portugal and the CGIAR

A PARTNERSHIP FOR RESEARCH AND DEVELOPMENT

CONSULTATIVE GROUP ON INTERNATIONAL AGRICULTURAL RESEARCH
PORTUGAL'S UNRESTRICTED SUPPORT:

Described below are some important examples of a successful partnership directed toward achieving the Millennium Development Goals, with particular emphasis on poverty alleviation, through improved education, health, agriculture, private sector development, infrastructure and the processing sector. These priorities are fully aligned with those of the CGIAR, which works closely with Portugal’s Ministry of Agriculture and Ministry of Science and Technology.

Portugal’s development aid agenda is shared priorities and close collaboration with the international Centers supported by the CGIAR, as it allows flexibility in resource allocation, based on CGIAR research priorities. This also permits strong support for the CGIAR reform program, which aims to increase transparency and promote high-quality science, in particular through Challenge Programs.

Through its support for interdisciplinary agricultural research, Portugal aims to promote the generation and use of new knowledge in the tropics. The country has a special mandate to support the Community of Portuguese Speaking Countries (CPLP), whose members are Brazil, East Timor, five African nations and Portugal. Research for those countries is carried out through the Tropical Research Institute (ICT, Instituto de Investigação Científica Tropical), which is responsible for support for the CGIAR.

The international Centers supported by the CGIAR collaborate actively with ICT and with leading Portuguese universities.

A major portion of Portugal’s financial support for the CGIAR is core funding for the international agricultural research Centers. Sustained core funding is crucial for the CGIAR, as it allows flexibility in resource allocation, based on CGIAR research priorities. This also permits strong support for the CGIAR reform program, which aims to increase transparency and promote high-quality science, in particular through Challenge Programs.

PORTUGAL IS A MEMBER OF THE EUROPEAN INITIATIVE FOR AGRICULTURAL RESEARCH FOR DEVELOPMENT (EIARD), which brings together the 25 member states of the European Union, plus the European Commission, Switzerland and Norway. EIARD works to improve coordination of European policies on agricultural research for development. Toward this end, EIARD participates in meetings of the CGIAR Executive Council.

SHARED PRIORITIES AND CLOSE COLLABORATION

Portugal’s development aid agenda is directed toward achieving the Millennium Development Goals, with particular emphasis on poverty alleviation, through improved education, health, agriculture, private sector development, infrastructure and the processing sector. These priorities are fully aligned with those of the CGIAR, which works closely with Portugal’s Ministry of Agriculture and Ministry of Science and Technology.

Some Examples of a Successful Partnership

Described below are some important Center initiatives, made possible by Portugal’s unrestricted support:

- **Adapting rice production to climate change with varieties tolerant to flooding.** A team of International Rice Research Institute (IRRI) scientists and partners have made a key breakthrough with the recent discovery of a gene that allows rice to withstand up to 2 weeks of submergence caused by flooding. The gene, known as Sub1, has been bred into several popular varieties, making them tolerant to submergence. The new varieties enable farmers to obtain yields two to three times those of the nontolerant versions under prolonged submergence of rice crops, a situation that will become more common as a result of climate change. ([www.irri.org](http://www.irri.org))

- **Raising incomes by strengthening farmers’ links to markets.** In southern Africa, specifically in Mozambique, Namibia and Zimbabwe, ILRI is working to raise the incomes and improve the livelihoods of small farmers in drought-prone crop-livestock systems. Diversification of those systems with livestock appears to be more ecologically friendly and offers better opportunities for poverty reduction than cropping alone. With appropriate market incentives, subsistence cattle and goat producers can move towards more commercially oriented production practices. For that purpose, researchers are seeking to link extension and input delivery more directly with marketing strategies. The initiative is being implemented by a consortium of partners, including national research and extension services, farmers, nongovernment organizations, the private sector and two CGIAR Centers — the International Livestock Research Institute (ILRI) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). ([www.ilri.org](http://www.ilri.org))

- **Biofortified sweetpotato to combat blindness in sub-Saharan Africa.** More than 3 million African children under the age of five suffer from blindness as a result of vitamin A deficiency. One way to introduce more vitamin A into their diets is through the introduction of orange-fleshed sweetpotato varieties. These biofortified varieties are rich in betacarotene, which the human body converts easily into vitamin A. They are also easy to grow, and the average consumer can readily afford them. The Vitamin A Partnership for Africa (VITAA), pioneered and led by the International Potato Center (CIP), is vigorously promoting widespread adoption of orange-fleshed sweetpotato. The partnership involves more than 70 agencies from the health, nutrition and agricultural sectors, working together in ten countries of sub-Saharan Africa. CIP has developed about 40 new orange-fleshed sweet potato varieties that are resistant to important viral diseases. The improved varieties have been readily accepted by farmers and consumers in Ghana, Kenya, Mozambique, South Africa, Tanzania and Uganda. ([www.cipotato.org](http://www.cipotato.org))
IICT, a leader in reinforcing international coordination and cooperation in science and technology, will host the workshop on committing science to global development in Lisbon in 2008. This international conference with a focus on "knowledge for development" is organized in collaboration with Portuguese state laboratories, EMBRAPA (Brazil), the CGIAR and the United Nations. Also in 2008, IICT and the community of Portuguese speaking countries (CPLP) will host a side event during the CGIAR annual meeting in Maputo, Mozambique.
WHY AGRICULTURAL RESEARCH MATTERS

Rising food prices, concern over global climate change, the energy crisis and new interest in the potential of biofuels have ushered in a new era of challenge and opportunity for agriculture and natural resource management.

These global trends, while affecting people everywhere, have particularly high risks and consequences for the approximately 2.1 billion people who live on less than US$2 a day. About three-fourths of these people live in rural areas and depend directly or indirectly on agriculture for their livelihoods.

Furthermore, higher food and energy prices will force poor consumers to make tradeoffs in their spending, drastically reducing their possibilities for improved well being.

Climate change, by worsening growing conditions for crops, will further strain the capacity of agricultural land and threaten the productivity growth vital for reducing poverty. Scientists estimate that rising temperatures and changing rainfall patterns could cause agriculture production to drop by as much as 50 percent in many African countries and by 30 percent in Central and South Asia.

Strengthened investment in agricultural science at national and international levels is essential to meet these new and multi-faceted challenges. Moreover, there is a need to scale up such research to foster innovations for increased agriculture productivity to benefit the rural poor while conserving natural resources such as water, forests and fisheries.

According to the World Development Report 2008, investment in agriculture research has “paid off handsomely,” delivering an average rate of return of 43 percent in 700 development projects evaluated in developing countries. Clearly, strong programs of relevant and effective research must be at the top of the international development agenda, if the Millennium Development Goals of halving hunger and poverty by 2015 are to be met and if these gains are to be expanded in the decades to come.
AN EVOLVING STRATEGIC PARTNERSHIP

The Consultative Group on International Agricultural Research (CGIAR), established in 1971, is a strategic partnership, whose 64 Members support 15 international Centers, working in collaboration with many hundreds of government and civil society organizations as well as private businesses around the world. CGIAR Members include 21 developing and 26 industrialized countries, four co-sponsors as well as 13 other international organizations. Today, more than 8,000 CGIAR scientists and staff are active in over 100 countries throughout the world.

The CGIAR generates cutting-edge science to foster sustainable agricultural growth that benefits the poor through stronger food security, better human nutrition and health, higher incomes and improved management of natural resources. The new crop varieties, knowledge and other products resulting from the CGIAR’s collaborative research are made widely available to individuals and organizations working for sustainable agricultural development throughout the world.

The priorities of CGIAR research are:

- Reducing hunger and malnutrition by producing more and better food through genetic improvement
- Sustaining agriculture biodiversity both in situ and ex situ
- Promoting opportunities for economic development and through agricultural diversification and high-value commodities and products
- Ensuring sustainable management and conservation of water, land and forests
- Improving policies and facilitating institutional innovation

A critical task for 11 of the CGIAR Centers is to maintain international genebanks, which preserve and make readily available the plant genetic resources that form the basis of food security worldwide.

In addition, the CGIAR implements several innovative “Challenge Programs” designed to confront global or regional issues of vital importance. Implemented through broad-based research partnerships, Challenge Programs mobilize knowledge, technology and resources to solve those and other problems such as micronutrient deficiencies, which afflict more than three billion people; water scarcity, which already affects a third of the world’s population; and climate change, which poses a dire threat to rural livelihoods across the developing world.

The CGIAR is constantly striving for excellence. During 2008 a Change Management Initiative is in progress designed to ensure that in this rapidly changing external environment described earlier, the CGIAR is positioned to deliver new technologies and new knowledge which will deliver the best possible results. The Initiative will culminate in a forward looking strategy for the CGIAR.

The CGIAR is open to all countries and organizations that share a commitment to achieving sustainable agricultural development and are willing to invest financial, human and technical resources toward this end. Membership has expanded and diversified over the years, and the CGIAR is poised for further growth. CGIAR expenditures amounted to US$506 million in 2007, the single largest investment made to mobilize science for the benefit of the rural poor worldwide.

Visit [www.cgiar.org](http://www.cgiar.org) or email [cgiar@cgiar.org](mailto:cgiar@cgiar.org) for more information.

An Evolving and Growing CGIAR

Without public investment in international agricultural research through the CGIAR,

- world food production would be 4-5 percent lower
- developing countries would produce 7-8 percent less food
- world food and feed grain prices would be 18-21 percent higher
- 13-15 million more children would be malnourished.

For every US$1 invested in CGIAR research, US$9 worth of additional food is produced in developing countries, where it is needed most. The evidence is clear: agricultural growth alleviates poverty and hunger.

INTERNATIONAL AGRICULTURAL RESEARCH

International agricultural research has a strong record of delivering results that help confront the central development and environmental challenges of our time.

The science developed by the CGIAR-supported Centers and their partners has delivered significant gains in terms of reduced hunger and improved incomes for small farmers throughout much of the developing world. CGIAR research is much broader than agricultural productivity alone, encompassing a range of initiatives related to water, biodiversity, forests, fisheries and land conservation. It has advanced sustainable management and conservation practices in these sectors, therefore protecting millions of hectares of forest and grasslands, safeguarding biodiversity, and preventing land degradation.

Among the outcomes of that research are the following:

- Successful biological control of the cassava mealybug and green mite, both devastating pests of a root crop that is vital for food security in sub-Saharan Africa. The economic benefits of this work alone, estimated at more than US$4 billion, are sufficient to cover almost the entire costs of CGIAR research conducted so far for Africa.
- New Rices for Africa, or NERICA, which combine the high yields of Asian rice with African rice's resistance to local pests and diseases. Currently sown on 200,000 hectares in upland areas, NERICA are helping reduce national rice import bills and generating higher incomes in rural communities.
- More than 50 varieties of recently developed drought-tolerant maize varieties being grown on a total of about one million hectares across eastern and southern Africa.
- A flood-tolerant version of a rice variety grown on six million hectares in Bangladesh. The new variety enables farmers to obtain yields two to three times those of the non-tolerant version under prolonged submergence of rice crops, a situation that will become more common as a result of climate change.
- Widespread adoption of resource-conserving “zero-till” technology in

2007 ALLOCATION BY DEVELOPING REGION

- Asia 29%
- Latin America & Caribbean 13%
- Africa 48%
- Central and West Asia & North Africa 10%

The vital rice-wheat systems of South Asia. Employed by close to a half million farmers on more than 3.2 million hectares, this technology has generated benefits estimated at US$147 million through higher crop yields, lower production costs and savings in water and energy.

- An agroforestry system called “fertilizer tree fallows,” which renews soil fertility in southern Africa, using on-farm resources. More than 66,000 farmers have adopted this technology in Zambia, where it has strengthened food security and reduced environmental damage, and the system is spreading in four neighboring countries.

- A new approach to predicting the likely consequences of biofuels as well as valuable findings on the likely consequences of biofuels development in China and India for increasingly scarce water supplies.

- A simple methodology for integrating agriculture with aquaculture to bolster income and food supplies in areas of southern Africa where the agricultural labor force has been devastated by HIV/AIDS. Under large-scale testing in Malawi, the method doubled the income of 1,200 households and dramatically improve nutrition through fish consumption.

- Increasing smallholder dairy production in Kenya is improving childhood nutrition while generating jobs. This award-winning project with smallholder dairies has contributed up to 80 percent of the milk products sold in the country and strengthened local capacity to market milk products.

- A new method for detecting aflatoxin, a deadly poison that infects crops, making them unfit for local consumption or export benefiting farmers throughout sub-Saharan Africa. This technology, together with a novel biological control method that has proved able to reduce aflatoxin by nearly 100 percent, is helping to curb this major threat to human health, especially in children,
RESEARCH IS A COLLABORATIVE ENTERPRISE

cgiar members

The CGIAR’s achievements would not be possible without the support and commitment of the 64 Members and many hundreds of partner organizations who together form the growing CGIAR network.

African Development Bank
Arab Fund for Economic and Social Development
Asian Development Bank
Australia
Austria
Bangladesh
Belgium
Brazil
Canada
China
Colombia
Commission of the European Community
Côte d’Ivoire
Denmark
Arab Republic of Egypt
Finland
Food and Agriculture Organization of the United Nations
Ford Foundation
France
Germany
Gulf Cooperation Council
India
Indonesia
Inter-American Development Bank
International Development Research Centre
International Fund for Agricultural Development
Islamic Republic of Iran
Ireland
Israel
Italy
Japan
Kellogg Foundation
Kenya
Republic of Korea
Luxembourg
Malaysia
Mexico
Morocco
Netherlands
New Zealand
Nigeria
Norway
OPEC Fund for International Development
Pakistan
Peru
Philippines
Portugal
Rockefeller Foundation
Romania
Russian Federation
South Africa
Spain
Sweden
Switzerland
Syngenta Foundation for Sustainable Agriculture
Syrian Arab Republic
Thailand
Turkey
Uganda
United Kingdom
United Nations Development Programme
United Nations Environment Programme
United States of America
World Bank

cgiar-supported centers

The 15 Centers supported by the CGIAR are autonomous organizations, each with its own charter, board of trustees, director general and staff. Center scientists are recruited from around the world.

Africa Rice Center (WARDA)
Cotonou, Benin
www.warda.org

Bioversity International
Maccarese (Rome), Italy
www.bioversityinternational.org

International Center for Tropical Agriculture (CIAT, its acronym in Spanish)
Palmira (Cali), Colombia
www.ciat.cgiar.org

Center for International Forestry Research (CIFOR)
Bogor, Indonesia
www.cifor.cgiar.org

International Maize and Wheat Improvement Center (CIMMYT, its acronym in Spanish)
Texcoco (Mexico, D.F.), Mexico
www.cimmyt.org

International Potato Center (CIP, its acronym in Spanish)
Lima, Peru
www.cipotato.org

International Center for Agricultural Research in the Dry Areas (ICARDA)
Aleppo, Syria
www.icarda.org

International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
Patancheru (Hyderabad), India
www.icrisat.org

International Food Policy Research Institute (IFPRI)
Washington, D.C., USA
www.ifpri.org

International Institute of Tropical Agriculture (IITA)
Ibadan, Nigeria
www.iita.org

International Livestock Research Institute (ILRI)
Nairobi, Kenya, and Addis Ababa, Ethiopia
www.ilri.org

International Rice Research Institute (IRRI)
Los Baños (Manila), the Philippines
www.irri.org

International Water Management Institute (IWMI)
Battaramulla (Colombo), Sri Lanka
www.iwmi.cgiar.org

World Agroforestry Centre (ICRAF)
Nairobi, Kenya
www.worldagroforestrycentre.org

WorldFish Center
Penang, Malaysia
www.worldfishcenter.org