

PABRA's Demand-led Seed Systems (DLSS) and its global expansion

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Background

The Demand-Led Seed Systems model developed by the Pan-Africa Bean Research Alliance ([PABRA | The Pan-Africa Bean Research Alliance \(pabra-africa.org\)](#)), and adopted by the CGIAR Seed Equal Initiative, is improving varietal turnover, seed production and bean production. For example, between 2021 and 2023 in Zambia, Early Generation Seed (EGS) output soared by 220%, and certified seed production grew six-fold. Subsequently, this boosted varietal turnover, the composition of new varieties increased from 61% to 88% between 2021-24. The bean grain production increased by 10% while the area under beans expanded by 11% in 2023 -<https://cgspace.cgiar.org/server/api/core/bitstreams/45aa3ef8-bc57-47a4-80de-c2fc71336a1/content>. This implied that the DLSS and new varieties incentivized farmers to invest in quality seed of new improved varieties. The approach implemented through Multistakeholder Partnerships (MSPS) creates an environment that enables market actors increase equity and inclusion of women and youth in priority urban food environments.

This model focuses on aligning seed production and distribution with the specific variety needs and preferences of farmers and consumers. By fostering collaboration among various stakeholders, including government agencies, private sector companies, non-profits, and local communities, the DLSS model ensures that the new bean varieties developed are not only high-yielding but also resilient to local environmental challenges such as pests and diseases.

The DLSS has been successfully implemented by PABRA since the early 2000s, starting with a test in Ethiopia in 2004. It has since expanded to other countries, including Ethiopia, Cameroon, Tanzania, Burundi, Zimbabwe, Kenya, Rwanda, Uganda, Mozambique, and Zambia.

The DLSS model's emphasis on demand-driven research and development, combined with its collaborative approach, has made it a powerful tool for scaling new varieties and complementary agricultural innovations. This trader and market-focused approach has been used to link bean trade, grain production, seed supply and demand-led breeding production and has been adapted by several other commodities. By fostering collaboration among diverse stakeholders, the DLSS model ensures the continuous improvement and scalability of seed systems, ultimately contributing to sustainable agricultural development and food security in the region.

Use and adapting the demand -led seed system to other value chains

- Building on this success in common bean beans, **Nepal's** government, Michigan State University's Innovation Lab for Legume Systems Research, and PABRA, with support from USAID's Feed the Future, are scaling a DLSS centered multistakeholder platforms (MSPs) in three Nepali provinces to

bolster Nepal's lentil sector. The lab is jointly working with PABRA to scale up the DLSS innovation eastern, southern and western Africa and Central America.

- The DLSS approach is also making significant progress in cowpea production through IITA in Nigeria. In just two years (2022–2024), the model is associated with an impressive 11-fold increase in certified and quality-declared cowpea seed production among adopting partners. Volumes grew from 157 tons in 2022 to 822 tons in 2023 and are projected to increase to 1,748.3 tons in 2024.
- Additionally, the ACCELERATE project in Tanzania has extended the DLSS approach to sorghum, groundnuts, and beans. Partnering with 30 grain traders, the interventions focus on introducing new varieties released within the last decade. These traders actively support on-farm demonstrations and offer seeds of high-demand varieties to farmers on credit. Over two years, the project has significantly boosted sorghum variety promotion, increased seed production, enhanced seed access for thousands of farmers, and improved adoption rates and crop productivity.
- In Zambia, following successful implementation under seed equal by the bean team, ZARI through its bean program is piloting the DLSS in boosting millet and ground nut value chains.
- The demand led seed systems model has also been used to build and scale use of new bean innovations in Central America.
- To scale adoption of improved chickpea, lentils, and faba bean varieties, develop seed systems and create awareness under the WP2 of Seed Equal CGIAR initiative, ICARDA is using the demand led seed systems approach. This is being implemented in Morocco, Egypt and Uzbekistan.

The key innovations and findings attributable to the Demand led seed system include

1. <https://repository.cimmyt.org/server/api/core/bitstreams/4a60f1a9-6f35-486c-b341-a15232916d18/content?form=MG0AV3>
2. [Taking the PABRA's multi-stakeholders platform model to transform Nepal's lentil value chain | PABRA \(pabra-africa.org\)](#)
3. [Boosting bean-based products: scaling SMEs in Malawi and Zambia](#)
4. Adapting a Demand-led Seed System to Cowpea to Facilitate Variety Turnover: A Case Study in Nigeria:
<https://cgiar.sharepoint.com/:b/s/OneCGIARPRMSRepository/ERMFs8TVGxpEvfWIIhY0HSMBMXZWSEwJgpf4IJSlykOAZw>
5. [Making the Bean Corridor work: Lessons from Zambia | PABRA \(pabra-africa.org\)](#)
6. [Transforming lives: biofortified beans reach 22.14 million people in Africa](#)
7. [Demand-led seed system accelerates adoption of improved bean, sorghum, and groundnut varieties in Tanzania | PABRA](#)
8. [How Can Multi-Stakeholder Platforms Drive Bean Seed Systems to Respond to Market Demand? | PABRA \(pabra-africa.org\)](#)

9. From Struggle to Strength: Beatrice Alban Msafiri's Journey of Resilience and Impact
<https://alliancebioiversityciat.org/stories/struggle-strength-beatrice-alban-msafiris-journey-resilience-impact>
10. Revolutionizing the Bean Value Chain in Tanzania: Case of IKUWO General Enterprises
<https://www.pabra-africa.org/revolutionizing-the-bean-value-chain-in-tanzania-case-of-ikuwo-general-enterprises/>
11. Participatory Approaches and Demand-Led Research Making Bean Seed Accessible to Millions of Smallholders in Burundi <https://www.pabra-africa.org/participatory-approaches-and-demand-led-research-making-bean-seed-accessible-to-millions-of-smallholders-in-burundi/>
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13. Rambiki, K.I; Phiri. A; Magreta R.; Birachi E.; Larochelle C; Mutua M; Rubyogo, J.C.and Wison Nkhata (2024). Breaking barriers to adoption: A multiple stakeholder platform approach to promoting improved common bean varieties among farmers in Malawi. Outlook on Agriculture. Vol 53 (1) 30-36. DOI: [10.1177/00307270231226233](https://doi.org/10.1177/00307270231226233)
14. Rubyogo, J.C.; E. Akpo -----, Hajisaheb Lalasab Nadaf, Sylvia Kalempera (2019). Market-led options to scale up legume seeds in developing countries: Experiences from the Tropical Legumes Project. Plant Breeding 138 (4) 474-486. <https://doi.org/10.1111/pbr.12732>

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4. USD -Feed the Future (FtF) legume Innovation Lab
5. Seed Companies
6. Seed Certification Agencies
7. NGOs
8. Schools
9. Grain traders in various countries

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SeedEqual: Supports Delivering Genetic Gains in Farmers' Fields

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