

CIAT Annual Report 2008

Eco-Efficient Agriculture for the Poor



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Institutional Highlights

From the CIAT Board Chair and Director General

CIAT did well in 2008: its scientists continued their tradition of receiving prestigious awards; and the Center won widespread attention from national and international media for its work. Notable activities included research on seed systems in Africa, a legal fight to protect common beans in the public domain, contributions of germplasm to the Svalbard Global Seed Vault, and the development of cassava with special starch characteristics.

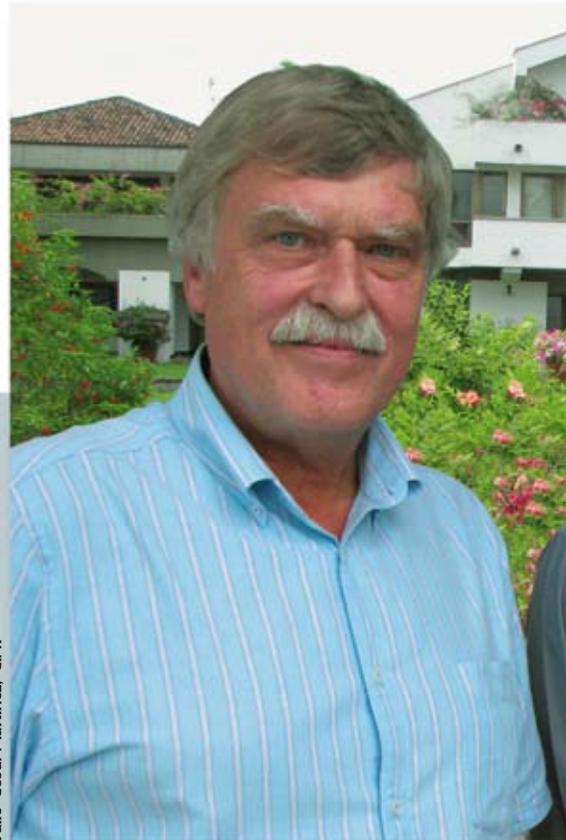
Although CIAT was delighted with its progress in 2008, it was also aware that a new vision and strategic direction was needed to respond to shifting regional and global priorities, and contribute to the CGIAR's revitalization. Thus, for much of 2008, CIAT also worked at defining its future directions. It conducted numerous consultations with partners and stakeholders, especially in Latin America; an Internet survey; and several special studies. By the end of 2008, the exercise was essentially completed. A Board-approved document, outlining CIAT's new strategic directions, was published in February 2009.

Because of recent difficulties, significant changes in the way CIAT is managed were introduced in 2008. The Center presented a Transition Plan to donors in March, several of whom provided special funding for its implementation. The Board and Senior Management were renewed, a new strategy prepared, staff consolidated, and investment made to maintain critical infrastructure. An "Activity Based Costing" system was also introduced to ensure that full institutional costs were recovered from all new project grants. To date, significant strides have been made.

Donor support remained strong. CIAT received its highest total income ever at US\$47.3 million. The Center ended 2008 with a small surplus, which brought

its net reserves to \$4.5 million. This is the equivalent of 39 days of operational expenditures.

Strong donor support was also evident in the number of significant new grants approved during the year. These included support for the African Soil Information Service (AfSIS), compliance with the Cartagena Protocol on Biosafety in Latin America, the Pan-Africa Bean Research Alliance (PABRA), and a project to breed waxy-starch cassava for Thailand.



Julio César Martínez, CIAT

Geoffrey Hawtin

CIAT's leadership and governance also experienced significant change in 2008. Throughout the year, the Center was led by Dr Geoffrey Hawtin. He had been appointed on a temporary basis to help put CIAT back on a firmer institutional footing, pending selection of a "permanent" director general. In July, recognizing the need for governance renewal, the elected members of Board of Trustees resigned. A new 11-member Board was elected, following consultations with the CGIAR.



Ruben G. Echeverría

This Board met twice: first in Washington, DC, in September, and again in Colombia in December. They approved CIAT's new vision and strategic direction, and recruited a new director general, Dr Ruben G. Echeverría, who took up the position in March 2009.

The year 2008 has certainly been one of considerable change and renewal for CIAT. We thank all our many friends and donors who continued to give the Center such strong support throughout this period. With new leadership recruited, a new Board, new strategic directions, and more effective management systems, we believe CIAT can face the future with confidence. With continued strong funding, CIAT expects to contribute substantially towards achieving its newly adopted vision: a more eco-efficient agriculture that better serves the needs of the rural poor in Latin America and throughout the tropics.

Geoffrey Hawtin
Outgoing Director General

Gordon MacNeil
Board Chair

Ruben G. Echeverría
Director General



Research Highlights



The ultimate goal of CIAT's research is to overcome poverty, hunger, and environmental degradation in the tropics. CIAT's strategy derives from a vision of deploying science and new knowledge to achieve eco-efficient agriculture.

This type of agriculture benefits the poor by (1) delivering sustainable increases in productivity; (2) enabling family farms to compete better in markets; (3) limiting damage to natural resources both within and outside agriculture; and (4) possessing resilience in the face of environmental shocks, particularly those resulting from climate change.

By pursuing this vision with partners in Latin America and the Caribbean (LAC) and elsewhere, CIAT plays a key role in the CGIAR system. To help create conditions essential for eco-efficient agriculture, CIAT and its partners follow a three-part strategy:

1. **Improved crops for the poor**—Providing affordable and nutritious food, as well as pathways out of poverty.
2. **Improved soil fertility management**—Overcoming poor soils to enable small farmers obtain sustained increases in agricultural production.

3. **Latin America and the Caribbean**—Working with partners to solve problems of high priority for the region while generating global public goods.

Most of CIAT's research is global in scope and relevant to LAC. Nevertheless, some effort also focuses on LAC's particular problems, even as the intention is to produce globally significant international public goods and promote South–South linkages between LAC and other regions.

Improved crop and forage production is vital for improving food security, enhancing human nutrition, and raising agricultural incomes. CIAT conducts research in LAC and with partners around the world on four globally important crops:

1. **Common bean**—The world's most important food grain legume, which, in Africa, is grown mainly by impoverished farmers, who are mostly women and children.
2. **Cassava**—After rice and maize, the third most important food crop in the tropics and second only to maize in its suitability for multiple uses. IITA plays a leading role in cassava research in Africa.



3. **Tropical forages**—A key input for the production of meat and milk, LAC’s most important high-value agricultural products. Forages also have considerable potential for enhancing natural resource management (NRM). In Africa and Asia, CIAT works in close collaboration with ILRI.
4. **Rice**—The most important staple food in South America and the world generally. CIAT research focuses on the unique characteristics of rice in LAC, while IRRI and the Africa Rice Center (WARDA), respectively, concentrate on Asia and Africa.

Crop improvement and soil-fertility management are closely related. Improved varieties, adapted to low soil fertility, will use soil nutrients more efficiently. Legumes, including beans and many tropical forages, can improve soil fertility through biological nitrogen fixation. Because crop yields tend to vary widely according to management, more efficient agronomic practices will greatly improve productivity. With improved management, crop residues and integration of forages into cropping systems will not only boost productivity by increasing soil organic matter, but will also help mitigate climate change through carbon sequestration and reduced greenhouse gas emissions.

To address the expressed needs and demands of the LAC region, CIAT follows an ecoregional strategy. This approach integrates the aims of increased agricultural productivity and improved NRM by taking into account both biophysical and socioeconomic perspectives and working through interinstitutional partnerships. CIAT’s ecoregional research agenda focuses on four main topics:

1. Improving crops that are important to LAC and globally.
2. Improving other crops that receive high priority in LAC.
3. NRM and policy research on issues that receive high priority in LAC.
4. Strengthening research capacity in the region through institutional innovation, knowledge management, and skills enhancement.

The research highlights presented in this report illustrate both CIAT’s potential to make progress towards eco-efficient agriculture and its track record in working with partners to accomplish this objective.



Significant Advances towards CIAT's Mission

CIAT's research was lauded as "excellent" by the recent External Program and Management Review. In this section, we give the reader a flavor of the exciting research currently being carried out by the Center and its partners.

Jim Weale, SCRIPTORIA Communications



From the tropics to the Arctic: A volunteer brings out a box containing seeds duplicated from the collections held in trust at CIAT, Cali, Colombia. The photo was taken during the Opening Ceremony held on 26 February 2008, inside the Svalbard Global Seed Vault, Spitsbergen Island, Norway.

"Humanity's future survival depends on conservation"

Germplasm collections held at CIAT are duplicated for safekeeping in the Svalbard Global Seed Vault

The CGIAR system keeps in trust much of the world's agricultural heritage as plant germplasm collections. CIAT alone holds collections from 141 countries. As human populations, their wars, and other social upheavals increase, and as climates change, food supplies become disrupted and genetic erosion accelerates. Plant and crop diversity is in danger of being lost. Germplasm collections therefore more urgently need safeguarding by duplication in other facilities.

One such facility is the Svalbard Global Seed Vault, buried inside a mountain within the Arctic Circle at Longyearbyen, Spitsbergen Island, Norway. The main actors—the Global Crop Diversity Trust, the Government of Norway, and the Nordic Genetic Resource Center of Sweden—hope that "one day, all of humanity's existing food crop varieties would be safely protected from any threat to agricultural production, natural or manmade."

In an unmatched case of cooperation, the CGIAR gene banks, including CIAT's, responded to the call for samples for safekeeping in the Vault. To date, CIAT has sent 34,111 accessions, 23,812 of which were beans and 10,299 were forages. (For the Vault's opening, IRRI had sent 70,180 accessions and CIMMYT 57,721 accessions.)

The response by CIAT and other CGIAR centers has helped increase security for the in-trust collections, complying with the International Treaty on Plant Genetic Resources for Food and Agriculture. The CGIAR also won worldwide recognition for helping to protect agricultural biodiversity for present and future generations. But perhaps the most significant message was to the world community: that humanity's future survival depends on conservation.

For more information, please see www.ciat.cgiar.org/newsroom/release_36.htm

<http://isa.ciat.cgiar.org/urg/main.do?language=en>

Improving “life after harvest” for cassava

Mutagenesis as a way of delaying postharvest physiological deterioration

Roots of cassava (*Manihot esculenta*) usually spoil within 3 or 4 days after harvest. The rot—postharvest physiological deterioration (PPD)—renders roots useless for consumption. Cassava clones react differently to PPD. In roots of susceptible clones, typical dark rings of PPD rot appear within 3 or 4 days of being harvested (Figure A). In contrast, a root harvested from a resistant clone shows no symptoms, even after 8 weeks of storage at room temperature. Different sources of tolerance of PPD are increasingly being found among wild relatives, induced mutations, recessive mutations, and cassava with high carotenoid contents in roots (which therefore have an orangey appearance, as in Figure B).

Such is the case of *M. walkerae*, which shows resistance to this rot. Hence, the trait was introgressed into cultivated cassava and then backcrossed by using a different cassava cultivar. This approach, however, meant introducing many undesirable alleles from *M. walkerae*. To side-step this problem, other approaches were taken.

At least three different sources of tolerance of PPD have been identified within *M. esculenta*. In an ad hoc replicated experiment, the roots of genotype AM 206-5 proved to have very low levels of PPD, even 3 weeks after harvest. Genotype GM 905-66 also proved to have high levels of tolerance of PPD. Two of its roots showed no symptoms of PPD 8 weeks after harvest when maintained at room temperature. Tolerance in this case may be linked to the antioxidant properties of high carotenoid contents. A third resistant genotype, an M2 line of a mutation-induced population, will be further evaluated in April 2009. It has already been screened but only in one plant, which had been grown from self-pollinated seed.

For more information, please see www.ciat.cgiar.org/yuca/pdf/introduction_to_cassava.pdf



Teresa Sánchez, CIAT



Nelson Morante, CIAT

Cassava clones react differently to postharvest physiological deterioration (PPD).



Learning to recognize symptoms of bacterial panicle blight in rice. The trainees are participants in a workshop organized by the CIAT Rice Pathology Laboratory.

Detecting bacterial panicle blight in rice

Developing sensitive and reliable detection techniques will help control a spreading and potentially significant disease

Bacterial panicle blight (or grain rot) of rice is, economically, a potentially serious disease. It spreads rapidly, and its presence has recently been confirmed in Panama, Costa Rica, Nicaragua, and Colombia.

A method for detecting the pathogen (*Burkholderia glumae*), using the polymerase chain reaction (PCR), was developed to screen potentially infected materials. Results from the PCR, which had used seeds with different levels of infection, showed that apparently healthy seeds from infected panicles contained low concentrations of the bacterium. This finding therefore demonstrated the sensitivity and reliability of this technique.

In addition, rice materials that tolerate this disease were also identified, using a methodology developed at CIAT for greenhouse conditions. This methodology permitted accurate reproduction of field symptoms on susceptible materials when pure cultures of the bacterium were used as inocula.

CIAT also conducted training courses to transfer these methodologies to rice scientists from the universities and national rice programs of several countries, including Colombia, Costa Rica, the Dominican Republic, Nicaragua, and Panama.

www.ciat.cgiar.org/riceweb/index1.htm

Abiotic stress tolerance lies in the genes: the case of *Brachiaria* grasses

Brachiaria genotypes differ widely in their response to the combined stresses of drought and aluminum toxicity

Brachiaria grasses are economically significant pasture grasses for much of the drought-prone acid-soil savannas of Latin America. A greenhouse study was conducted to determine differences between six *Brachiaria* genotypes, including two hybrids, in their regulation of water use, water-use efficiency (WUE), and shoot growth. The genotypes were subjected to the combined stress conditions of drought and aluminum (Al) toxicity in acid soil.

Genotypes *B. decumbens* CIAT 606 and *B. brizantha* CIAT 26110 cv. Toledo best tolerated the combined stress conditions of terminal drought and Al toxicity while *B. ruziziensis* 44-02 was found to be most sensitive. The other three genotypes—*B. brizantha* CIAT 6294 cv. Marandú, and hybrids, cv. Mulato (CIAT 36061) and cv. Mulato 2 (CIAT 36087)—showed varying degrees of high sensitivity to the combined stress conditions, higher water demand because of their higher growth rate, and difficulties in adjusting shoot growth to decreasing soil moisture.

The two most tolerant genotypes had demonstrated delayed stomatal closure, combined with efficient use of soil moisture for plant growth during dehydration. This finding will enable scientists to use these traits to screen other *Brachiaria* grasses for resistance to drought and acid soils.



Valerio Hoyos, CIAT

CIAT scientists have tested the responses of six genotypes of *Brachiaria* under combinations of drought and aluminum toxicity. The results will be used to develop improved forages for smallholder farmers in the tropics.

www.ciat.cgiar.org/forrajes/index.htm



Pieter Pypers, CIAT-TSBF



A farmer examines a plot of legumes intercropped with cassava, during a farmers' field day in Sud-Kivu province, DR Congo.

Improving cassava/legume intercropping systems in DR Congo

By simultaneously integrating several good soil management practices, ISFM improves, by even three times, the yields of important crops such as cassava and beans in eastern DR Congo

Technologies based on integrated soil fertility management (ISFM) were evaluated for production systems in the humid tropics. Whether these technologies increased the productivity of cassava/legume intercropping systems was determined in a series of on-farm demonstration trials conducted in Sud-Kivu, DR Congo.

To maximize productivity, the ISFM-based production systems combined improved germplasm, fertilizer applications, organic matter management, adapted agronomic practices, and crop spacing. For example, in the cassava/legume system, four rows of fast-growing legumes are planted in between rows of the slow-growing cassava, itself planted at 2×0.5 m. The spacing encouraged higher legume production without affecting cassava root yield. That is, compared with usual practices, legume yields in ISFM-based production systems increased by 300% and cassava yields by 200%.

The cassava/legume system may be modified according to production objectives, and different legumes can be intercropped. In Sud-Kivu, for example, farmers prefer intercropping with beans and soybeans, while in Bas-Congo, intercropping with groundnuts or soybeans is more common.

Farmer groups participating in the intercropping trials liked the system, which is now being further tested in farmer adaptation trials. Even so, farmers have already begun adopting the system. In pilot studies with fertilizer credit, expected benefit-to-cost ratios are highly favorable, ranging between 1.9 and 9.0. Hence, expected impact is to improve income, health, and nutrition for farming families.

www.ciat.cgiar.org/tsbf_institute/index.htm
www.ciat-tsbf-legume.or.ke

The triple benefits of a cover-crop legume

*Central American hillside farmers adopt the forage legume *Canavalia brasiliensis*, and benefit as milk production increases, crops receive more nutrients, and degraded soils improve*

The dominant farming system in the Central American hillsides consists of small farms that grow maize and beans, and may carry cattle. Soil nutrient depletion is a major problem, leading to degraded soils, declining agricultural productivity and, eventually, food insecurity and poverty. Problems are compounded by the scarcity of forage during the 4 to 6-month dry season when milk production drops and prices rise by 40% to 50%.

The forage legume *Canavalia brasiliensis* is drought tolerant. It was therefore assessed for its potential as a multipurpose option for use during dry seasons, that is, as a green manure and cover crop, as well as animal feed. Maize was planted during the first rainy season (May to July) and, in the second rainy season (September to November), as soon as the crop completed the filling stage, it was undersown with either bean or canavalia.

Canavalia improved soil fertility by fixing significant amounts of nitrogen. Plant biomass in the dry season increased by almost 1 ton per hectare. This resulted in an increase of daily milk production at 1 kg per animal. The milk retained its original quality.

Farmers showed considerable interest in integrating canavalia into their mixed farming system as a technology for substituting, in part, purchased fertilizers, increasing milk production during the dry season, and helping to recuperate degraded soils. Farmers are now being encouraged to disseminate this technology, together with seed production techniques.



Sabine Douxchamps, ETH Zürich

Cattle graze the legume canavalia, which grows between rows of maize residues left behind after harvest, Santa Teresa, Nicaragua.



Steve Beebe, CIAT



Beans sold in local markets ensure income for small farmers and food security for the community.

“Beans: they’re worth it!”

PABRA shows that big benefits result from investments in bean research for Africa

The Pan-Africa Bean Research Alliance, otherwise known as PABRA, comprises CIAT, national agricultural research systems (NARS), and other research and development (R&D) partners. In a collaborative way, PABRA develops and disseminates bean technologies, that is, improved bean varieties and cultivation practices. By 2005, 184 improved bean varieties had been disseminated to 17 countries (5-20 per country). Some varieties were adopted in several countries because of their suitability across different agroecologies and markets.

Studies were conducted to estimate the economic, social, and environmental benefits generated by investments in beans for such major bean-growing countries as DR Congo, Malawi, Rwanda, Tanzania, and Uganda. Between 1980 and 2004, more than US\$16 million were invested in bean research for sub-Saharan Africa. The studies (1) analyzed the impact of new bean technologies on households, (2) extrapolated results that provided aggregate measures of impact, and (3) estimated the rate of return to investments in bean R&D.

The studies suggested that, between 1986 and 2015, the net benefit from the US\$16 million investment in eastern and central Africa beans will reach \$199 million, that is, more than \$12 for each dollar invested. The average return to the total investment will therefore be 41%, but with substantial variation across countries, as follows: DR Congo–Kivu 40%, Malawi 37%, Rwanda 34%, Tanzania 25%, and Uganda 71%. The highest R&D benefits are being realized in countries with high annual bean output, acreage adoption, and yield gains.

www.ciat.cgiar.org/beans/index.htm

Chasing drought to control poverty: the CIAT–GCP partnership

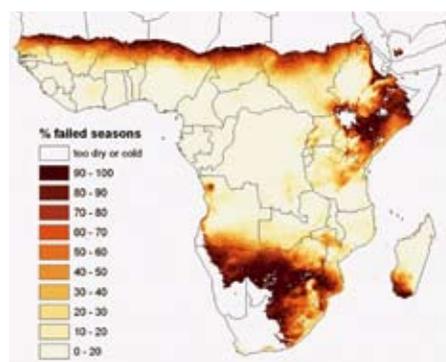
CIAT and the GCP aim to reduce poverty by developing and improving crop technologies for regions suffering from drought

CIAT scientists are working with the Generation Challenge Programme (GCP) to breed crops resistant to drought and other constraints. GCP–CIAT researchers first focused on regions of high drought and severe poverty, and the key crops that the inhabitants of such zones depend on. Today, the researchers are characterizing in-depth the targeted areas and drought dynamics for each focus crop. They are also creating a variety-testing network that will bring technology to national agricultural research systems and farmers.

Activities include developing a searchable database to provide extensive data to researchers wanting to estimate the spillover potential of an improved variety targeted at a specific country. Drought maps are also developed for the GCP’s mandated crops—rice, beans, and maize—using the “failed-season” algorithm. Hence, breeders can focus on developing varieties that resist drought at a given stage of their life cycle, whether early, mid-season, or at maturity.

CIAT contributes to the GCP Phenotyping Network by assessing and comparing sites across zones targeted for new cultivars, whether in Latin America, Africa, and Asia. Through this Network, the Center assists crop improvement programs with information on experimental design, how to avoid duplicating sites, and how to determine genotype-by-environment interactions in a sample of sites chosen from various targeted environments.

Through these activities, GCP–CIAT researchers are developing and providing crop varieties and other technologies that will lead to reduced poverty in drought-stricken regions.



The “failed-season” model uses a climate database and simulated weather data to estimate water balance and, hence, the probability of a failed growing season. Maps like these are then placed over crop maps to identify drought hot spots for each GCP crop.



Eugenia Isnardi, AI



Research has shown that biodiversity in Latin America can be protected by empowering local communities.

“Healthy, wealthy, and wise”: using ecosystem services

Reporting on the study “Challenges to managing ecosystems sustainably for poverty alleviation: securing well-being in the Andes/Amazon”

The Ecosystems Services for Poverty Alleviation (ESPA) program is an initiative of DFID, NERC, and ESRC, all UK-based. The program aims to promote multidisciplinary research in sustainable ecosystem management around the world. For Latin America, it commissioned a study to “perform a comprehensive analysis of the state of environmental services and their role in benefiting poor communities in the Andes/Amazon region”. This study is being conducted by ESPA’s partners: AI, TNC, UNAL–Palmira, King’s College–London, WWF, and CIAT.

The partners first carried out a “situation analysis” to determine the entry points for research, development, and capacity-building, emphasizing ecosystem services and poverty alleviation in the Amazon Region and eastern Andean hillsides. The study involved extensive engagement with stakeholders in the region; novel analyses of secondary data on poverty and ecosystem services such as water provision, biodiversity, and soil quality; and a literature survey.

The resulting report presented a list of priority research challenges for the region, and offered recommendations for improving the definition, assessment, and valuation of ecosystem services. Likewise, it suggested ways of developing sustainable and equitable management options that will also contribute to the alleviation of poverty.

The report concluded that it is far more cost-effective to prevent future degradation through incentive-based schemes that empower local communities than to oblige people to comply with demands from authority bodies.

For more information, please see www.ecosystemsandpoverty.org/wp-content/uploads/2008/05/espa-aa-final-report-_small-version_.pdf

www.ecosystemsandpoverty.org

Developing supply chains for specialty crops

Identifying environmental niches where supply chains could be implemented

CIAT has generated several methodologies and tools for identifying environmental niches that would support the implementation of supply chains of high-value (or specialty) crops. These instruments are now being widely used by numerous public and private organizations across Latin America, Africa, and Asia to identify environmental niches for a wide range of crops and species, including many underused crop species.

This outcome was achieved largely through a project in Colombia and Ecuador on diversification options for hillside agroecosystems, and subsequent off-shoot projects that also included Central America. Specialty crops included coffee, honey, medicinal plants, and forages. The supply chains studied involved 52 community-based organizations, public institutions, and private companies.

Major results included a highly successful methodology known as the CinfO system, which enables the necessary two-way flow of information between farmers, exporters, processors, and consumers. At first, about 2000 farms were integrated into the system. Today, close to 4000 farms, farmer organizations, and secondary level organizations have adopted the tool, with numbers increasing.

Two software programs, *Homologue* and *CaNaSTA*, were also developed. The first is used to find homologous environments for transferring technologies, whether these are varieties or management regimes. The second program combines formal scientific and socioeconomic knowledge to predict potential adaptation zones for a given crop.

Once environmental niches are identified for the specialty production of different crops on different continents, information is fed back to farmers, providing them with options for increasing their incomes.

For more information, please see http://cgmap.cgiar.org/documents/MTPProjects/2007-2009/CIAT_2007-2009_BP-2.PDF

<http://csusap.csu.edu.au/~robrien/canasta/index.htm>



The pioneering *CaNaSTA* software, developed by CIAT can help identify new ecological zones for crop production.



A small farmer sells navy beans at a night market in Ethiopia, one of the chains supported by the New Business Models for Sustainable Trading relationships project.

New business models for sustainable trading relationships

Recent CIAT-IIED research suggests that big business, like small farmers, also needs guidance in structuring mutually beneficial and successful trading relationships with the rural poor

“Linking farmers to markets” is a common theme in the R&D community. However, this approach has contributed only modest changes for women and the rural poor. Recent research indicates that a lack of scaleable models is a critical issue, leaving unanswered questions like the following: How can supply chains be structured so that they provide both business and development benefits? How can successful business linkages be leveraged to support large-scale processes of inclusive social development that will benefit women and the rural poor? How can such changes be measured and fed back into decision-making by multiple actors to scale-up positive results or reorient less successful activities?

CIAT and the International Institute for Environment and Development (IIED) reviewed existing knowledge to identify critical underlying principles in successful market linkages between small farmers and buyers across the developing world. These principles are now being applied to specific supply chains via action research in four countries in Africa and two in Latin America. Active participants include Acos S.p.A., Asda/Wal-Mart, Unilever, Sysco Corporation, Kraft Foods, Hershey Company, the Sustainable Food Lab, Rainforest Alliance, Catholic Relief Services, and Oxfam Great Britain, among others. The goal of this research is to provide guidance for the large-scale participation of the rural poor in sustained, beneficial, trading relationships.

www.ciat.cgiar.org/agroempresas/ingles/index.htm

Reviewing research approaches

Perhaps the way the CGIAR does research needs reviewing suggests a workshop on “Rethinking Impact: Understanding the Complexity of Poverty and Change”

The Workshop, organized by the ILAC Initiative, the PRGA Program, and ILRI, was held at CIAT headquarters, Cali, in March 2008. More than 60 participants from highly diverse backgrounds attended. They spent an intense 3 days working towards common ground and identifying future activities for achieving and assessing the impact on poverty of R&D agricultural and natural resource management. Six key issues arose from the workshop:

1. If the CGIAR is to effectively link its research to poverty alleviation and other development issues, then it must continually increase its understanding of the complex dynamics existing between poverty, gender, and social inequality and exclusion.
2. The distinctions between research and development are breaking down. Hence, the comparative advantage of CGIAR science lies in conducting use-oriented research that links knowledge with action.
3. The CGIAR needs to recognize the legitimacy of work that spans academia, farmers, policy-makers, civil society, and market forces, thus creating and sharing knowledge for use as a basis for effective and sustainable action.
4. Thoughtful assessment is needed when considering which actors to involve in research affecting farmers and the poor (or the civil society organizations representing them).
5. CGIAR management needs to acknowledge the legitimacy of the diversity of impact-assessment methods and approaches that are available, including traditional ones, for evaluating outcomes and impact.
6. If the CGIAR is to adopt new approaches to research for poverty alleviation and associated impact assessment, its capacity to use these approaches and their methodologies must be improved.

For more information, please see www.prgaprogram.org/riw/Briefs/RIW%20Brief%203%20screen.pdf
www.prgaprogram.org/riw/files/RIW%20Summary.pdf

www.prgaprogram.org



Jim Weale, SCRIPTORIA Communications

Workshop participants call upon the gods to help review the CGIAR's research approaches.



CIAT as Collaborator in CGIAR Partnerships

CIAT continues to stress active collaboration among CGIAR centers and participates in several CGIAR systemwide programs and initiatives. CIAT—together with IFPRI—is a co-convenor of the HarvestPlus Challenge Program and actively participates in the other Challenge Programs (see below). A complementary program to HarvestPlus, called AgroSalud and dealing with biofortification issues in Latin America, is also hosted by CIAT. Furthermore, CIAT serves as the host center for two systemwide programs.

CGIAR Challenge Programs



HarvestPlus Challenge Program
www.harvestplus.org



AgroSalud Project
www.agrosalud.org



Generation Challenge Programme
www.generationcp.org



Sub-Saharan Africa Challenge Program
www.fara-africa.org/networking-support-projects/ssa-cp



Challenge Program on Water and Food
<http://gisweb.ciat.cgiar.org/sig/cgiar-cpwf.htm>

Systemwide Programs



International Consortium for the Conservation and Sustainable Use of Natural Resources in the Amazon (Amazon Initiative)
www.iamazonica.org.br



Systemwide Program on Participatory Research and Gender Analysis (PRGA)
www.prgaprogram.org

Agronatura Science Park

www.ciat.cgiar.org/agronatura/index_eng.htm

Purpose and activities

The Agronatura Science Park at CIAT headquarters was created in the 1990s. It has since been developing cross-sectoral alliances in agricultural research and natural resource management in Latin America and the Caribbean (LAC). It therefore contributes to CIAT's mission to work in the tropics to reduce hunger and poverty and improve human health through research that increases the eco-efficiency of agriculture.

Over the years, Agronatura has strengthened its leadership in exploring and implementing opportunities for new collaborative initiatives. These addressed agricultural development concerns of priority interest to LAC and delivered research outputs more efficiently to end users. Highly diverse organizations have found that the Science Park offers an environment in which they can achieve interactive synergies that enable them to respond more effectively to the challenges of improving the efficiency and effectiveness of their research.

In 2008, 12 institutions renewed their commitment to the Science Park (see next pages for brief descriptions of each member institution). They work on themes such as biodiversity conservation, sustainable natural resource management, generation of high-value alternatives for the agroindustrial and bioindustrial sectors, food sovereignty¹, genetic resources, crop and animal health, and food safety.

Now, more than ever, Agronatura will play a significant role in the Center's and the CGIAR's ongoing change process, taking advantage of the new policies that favor and value dynamic partnerships. CIAT's new *Strategic Directions*, finalized in February this year, indicate that, essentially, all its ecoregional and global research will be conducted through partnerships. Some of these will focus on joint research and others on linking CIAT research more effectively with development.

1. This term refers to the right of peoples to define their own food, agriculture, livestock, and fishery systems without having their food largely subjected to international market forces.



Julio César Martínez, CIAT

Staff of the 12 institutions who renewed their commitment to the Agronatura Science Park at CIAT, Cali, Colombia.



The CGIAR, during its AGM08, emphasized that “A re-invigorated partnership culture, supported by incentives and processes, will be developed. It will take on the best practices of today’s CGIAR where partnership approaches have instilled new dynamism to the agenda”².

Now is the time, therefore, to think not only about creating new, but also more effective, alliances that will access a private-sector perspective on global agricultural research. This enriched perspective will reinforce Agronatura’s efforts to convert research outputs into products for the poor and, hence, truly reach farmers through closer contact.

Members

Public–private partnerships



- **Consortio Latinoamericano y del Caribe de Apoyo a la Investigación y al Desarrollo de la Yuca (CLAYUCA)**
Latin American and Caribbean Consortium to Support Cassava Research and Development

The Consortium aims to strengthen the exchange of experiences and information, transfer improved technologies, and support the planning and financing of research and development activities for the cassava crop. It also aims to help improve living standards and contribute to the sustainable management of natural resources in those regions of LAC where cassava cultivation occupies a significant place in agricultural production systems.



- **Fondo Latinoamericano de Innovación en Palma de Aceite (FLIPA)**
Latin American Fund for Oil Palm Innovation

The Fund’s main objective is to contribute towards attaining sustainability of the oil palm agroindustry in tropical Latin America by carrying out research and development throughout the region.

2. Page 6 in The Change Steering Team. *A revitalized CGIAR—A new way forward: the integrated reform proposal*. 3 November 2008. Also available at www.cgiar.org/pdf/agm08/agm08_reform_proposal.pdf

- **Fondo Latinoamericano para Arroz de Riego (FLAR)**

Latin American Fund for Irrigated Rice

The Fund brings together the public and private sectors of 15 rice-growing countries of tropical and temperate Latin America. In responding to the needs of Latin America, the Fund offers innovative technological solutions that are aligned with principles of competitiveness and sustainability. The Fund also helps generate and transfer technologies that preserve natural resources while reducing unit production costs.



Colombian organizations

- **Centro de Investigación de la Caña de Azúcar de Colombia (CENICAÑA)**

Colombian Sugarcane Research Center

Private, not-for-profit organization. Its mission is to help develop a competitive sugarcane sector through research, technology transfer, and provision of specialized services. The goal of this sector is to achieve and maintain excellence while playing an outstanding role in the socioeconomic progress of sugar-producing zones and the conservation of productive, pleasant, and healthy environments in those zones.



- **Corporación para el Desarrollo de la Biotecnología (Corporación BIOTEC)**

Corporation for the Development of Biotechnology

Belongs to Colombia's national science, technology, and innovation system. Its biotechnological work is carried out within social construct schemes to generate value for agricultural, agroindustrial, and bioindustrial sectors through value chains in the areas of research, development, and technology transfer.



- **Fundación para la Investigación y Desarrollo Agrícola (FIDAR)**

Foundation for Agricultural Research and Development

Nongovernmental organization that promotes the conservation and sustainable use of genetic resources, food sovereignty and security, and the use of agricultural technologies and practices that will enhance, in harmony with the environment, the competitiveness of the small and medium-scale farmers of Colombia.





- **Instituto Colombiano Agropecuario (ICA)**
Colombian Agricultural and Livestock Institute
National public entity, affiliated with the Colombian Ministry of Agriculture and Rural Development. ICA works in the areas of crop and animal health, and food safety in primary production, with the goal of projecting Colombian agrobusiness to the world.



- **Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (Instituto Humboldt)**
Alexander von Humboldt Biological Resources Research Institute
Not-for-profit organization, which operates under the auspices of the Colombian Ministry of Environment, Housing, and Territory Development. The Institute has a public mandate to conduct basic and applied research on the genetic resources of Colombia's flora and fauna, and develop a scientific inventory of the mega-biodiversity found in this country.



- **Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andrés" (INVEMAR)**
Institute of Marine and Coastal Research "José Benito Vives de Andrés"
Affiliated with the Colombian Ministry of Environment, Housing, and Territory Development. INVEMAR conducts basic and applied research on renewable natural resources and the environment of coastal, marine, and oceanic ecosystems. Its goal is the sustainable management of resources, recovery of marine and coastal environments, and improvement of Colombia's quality of life.

CGIAR centers



- **Bioversity International**
Seeks to improve the well-being of present and future generations by enhancing the conservation and deployment of agricultural biodiversity on farms and in forests.

- **International Maize and Wheat Improvement Center**
Centro Internacional de Mejoramiento de Maíz y Trigo
(CIMMYT)

Dedicated to scientific research and training on issues related to maize and wheat to help improve the livelihoods of people in developing countries.



Other

- **Ecoagriculture Partners (EP)**

This entity seeks to support the emerging global movement for ecoagriculture. In working towards its goal, EP actively encourages the development and assessment of new agricultural and natural resource management practices within a landscape framework. These practices aim at contributing to the three goals of healthy ecoagricultural systems: enhanced biodiversity conservation, increased agricultural production, and improved rural livelihoods.





An Overview of CIAT

Mission, vision, and values

Mission

To reduce hunger and poverty, and improve human health in the tropics through research aimed at increasing the eco-efficiency of agriculture.

Vision

CIAT will engage its key scientific competencies to achieve significant impact on the livelihoods of the poor in the tropics. Interdisciplinary and applied research will be conducted through partnerships with national programs, civil society organizations, and the private sector to produce international public goods that are directly relevant to their users. These goods include improved germplasm, technologies, methodologies, and knowledge.

Values

- **Excellence**
High quality outputs are achieved through efficient work processes.
- **Scientific integrity**
Research is carried out with integrity and transparency, and according to an agenda that is socially and environmentally responsible.
- **Innovation, creativity, diversity, and continuous learning**
Innovative approaches in research and organizational activities are pursued by taking advantage of gender and cultural diversity, and applying effective approaches for knowledge sharing and learning.
- **Impact orientation**
Research and related activities are demand driven, and are monitored and evaluated for social and environmental impact and relevance.
- **Teamwork and partnership**
Internal and external teams are proactively built and strengthened through collaborative activities.

Board of Trustees

Further details of each Board member can be found at www.ciat.cgiar.org/about_ciat/board.htm

Gordon MacNeil
(Board Chair)
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Switzerland

Luis Fernando Vieira
Brazil

Moisés Wasserman
(ex officio)
Colombia

Donors

CIAT receives funds through the Consultative Group on International Agricultural Research (CGIAR) or under specific projects from countries and organizations. The Center also receives, from a growing number of institutional clients, funds for research and development services, which are provided under contract. We gratefully acknowledge their commitment and contributions. A list of donors can be accessed at www.ciat.cgiar.org/about_ciat/donors.htm

Partners

In carrying out its mission, CIAT works with a large array of diverse partners. We take this opportunity to sincerely thank our partners for their collaboration and dedication in the many projects on which we work together.

An alphabetical list of partners, together with their links, can be accessed at www.ciat.cgiar.org/about_ciat/pdf/partners_collaborators.pdf

Institutional performance

CIAT performed at the top end of CGIAR centers in the Performance Measurement exercise of 2007 (conducted and announced in 2008). The combined score of outputs, outcomes, and impacts placed CIAT in fifth

position among the 15 centers. Figure 1A shows the Center's composite score, relative to the maximum and minimum scores achieved by other CGIAR centers.

CIAT ranked third in the publication measurement exercise, with respect to peer-reviewed journal articles, coming in above the CGIAR average for the two publication indicators, as illustrated in Figure 1B. When the Science Council took, as a trial, the impact factor of the journals, CIAT would have ranked first.

Other performance indicators

Capacity strengthening

CIAT continues to play an important role in the capacity strengthening of institutions and individuals. In 2008, more than 300 young researchers were engaged in research and training activities at headquarters. About the same number of young researchers also benefited from working alongside research staff in Africa and Asia.

During its 42 years of existence, the Center has trained well over 10,000 professionals from different parts of the world. They participated in all kinds of capacity strengthening activities, as indicated in the table on the following page.

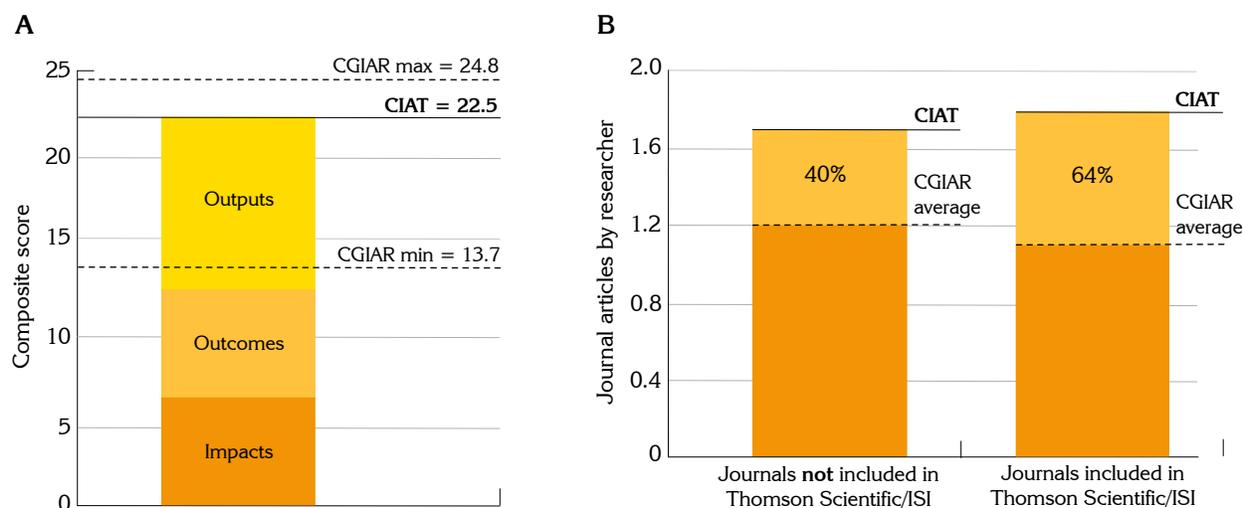


Figure 1. CGIAR performance indicators reported and evaluated in 2008.



Professionals trained at CIAT headquarters, 1967–2008

Training	Participants (no.)	
	1967–2007	2008
By modality		
Group		
Multidisciplinary and specialized courses	5,215	124
Specialized distance learning course	22	0
Individualized specialization		
Thesis work towards:		
An undergraduate degree	706	20
A master's degree	340	5
A doctorate	302	6
	10,373	319
By region		
Latin America and the Caribbean	4,499	126
Africa and Asia	534	8
Europe	392	5
North America	136	64
Colombia	4,812	116
	10,373	319

Most training activities are carried out at the Center's headquarters. An array of training modalities is offered, including conferences, laboratory practices, fieldwork, and individual training during thesis work.

Trainees come from a broad range of local, national, international, development, and nongovernmental institutions, whether public, private, or mixed in nature.

As to be expected, CIAT's host country benefited most from these training activities, with almost 5000 researchers trained (about 46% of all trainees). Many of their training events were made possible through financial support from national entities such as the Colombian Ministry of Agriculture and Rural Development, COLCIENCIAS, ICETEX, CORPOICA, national federations and research centers, and international organizations based in Colombia.

Awards

CIAT was again successful in attracting several prestigious awards during 2008, including those listed below:

- **2008 National Scientific Merit Award**, category Technological Innovation, granted by the Colombian Association for the Advancement of

Science (ACAC) to **Hernán Ceballos** in recognition of the research carried out to identify cassava varieties with enhanced nutritional qualities and increased productivity for Colombia's industrial sector.

- **2007 Distinguished Researcher Award**, granted by the World Association of Soil and Water Conservation (WASWC) to **Reinhardt H. Howeler**, Watana Watananonta, and Tran Ngoc Ngoan, for the development of effective soil conservation practices, which were widely adopted by cassava growers in Asia.
- **Honorary Doctorate Award**, granted by the Faculty of Natural Resources and Agricultural Sciences at the Swedish University of Agricultural Sciences to **André Bationo** in recognition of his research, writing, and teaching in relation to agronomy in Africa.
- **Certificate of Appreciation**, granted by the Ethiopian Institute of Agricultural Research (EIAR) to **CIAT**, for its work on beans in that country.

A complete list of awards, starting 1990, can be accessed at www.ciat.cgiar.org/about_ciat/awards_2006.htm

Publications

In 2008, CIAT researchers again published widely, with 141 articles in refereed journals and another 135 documents in other sources. A list of these and other documents published in the last 10 years can be accessed at www.ciat.cgiar.org/biblioteca/articles2008.htm

A collection of over 13,000 documents published by CIAT researchers in the Center's 42 years of existence can also be retrieved through CIAT's electronic library catalog at http://ciat.catalog.cgiar.org/ciat_bibliography.html

CIAT principal staff and offices

Principal Staff 2008*

Geoffrey Hawtin, Director General
Albin Hubscher, Deputy Director General for Corporate Services
Douglas Pachico, Deputy Director General for Research

Research Leaders

Stephen Beebe, Beans
Patricia Biermayr-Jenzano, Coordinator, CGIAR PRGA Program
Hernán Ceballos, Cassava
Daniel Debouck, Genetic Resources Unit
Alonso González, Linking Smallholder Farmers to Growth Markets
Jeroen Huising, Sustainable Land Management in the Tropics, Kenya
Andrew Jarvis, Agroecosystems Resilience
Roger Kirkby, People and Agroecosystems, Uganda
César Martínez, Rice
Michael Peters, Multipurpose Forages
César Sabogal, Coordinator, CGIAR Amazon Initiative Program, Brazil
Nteranya Sanginga, Tropical Soil Biology and Fertility (TSBF), Kenya
Joseph Tohme, Sharing the Benefits of Agrobiodiversity
Bernard Vanlauwe, Integrated Soil Fertility Management in Africa, Kenya

Regional Coordination

Robin Buruchara, Coordinator for Sub-Saharan Africa, Uganda
Rod Lefroy, Coordinator for Asia, Lao PDR
Axel Schmidt, Coordinator for Central America and the Caribbean, Nicaragua

* Countries are only indicated for staff working outside Colombia.

Research Support

Edith Hesse, Corporate Communications and Capacity Strengthening
Kathryn Laing, Grant Management and Donor Relations
Carlos Meneses, Information Systems Unit

Administration and Finances

Germán Arias, Internal Legal Adviser
Luz Stella Daza, Internal Audit
Andrés Palau, Central Services
Jorge Peña, Budgeting
Gustavo Peralta, Human Resources
Mario Rengifo, Treasurer

CIAT Offices**

Headquarters

Apartado Aéreo 6713
Km 17, Recta Cali-Palmira
Cali, Colombia
Phone: +57 (2) 4450000 (direct) or +1 (650) 8336625 (via USA)
Fax: +57 (2) 4450073 (direct) or +1 (650) 8336626 (via USA)
E-mail: ciat@cgiar.org
Internet: www.ciat.cgiar.org

CIAT Regional Office—Central America and the Caribbean

Residencial San Juan de Los Robles
Del Restaurante La Marsellaise, 2 cuadras al lago, Casa #303
Apartado Postal LM-172
Managua, Nicaragua
Phone: +505 2709965
Fax: +505 2709963
E-mail: ciatnica@cable.net.ni / a.schmidt@cgiar.org

CIAT Regional Office—Africa

CIAT Africa Coordination
Kawanda Agricultural Research Institute
13 km Gulu Road
P.O. Box 6247
Kampala, Uganda
Phone: +256 (414) 567259, 566089, 567670, or 567116
Fax: +256 (414) 567635
E-mail: r.buruchara@cgiar.org / ciat-uganda@cgiar.org

** In addition, CIAT has staff posted in Bolivia, Brazil, Honduras, Kenya, Malawi, Rwanda, Tanzania, Thailand, Vietnam, and Zimbabwe (for further details see www.ciat.cgiar.org/about_ciat/staff.htm).



TSBF Institute of CIAT (TSBF-CIAT)

ICRAF Campus
UN Avenue, Gigiri
P.O. Box 30677-00100
Nairobi, Kenya
Phone: +254 (20) 7224766, 7224755, or 7224770
Mobile: +254 711 034000
Fax: +254 (20) 7224763
E-mail: tsbfinfo@cgiar.org

CIAT Regional Office—Asia

c/o NAFRI Compound
Dong Dok, Ban Nongviengkham
P.O. Box 783
Vientiane, Lao PDR
Phone: +856 (21) 770090
Fax: +856 (21) 770091
E-mail: r.lefroy@cgiar.org

Financial Highlights and Outlook

Results for 2008

Revenues continued to grow from US\$46 million in 2007 to \$47.3 million in 2008, including funds from the Transition Plan. They then decreased slightly to \$44.5 million. In 2007, CIAT was also able to reverse the trend of negative operating results of recent years and achieve a surplus of \$0.67 million. This positive trend continued throughout 2008, ending the year with a surplus of \$0.86 million.

Net reserves increased slightly from US\$4.3 million in 2007 to \$4.5 million in 2008. CIAT began protecting its local expenses according to established hedging policy. In compliance with international accounting and reporting standards, temporary variances of currency hedges are being reported.

Such variances are temporary in nature, as the objectives of such operations are to reduce budget-planning risks and protect the unrestricted local operating budget for the following year from unpredictable currency fluctuations. For the last 12 months, these fluctuations reached more than 55% (see Figure 2). Hence, for 2008, CIAT reports a temporary negative variance in net assets of \$2.1 million, which will be fully recovered in 2009.

By reversing the continual deterioration of its net assets, CIAT was able to more than double its days of operating reserves from a low of just 18 days in 2006 to 39 days in 2008. This compares favorably with the targeted 30 days of the Transition Plan. However, meeting the CGIAR target of 75 to 90 days will require continued commitment and



Figure 2. Daily exchange rates Colombian peso/US\$ (January 2007 to March 2009).

focus on resource mobilization, and the concerted implementation of the “full cost budgeting and recovery process”, which is based on “Activity Based Costing” principles.

The trend of core fund erosion continues. Unrestricted funds (net Transition Plan funds plus self-generated income) have decreased by US\$2.2 million, thus reducing the ratio of unrestricted to total funds to just 24% (see Figure 3).

In February 2008, the Executive Committee of the CGIAR, in a special meeting, supported the proposed Transition Plan. These resources enabled CIAT to reduce its staffing number further by 18 positions—half from Corporate Services and half from Research—and absorb, while complying with Colombian labor law, the high termination costs for indefinite labor contracts drawn up before 1990.

The Transition Plan funds also allowed CIAT to review its strategic aims and develop a new Strategic Direction Plan in consultation with partners and other interested parties. Funds were also earmarked for the reconstitution of CIAT’s management team, including a new board of trustees, the recruitment of an interim director general, and the search and selection of a new director general and head of finance.

In line with the approved Transition Plan, CIAT used the remaining funds to bridge crucial time-limited research staff contracts, strengthen the relationship between CIAT and Colombia and the rest of Latin America, and renovate CIAT’s aging infrastructure, particularly for research and information technology. The funds helped rebuild the Geographic Information System offices, which suffered from structural failure in early 2008.

We take this opportunity to sincerely thank those donors who helped fund the Transition Plan.

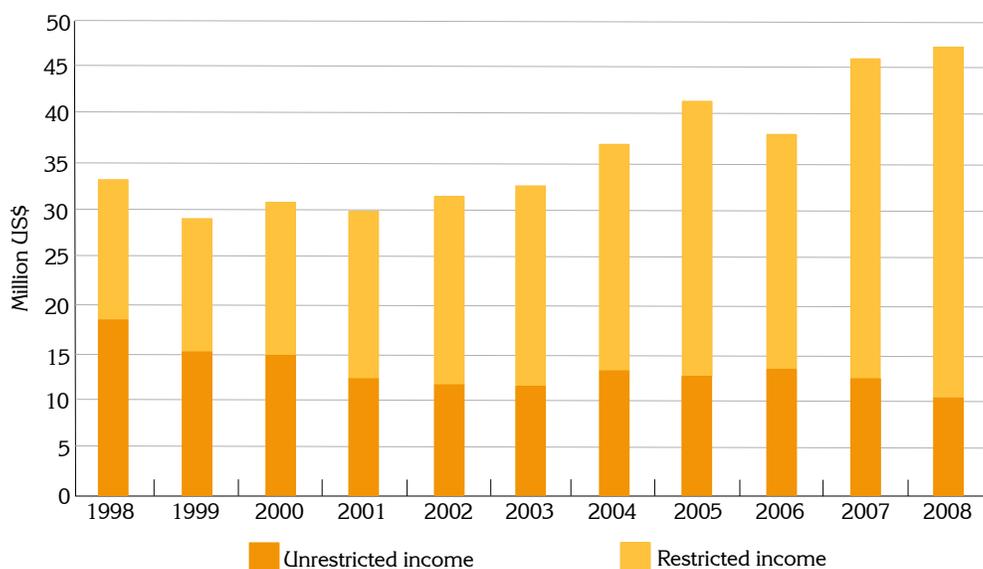


Figure 3. CIAT donor revenues.

Outlook for 2009

CIAT estimates that total revenues will be slightly less than US\$50 million and the balance will show a small surplus. Net assets will keep reserves at current levels (expressed as days of operating expenditures). With the current trend in the Colombian peso exchange rate, CIAT anticipates a significant increase in net assets during 2010, provided unrestricted donor funding remains stable.

Statement on risk management and internal control

The Board of Trustees is responsible for establishing appropriate practices that will identify and manage significant risks in the achievement of CIAT’s objectives. These practices will also ensure that the Center’s management of risks will align with CGIAR principles and guidelines, now used by all CGIAR centers.



These risks are operational, financial, and reputational, and are inherent to CIAT's activities. They represent potential losses resulting from external events, human error, or inadequate internal procedures or systems.

The Management Team has communicated the risk management policy it adopted to all Center staff, both in the areas of scientific research, finance, and administration, and in the regional offices. This policy, supported by the staff, is based on a framework that identifies, evaluates, and prioritizes risks and opportunities across CIAT.

CIAT Management is charged with implementing the policy and continuously evaluating identified risks. At all its meetings, the Board receives a risk management assessment report and a follow-up "action review".

CIAT endeavors to manage risks by ensuring that the appropriate infrastructure, controls, systems, and people are in place throughout the Center. Key practices used to manage risks and opportunities include financial reviews, clear policies and accountabilities, transaction approval frameworks, financial and management reporting, and the monitoring of metrics. This last is designed to highlight the positive or negative performance of individuals and procedures across a broad range of key performance areas.

Risk management assessment and the follow-up of actions are regular items on the Management Team's weekly meeting agendas. The Board's Audit and Risk Management Committee reviews and approves the annual risk assessment conducted by the Management Team.

Assessment for 2008 identified risks in three broad areas:

- Quality of science
- Financial compliance
- Administrative and legal integrity

In 2008, CIAT's operational environment was one of transition. The Transition Plan approved in February

2008 has been implemented. The full-cost budgeting and recovery process, based on the "Activity Based Costing" principle, will be fully implemented in 2009. The new strategic directions that outline CIAT's future have been developed and are being implemented under the guidance of the new Director General.

In this context, CIAT has identified its priority risk areas in terms of degree and immediacy of impact, and likelihood of occurrence. These are:

- Maintaining the effectiveness of research operations and retaining essential staff while the new strategic plan is being implemented.
- Security of in-trust genetic resources.
- Achieving net assets and operating reserves and other financial targets.
- Ensuring the security of staff working in regions suffering political and social unrest.
- Managing the Center's geographically decentralized structure to ensure integration and communication among and within regions, and with headquarters.

The Board has reviewed the progress made by CIAT Management in implementing the risk management framework over the last year, and its focus on the highest priority risks. The Board notes that the effectiveness of risk management depends not only on the identification of risks, but also on the implementation of mitigation plans. It is satisfied with the steps initiated by Management to strengthen this latter area. It continuously monitors the status of the mitigation actions taken, particularly in relation to the high priority risk areas mentioned above.

The Board is confident that the policy and practices so far implemented will lead to a stronger and more effective management and control over the potential risks that the Center faces now, and may face in the future.

Financial statements

CIAT Statement of Financial Position (in thousands of US\$, at 31 December for years 2008 and 2007)

	2008	2007
Assets		
Current Assets		
Cash and cash equivalents	26,784	24,814
Accounts receivable		
Donors	7,462	9,231
Employees	309	427
Other CGIAR centers	51	51
Others	2,523	2,379
Inventories	526	139
Prepaid expenses	115	74
Total Current Assets	37,770	37,115
Non-Current Assets		
Property, plant, and equipment	5,571	5,190
Other assets	28	31
Total Non-Current Assets	5,599	5,221
Total Assets	43,369	42,336
Liabilities and Net Assets		
Current Liabilities		
Accounts payable		
Donors	19,199	14,297
Employees	601	887
Others	5,350	4,853
Support to Partners Challenge Programs	5,265	4,899
Funds in trust	2,660	5,427
Accruals and provisions	1,186	1,284
Total Current Liabilities	34,261	31,647
Non-Current Liabilities		
Accruals and provisions	1,170	1,264
Total Non-Current Liabilities	1,170	1,264
Total Liabilities	35,431	32,911
Net Assets - Unrestricted		
Undesignated	1,470	1,461
Designated	8,585	7,734
Temporary Net Assets	(2,117)	230
Total Net Assets	7,938	9,425
Total Liabilities and Net Assets	43,369	42,336



CIAT Statement of Activities
(in thousands of US\$, at 31 December for years 2008 and 2007)

	Unrestricted	Restricted		Total 2008	Total 2007
		Temporary	Challenge Programs		
Revenue and Gains					
Grants	8,573	27,679	6,353	42,605	44,242
Transition Plan support	2,521	-	-	2,521	-
Other grants	-	-	-	-	434
Other revenues and gains	1,933	-	-	1,933	1,276
Total revenues and gains	13,027	27,679	6,353	47,059	45,952
Expenses and Losses					
Program-related expenses	6,767	26,816	6,173	39,756	38,066
Management and general expenses	6,217	863	180	7,260	6,860
Other losses and expenses	327	-	-	327	268
Subtotal expenses and losses	13,311	27,679	6,353	47,343	45,194
Indirect cost recovery	(3,665)	-	-	(3,665)	(3,707)
Total expenses and losses	9,646	27,679	6,353	43,678	41,487
Operating Surplus from Ordinary Activities	3,381	-	-	3,381	4,465
Extraordinary Items:					
Reorganization/Phase-out costs	-	-	-	-	(3,791)
Transition Plan costs	(2,521)	-	-	(2,521)	
Operating Surplus (Deficit) before Adjustment on Fixed Assets	860	-	-	860	674
Change in accounting estimate on fixed assets	-	-	-	-	(2,820)
NET SURPLUS (DEFICIT)	860	-	-	860	(2,146)
Operating Expenses by Natural Classification					
Personnel costs	9,792	8,419	1,450	19,661	18,751
Supplies and services	1,868	9,151	1,917	12,936	13,921
Collaborators/Partnerships costs	-	6,726	2,245	8,971	7,513
Operational travel	707	2,520	561	3,788	3,500
Depreciation of fixed assets	945	863	180	1,988	1,509
Indirect cost recovery	(3,665)	-	-	(3,665)	(3,707)
Total operating expenses, net	9,647	27,679	6,353	43,679	41,487



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Website information

See the following lists online:

CIAT donors: www.ciat.cgiar.org/about_ciat/donors.htm

CIAT partners: www.ciat.cgiar.org/about_ciat/pdf/partners_collaborators.pdf

CIAT publications: www.ciat.cgiar.org/biblioteca/articles2008.htm

CIAT awards (1990–2008): www.ciat.cgiar.org/about_ciat/awards_2006.htm

Acronyms and abbreviations used in this report: www.ciat.cgiar.org/newsroom/report2008/pdf/acronyms.pdf

The International Center for Tropical Agriculture
(Centro Internacional de Agricultura Tropical, or CIAT, in Spanish)
is a not-for-profit organization that conducts socially and
environmentally progressive research aimed at reducing hunger and poverty,
and preserving natural resources in developing countries.

CIAT is one of the 15 centers funded mainly by the 64 countries,
private foundations, and international organizations that make up
the Consultative Group on International Agricultural Research (CGIAR).

www.ciat.cgiar.org

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