Fairs and Voucher Programming: Evaluation and Learning in the Southern Africa Region (2020)

This study evaluates how the DiNER Fair approach improves participating households' food and nutrition security as well as strengthen access to seed and other agricultural inputs at the last mile in Madagascar, Malawi, and Zimbabwe.

#Global #SouthAfrica #Madagascar #Malawi #Zimbabwe

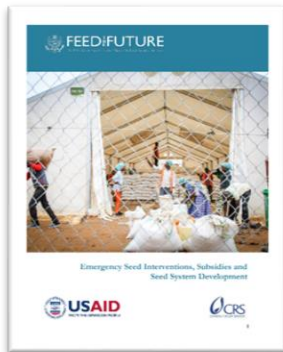


### Effects of Agricultural Input Fairs on Seed Markets: A Review (2020)

The review examines the market effects of DiNER fairs, draws lessons learned and provides recommendations for the use of fairs for market system development.

#Global #Guatemala #Madagascar #Malawi #Zimbabwe

## Development & Relief to Resilient Seed Systems



### Emergency Seed Interventions, Subsidies and Seed System Development (2023)

Based on a review of literature from Malawi, Uganda, Kenya, and Mozambique, this report explores the changing nature of seed distribution through emergency interventions and subsidy programs, as well as the impacts of such distributions on the formal seed sector.

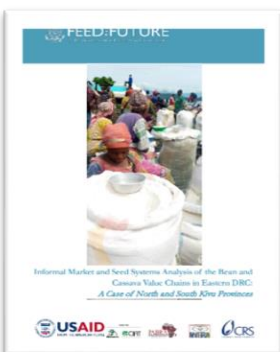
#Global #Kenya #Malawi #Mozambique #Uganda



### Guidelines for Developing Sustainable Farmer Access to Quality Seeds. Some Do's and Don'ts (2023)

This guidance provides humanitarian, resilience, and development practitioners with market-based thinking and options for improving the sustainability of smallholder farmers' access to quality seed of improved varieties, while also describing the various types of seed systems – including formal, semi-formal/intermediate, informal, and emergency – as well as their interrelationships.

#Global



### Informal Market and Seed Systems Analysis of the Bean and Cassava Value Chains in Eastern DRC: A Case of North and South Kivu Provinces (2021)

This study characterizes the current status and identifies constraints limiting development of seed systems in the Democratic Republic of the Congo (DRC), assesses the role of market pull in enhancing access to customer-preferred varieties and information by value chain actors, estimates gross profit margins of informal seed traders, and uses the results to propose appropriate business models for enhancing the capacity of the informal seed system to respond to both farmer demand and emergency seed needs.

#DRC



### Report on Formal Seed Sector Key Informant Interviews in the Democratic Republic of Congo (2022)

This study was undertaken to better understand DRC's formal seed sector and processes, including its development and current status, particularly in its eastern region.

#DRC

## Development & Relief to Resilient Seed Systems



### Review of Cash Transfers for Seed Security in Emergency Contexts (2023)

This report provides an analytical review of eight cash transfer for seed security interventions and offers lessons and recommendations to guide the use and design of future responses.

#Global



### Review of Practice and Possibilities for Market-led Interventions in Emergency Seed Security Response (2019)

This review focuses on the current and future potential use of markets to support smallholder farmer seed security in emergency and chronic stress contexts. The first objective is to review and categorize experience across different types of market-oriented interventions and the second objective is to explore possible approaches for moving better practices forward, recognizing both the enablers and barriers for doing so.

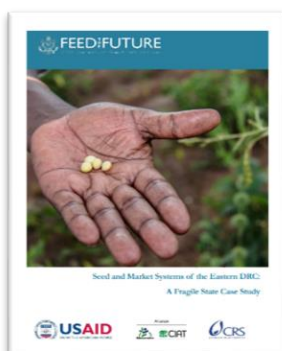
#Global



### The Role of Seed Vouchers and Fairs in Promoting Seed Market Development: Opportunities and Limitations (2021)

The report suggests multiple ways to address the challenges to support seed market development over time with or without seed fairs.

#Global



### Seed and Market Systems of the Eastern DRC: A Fragile State Case Study (2022)

This report presents one of three case studies undertaken to explore and develop models for the emergence of enhanced and resilient seed systems in fragile state contexts. Findings identify key formal seed system actors, private seed company opportunities and constraints, organizational approaches to seed production and distribution, and areas of resilience and vulnerability in seed system development models.

#DRC #fragilestates

## Development & Relief to Resilient Seed Systems



### Seed Systems in Fragile States Haiti Case Study (2021)

This report provides an overview of seed systems Haiti, with insights drawn from the literature and key informant interviews. The lessons drawn from this case study can help inform seed system development in fragile states.

#Haiti #fragilestates



### Six Lessons for Seed Sector Development in Fragile States (2023)

Based on case studies in Haiti, DRC, and South Sudan, this report highlights six key lessons learned for how actors can develop and build resilience in informal, intermediary, and formal seed systems within fragile environments.

#Global #DRC #Haiti #SouthSudan #fragilestates



## Emergency, Humanitarian Assistance, & Resilience

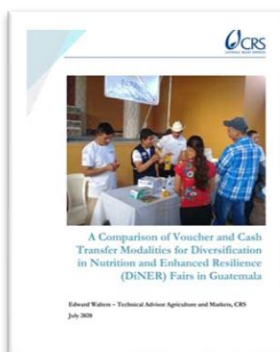
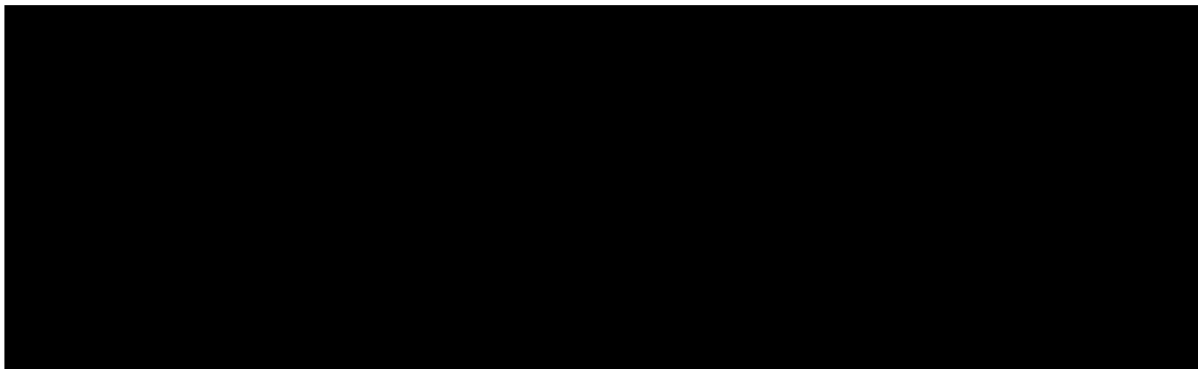
Seed interventions have long served as a primary means of addressing agricultural challenges during emergency and resilience response programs. Such interventions tend to include either direct (e.g., direct seed distribution) or market-based (e.g., vouchers, cash, fairs) approaches. Despite their long history, there has historically been limited available evidence to suggest the ideal modality in specific emergency situations and the extent to which seed aid should be utilized as part of emergency and resilience programs. S34D therefore worked on developing seed system security assessments, determining impacts of market-based humanitarian seed interventions on linking buyers and sellers, finding ways to enable vulnerable farmers to test improved varieties and track seed flows, developing sustainable last-mile seed business models and distribution networks, analyzing cash and voucher modalities, and developing best practices to limit free seed distribution.



### An Analysis of Opportunities and Constraints in Regulated Finance for the Emergency and Humanitarian Aid Seed Sector in Uganda (2020)

This report examines the Ugandan refugee context, the response from the Ugandan government and international non-governmental organizations (NGOs), and the shift away from food in-kind towards a market development approach within the humanitarian sector and the role financial service providers are playing in tin seed and agricultural work.

#Uganda

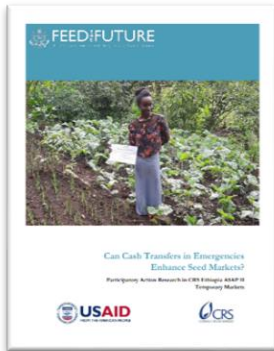


### A Comparison of Voucher and Cash Transfer Modalities for Diversification in Nutrition and Enhanced Resilience (DiNER) Fairs in Guatemala (2020)

This report examines the tradeoffs of cash versus voucher modalities and finds significant benefits from the use of cash.

#Guatemala

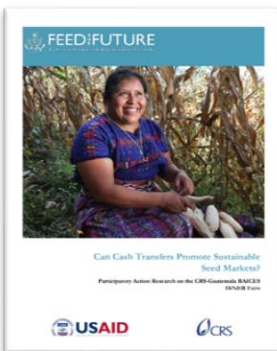
## Emergency, Humanitarian Assistance, & Resilience



### Can Cash Transfers in Emergencies Enhance Seed Markets? Participatory Action Research in CRS Ethiopia ASAP II Temporary Markets (2022)

This report summarizes participatory action research S34D undertaken in Ethiopia, focusing on the provision of vegetable seed to vulnerable households via temporary seed markets as part of CRS Ethiopia's 2022 Agricultural Seed Activity Project (ASAP) II.

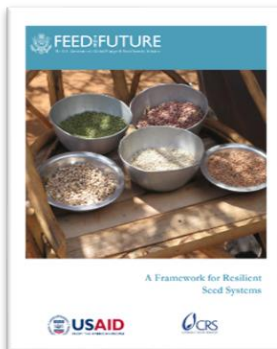
#Ethiopia



### Can Cash Transfers Promote Sustainable Seed Markets?: Participatory Action Research on the CRS-Guatemala RAICES DiNER Fairs (2022)

This report summarizes participatory action research S34D conducted in Guatemala focused on the 2022 DiNER fairs held as part of CRS Guatemala's Restorative Agriculture in Communities for Economic Sustainability project.

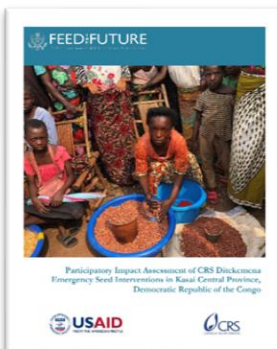
#Guatemala



### A Framework for Resilient Seed Systems (2023)

This report reviews addresses seed system resilience, reviewing existing related frameworks and principles, creating a proposed framework that distinguishes six characteristics that contribute to seed systems resilience, and highlighting interventions that can potentially build resilience into seed systems.

#Global



### Participatory Impact Assessment of CRS Ditekemena Emergency Seed Interventions in Kasai Central Province, Democratic Republic of the Congo (2023)

This report presents the findings of a participatory impact assessment (PIA) of emergency seed interventions in the Kasai Central Province of DRC to generate evidence on the impacts of selected interventions on crop production, household food security, and livelihoods amongst community beneficiaries and local seed systems.

#DRC

## Emergency, Humanitarian Assistance, & Resilience



### Participatory Impact Assessment of Lutheran World Federation Emergency Seed Interventions in Adjumani District, Northern Uganda (2023)

This report shares findings from a PIA of emergency seed interventions by Lutheran World Federation in the Adjumani District of Northern Uganda to generate evidence on the impacts of selected interventions on crop production, household food security, and livelihoods amongst community beneficiaries and local seed systems.

#Uganda



### Participatory Impact Assessment of Selected Emergency Seed Interventions: Synthesis Report (2023)

This report provides a synthesis of three PIAs of emergency seed interventions – either seed vouchers and fairs or direct seed distribution – in Uganda and DRC (see more above and below).

#Global



### Participatory Impact Assessment of World Vision Emergency Seed Intervention in Adjumani District, Northern Uganda (2023)

This report shares findings from a PIA of emergency seed interventions by World Vision in the Adjumani District of Northern Uganda to generate evidence on the impacts of selected interventions on crop production, household food security, and livelihoods amongst community beneficiaries and local seed systems.

#Uganda



### Rapid Seed System Security Assessment (R-SSSA) Pilot Evaluation Report (2021)

In response to demand for a more rapid and less resource-intensive seed system assessment, S34D developed a methodology and set of tools – the Rapid Seed System Security Assessment (R-SSSA). This report analyzes nine pilots carried out in seven countries by members of the Global Food Security Cluster.

#Global

## Emergency, Humanitarian Assistance, & Resilience



### **S34D Study on Cash Transfers for Seed Security in Humanitarian Settings (2019)**

This study examines the barriers and opportunities for cash transfers to be used to address seed security in humanitarian situations.

#Global

## Formal/Informal

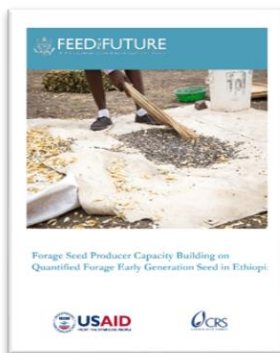
International actors increasingly recognize the importance of bridging gaps between the various seed systems – including formal, informal, intermediate, and humanitarian – to ensure that high quality, culturally appropriate, and resilient seed is available and accessible to farmers. In bridging formal and informal systems, S34D particularly worked in the areas of forage early generation seed production, forage seed production, and densification of forages to improve livestock nutrition outcomes and further enhance food security.



### Forage & Forage Seed Capacity Building Report (2023)

This report shares about the rationale, objectives, participation, and proceedings of a Forage and Forage Seed Capacity Building Workshop S34D held in Addis Ababa. The purpose of the workshop was to contribute to the availability of quality forage seeds for increased forage productivity to narrow the gap between livestock roughages demand and supply and increase efficiency in the value chain.

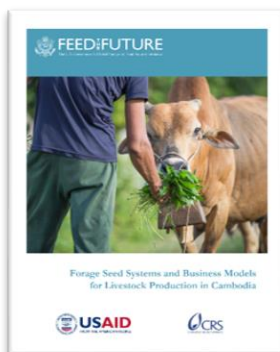
#Global #forages



### Forage Seed Capacity Building on Quantified Forage Early Generation Seed in Ethiopia (2023)

This study assesses the impact of forage seed producers training and quantifies the amount of forage early generation seeds they would be interested acquiring to bolster forage seed production in their entities.

#Ethiopia #forages



### Forage Seed Systems and Business Model for Livestock Production in Cambodia (2023)

This study assesses the demand-pull factors in Cambodia that would increase the use of cultivated forages in the livestock sector and proposes viable and economically, environmentally, and nutritionally sustainable business models to enhance profitability and productivity of the livestock and feed sector.

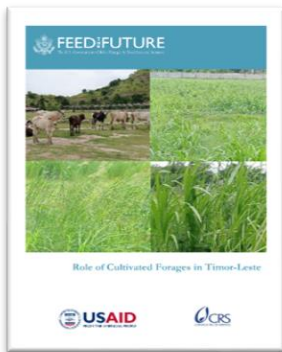
#Cambodia #forages



### Role of Cultivated Forages in Sudan (2023)

This report provides an overview of Sudan's livestock and forage sectors, assesses the annual forage seed requirement for the country, and provides context-specific nutritional, economic, and environmental assessments of cultivated forages.

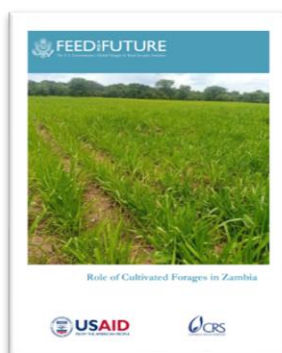
#Sudan #forages



**Role of Cultivated Forages in Timor-Leste (2023)**

This study includes information on the livestock and forage sectors in Timor-Leste, assesses the annual forage seed requirement to bridge the livestock roughages demand gap, and provides nutritional, economic, and environmental assessments of fit-for-context cultivated forages.

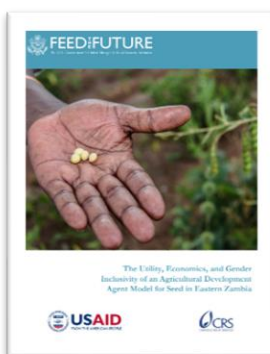
#TimorLeste #forages



**Role of Cultivated Forages in Zambia (2023)**

This study examines opportunities for forage and fodder seed systems to contribute to an enhanced livestock sector in Zambia, examining its livestock and forage systems, evaluating its annual forage seed requirement, and evaluating the nutritional, economic, and environmental implications of the use of recommended cultivated forages.

#Zambia #forages



**The Utility, Economics, and Gender Inclusivity of an Agricultural Development Agent Model for Seed in Eastern Zambia (2023)<sup>2</sup>**

Based on the CRS-supported Promoting Access to Locally Grown Legume Seed project, the primary objectives of this study were to (i) understand how seed is accessed and utilized by smallholder farmers; (ii) conduct an economic analysis of the agricultural development agents' (ADAs) legume seed enterprises using a gender lens; and (iii) understand how the behaviors promoted in gender training effected business practices.

#Zambia #forages



**Unexploited Economic and Environmental Benefits from Cultivated Forages in Zambia (2023)**

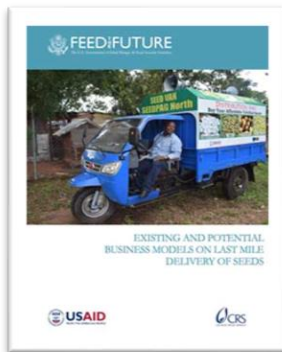
This journal article from CABI Reviews estimates the seed requirement of promising forage crops to offset the current ruminant roughage gap in Zambia.

#Zambia #forages

<sup>2</sup> Note: Document pending

## Formal

The purpose and thus the benefit of formal seed systems are to ensure the availability of high-quality seed. However, formal seed systems account for only a very small percentage (10%) of overall seed is obtained through the formal system, due in part to the reduced accessibility and timeliness of seed offered. S34D worked to improve the benefits of formal seed systems by providing formal seed system stakeholders, providing market forecasting and demand and cost estimation, developing new market strategies to expand market frontiers, and creating new business models, particularly last-mile models to support marginalized communities.



### Existing and Potential Business Models on Last Mile Delivery of Seeds (2019)

The report provides a review of existing seed delivery systems available in sub-Saharan Africa, and gives basic guidelines to improve scalability, sustainability, quality, and incorporation of technological advancements of last mile delivery systems.

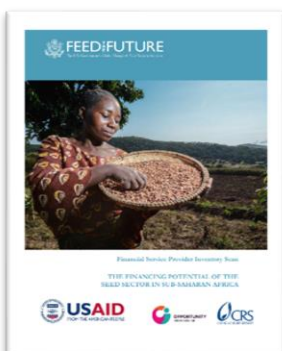
#Global



### Financial Service Provider Inventory Scan. Updated Seed-Financing Landscape Analysis in Kenya (2023)

This study examines the agricultural sector, the capacity of financial service providers (FSPs) post-interest rate repeal, the availability of agricultural financial services, and the overall health of FSPs in Kenya; additionally, the report provides recommendations to increase financing flow to the seed sector through gender-sensitive approaches.

#Kenya



### The Financing Potential of the Seed Sector in Sub-Saharan Africa. Financial Service Provider Inventory Scan (2019)

This study provides a regional overview as well as country-level assessments of the supply-side financing gaps and opportunities within the agricultural financial services sector, specifically for the purpose of expanding access to financing for the seed sector.

#Malawi #Uganda #Kenya #Tanzania

## Formal



### Micro-Franchise Model for Last Mile Seed Delivery in Kenya (2021)

In a pilot implemented by the International Fertilizer Development Center, S34D worked with a seed company, agrodealers, farmers and motorbike riders to test a Micro-Franchise Model for Last-Mile Seed Delivery in Kenya. This report summarizes difficulties during implementation, lessons learned and the way forward for the micro-franchising concept.

#Kenya



### Niger Financial Service Provider Inventory Scan (2020)

The analysis contained in this report focuses on the capacity of financial service providers to increase the availability of appropriately tailored financial services for key seed sector actors throughout the value chain.

#Niger



### Rapid Regulatory Constraint Assessment for Seed Firms Accessing Finance in the Democratic Republic of the Congo (2023)

This report offers a high-level assessment of the financial services sector in the DRC, including a review of the agriculture finance market for seed sector actors and recommendations for several intervention partners (e.g., non-financial seed sector actors, FSPs, and the USAID Mission in the DRC).

#DRC



### Review of Existing Last Mile Seed Delivery Models and Approaches (2020)

This review identifies the various seed systems as articulated in available literature as the formal, informal, and quality declared seed systems and then delves into how the different ten delivery models identified are organized around these seed systems.

#Global

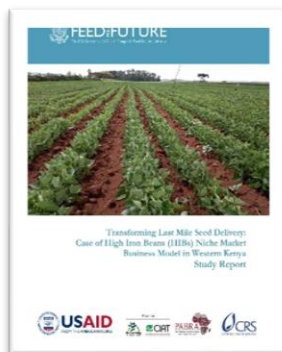




## Site Selection and Prioritization for Piloting Forage Feed Business Models in Ethiopia (2023)

This report describes the various sites explored for piloting economics-driven cultivated, forage-based seed models, provides an overview of the methodology and parameters used for the assessment, and explores recommendations for site-specific business propositions to improve the quality of livestock feed in Ethiopia.

#Ethiopia #forages



## Transforming Last Mile Seed Delivery: Case of High Iron Beans (HIBs) Niche Market Business Model in Western Kenya Study Report (2020)

This case study, conducted in Western Kenya, examines a niche market business model to deliver micronutrient rich bean varieties. Results indicate that linking agro-dealers to motorbike riders creates great potential to improve last-mile seed delivery, access to new technologies, farmer productivity, and farmer resilience during times of crisis.

#Kenya



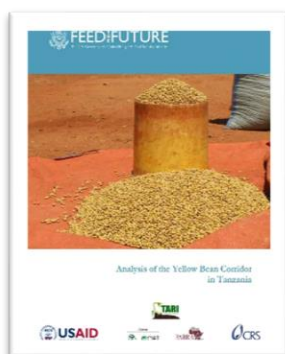
## Transforming Last Mile Seed Delivery: Case of High Iron Beans (HIBs) Niche Market Business Model in Lower Eastern Kenya Second Season Study Report (2021)

This second season report continued to determine if efficient and low-cost non-traditional channels for seed distribution (viz use of motorbike riders) can enable reaching the last mile while presenting a viable business case for seed companies and agro-dealers.

#Kenya

## Informal

In developing countries, 80-90% of the farmers access their seed from the informal system, broadly due to its advantages over alternative systems in terms of economic, social, and physical availability. S34D therefore worked to upgrade informal seed systems by developing business models that accelerate the production and delivery of higher quality seed, linking seed producer organizations to agro-dealer networks, exploring options for standard seed, producing new market strategies with informal actors to open new sales points and push out market frontiers, and creating sustainable last mile seed business models to support highly vulnerable communities.



### Analysis of the Yellow Bean Corridor in Tanzania (2021)

Although over 75% of rural households in Tanzania depend on beans for daily subsistence, there is limited information on yellow bean production and trade. This study provides insights on the production and trade of yellow beans and the different varieties traded through DNA fingerprinting analysis, with implications for seed systems and other possible investments.

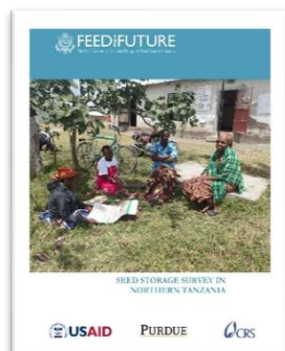
#Tanzania



### The Financing Potential of the Seed Sector in Sub-Saharan Africa. Seed And Post-Harvest Technology Provider Financial Bottleneck Analysis (2019)

This report highlights the key bottlenecks that are limiting access to financial services for seed sector actors in Malawi, Uganda, Kenya, and Tanzania, identifying common demand-side challenges that are preventing seed sector actors from accessing and utilizing financial services and providing strategic recommendations for future interventions that aim to increase access to finance for seed sector actors throughout the corridor.

#Global #Kenya #Malawi #Tanzania #Uganda



### Seed Storage Survey in Northern Tanzania (2019)

This study was undertaken to assess postharvest seed management of various grain value chain actors (farmers, agro-dealers, and seed producers) in four districts Northern Tanzania, with a goal of identifying the current storage and protection practices of postharvest management of seed of farmers, agro-dealers, and seed producers and to identify potential causal factors of those practices.

#Tanzania

## Policy

Seed policy and regulation is critical to ensuring the availability, access, and utilization of quality seed, impacting private sector participation, efficient and effective regulatory systems, and quality control. Given the unique policy and regulatory environments and needs of the countries S34D works within, S34D, with support from key stakeholders, takes a tailored approach to generate evidence and provide actionable, gender-sensitive policy recommendations that create enabling environments at both the national and regional levels. S34D supported seed policies within and across national boundaries by assisting governments in developing seed road maps, generating evidence to inform decision-making, supporting measures to stop poor-quality seed, and exploring options for new seed classes.



### Construcción de Hoja de Ruta de Políticas que Documenten las Barreras Enfrentadas en la Regulación del Sistema de Semillas de frijol y papa: Regulación del Sistema de Semillas de frijol y papa (2023)

The objective of this work was to review the legislation on seeds, identify actors that influence the production chain, and highlight key barriers that influence the production process for potato and bean seeds in Guatemala.

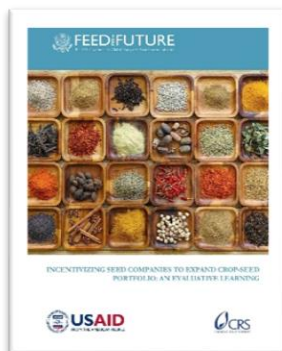
#Guatemala



### Development and Comparison of Seed Regulatory System Maps in Ethiopia (2022)

This report contains the results of a comparative mapping of current rules and regulations against the Draft Seed Proclamation along six key dimensions of the seed systems regulatory value chain, highlighting important changes and gaps and building upon efforts by the Government of Ethiopia.

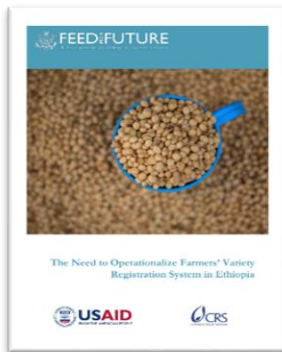
#Ethiopia



### Incentivizing Seed Companies to Expand Crop-Seed Portfolio (2022)

Drawing on information from the three countries studied, this study investigates the incentives that could encourage seed companies to broaden their crop portfolio.

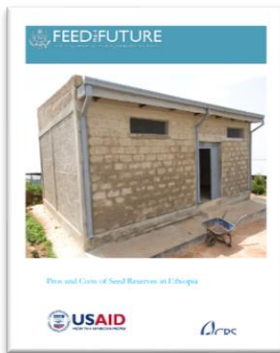
#Global #Kenya #Tanzania #Uganda



## The Need to Operationalize Farmers' Variety Registration System in Ethiopia (2023)

This paper discusses Ethiopia's current stance on a potential farmer variety registration system within the country, with the objective of encouraging the country to implement such a system using the recently developed roadmap and application template to provide legal pathways for commercial seed production and marketing of potential farmers' varieties and thereby contribute to the seed, food, and nutrition security of smallholder farmers.

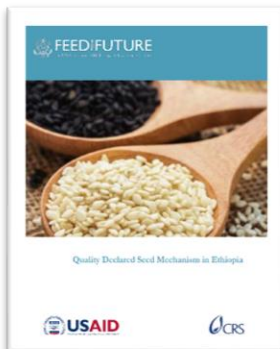
#Ethiopia



## Pros and Cons of Seed Reserves in Ethiopia (2022)

This report includes insights surrounding seed reserves as provided by national and international stakeholders from national and regional government organizations, research institutions, public and private seed companies and seed banks, cooperatives, United Nations organizations, and NGOs.

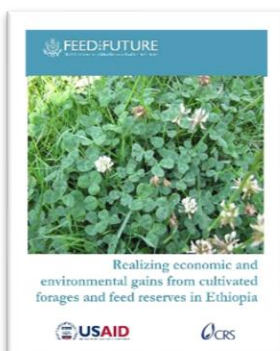
#Ethiopia



## Quality Declared Seed Mechanism in Ethiopia (2023)

This S34D study investigated why Ethiopia adopted quality declared seed and how it is implemented, considering the political economy perspective of divergence and similarities of the different provisions as indicated in the Food and Agriculture Organization guidelines, the Ethiopian directive, and actual implementation practices.

#Ethiopia



## Realizing Economic and Environmental Gains from Cultivated Forages and Feed Reserves in Ethiopia (2022)

This paper presents the economic benefits and insights into the role of cultivated forages, such as densification into pellets, in bridging gaps in feed supply in Ethiopia.

#Ethiopia #forages



### Realizing Economic and Environmental Gains from Cultivated Forages and Feed Reserves in Ethiopia (CABI Reviews article) (2022)

This publication explores nutrient requirement calculations for feedlot and dairy animals, how to meet those requirements using cultivated forage-based diets, the potential benefits of forage seed systems, and prospective interventions within the Ethiopian context.

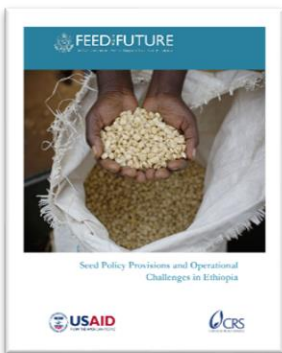
#Ethiopia #forages



### Seed Policy Landscape (2021)

This document maps initiatives and programs associated to seed policy, providing descriptions thereof and indicating their respective geographies, crops covered, and stakeholders involved.

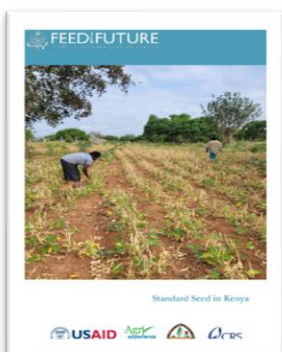
#Global



### Seed Policy Provisions and Operational Challenges in Ethiopia (2023)

Focused on three key regulatory arenas that would push the frontier for seed markets and formalize the informal seed systems in Ethiopia, this report assesses the levels of operationalization of seed-related regulatory provisions and then identifies reasons behind low levels of implementation, with an ultimate goal of better understanding why Ethiopian regulatory provisions for seed are not operationalized at scale, are implemented inconsistently, and feature asymmetrical patterns of adherence.

#Ethiopia



### Standard Seed in Kenya (2023)

This report shares information on pilot-phase outcomes, FY23 activities, and lessons learned regarding recent recommendations for a new certified seed class in Kenya.

#Kenya



**Strengths And Weaknesses of Organized Crop Seed Production by Smallholder Farmers: A Five-Country Case Study (2022)**

Drawing cases from twenty-five seed producer groups that deal with nine crops, this study attempts to better understand the community roles, operational structures, seed production efficiency, aspects of sustainability, and the social and policy environments in which smallholder farmers operate. Published in the journal Outlook on Agriculture.

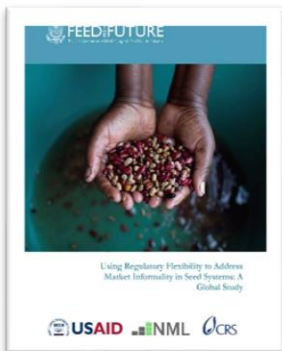
#Global #Guatemala #Niger #Vietnam #Uganda #Zambia



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#Global #Guatemala #Niger #Vietnam #Uganda #Zambia



**Using Regulatory Flexibility to Address Market Informality in Seed Systems: A Global Study (2020)**

This report examines the role of law and regulation in linking informal and formal seed sectors to create more inclusive and better governed seed systems.

#Global



**Using Regulatory Flexibility to Address Market Informality in Seed Systems (2021)**

This study addresses a gap in the current literature regarding the role of law and regulation in linking the informal and formal seed sectors and creating more inclusive and better governed seed systems. The study focuses on two key dimensions: extending market frontiers and liberalizing seed quality control mechanisms. Published in MDPI Journal of Agronomy.

#Global

## Academic Journal Articles

S34D has complemented its portfolio of reports with several publicly available academic journal articles in such publications as Agronomy, CABI, and Outlook on Agriculture.



### Forage Seed System Performance of Ethiopia: An Overview Based on Key Indicators (2022)

Published in CABI Reviews in December 2022, this study provides a template to monitor forage seed system performance in a developing country and identifies opportunities and recommendations for development partners, practitioners, national stakeholders, and decision-makers active in the Ethiopian forage sector.

#Ethiopia #forages



### Realizing Economic and Environmental Gains from Cultivated Forages and Feed Reserves in Ethiopia (2022)

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#Ethiopia #forages



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#Global #Guatemala #Niger #Vietnam #Uganda #Zambia



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#Global

## Webinars/Presentations

This section contains a list of key S34D presentations.



**Cultivated Forages and Business Models: A Multi-Country Metastudy (2023)**



**Development and Comparison of Seed System Regulatory maps in Ethiopia (2022)**



**Forage Seed System Performance in Ethiopia (2022)**



**Forage Seed Systems and Seed Reserves: Business Propositions, Case for Ethiopia (2021)**



**Global Seed Policy Review (2020)**



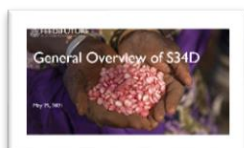
**Grain Market: A Pull for Seed Businesses across Bean Corridors in Tanzania (2021)**



**High Quality Seed Production by Smallholder Farmer Groups (2022)**



**Metrics for Seed Systems – A Comparative Review of ASI, EBA, and TASAI (2020)**



**Overview of S34D**



**Seed Policy Provisions and Operational Challenges in Ethiopia (2022)**





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