

CIAT's Partnership with the International Fund for Agricultural Development (IFAD): Guided by a Shared Vision



CIAT's Global Vision

Towards a world without poverty and hunger: Focus on the tropics

When CIAT began its research in 1967, its founders saw the vast tropical region as a world of promise. Agriculture, aided by the latest science and technology, could substantially contribute to reducing global hunger and poverty.

Today, the pressure to strengthen the fight against poverty and hunger in tropical areas is greater than ever before. Dwindling natural resources and environmental degradation; limited access to new technology, information, and market opportunities among poor people; climate change; and emerging pests and diseases are just a few of the barriers to improvement in tropical agriculture.

Despite rapid economic growth in many developing countries, poverty remains unacceptably high. According to recent reports, a quarter of the global population – around 1.8 billion people – live in rural areas on less than US\$2 a day. Many live in the

tropics, where they're vulnerable to disease, poverty, and food insecurity.

Yet CIAT remains as confident about tackling these challenges as it was from the start. Based on a unique understanding of the complex issues facing the global tropics, Center scientists enhance eco-efficiency in agriculture – making it more sustainable and profitable, while minimizing its environmental footprint, to empower poor rural women and men in the tropics.

Focusing on the development of cassava, common bean, and rice (the latter in Latin America and the Caribbean), together with tropical forages for livestock, the Center plays a vital role in preserving

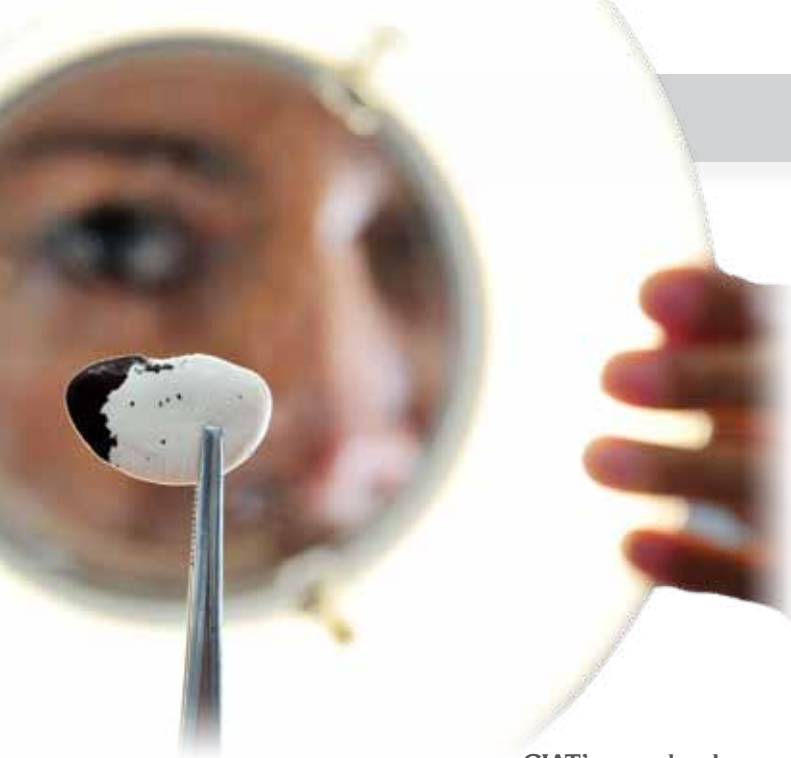
The IFAD/CIAT partnership

The mandate of the International Fund for Agricultural Development (IFAD) is to improve rural food security and nutrition and enable rural women and men to overcome poverty. Like IFAD, CIAT understands that small-scale agriculture, specifically in tropical areas, must become more robust, resilient, efficient, and sustainable, so that it can meet growing demand for food and resources while offering profitable pathways out of poverty.

Our shared vision is a world without poverty and hunger, where natural resources are used economically and sustainability for the benefit of everyone, and where enough food is produced efficiently to sustain good nutrition and food security. Our success in South-South coordination, making markets work for smallholders, transforming subsistence farming systems into eco-efficient hubs of change, and empowering poor rural women and men through improved incomes speaks for itself.

We thank IFAD for supporting our work and are confident that our ability to identify and realize opportunities for investing in agricultural research will continue to help improve livelihoods & increase prosperity for the rural poor. We look forward to aligning CIAT's new strategic framework (2014-2020), currently being developed, with the priorities of IFAD's own strategy to better fulfill our shared goals and vision of a world without hunger.





CIAT's genebank,
safeguarding the
global collection of beans,
cassava, and tropical forages

the world's agricultural biodiversity, while helping to boost nutrition and food security, eradicate hunger, and improve the incomes of the rural poor. Alongside research on these major crops, CIAT works in two other key areas – soils and decision and policy analysis – which cut across all tropical crops and production environments.

At the cutting edge

Over the last 46 years, CIAT scientists have worked at the cutting edge of scientific innovation. An



Cut and carry forage systems are improving
livestock productivity and livelihoods in Vietnam

impressive track record of achievement includes research on new varieties of cassava in Southeast Asia, which have generated economic gains to the tune of US\$12 billion over the last two decades. In sub-Saharan Africa, research on new bean varieties has translated into benefits worth more than US\$200 million for 8 million rural households.

Of course, achievements such as these are not made in isolation. CIAT prides itself on strong partnerships, linking with private enterprises, governments, research partners and NGOs to achieve results and create win-win solutions to poverty. Center scientists and partners combine global expertise, the latest technology, and enterprising ideas to rapidly respond to today's challenges.

Think global, act local

Technology is a key driving force of agricultural development. CIAT is uniquely positioned to stay ahead of new threats to global food security through a constant search for technological solutions to agricultural problems. The Center continues to strengthen South-South partnerships, ensuring that these solutions are appropriate and practical under local conditions.

With its headquarters near Cali, Colombia, CIAT has regional offices in Nairobi, Kenya, and Hanoi, Vietnam, with a network of scientists working in Latin America and the Caribbean as well as 30 countries in sub-Saharan Africa and 6 in Southeast Asia. This dynamic team detects and monitors threats to nutrition and food security in the tropics, particularly among the rural poor, with the aim of delivering large development impact by tapping scientific knowledge and honing innovative ideas into first-class initiatives.

Impact of IFAD Investments

A roots-to-riches story

As demand for dried cassava chips and starch is expected to double in the next 5-10 years in China, the cassava trade in Southeast Asia is booming. Vietnam alone earns close to **US\$1 billion** by exporting cassava mostly to China, and already an estimated 40 million people across the region depend on the production of 75 million tons of cassava every year. Launched by CIAT and the International Potato Center (CIP) together with national research partners and supported by IFAD, the Program for Linking Livelihoods of Poor Smallholder Farmers to Emerging Environmentally Progressive Agro-Industrial Markets has enabled upland smallholders and ethnic minorities to take advantage of this trade.

The program successfully raised cassava yields by 50 percent, boosting starch concentration.

Improved sloping-land management and fertilizer use boosted production systems, and a closed production system was developed through which farmers can buy back cassava residues as high-quality livestock feed, cheaper than commercial feeds, making smallholder producers more competitive.

“In 25 years at IFAD, I haven’t seen a better example of a regional research grant having such a positive effect on our large-scale loan projects,” said Henning Pedersen, IFAD country program manager for Vietnam. “What’s really impressive is the way cassava research and technology development have fed into market expansion and diversification; this has huge potential for wider application in Vietnam and other countries.”



Linking smallholder farmers to cassava markets near Hanoi

Full of beans

In Ethiopia, improved white beans are the building blocks of an emerging industry that's currently worth US\$50 million a year; they're considered "white gold" by those producing and processing them. The beans are now listed on the country's commodity exchange and are exported to lucrative markets in Europe. The foundation is smallholder farmers growing improved beans.

IFAD has contributed importantly to such initiatives by supporting CIAT's Genetics Resources Program, which safeguards the world's largest and most diverse collection of beans, cassava, and tropical forages, consisting of more than 65,000 samples of cultivated and wild materials – a valuable resource for safeguarding food security.

Using genetic resources for crop improvement can increase yields and nutritional value, making crops more resilient in the face of increasing threats from pests, diseases, drought, and flooding, while reducing dependence on food imports. The introduction of improved climbing bean varieties by CIAT, via the Pan-African Bean Research Alliance (PABRA), has transformed landscapes in Rwanda, Burundi, and western Kenya.

Driving out cassava pests and disease

Over 90% of internationally traded cassava comes from Southeast Asia, with an estimated annual value to farmers of more than **US\$3 billion**. In addition to cassava's historical role as a secondary food and expanded use as an animal feed in the form of dried chips, new demands for starch have applications in a whole range of food and industrial processes, including biofuels. Yet emerging pests and diseases increasingly threaten cassava harvests.



Improved climbing beans are transforming productivity in Rwanda

The cassava mealybug (*Phenacoccus manihoti*), first detected in Thailand in 2008, has rapidly spread to Cambodia, Laos, Vietnam, and Indonesia. If left unchecked, the mealybug and other highly destructive pests and diseases, such as the cassava witches' broom disease, could trigger a major decline in cassava production, especially if changing weather patterns increase the risk, as predicted.

So that smallholder farmers continue to benefit from boosted demand for cassava, the European Commission-funded and IFAD-managed Emerging Pests and Diseases Project focuses on effective and eco-efficient management of emerging cassava pests and diseases in Asia. Three main thrusts of research incorporate pest and disease monitoring, applied research to facilitate pest and disease management, and agricultural extension.

South-South sharing of new knowledge on cassava pests and diseases will be encouraged among research and extensions systems throughout the Greater Mekong Region and, when relevant, with the broader cassava research community in Asia, sub-Saharan Africa, the Pacific Islands, and Latin America. Supporting cassava production systems across China, Myanmar, Cambodia, Laos, Thailand, and Vietnam, the project expects to improve the livelihoods of many rural poor farmers and those associated with the wider cassava trading and processing industry, especially small rural businesses and industries.

Making the most of livestock assets

Until recently, smallholder livestock husbandry in the upland areas of Southeast Asia was not very productive. Animals were sold as a source of cash for emergencies or large purchases, and the rest of the time they were left to graze on native pasture and crop residues. With demand for meat products on the rise, there is no better time for poor livestock farmers, particularly women, to take advantage of this market. But burgeoning human and animal populations have put increasing pressure on traditional, communal feed sources, and despite strong demand, smallholders find themselves caught in a “labor-productivity trap.” More labor is needed to improve animal feeding, but the low

productivity of the animals does not justify the extra investment of time.

Funded by IFAD and built on previous research by CIAT, the new CIAT-led Cambodia, Laos and Vietnam Livestock Project (CLVLP) has developed new management systems that address this dilemma by boosting livestock productivity and improving husbandry of cattle, buffalo, chickens, pigs, and rabbits on increasingly scarce land, while keeping labor requirements low. Together with poor smallholder farmers in the remote border region of these three countries, known as the Development Triangle, this 4-year project has also linked farmers to markets, building strong relationships throughout the livestock value chain, so that livestock producers can better capitalize on the value of their livestock.



New management systems boost livestock productivity in Vietnam

IFAD-funded projects

Project Name	CIAT Leader(s)	Period	US\$ (in '000)
Technology issues and challenges and opportunities for small- and medium-sized coffee and cocoa producers in Central America	Peter Laderach	2012	15
Conservation and sustainable use of high-Andean ecosystems of Peru through compensation for environmental services	Marcela Quintero	2012	17
Improved forage based livestock feeding systems for small farmer livelihoods in the Cambodia–Laos– Vietnam Development Triangle	Adrian Bolliger	2011-2015	1,500
Emerging pests and diseases of cassava in Southeast Asia (EC \$)	Rod Lefroy	2011-2014	1,500
Climate Change, Agriculture and Food Security (CCAFS) (EC \$)	Andy Jarvis & Bruce Campbell	2011	2,700
Increasing small farm productivity, income and health through widespread adoption of integrated soil fertility management in the Great Lakes and Southern African Regions (EC \$)	Nteranya Sanginga	2010-2012	2,500
Supporting rural populations of African descent in LAC	Andy Jarvis	2010-2012	190
Strengthening support for people of African descent through the institutional consolidation of the ACUA program	Andy Jarvis	2010	100
Inclusive business models to promote sustainable smallholder cassava production (SNV-CIAT)	Keith Fahrney	2009-2013	473
Linking livelihoods of smallholder farmers to emerging, environmentally progressive, agro-industrial markets	Keith Fahrney	2009-2013	1,500
Conservation and use of tropical genetic resources (EC \$)	Daniel Debouck	2009-2010	1,500
Developing new pro-poor business models in the LAC region in partnership with the private sector	Mark Lundy	2009-2010	120
Improved cassava for the developing world (EC \$)	Hernan Ceballos	2008-2010	1,700
Linking the poor to global markets: Pro-poor development of biofuel supply chains (ICRISAT-CIAT)	Rod Lefroy	2008-2010	295
Strengthening capacity for collaborative management of rural innovation in sub-Saharan Africa: Exploring new tools and partnerships	Edith Hesse & Jacqueline Ashby	2006-2008	118
Accelerating prosperity of rural communities in the Umtara Province in Rwanda	N. Sanginga	2005-2008	40
Improved cassava for the developing world (EC \$)	Hernan Ceballos	2005-2007	300
Integrated upland agriculture development using participatory approaches in China, Laos and Vietnam	Keith Fahrney	2003-2008	1,450
Development of sustainable integrated soil fertility management strategies for smallholder farmers in sub-Saharan Africa	Edmundo Barrios	2001-2004	695

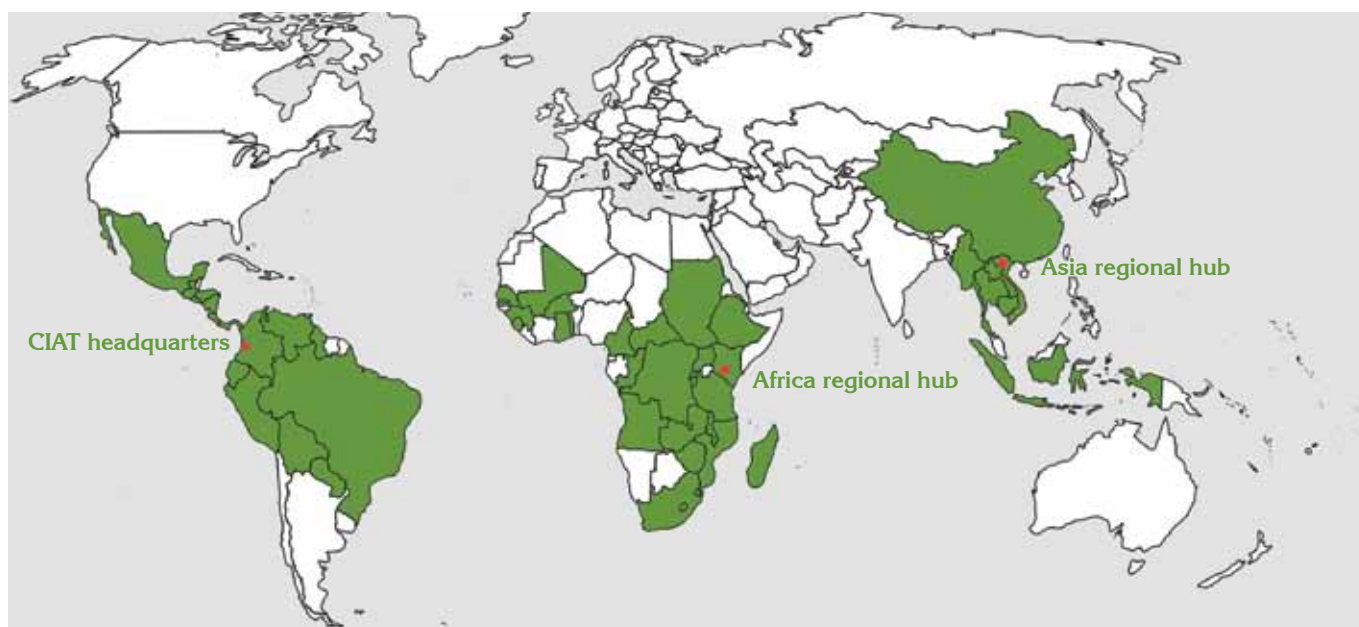
Promise to partners

CIAT's research and related activities are demand driven and closely monitored and evaluated for social and environmental impact and relevance to the livelihoods of the poor. Our research is carried out with the highest integrity and transparency. Innovation and creativity are key drivers of our research, and we take into account gender and cultural diversity through the use of effective methods for knowledge sharing and learning to deliver lasting impact.

Looking forward: developing joint visions

In line with IFAD's strategic objective of promoting win-win arrangements and aiding smallholder agricultural producers to seize market opportunities, CIAT's work harnesses global expertise and partnerships to highlight niche markets and make them work for the rural poor. CIAT looks forward to continuing its work with longstanding partners, including IFAD, and to shedding light on new solutions to global challenges.

The global reach of CIAT research



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