

## IMPACTS CIP is a GREAT investment!

The annual net benefit from CIP research has exceeded \$225 million for the past 10 years. This figure is based on estimates from CIP impact studies, which also show that the benefits mostly accrue to the poor and hungry in developing countries.

“For CIP donors, that is a handsome dividend, indeed,” notes Guy Hareau, who leads CIP’s Impact Assessment, Monitoring, and Evaluation Unit.

Beneficiaries range widely from semi-subsistence women potato farmers in the East African highlands to small sweetpotato producing households in mixed crop-livestock systems in China and poor potato consumers in Latin America.

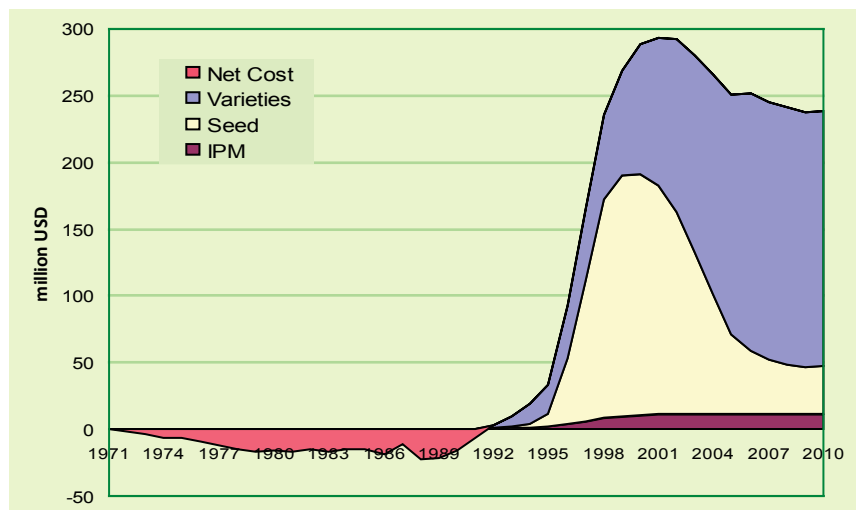
“But impacts of this scale require long-term, sustained investments,” cautions Hareau. The gestation period between investment and returns to agricultural research is long. “It took nearly 20 years for CIP to ‘get out of the red’ with returns reaching a level that exceeded the organization’s annual budget,” explains Hareau, “but then the payoffs really took off.”

By the mid-1990s, CIP technologies had matured and were generating seven times more annual returns than CIP’s annual expenditure. Major benefits accrued from improved varieties, better seed technologies, and integrated pest management practices.

The estimates of benefits are based on detailed impact studies. Each identifies the source of benefit from the use of a technology developed by CIP and its partners, the adoption profile, and total value gained over time from its use. A discount rate is applied to account for variations in time and by technology.

These estimates are conservative. Not all success stories have been documented, nor does all CIP’s work lend itself to economic measurement, such as CIP’s role in the preservation of biodiversity. CIP’s contributions to human capital development, and to other livelihood assets such as physical capital and improved social cohesion, are undeniably important, too. But quantifying these additional gains entails extensive research.

Impact studies play a key role in demonstrating the value of strategic research, raising awareness, and ensuring continued donor investment. But they face challenges. Because impacts generally occur outside the time frame of a project, special attention must go to funding impact work and developing an impact culture in the planning and implementation of the research agenda. A further challenge is the trend toward lower investments in long-term global research. Pressures from donors to produce short-term results for targeted programs are moving investment away from upstream research that may produce the biggest impacts in the longer run.



Net annual benefit from CIP related technology documented in impact studies



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## A Maasai woman becomes a potato seed production pioneer

Christine Nashuru is a Maasai woman living in the Transmara District of Kenya. Christine did not access formal education. But thanks to a training course led by CIP, she has pioneered the production of seed potato in her district. In 2010, Christine sold over 10.3 tons of seed potato, worth over US\$4,000, and she is expecting more than 80 tons of seed from her 4 acres for 2011.

This is a very surprising role for a Maasai woman. By tradition, the pastoralist Maasai are consummate cattle-herders. Cattle are a critical symbol of wealth and pride, as well as the main source of food and material. "I hope your cattle are well", is a standard greeting.

But potatoes are taking on increased importance in Transmara District, and in Sub-Saharan Africa as a whole. Since 1994, potato production in Sub-Saharan Africa has more than doubled. In Transmara, it began in 2000, with potato grown as a kitchen garden crop. Farmers bought tubers from the local markets and used them as seed. However, potato yields fall far short of their potential. Farmers face an inadequate supply of high-quality seed, coupled with their own limited awareness of better seed management practices.

In August 2009, Christine was selected to attend a course on potato seed production held in Nairobi and organized by CIP. The course focused on the use of three-generation (3-G) seed multiplication strategy. The 3G seed strategy produces large numbers of minitubers through very rapid multiplication – in three field generations, instead of the usual seven required. The rapid multiplication means production costs are lowered, and there is less chance of contamination from disease or pests.

CIP is leading 3-G projects in Kenya, Rwanda, and Uganda, in partnership with private and public partners. The private partners are key to increasing capacity and broadening adoption of quality seed. This helps accelerate the availability of improved varieties that are more adapted to local conditions and demands.

The project is fostering private adoption of the 3-G strategy and improved knowledge and skills leading to average yield increases of 20% for over 15,000 smallholder growers on potato production technologies and best practices.

As for Christine, since her training, she has never looked back. Not only is she driving better seed production in her district. She also has trained farmers in her region, mostly women, on seed and ware potato production and utilization.



The video "Seed for Change" about the role of potatoes in Africa is available at [http://www.youtube.com/watch?v=ZDdZN1\\_zibQ](http://www.youtube.com/watch?v=ZDdZN1_zibQ)

## First ever Mozambican potato varieties released

Seven new potato varieties, obtained from CIP's breeding program and collection, were recently released in Mozambique as part of a food security and poverty alleviation effort. Developed and selected in Mozambique in collaboration with government partners, other local partner, and farmers, they are the country's first home-developed potato varieties.

The goal of introducing new potato varieties is to lessen Mozambique's dependence on its neighbors for ware potatoes and costly potato seed, especially now that urban consumption is on the rise. The country currently imports some 2,000 tons of seed potato yearly, making local potato production an expensive venture, especially for small-scale farmers.

"The timely availability of seed of well-adapted varieties will enhance the sustainability and economics of potato production in Mozambique," notes Dieudonne Harahagazwe, a CIP seed system specialist. Three of the clones are part of the new generation of CIP material that is resistant to Late Blight (*Phytophthora infestans*), the most devastating crop disease in the world.

Potato production is increasing in Mozambique, where it is grown in with nine out of the country's 10 provinces. In recent years, Mozambique's government has been prioritizing food security, and this is

reflected in adaptation of agricultural regulations to fast track getting seeds to the field.

The result is not only helping end users. It is also benefitting researchers:

“In most cases, only one new variety is released at a time,” explains Merideth Bonierbale, senior potato breeder at CIP, “so there is little possibility to understand the reasons why one variety may spread quickly and another one slowly.” The release of seven varieties at once offers a very interesting opportunity to study uptake pathways. “The seven varieties will be subject to the same institutional procedures and made available simultaneously to farmers and end-users. This means we’ll be able to collect and compare information on aspects such as farmers’ and consumer’s choices and other factors that can determine varietal success and the costs and benefits of production,” concludes Bonierbale.



## PARTNERSHIPS Sweetpotato – in perpetuity



A new agreement between CIP and the Global Crop Diversity Trust is paving the way to support, conserve, and make available sweetpotato varieties in perpetuity. The agreement finalizes a 5-year grant for US\$1 million from the Trust to CIP, which will be automatically renewed every five years.

“The impetus for this agreement goes back several years,” explains Genoveva Rossel, sweetpotato curator for CIP’s genebank. She and colleagues Willy Roca and Dindo Campilan organized a workshop in the Philippines in 2007 that brought together sweetpotato experts from Asia, Africa, Latin America, and the Pacific. “There was clear agreement among the participants of the need to regenerate sweetpotato material at risk of being lost due to climate change, and that a critical genebank function is to duplicate and maintain clonal collections to secure the rich biodiversity of sweetpotato,” says Rossel.

The sweetpotato germplasm collection at CIP maintains 7,777 accessions, including 4,615 landraces (native varieties), 1,984 breeding lines (improved varieties), and 1,178 accessions of wild sweetpotato from the Americas, Asia, Africa, and the Pacific Islands.

The purpose of the collection is to conserve living samples to ensure that the genetic resources are available now for use by farmers, plant breeders, and researchers and secure for the long term. The genetic diversity is critical for developing varieties that can adapt to diverse needs and preferences of producers and consumers and to shifting pressures and conditions from climate change.

The sweetpotato accessions are conserved in the genebank both as seeds and as *in vitro* plantlets. Cryopreservation is also used to preserve plant material indefinitely. CIP is collaborating with the Global Crop Diversity Trust and researchers from six collaborating countries to develop cryo-preservation protocols, standardizing methodologies for long-term preservation of sweetpotato accessions. Another partner activity with the Trust and colleagues from INTA Argentina involves the use of *in-vitro* screening for salinity tolerance of sweet potato varieties.

“Sweetpotato specialists are a very collaborative group, here at CIP and globally,” notes Rossel. “We work with colleagues across all parts of CIP, whether it’s regarding the identification of selected clones for improved varieties, analysis of nutritional value and quality, genetic analysis, and ensuring the distribution of clean material for colleagues and institutions around the world.”



## A positive legacy in Uzbekistan

CIP's main partner in Uzbekistan at the National University has received a US\$2.8 million grant to implement a seed potato multiplication project using the three CIP clones released in the past two years. The three varieties are well adapted to local conditions of drought, heat, and soil salinity. The new program aims to produce 500,000 microtubers per year in new labs to boost potato seed production. Other components involve planting seed potato in the mountains, building new screenhouses and storehouses, and supplying needed farm equipment and machinery.

These advances are legacies of CIP's work with partners in the region, which has focused on speeding up the process of varietal development in the face of climate change pressures. It also represents a very successful collaboration between researchers in Lima and those in Central Asia. To speed up the process, breeders in Lima developed true-seed families with a high probability of desired traits for the region. These were planted directly in Uzbekistan and neighboring countries, skipping the step of testing varieties in the fields and laboratories of Peru. Results guided crossbreeding in Peru for next-generation seed that was then sent back to Uzbekistan. "We went through the back and forth process three times to get it just right," explains Merideth Bonierbale, leader of CIP's Global Program on Germplasm Enhancement and Crop Improvement. "The new funding and activities are an impact of CIP's work," says Carlo Carli, CIP's Regional Seed Specialist for Central Asia. "Without the release of the three new varieties, which are very well adapted to local conditions," he adds, "our university partners in Tashkent would never have asked the Government to fund such a project. It is very satisfying to know our work has produced such results."

## One Corporate System Prototype Workshop

More than 30 staff members from AfricaRice, Bioversity, CIAT, CIP, ICARDA, ICRAF, ILRI, IRRI, WorldFish, and the Consortium Office met at CIP-Lima for a 3-week workshop to review prototype modules for One Corporate System (OCS). They carefully went through the processes and details of the prototypes with consultants from UNIT 4, the company that has been contracted to develop the system. Participants identified gaps in the system design, continued to align terminology and processes, and made headway to build a shared understanding of the key processes and initial design. Another objective of the workshop was to test the usability of the prototype modules and discuss how to move into the design phase of OCS.

"OCS is a model of CGIAR collaboration, but it is also unconventional and complex," notes Carlos Alonso, CIP's Executive Director for Strategy and Corporate Development, who has been spearheading the project for CIP. He points out, "OCS involves 10 institutions scattered around the world, with 10 different corporate cultures, diverse cultural backgrounds, and people in different time zones." The process of culling through the details of the OCS prototype required enormous commitment and patience – and was not without its frustrations. "But what makes it unique is that we are all bounded by a shared vision of doing things better and a common purpose to make this a success," comments Alonso.

Pre- and post-workshop surveys were conducted with all the participants to provide data and feedback on the OCS process, concerns, and progress. Responses indicate that the new system is capturing and supporting business processes and that the collaborative work around OCS has been excellent for teambuilding and developing a new community of practice.



Available at:  
<http://cipotato.org/book-innovation-for-development>



## EVENTS Innovation celebrations

Two recent events are highlighting innovations from CIP's Papa Andina Partnership Program. The first was the release of the book, *Innovation for Development: The Papa Andina Experience*. The book represents a compendium of 25 papers on Papa Andina's experiences with and contributions to innovation through participatory processes. They feature multiple aspects of Papa Andina ranging from new models and methodologies to various technical innovations. Also featured are examples of learning and program improvement, public policy development, empowerment and gender, and South-South knowledge sharing. *Innovation for Development* underscores the remarkable productivity of the Papa Andina initiative and how it has helped spur innovations to promote sustainable development.

Papa Andina was also showcased in a short video presented at CADE Ejecutivo 2011, in Cusco, Peru. This is an annual conference of top executives, entrepreneurs, and political leaders from Peru and around the world. This year, the featured topic was innovation and the processes of change needed to spur it. Papa Andina was chosen to be presented due to its experiences bringing together research, the private sector, the public sector, and small-scale farmers to promote successful innovations in products, processes, and partnerships.

## Malawi Minister of Agriculture visit

The Honorable Peter Mwanza, Minister of Agriculture, Irrigation, and Water Management of Malawi, visited CIP and its partner Millennium Villages Project on November 19. He was accompanied by other important government officials, including the Principal Secretary for the Ministry and other leaders. The Minister expressed his appreciation to CIP for the introduction of orange-fleshed sweetpotato (OFSP) to Malawi. He said that he was happy with the progress of the OFSP project in Malawi, recognizing that it will benefit many people and lending his support to ensuring attention is paid to this promising crop.



## African Crop Science Society Conference

CIP actively participated in the 10th African Crop Science Society (ACSS) Conference, presenting oral presentations, posters, panel discussions, agro-processing displays, and a large panel display. The conference was held in Maputo, Mozambique on October 10-13. CIP presented research regarding sweetpotato plant breeding, biotechnology, and seed systems, particularly associated with the Sweetpotato for Profit and Health Initiative (SPHI) and its Sweetpotato Action for Security and Health in Africa (SASHA) Project.



CIP also participated in a field day, which was integrated with the conference and took place at LOZANE Farm and Umbeluzi Research Station in the Boane District of Maputo province. Participants toured sweetpotato fields and were briefed on different aspects of sweetpotato production, multiplication, and dissemination by CIP staff.

The conference also served as the venue for the official launching of two new CIP projects, "Reaching Agents of Change" (RAC) and "Mitigating Disaster and Fighting Vitamin A Deficiency with New Drought-Tolerant Orange Fleshed Sweetpotato." It was presided over by His Excellence Antonio Limbau, Vice Minister of Agriculture of Mozambique. Participants had the chance to taste sweetpotato products as part of the ceremony.

## Expanding CIP's NIRS network



The Honorable Kwesi Ahwoi, Minister for Food and Agriculture of Ghana, was present for the official launching and demonstration of the new Near-infrared Spectroscopy (NIRS) lab at the Crops Research Institute of the Council for Scientific and Industrial Research (CSIR-CRI), in Kumasi, Ghana on October 26. This facility represents an important extension of CIP's global NIRS network and will provide critical support to CIP's sweetpotato breeding program in West Africa. It is also part of the Sweetpotato Support Platform for West Africa of the

Sweetpotato Action for Security and Health in Africa (SASHA) Program. Among those attending the event were Dr. H.K. Adu-Dapaah, Center Director of CSIR-CRI and SASHA Executive Steering Committee member; Dr. (Mrs.) R.E.M, Entsua Mensah, Deputy Director of CSIR-CRI; a representative of Chief Otumfuo Osei Tutu II; and Ted Carey, CIP's Regional Sweetpotato Breeder.

Key support and collaboration was given by colleagues in Lima, including Thomas zum Felde and Eduardo Porras from the NIRS laboratory and members of the CIP administration/procurement department.

AWARDS  
& HONORS

## Award for Dinah Borus

Dinah Borus, a CIP researcher based in Nairobi, has been selected for the prestigious Australia Awards for Africa Scholarship to pursue her PhD. The topic of her research is "Climate Change Adaptation by Farmers Growing Potato in Kenya". There are very few women scientists specialized in potato in Sub-Saharan Africa, and Dinah is a real role model for other young women. She is so appreciated by the farmers with whom she works that she has earned the nickname of "Mama Viasi", which is Swahili for "Mama Potato".



IN MEMORIUM

## In memorium - Cirilo Enciso



On November 27, CIP lost a dear friend and colleague, Mr. Cirilo Teófilo Enciso Bustios. Cirilo worked with CIP for 28 years as a driver, based in Lima. He was a warm, hard working, and dedicated employee, who was not afraid of going beyond the call of duty to help others. Always ready to pitch in, Cirilo not only got us safely to remote destinations on difficult roads, but was also one to help harvest potatoes in the field, carry crates and equipment, or dig out fellow travelers stuck in the mud or snow.

We are grateful to Cirilo for all the rides, the camaraderie, and the stories he left us. Our thoughts are with his family and dear friends.



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The International Potato Center (known as CIP from its Spanish-language name Centro Internacional de la Papa) is a research facility based in Lima, Peru, that seeks to reduce poverty and achieve food security on a sustained basis in developing countries through scientific research and related activities on potato, sweet potato, other root and tuber crops, and on the improved management of natural resources in the Andes and other mountain areas. It was established in 1971 by decree of the Peruvian International Potato Center (CIP). Director General. Barbara Wells.Â CIP has also made significant advances in developing biofortified potatoes with elevated levels of iron and zinc to contribute to global efforts to end malnutrition. For these potatoes to improve nutrition and livelihoods, more efficient seed systems are needed to deploy quality seed tubers for farmers to plant. Smallholder farmers in developing countries primarily plant seed they saved from earlier harvests which facilitates the spread of viruses and reduces yields. The International Potato Center or Centro Internacional de la Papa (also known by its Spanish acronym, CIP) seeks to reduce poverty and achieve food security on a sustained basis in developing countries. The Center works to achieve this through scientific research and related activities on potato, sweet potato, other root and tuber crops, and on the improved management of natural resources in the Andes and other mountain areas. (Click to enlarge). International Potato Center Global Presence. Hide Product Types.