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# Policy brief: Ten pathways towards a robust, inclusive, sustainable and resilient seed sector in South Sudan

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## South Sudan Seed Hub

This brief is the outcome of the first South Sudan Seed Hub event organised by the University of Juba, at their campus 8-12 September 2022, in collaboration with the Ministry of Agriculture and Food Security (MAFS), the Directorate of Agricultural Research (DAR), the Food and Nutrition Security Resilience Programme (FNS-REPRO) of the Food and Agriculture Organization of the United Nations (FAO), Wageningen University & Research (WUR), and Integrated Seed Sector Development Africa (ISSD-Africa).

The South Sudan Seed Hub is in essence a multi-stakeholder partnership that brings together seed actors and stakeholders dedicated to building a robust, inclusive, sustainable and resilient seed sector in South Sudan. The Hub provides a neutral and independent platform for information sharing, capturing good practice, joint learning, and the development of policy briefs.

One of the objectives of the Seed Hub is to reflect on the current performance of the seed sector in South Sudan, identify the challenges faced, and explore and advise on opportunities to address those challenges.

## Analysis of South Sudan's Seed Sector

The dialogue facilitated through the Seed Hub was grounded in a contextual analysis of South Sudan's seed sector, aimed at identifying pathways to building seed sector resilience.

The contextual analysis was made possible through a collaboration of the Feed the Future Global Supporting Seed Systems for Development Activity (S34D) and the FNS-REPRO programme. The report will soon be available at <https://www.crs.org/our-work-overseas/program-areas/agriculture/feed-future>.

The study was aimed at providing guidance to the government, humanitarian and development agencies

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and the private sector, to strengthen the resilience of seed systems, so that even in fragile contexts the systems can provide farmers with access to quality seed of appropriate varieties in a timely and affordable manner. The study proposed models for the (re-)establishment of robust seed systems, able to adapt and transform to withstand the shocks and stressors that characterise South Sudan.

The study report characterised the three clusters of seed systems that co-exist: that is, the informal seed system (farm-saved seed, social seed networks, and local grain markets); the intermediary seed system (community-based seed production schemes and seed relief); and the formal seed system (the public seed system and private seed companies).

## Policy brief: ten pathways for South Sudan's seed sector transformation

This policy brief documents ten pathways that were discussed and supported during the first South Sudan Seed Hub) by key seed sector stakeholders including representatives from government, national and international research institutes, educational organisations, development and humanitarian actors (in particular FAO), NGOs, seed companies, civil society, policy makers, and donors.

The summary of the ten pathways can be seen as giving the transformation priorities for, and a road map towards, a robust, inclusive, sustainable, and resilient seed sector in South Sudan.

Each pathway elaborates the challenges, ambitions, strategic actions and key stakeholders.

## The ten pathways to building a resilient seed sector in South Sudan

1. Developing a national seed policy and seed regulatory framework.
2. Strengthening seed sector coordination, digital inclusion and partnerships.
3. Supporting the transition from seed relief to seed sector development.
4. Strengthening farmer-based seed systems.
5. Supporting the development of the private seed sector.
6. Establishing a decentralised seed quality assurance system.
7. Establishing a national gene bank linked to community seed banks.

8. Strengthening crop breeding and access to new varieties.
9. Establishing public-private partnerships in foundation seed production.
10. Capacity building of key government departments and public institutes.

## Pathway 1: Developing a National Seed Policy and seed regulatory framework

### Challenges:

- The 2012 seed policy was not enacted, resulting in lack of strategic directions for South Sudan seed sector stakeholders towards the development of a resilient seed sector.

### Ambitions:

- Develop a National Seed Policy and a seed regulatory framework based on current realities across South Sudan and harmonised with international agreements.

### Key strategic actions:

- Through a multi-stakeholder dialogue process verify, and where necessary improve the 2012 seed policy document for official endorsement, considering:
  - Coverage of interests of the public sector, private sector, civil society, development and humanitarian agencies, and farmers
  - Coverage of interests at national, state and county level
  - Attention to formal, intermediary and informal seed systems
  - Consideration of key operations and services in the seed value chain
  - Assessment of current capacities and capacity building needs of seed producers, service providers and regulators
  - Whenever possible and appropriate, decentralised approaches at state and county level
  - Elaboration of different scenarios, including one in which South Sudan becomes more peaceful and stable
  - Specific attention for transforming humanitarian seed relief in ways that strengthen the development of robust local private sector.
- Develop a seed law, regulations and guidelines to implement the seed policy.
- Establish the appropriate bodies to implement the seed regulatory framework including a National Seed Council, a National Seed Authority, a National Seed Variety Release Committee, and a Seed Quality Control Board.

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## Pathway 2: Strengthening seed sector coordination, digital inclusion and partnerships

### Challenges:

- Lack of a mechanism facilitating coordination and knowledge sharing among seed sector stakeholders, resulting in lack of alignment of seed sector interventions and difficulties in scaling good practices.

### Ambitions:

- Improved coordination across the three main seed systems, from local to regional and national level, through a functional South Sudan Seed Hub.
- Facilitate easy access to seed-related information through a South Sudan Seed Portal.

### Key strategic actions:

- Establish a South Sudan Seed Hub, operating at central and state levels, facilitating coordination and knowledge sharing and fostering seed partnerships.
- Develop the South Sudan Seed Portal as a digital platform/or gateway to share seed related policies, seed regulatory provisions and requirements, information on ongoing seed programmes, seed companies, etc.
- Promote regional partnerships with surrounding countries (Kenya, Uganda, Ethiopia, and Sudan in particular) for dialogue and exchange, exposure to good practice, and development/ strengthening of cross-border seed work.
- Develop/strengthen partnerships with CGIAR centres and NARS in Eastern Africa for introduction, testing and release of new and adapted varieties.
- Establish long-term partnerships between South Sudan and foreign universities and research centres.

## Pathway 3: Supporting the transition from seed relief to seed sector development

### Challenges:

- If not carefully managed and properly designed, seed relief may do farmers more harm than good, and potentially undermine the development of a resilient seed sector in South Sudan.

### Ambitions:

- Transition (from seed importing and free seed distribution approaches) to long-term investment in the development of a robust and resilient seed sector with a vibrant local seed industry in South Sudan.

### Key strategic actions:

- Specify the role of seed relief programming in becoming instrumental and catalytic to seed sector transformation.
- Reduce seed importation by supporting the government and private sector to invest in structures and systems that support sustainable local seed production and marketing.
- FAO, NGOs, and Government to purchase locally produced seeds, either QDS or certified seed, thereby enhancing/strengthening the local seed industry.
- Seed relief programmes to invest in the development of professional local capacities along the seed value chain.
- Seed relief programmes to support the strengthening of farmer-saved seed systems, especially building the capacity of women in production and management of quality seed.
- Seed relief programme support to the Government in the development of the seed policy and seed regulatory framework.

## Pathway 4: Strengthening farmer-based seed systems

### Challenges:

- The opportunities of informal and intermediary seed systems in providing farmers access to quality seed of locally preferred varieties have been largely unexplored.

### Ambitions:

- Support the strengthening of farmer-based seed systems, including farm-saved seed, community-based seed production and local seed business, also considering nutrition-dense crops & vegetables and fodder & forage crops.

### Key strategic actions:

- Develop the professional capacity of local seed producers in the areas of seed production and marketing, organisational development, and building strategic linkages with seed service providers.
- Broaden local seed producers' crop/variety portfolios with locally preferred and climate-resilient crops and varieties, potentially through community seed banks.
- Assure access to proper seed storage facilities, meeting the standards with sufficient capacity and processing/value addition facilities.
- Support well-performing local seed producers in the process of becoming financially viable local seed businesses/companies.
- Advocate for a policy that supports local seed production and marketing of farmers' varieties, based on local demand.

- Develop and implement targeted seed training programmes for female farmers and ensure their involvement in seed-related programming at county level.
- Strengthen the capacities of nodal seed farmers for becoming a reliable (sustainable) source of quality seed.
- Varietal promotion and demand-side support to encourage farmers to purchase locally produced quality seed and adopt appropriate new varieties
- Strengthen the capacity of local traders in local grain markets and link them to local producers of quality seed.
- Facilitate participatory plant breeding/variety selection to support farmers' access to locally preferred crop diversity.

## Pathway 5: Supporting the development of the private seed sector

### Challenges:

- The private seed sector in South Sudan is still in a nascent stage. As well as the constraints of political instability, prevailing insecurity and poor roads and market infrastructure in large parts of the country, the sector is constrained by serious competition of imported seeds which are at lower cost or often freely distributed.

### Ambitions:

- Professional seed producers and seed companies that can produce and market large quantities of high-quality seed of well-adapted and farmer-demanded varieties.
- Seed companies producing their own foundation seed and embarking on their own crop breeding programmes.
- STASS to play a central role in policy advocacy and facilitation of strategic linkages and in developing capacities of seed companies.

### Key strategic actions:

- Improve the procedures for seed certification by STASS-MAFS.
- Take a diversity of measures to reduce the high cost of in-country and local seed production.
- Facilitate access to finance for seed companies.
- Establish seed processing facilities to reduce the cost of locally produced seed and to add value.
- Government to create a more enabling environment for seed business.
- Support investment in seed storage facilities.
- Design processes for transition of seed relief to support of sustainable seed business.

## Pathway 6: Establishing a decentralised seed quality assurance system

### Challenges:

- The non-functional seed quality assurance system fails to protect farmers from sub-standard and counterfeit seed.

### Ambitions:

- Develop a simple, cost effective, decentralised seed quality assurance system providing authority to local/county agriculture departments on seed quality control and seed certification, and include the possibility of accreditation of private seed companies.

### Key strategic actions:

- Develop a policy and regulatory framework that supports decentralised seed quality control.
- Establish one reference seed laboratory at country level in accordance with International Seed Testing Association (ISTA) standards.
- Establish one small-scale seed testing laboratory (mini seed lab) per county, or cluster of seed producing counties.
- Provide authority to the county agriculture office for seed quality control and seed certification in their respective areas.
- Support the private seed sector to develop their own internal quality control system, in line with seed regulations, and provide accreditation of such systems by government.
- Promote a risk-based approach in prioritising seed laboratory testing and field inspection, based on the risks and complaints made by the seed users.

## Pathway 7: Establishing a national gene bank linked to community seed banks

### Challenges:

- Conflicts, displacement and climate change have caused a dramatic loss of genetic resources of local food crops, fodder and forage crops. The mechanism for collection, conservation and promoting use of these important genetic resources is missing.

### Ambitions:

- Establishment of a basic but functional national gene bank in South Sudan for conservation and promoting the use of important food and fodder-forage crops diversity, including linkages with community seed banks that conserve and produce seed of genetic resources in areas where their loss is highly significant.

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**Key strategic actions:**

- Set up a national/central gene bank under the authority of the Directorate of Agricultural Research (DAR) and build DAR capacity to manage the gene bank.
- Institutionalise germplasm collection and storage in the national gene bank.
- Document important landraces with germplasm collected and stored at the national gene bank.
- Develop a policy on national gene banks that link with and give support to decentralised community biodiversity seed banks at local level.
- Build the capacity of the national gene bank for multi-lateral germplasm exchange through the implementation of the International Plant Treaty, carrying out pre-breeding work and germplasm testing at farmers' fields.

## Pathway 8: Strengthening crop breeding and access to new varieties

**Challenges:**

- Local crop breeding programmes face a lack of resources and breeder capacity and are hampered in access to new varieties and advanced breeding lines. This has resulted in very few new/well adapted varieties being available to the farmers to choose from to meet their demand.

**Ambitions:**

- Establish functional partnerships with CGIAR and regional NARS for wider access to germplasm for adaptability testing and subsequent release/registration for local seed production.
- Further support for local crop breeding efforts including participatory plant breeding and participatory variety selection.

**Key strategic actions:**

- Facilitate partnerships with CGIAR centres and regional NARS, particularly with countries bordering South Sudan, for wider access to germplasm for adaptability testing in-country, and for subsequent release and registration for local seed production.
- Strengthen the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture Support (IT-PGRFA), of which South Sudan is a contracting party, facilitating access to germplasm from the international gene pool through its multilateral system.
- Build the capacity of DAR, the University of Juba and Yei CTC and others on participatory plant breeding and participatory variety selection.
- Support private seed companies with an interest in establishing their own crop breeding programme.

## Pathway 9: Establishing public-private partnerships in foundation seed production

**Challenges:**

- South Sudan seed sector development is constrained by lack of foundation seed of demanded varieties, which is in most cases imported from Uganda by the STASS and humanitarian organisations, often facing challenges in quality, pricing, and timing.

**Ambitions:**

- The MAFS and domestic seed companies play a key role in ensuring foundation seed production and supply through a well-coordinated system, with a clear task division between the public (in particular MAFS/DAR) and the private sector (in particular STASS).

**Key strategic actions:**

- The MAFS should take up a main role in foundation seed production, bulking and its supply by promoting the PPP models, with further development of the DAR capacities to produce foundation seed at zonal and sub-zonal agro-ecological levels.
- Government should allow the private seed companies to produce their own foundation seed to reduce access risks.
- STASS and I/NGOs should play a key role in shaping the guidelines and supporting capacity building of seed companies for foundation seed production.
- Government should facilitate the partnership with sub-regional NARS and private seed companies of neighbouring countries for access to breeder seed.

## Pathway 10: Capacity building of key government departments and public institutes

**Challenges:**

- Insufficient human capacity within the Ministry of Agriculture and Food Security, the Directorate of Agricultural Research, the University of Juba, and Yei Crop Training Centre, for supporting the required transition of the seed sector.

**Ambitions:**

- Professional capacity on seed sector development available at key government departments and public institutes, based on institutional and individual needs.

**Key strategic actions:***Directorate of Agricultural Research:*

- Grant the Directorate of Agriculture a semi-autonomous status for promoting research in support

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of seed sector development and seed systems resilience.

- Government and international community to invest in the development of human resources and research infrastructure.
- Strengthen the link between DAR and CGIAR centres
- Government to commit a multi-year reasonable budget to the directorate.
- Establish agro-ecology specific zonal stations to address local seed challenges.
- Incorporate local seed business into the national seed framework.
- Establish a functional National Seed Authority in South Sudan.
- Government to implement the International Treaty for facilitating access to and exchange of plant genetic materials.

#### *University of Juba:*

- Train academic staff in seed systems development and transformation.
- Transform the relevant Department at the University of Juba from purely knowledge-based to competence-based to build both knowledge and the skills required for seed systems transformation.
- Enhance the research capability of the agricultural staff at the University of Juba through access to studies, training, exposure visits and by actively involving staff in seed programming.
- Review and update the existing curriculum of Agricultural Sciences at the University of Juba.
- Consider upgrading the current Department of Agricultural Science into a School of Agricultural Science, and within that establish an Agricultural Research Institute to tackle seed and seed related issues (having its own mandate to develop and release crop varieties).
- Develop a policy that attracts and encourages exchange of both students and academic staff with partners universities both regionally as well as internationally.

#### *Yei Crop training Centre:*

- Update/develop practical training in the field of seed production, storage and marketing, including seed testing and field inspection.
- Encourage exchange visits to strengthen capacities in teaching and training; review the training curriculum; upgrade existing courses to Diploma level; and invest in ICT, in particular good quality internet.
- Strengthen links with other centres in the region and internationally.
- Ensure the financial sustainability of Yei CTC by ensuring an annual budget from the Government, and the development of a Yei-CTC business component to charge (standard) fees for services rendered.

## Conclusions

The ten pathways provide a road map and the concrete actions required for the transformation of South Sudan's seed sector into a robust, inclusive, sustainable and resilient seed sector which will better serve the needs of smallholder farmers across South Sudan.

The dialogue established that there is an urgent need to transform the predominant humanitarian seed provisioning approach, which has been prevailing for decades in South Sudan, into building a robust and resilient seed sector, including a vibrant local seed business.

Seed systems development must be relevant to the current context of smallholder farmers across South Sudan, and at the same time it should envision a seed sector fitting a more stable and peaceful South Sudan in, hopefully, the near future.

## Contributing organisations

The following organisations have contributed to the review and subscribed to the ten pathways: the Ministry of Agriculture and Food Security in South Sudan (MAFS), the Directorate of Agricultural Research (DAR), and the South Sudan Bureau of Standards; the University of Juba, Western Equatoria University, and Wageningen University & Research; the Food and Agricultural Organization of the United Nations (FAO) and the United Nations World Food Programme (WFP); the Association of Volunteers in International Service (AVSI), Cordaid, the International Fertilizer Development Center (IFDC), Mercy Corps, World Concern, World Vision International (WVI), and Resilience through Agriculture in South Sudan (USAID); Afroorganics, East West Seed Knowledge Foundation, Premium Agro Consult, Pro Seed, Seed Grow, the Seed Traders Association of South Sudan (STASS), and the South Sudan Agricultural Producer's Union; the Feed the Future Global Supporting Seed Systems for Development Activity (S34D); the Embassy of the Kingdom of the Netherlands in South Sudan; and the EU Technical Assistance Programme.

Regional presentation: Agricultural Research Corporation Sudan; Al Fashir University, Sudan; the National Agricultural Research Organisation (NARO), Uganda; ISSD Uganda; ISSD Ethiopia; and Mercy Corps.

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