



MEDIA RELEASE

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Legumes step into the limelight in the tropics

Laden with nutrients and with a high commercial potential, legumes hold great promise for fighting hunger, increasing income and improving soil fertility. However, legumes thus far have not received the scientific or funding attention needed to increase smallholder farmers' yields in Sub-Saharan Africa and South Asia, enhance their food security and reduce poverty.

A new cross-continental research and development project turns the limelight on legumes. The Tropical Legumes Project was officially launched in September 2007 in Rustenburg Kloof, South Africa, and in Arusha, Tanzania. Tropical Legumes involves 14 African and Asian national agricultural research programmes in Burkina Faso, Cameroon, Ethiopia, India, Kenya, Malawi, Mozambique, Mali, Myanmar, Niger, Nigeria, Senegal, Tanzania and Zimbabwe.

This double-pronged project to improve tropical legumes is funded by the [Bill & Melinda Gates Foundation](#). Its focus is to enhance the productivity of selected legumes with actual and high potential for improving food security and reducing poverty among smallholder farmers in Sub-Saharan Africa and Asia. These projects will partner with the Program for African Seed Systems (PASS), a major initiative within the [Alliance for a Green Revolution in Africa](#) (AGRA), to ensure African farmers have access to seed of improved legume varieties.

“Legumes are critically important as a source of income and nutrition for low-income farm families. However, there has not been enough investment in this area in the past,” said Dr Rajiv Shah, director of agricultural development, Global Development Program at the Gates Foundation. “We hope this project – by working across the value chain and linking to other investments like AGRA – will help deliver meaningful benefits to farmers' fields and families. We also hope it will encourage others to increase their investments in this type of critical, farmer-oriented agricultural research.”

The Foundation is dedicated to a sustainable model of agricultural development that empowers small farmers, engages rural communities and improves agricultural productivity while reducing inequity and protecting natural resources. Legumes have an important role in getting smallholder farmers onto the first rung of the ladder leading out of poverty. This programme will reduce the risks, costs and time of creating locally-adapted legume varieties that will improve household nutrition, household income and become an integral tool in integrated soil fertility management for both sub-Saharan Africa and two countries in South Asia.

The first prong (Tropical Legumes I or TLI) focuses on sub-Saharan Africa and four legumes, and is led by the Generation Challenge Programme (GCP) of the Consultative Group on Agricultural Research (CGIAR), in collaboration with partners from national research programmes, universities and CGIAR centres. The four TLI legumes are beans, cowpeas, groundnuts and chickpeas.

The second prong (TLII) focuses on large-scale breeding, seed multiplication and distribution primarily in sub-Saharan Africa and South Asia, thus paving the way for the research results from TLI to translate into breeding materials for the ultimate benefit of resource-poor farmers. In addition, TLII also works on soybeans and pigeon peas, and is led by the

[International Crops Research Institute for the Semi-Arid Tropics](#) (ICRISAT) on behalf of two other CGIAR centres—the International Centre for Tropical Agriculture (CIAT) and the International Institute of Tropical Agriculture (IITA).

Needs, know-how and ‘know-who’

But how relevant are all these crop improvement R&D efforts to the farmer? In the words of Mr Denis Mwashita, a small-scale farmer at the Chinyika Resettlement Scheme in Bingaguru, Zimbabwe, “Beans have always carried disease, but from the little we harvest and eat, we and our children have developed stomachs.”

“What Mr Mwashita means is that despite the meager harvests, farm families fare better in terms of health and nutrition for having grown beans,” explains Mr Godwill Makunde, a bean breeder at the Crop Breeding Institute’s Department of Research and Extension in Zimbabwe.

The Tropical Legumes Project is firmly anchored in farmer realities and needs, which are in fact the point of departure. But no institution can single-handedly tackle the challenge of needs- and reality-based crop improvement for several crops across such a broad geographical spread. Project partners and perspectives range from advanced genomic researchers to the views and needs of farmers, thanks to collaboration between advanced research institutes that will bring in cutting-edge science, and national research programmes that, in addition to providing reality checks and farmer perspectives, ensure effectiveness, continuity and relevance. Dr Jean-Marcel Ribaut, the GCP Director, notes “Involving scientists from national research programmes all along the research pathway ensures new tools and germplasm from the project will be relevant to local needs.”

How will all these different players work together? TLI comprises different research and training components at different levels to generate new breeding tools through an integrated three-step approach. First, new diversity in superior legume sets will be explored. The second step will be developing genomic resources for historically less-studied crops—resources essential in applying new breeding approaches to legumes. Finally, molecular markers will be identified for disease resistance and drought tolerance to boost legume productivity in disease- and drought-prone environments.

In his inaugural address at the TLII launch meeting in Arusha, Tanzania, Dr William Dar, ICRISAT’s Director General, affirmed the commitment of CGIAR centres to ensure that poor and marginal farmers in Africa and Asia have access to improved varieties that can help to increase legume production. “The next Green Revolution will be a ‘grey to green Revolution’ by turning the grey lands [drought-prone areas] to green by expanding the cultivation of legumes,” he said.

Dr CLL Gowda, TLII leader, elaborates that TLII activities include farmers participating in selecting improved on-the-shelf legume varieties, as well as strengthening seed production and delivery systems in project countries to ensure farmers get quality seed. TLII will focus on promoting drought-tolerant varieties while developing new ones using participatory approaches to ensure that farmers have a say in the variety development process.

Legumes and livelihoods

In order of importance, groundnut, cowpea and bean represent about 80 percent of the production and cultivated area of food legumes in sub-Saharan Africa. Legumes are rich in proteins and minerals and are referred to as ‘poor man’s meat’ in certain cultures: along with chickpeas, these legumes are essential staples in the diets of millions of Africans. Soybeans are increasingly popular in most of sub-Saharan Africa, while pigeon peas are a major protein source for the vegetarian South Asian population, and a major export for Eastern Africa.

The project follows a value-chain approach from planting the highest quality seeds and improving farm management practices to bringing crops to market, to ensure that both farmers and consumers benefit from the research and development efforts. To this end, socio-economic studies will be conducted to better target the development of new legume varieties.

Sustainability

The project comes at a time when there is an unprecedented confluence of knowledge and opportunities. These include greater confidence in modern genomics to tackle contemporary agricultural challenges, and stronger national research programmes with increasing capacity for advanced research. By further building the capacity of national programmes, Tropical Legumes will leave a mark long after its three-year span.

In addition to equipping and supporting project scientists, the project will also ‘plant seeds’ by supporting Masters and PhD students in sub-Saharan Africa and Asia.

Most importantly, the impact of Tropical Legumes is not just about science and institutions but about balanced diets and higher incomes. Given their high returns on investment, legumes deserve a second look and a leap *in* faith.

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