Empowering local partners for inclusive and sustainable agricultural development — experiences from the Tropical Legumes Project in Africa

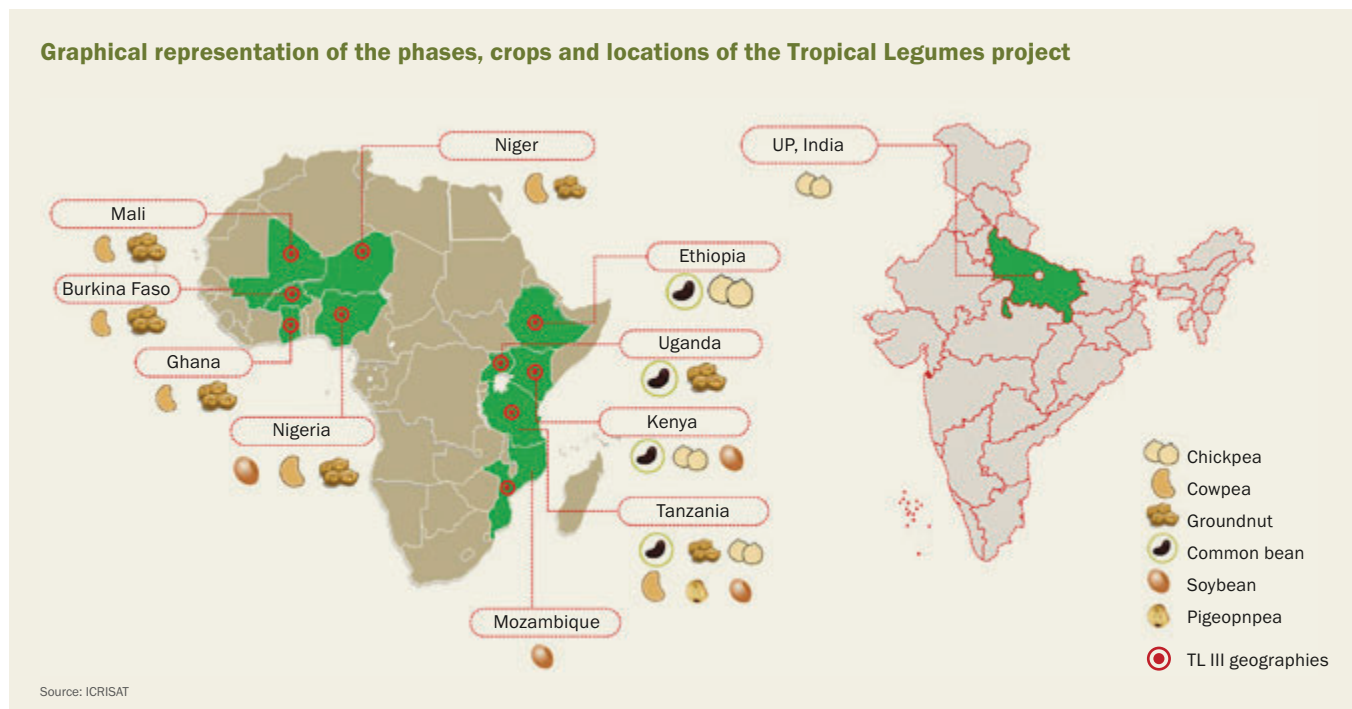*Mequanint B. Melesse[1], Essegbemon Akpo[2], Chris O. Ojiewo[3], Victor Afari-Sefa[4]*

The importance of strong local partnerships and alliances for the sustainability and long-term success of agricultural development efforts cannot be overemphasized. This is supported by its inclusion as a standalone goal (goal 17) in the Sustainable Development Goals (SDGs), but also by increasing calls to make local partnerships and alliances integral components of development projects and programmes. Strong local partnerships are critical not only for identifying development needs, setting priorities, and driving the implementation of validated development interventions but also for scaling and sustaining impacts of such interventions.
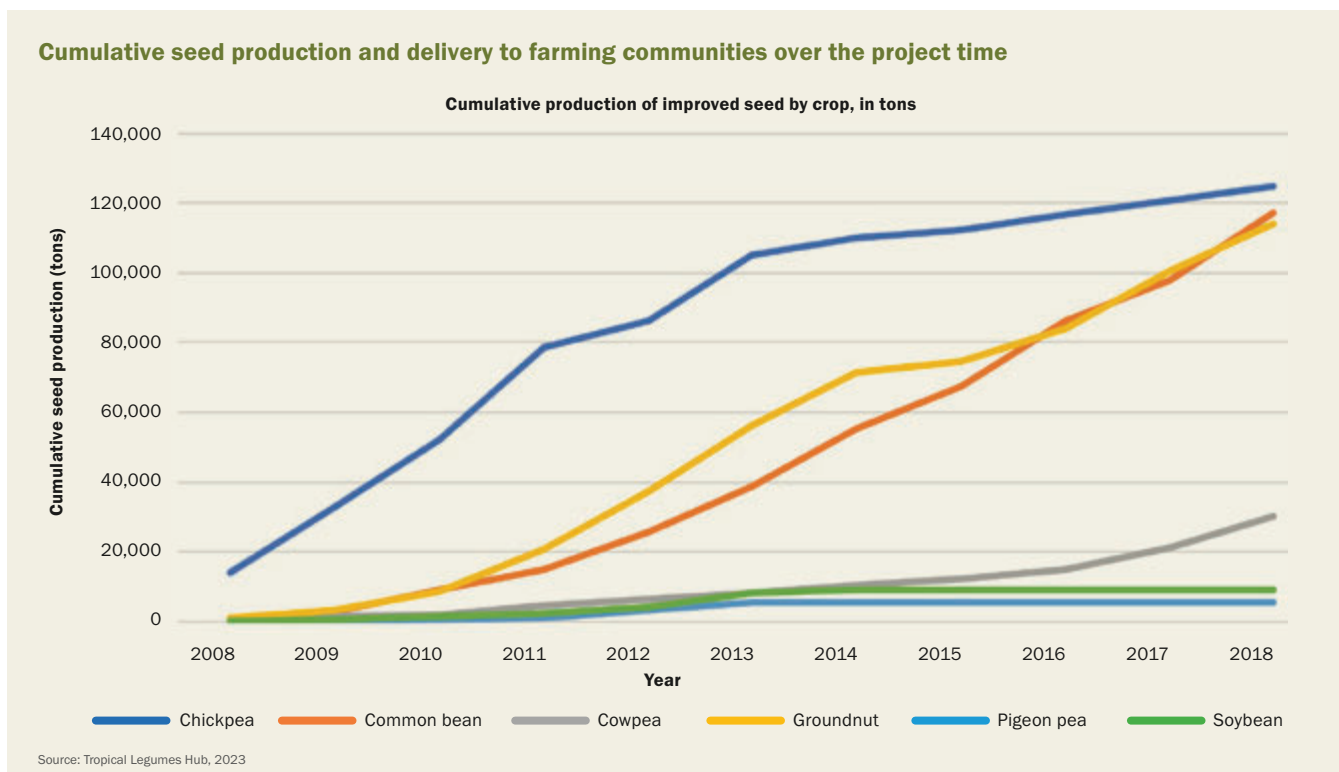
Establishing functional partnerships for inclusive and sustainable agricultural development requires a commitment to shift more ownership, leadership, decision-making and implementation to local partners through the institutionalization of proposed interventions, with strong support to truly empower them to achieve shared development goals. However, securing successful local partnerships has remained a critical challenge

for development efforts, and success stories are not widely documented for co-learning and future project design.

This article aims to offer critical insights into what it would take to develop successful local partnerships and alliances for inclusive and sustainable development by reflecting on the experiences of the Tropical Legumes (TL) project. The TL project focused on improving the productivity and production of six major legume crops in 13 countries in sub-Saharan Africa, and India and Bangladesh in South Asia. Funded by the Bill & Melinda Gates Foundation, TL was led by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and implemented in collaboration with other CGIAR centres and national research agricultural research organizations in the target countries. TL was implemented in three phases over a period of 12 years, TL II Phase I (2007–2011), TL II Phase II (2012–2014) and TL III (2015–2019). TL I and II focused on understanding the legumes' environment and existing knowledge and developing and disseminating improved varieties, while the TL III project built directly upon the outputs and

Graphical representation of the phases, crops and locations of the Tropical Legumes project

Niger · UP, India · Mali · Burkina Faso · Ghana · Nigeria · Ethiopia · Uganda · Kenya · Tanzania · Mozambique

Chickpea
Cowpea
Groundnut
Common bean
Soybean
Pigeopnpea
TL III geographies

Source: ICRISAT

Cumulative seed production and delivery to farming communities over the project time

Cumulative production of improved seed by crop, in tons

Source: Tropical Legumes Hub, 2023

momentum of TL I and II and placed increased emphasis on improving capacities of national breeding programmes and seed delivery systems. Globally, the project led to the development of 266 improved legume varieties and production of over 498,000 tons of certified seeds of the target legume crops on about 5.0 million ha of land, which helped over 25 million smallholder farmers increase their legume production and incomes. These legumes are an important part of people's diets to supply protein, healthy fats, vitamins, and essential micronutrients, while also serving a valuable role in crop rotation with cereals, nitrogen-fixation and restoration of soils, and adaptation to contemporary challenges of climate change.

With a focus on mainstreaming inclusive market-oriented development, the project promoted legume seed business and commodity value chain commercialization, with women and youth as primary target beneficiaries. Overall, the project was positioned to critically contribute to the achievement of the SDG goals of No Poverty (SDG 1), Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), Gender Equality (SDG 5), Climate Action (SDG 13) and Life on Land (SDG 15).

Scientific articles, books, and reports have been widely published on the impact stories and achievements of the TL project[1]; a special issue of the *Plant Breeding* journal has been dedicated to documenting achievements and results of the project[2] and a detailed record of the resources and data from the Tropical Legumes projects describing their legacy in sub-Saharan Africa and South Asia can be found at the Tropical Legumes Hub[3].

ICRISAT won the Africa Food Prize in 2021 for its leadership in the collaboration that implemented this highly impactful project. This was made possible through the novel approach adopted by the initiative to embed scalability and sustainability into its implementation process. A holistic approach was

taken to drive impact through three primary pathways: Developing farmer-preferred varieties; improving local seed systems and commodity value chains; and strengthening the breeding capacity of national agricultural research systems.

Considerable strides were made to develop and nurture partnerships to strengthen the means of implementation for achieving the outlined goals of the TL project, beginning with the recognition that deploying the genetic gains achieved at research stations to farmer fields requires closer interaction and collaboration at all levels among the various actors and stakeholders. Among other reasons, the success of the TL project hinged on the fact that it managed to mobilize a consortium of a truly diverse and huge number of partnerships, involving international and national agricultural research institutes, farmers and their associations, public and private seed companies, national extension systems, and various market actors.

The game changer was the recognition that developing partnerships alone was not enough to achieve the desired goals of the project. Great emphasis was placed on the critical importance of empowering partners and alliances through targeted capacity development initiatives. The project invoked a multipronged strategy to assess gaps and needs and to co-design and implement targeted capacity development activities. To this end, the project conducted a systemic diagnostic analysis to identify specific capacity gaps and needs of partners and understand how to support and empower them for delivering genetic gains at scale. This analysis started with the assessment of breeding programmes and portfolios of both CGIAR institutes and national agricultural research systems (NARS). The Breeding Program Assessment Tool (BPAT) was developed and used to evaluate the actual capacities and challenges faced by the implementing international and national research institutes, while identifying steps to mitigate those challenges. The

BPAT is a robust tool that can help to comprehensively assess crop-wise breeding programmes across nine components. This diagnostic paved the way for strengthening the capacity of various institutions in equipment, infrastructure, and human resources to address the gaps hindering breeding outputs.

The diagnostic analysis also generated useful and actionable insights for other partners. For example, the low rates of adoption of new varieties of legume crops by smallholder farmers were attributed to a lack of awareness, insufficient capacity to adopt innovations, limited timely access to quality seed of improved varieties at realistic costs and inefficient extension and advisory services. The lack of interest in production of legume seeds by potential seed producers, especially the private sector, was attributable to limited information on the cost and profitability of producing these seeds.
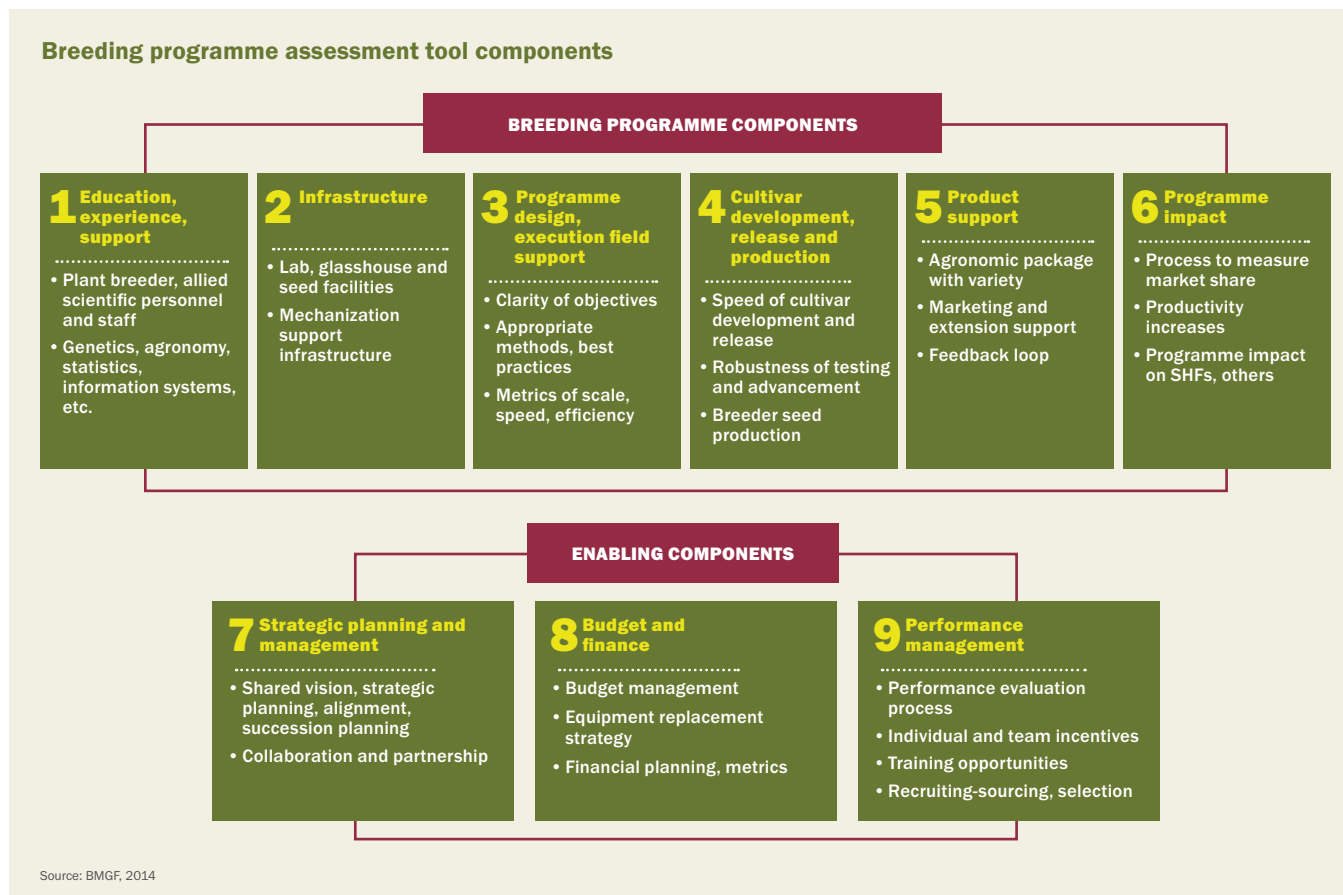
Following the diagnostic analyses, the project developed an adaptive strategy and action plan that largely focused on human and institutional capacity development to make the project successful. The developed strategy and plan were periodically revisited through multi-stakeholder platforms to address emerging needs for partners' capacity development, continually leveraging synergies in the project research and innovation ecosystem that promoted technology development, transfer, and uptake. Key to the strategy to achieve capacity development targets was intentional co-learning across international and national partners as well as project beneficiaries.

Various awareness and demand creation activities were initiated to ensure sustained collaboration and delivery of outputs and bring technologies closer to legume farming communities.

These activities involved demonstration farm trials, field days, participatory varietal selection, radio and TV shows, mobile app-based advisories, small seed packs affordable to resource-limited farmers, seed fairs, agri-shows and exhibitions, and targeted empowerment of women and youth in seed business and smart food making and marketing. Specifically, the implementing agencies trained farmers, the primary beneficiaries, on legume seed production and good agronomic practices, enhancing their knowledge and capacity to adopt the new technologies. This has helped to align breeding programmes with farmers' demands, while building a sense of ownership for the new varieties.

Multi-stakeholder platforms were also established along each legume crop value chain in the target countries. These platforms not only helped in dissemination of research-backed knowledge and training, but also in bridging the market gap that farmers often find difficult to cross by bringing input suppliers, seed companies and traders together in a common forum to exchange product and market information.

The institutional capacity development component focused on two interrelated levers: joint learning and formal training. Joint learning occurred in sharing germplasm materials, co-developing and testing of new varieties of target legume crops and relevant innovations between participating CGIAR centres and NARS through various mechanisms. The first mechanism was comparative cross-learning based on systematic assessment within and across countries of different partners based on the premise that agricultural policy processes vary by country and can be influenced by

Breeding programme assessment tool components

BREEDING PROGRAMME COMPONENTS

1 Education, experience, support
- Plant breeder, allied scientific personnel and staff
- Genetics, agronomy, statistics, information systems, etc.

2 Infrastructure
- Lab, glasshouse and seed facilities
- Mechanization support infrastructure

3 Programme design, execution field support
- Clarity of objectives
- Appropriate methods, best practices
- Metrics of scale, speed, efficiency

4 Cultivar development, release and production
- Speed of cultivar development and release
- Robustness of testing and advancement
- Breeder seed production

5 Product support
- Agronomic package with variety
- Marketing and extension support
- Feedback loop

6 Programme impact
- Process to measure market share
- Productivity increases
- Programme impact on SHFs, others

ENABLING COMPONENTS

7 Strategic planning and management
- Shared vision, strategic planning, alignment, succession planning
- Collaboration and partnership

8 Budget and finance
- Budget management
- Equipment replacement strategy
- Financial planning, metrics

9 Performance management
- Performance evaluation process
- Individual and team incentives
- Training opportunities
- Recruiting-sourcing, selection

Source: BMGF, 2014

Advanced groundnut nursery in Burkina Faso

national agricultural strategies and enabling factors for breeding and technology dissemination (e.g., regulations on seed systems), while recognizing country-specific conditions. This learning was facilitated during the theory of change review, annual M&E review and planning and reflection workshops. The second mechanism focused on participatory scenario analyses where effective delivery innovations, informative arrangements and appropriate market incentives were jointly identified and modified to fit country-specific circumstances for piloting and upscaling. The third set involved concerted action research in testing developed varieties and innovations through involving CGIAR and NARS partners, facilitating joint learning from both testing analyses and devising solutions to emerging challenges. Strengthening of breeding capabilities of implementing partners was also supported by formal learning through participation in short-term training courses and post-graduate research qualifications. The TL project helped 52 young scientists trained to acquire MSc and PhD qualifications. Most of these scientists are now active and still involved in various crop development programmes in the beneficiary countries.

Empowering partners through capacity development enhanced cooperation and awareness among individuals and organizations, building the capacity of partners to effectively lead the local implementation of project activities and to use data management and analysis tools for informed decision-making during project implementation. Particularly, the TL project's role in strengthening capacities of NARS was impressive and visible in current legume breeding programmes in the target countries. Building research capacity by training next-generation scientists instilled sustainability and scalability of project results and outcomes. This lays the foundation for developing new varieties and delivering genetic gains in farmers' fields in a short time span. The ensuing accelerated crop improvement made it possible to increase the number of crosses and populations developed each year and the number of generations per year using speed breeding to shorten the conventional breeding cycle, whereby countries increased their achievement from one up to four generations.

To conclude, reflecting on the lessons from the TL project implementation process revealed the insights needed to build effective partnerships in agricultural development projects and programmes. Firstly, successful partnerships are an outcome of carefully managed and nurtured collaborations based not only on shared goals but also on clear roles that each partner must play to contribute to achieving the shared goals. Secondly, what is even more critical is the extra effort needed to empower partners for advancing truly inclusive and sustainable agricultural development. This, in turn, requires applying a dynamic and adaptive strategy to continually address newly emerging needs and contemporary perspectives in the development discourse, while empowering local partners to set development priorities and to make strategic decisions backed by opening avenues to ensure access to critical resources beyond operation funds. Finally, a key factor underpinning this success was the continued engagement with policymakers and actors to secure their willingness and ability to use evidence in policymaking and implementation as well as to ensure high-level support to local implementing partners. It is hoped that this provides learning opportunities for similar efforts in agricultural development and research. Importantly, it would inspire development workers and project managers to share their own experiences and how these partnerships could be improved to revitalize global partnerships for sustainable development.

Training events for various actors in Uganda and Tanzania