



A Partnership for Research and Development Italy and the CGIAR



The Italy-CGIAR Partnership

Italy became a CGIAR Member in 1974 but was involved in its activities well before then. The country was host to the initial discussions, held at Bellagio beginning in April 1969, that led to the establishment of the CGIAR, and it participated in the CGIAR's first meeting in 1971.

Italy hosts Bioversity International, one of 15 Centers supported by the CGIAR, as well as the headquarters of two CGIAR co-sponsors—the UN Food and Agriculture Organization (FAO) and the International Fund for Agricultural Development (IFAD)—and also the CGIAR Science Council Secretariat at FAO.

Shared Priorities and Close Collaboration

Italy's development cooperation is aimed at achieving the Millennium Development Goals (MDGs), with particular emphasis on reducing poverty and strengthening governance. In its support for agricultural research, the country contributes to sustainable development by helping enhance food security, reduce poverty, strengthen capacities and improve management of natural resources—priorities that are fully aligned with those of the CGIAR.



The Italian Ministry of Foreign Affairs is responsible for the country's relationship with the CGIAR, and it is managed by the Ministry's Directorate General for Development Cooperation (DGCS). In this task, the Overseas Agronomic Institute (IAO) has provided technical support to DGCS since 1997. The IAO updates the DGCS on the use of Italian support and assists the Ministry in designing proposals for the allocation of funds. Its staff also keeps in touch with the Centers supported by the CGIAR through visits and participation in project-related workshops and seminars, and they form part of the Italian delegation at the CGIAR's annual general meetings.

The Centers collaborate with leading Italian universities, specialized research institutes and development organizations. In 2006, one Italian national served as a member of the Board of Trustees at one of the Centers, and in previous years, several Italians have been Board members, with one having served as Board Chair for the

International Institute for Tropical Agriculture (IITA). Italy also actively supports the secondment of junior professionals to the Centers.

In 2007, ten percent of Italy's financial support for the CGIAR was core funding.

Italy is an active member of the European Initiative for Agricultural Research for Development (EIARD),¹ which brings together the Member States of the European Union, plus the European Commission, Norway and Switzerland. EIARD works to improve coordination of European policies on agricultural research for development. Toward this end, EIARD nominates European representatives to the CGIAR Executive Council. As a participant in EIARD, Italy plays an active role in the CGIAR's reform process, which began in 1998.



Based on a review of the distribution of Italian support for the CGIAR over the last 10 years, aimed at determining how it can best foster development and enhance collaboration and partnerships, the country's support now focuses on System-wide Programs, Inter-Center Projects, Ecoregional Initiatives and Challenge Programs.

Some Products of Our Partnership

Described below are some important Center initiatives, made possible by Italian support:

- About 200 million Africans, mostly women and children, are chronically hungry, and nearly 30 million require emergency food and agricultural assistance in any one year; in 2004, 23 countries in sub-Saharan Africa needed food aid. Moreover, the number of Africans living in absolute poverty (with incomes of one dollar a day or less) has risen to 340 million, and most of these people (100 million households) rely on subsistence agriculture. As part of the CGIAR's efforts to combat rural poverty in the region, it has launched the Sub-Saharan Africa Challenge Programme (SSA-CP). Managed by the Forum on Agricultural Research for Africa (FARA), the program is based on partnerships among stakeholders at the local, national, regional and international levels. Partners use an innovative system-based approach—referred to as Integrated Agricultural Research for Development (IAR4D)—to manage the interactions between crops, soils, water,

¹ In 2005 Dr. Puccioni (Italy) was elected Chair of EIARD.

pests and diseases, and human interventions in agriculture. The approach also addresses policies and markets (including processing and movement of goods) and their effects on agricultural productivity, profitability, income generation and sustainability. (www.fara-africa.org)

- Barley is the world's fourth most important cereal crop. It is grown for feed and food, mainly by poor subsistence farmers in drought-prone areas where poverty levels are high. The barley breeding program at the International Center for Agricultural Research in the Dry Areas (ICARDA) has developed farmer participatory breeding methodologies that, using cutting-edge science, allow the development of resilient, drought-tolerant varieties. One important outcome of this participatory research is that when the varieties are released there are no problems of adoption as the farmers feel very strongly the ownership of the whole breeding process. So far, participatory barley improvement has generated economic benefits estimated in 1997 at US\$92.5 million in Algeria, Egypt, Ethiopia, Iraq, Jordan, Morocco, Tunisia and Syria. More recent estimates put the gross economic benefits at US\$ 24.9 million for 2006 in Syria alone. In the year 2000 the program received the CGIAR Award for the *Outstanding Scientific Article*. (www.icarda.org)
- The productivity of chickpea (*Cicer arietinum* L.), one of the most important cool-season food legumes, is affected by various biotic stresses, including nematodes. Among the most devastating is the Cyst Nematode, *Heterodera ciceri*, according to surveys conducted jointly by ICARDA and the Institute of Agricultural Nematology at Bari in different chickpea growing areas of West

Asia and North Africa. Though the pest can be controlled effectively with nematocides, these are expensive and damaging to the environment. To provide farmers with a more suitable alternative, the Institute and ICARDA researchers are developing barley varieties with host plant resistance to nematodes. Using a non-destructive screening technique, they evaluated a large number of chickpea samples and found that, while cultivated species do not show resistance, it is present in a few samples of wild chickpea species. Based on this knowledge, the joint program developed various agronomically superior chickpea lines with resistance to cyst nematode. These have

been registered and made available to national agricultural research systems (NARS) in different countries. This is the first example of successful transfer of cyst nematode resistance from wild to cultivated chickpeas. Researchers are now pyramiding genes for combined resistance to other important stresses. (www.icarda.org)

- Mycotoxins in food and feeds pose a major threat to human and animal health. They also create great economic hardship, since crops with levels of contamination higher than the acceptable limits cannot be traded internationally and must be destroyed. In a collaborative effort to



combat this problem, IITA's Agriculture and Health Program is working with Italy's Institute of Food Protection (ISPA) and the European Union to create a global network of mycotoxin researchers in developed and developing countries. The aim of this partnership is to facilitate the transfer of technology that can enhance the productivity and export potential of agriculture in tropical Africa and other developing countries. (www.iita.org)

- Civil society organizations (CSOs) are key partners of the CGIAR Centers. By helping ensure the relevance of research for development and by boosting its effectiveness, they contribute to accomplishing the goals of strengthening food security, reducing poverty and improving natural resource management in the developing world. CSOs also add value to the work of CGIAR Centers by drawing on local knowledge, providing technical expertise and leveraging social capital. Moreover, CSOs offer innovative ideas and solutions as well as participatory approaches for solving local problems. Many projects at CGIAR Centers are carried out in collaboration with CSOs in countries around the world, including Italy.





***Nourishing the
Future through
Scientific
Excellence***

The Consultative Group on International Agricultural Research

The Consultative Group on International Agricultural Research (CGIAR) is a strategic partnership of countries, international and regional organizations, and private foundations supporting 15 international agricultural research Centers that work with national agricultural research systems, civil society organizations and the private sector. The partnership mobilizes agricultural science to reduce poverty, foster human well-being, promote agricultural growth, and protect the environment. The CGIAR generates global public goods that are available to all.

Agriculture, the key to development

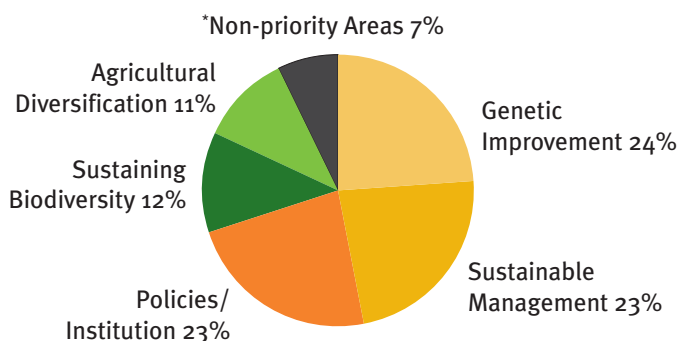
In a world where 75 percent of poor people depend on agriculture to survive, poverty cannot be reduced without investment in agriculture. Many countries with strong agricultural sectors have a record of sustained investments in agricultural science and technology. The evidence is clear—investment in agricultural research for development generates growth, reduces poverty and protects the environment.

Agricultural research benefits people and the planet

Agricultural research for development has a record of delivering results. The science that made possible the Green Revolution of the 1960s and 1970s was largely the work of CGIAR Centers and their national agricultural research partners. The scientists' work not only increased incomes for small farmers, but enabled the preservation of millions of hectares of forest and grasslands, conserving biodiversity and reducing carbon releases into the atmosphere. CGIAR's research agenda is dynamic, flexible, and responsive to emerging development challenges. The research portfolio has evolved from the original focus on increasing productivity in individual critical food crops. Today's approach recognizes that biodiversity and environment research are also key components in the drive to enhance sustainable agricultural productivity. Our belief in the fundamentals remains as strong as ever: agricultural growth and increased farm productivity in developing countries creates wealth, reduces poverty and hunger and protects the environment (see graphic, CGIAR's Evolving Research Agenda, page 6).

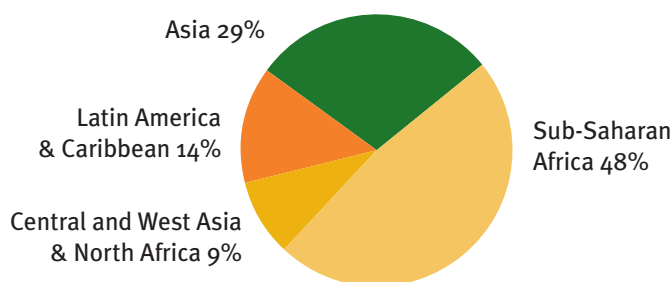


CGIAR Priority Investments 2006



* Include development activities, standalone training and new research areas

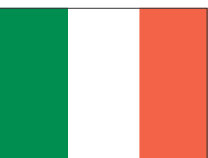
CGIAR Expenditure by Region 2006



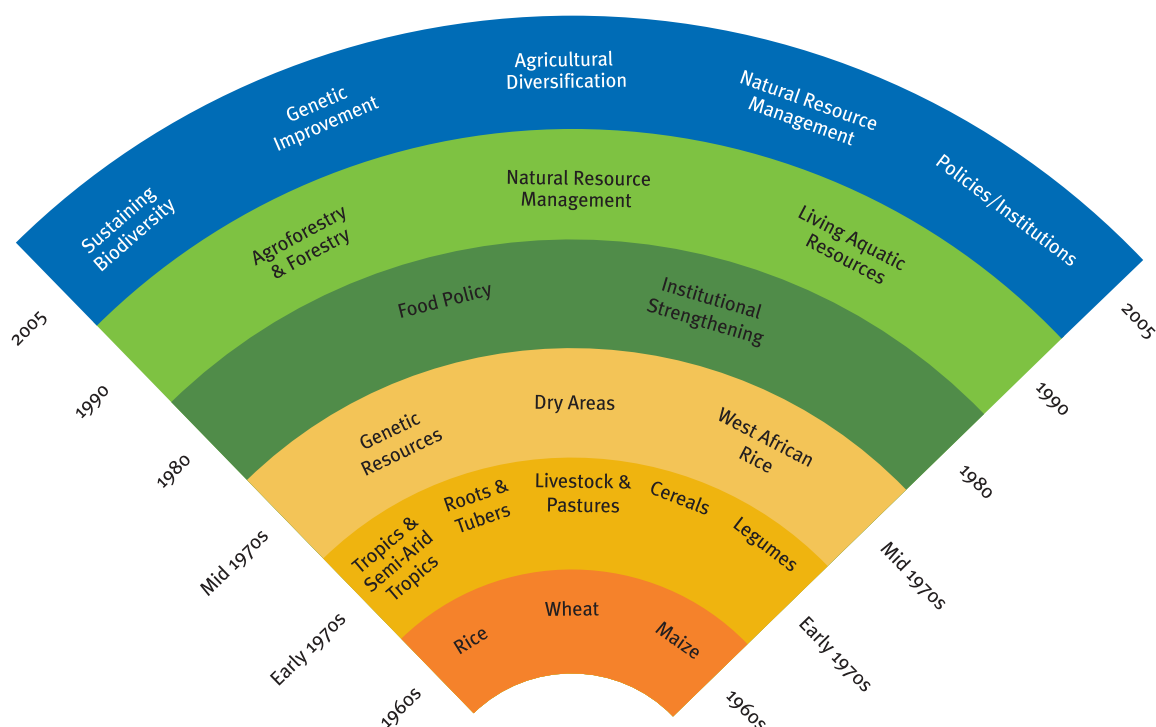
Agricultural research is delivering results

The CGIAR's more recent outstanding achievements include:

- Releasing Quality Protein Maize (QPM) varieties in 25 countries. QPM are currently grown on more than 650,000 hectares
- Transforming agriculture in East and West Africa through the release of New Rices for Africa (NERICAs). It is estimated that NERICAs are planted on 200,000 hectares across Africa, including approximately 75,000 hectares in Guinea and about 35,000 hectares in Uganda
- Selectively breeding a GIFT strain of tilapia which shows an approximate growth rate gain of 70%



CGIAR's Evolving Research Agenda



- Training over 75,000 developing-country scientists and researchers
- Reducing pesticide use in developing countries by promoting integrated pest management and biological control methods
- Enabling African producers to access international pigeonpea markets
- Releasing over 45 bean varieties, developed from CGIAR germplasm-across Latin America
- Improving forage grasses developed by CGIAR researchers and partners which are currently grown on over 100 million hectares in Latin America
- Planting fodder shrubs in Kenya and increasing smallholder dairy farmers' income by US\$166 per annum

These successes notwithstanding, future challenges are daunting. World population is expected to reach 9 billion people by 2050. Food demand is expected to more than double in a similar time frame. Some 30 percent of irrigated lands are already degraded, and water use is expected to increase by 50 percent over the next 30 years. Science-based solutions for sustaining productivity increases, while protecting ecosystems, are key to addressing these challenges.



Increasing sustainable productivity, strengthening science-for-development partnerships, protecting the environment

The CGIAR was created in 1971. Today more than 8,500 CGIAR scientists and staff are working in over 100 countries. CGIAR research addresses every critical component of the agricultural sector including — agroforestry, biodiversity, food, forage and tree crops, pro-environment farming techniques, fisheries, forestry, livestock, food policies and agricultural research services. Thirteen of the Centers are located in developing countries. Africa continues to be a priority for CGIAR research. CGIAR research partnerships help achieve the Millennium Development Goals and support major international conventions (Biodiversity, Climate Change, and Desertification).

The CGIAR has five areas of focus

- Sustainable production (of crops, livestock, fisheries, forests and natural resources)
- Enhancing National Agricultural Research Systems NARS (through joint research, policy support, training and knowledge-sharing)
- Germplasm Improvement (for priority crops, livestock, trees and fish)
- Germplasm Collection (collecting, characterizing and conserving genetic resources—the CGIAR holds in public trust one of the world's largest seed collections available to all)
- Policy (fostering research on policies that have a major impact on agriculture, food, health, spread of new technologies and the management and conservation of natural resources)

Forging New Partnerships: CGIAR Challenge Programs in action

Challenge Programs are new high-impact, research for development programs that tackle major global development challenges through expanded partnerships. Four Challenge Programs were initiated in 2004:

- “Generation” is unlocking crop genetic diversity through the application of comparative biological knowledge in 11 crops. There are 14 partner institutions involved. Program updates for the first year include genotyping a composite germplasm set representing global genetic resources for a first tier of eleven crops; development of a common phenotyping framework of techniques, plant development stages and parameters to enable cross-species comparison; validation and development of pre-existing markers for drought tolerance and the establishment of molecular breeding communities of practice; design of Generation CP information platform system for genetic resources, genomic and crop information systems and internal project workshops. (www.generationcp.org)



- “HarvestPlus” is an international alliance of over 40 institutions breeding crops with improved micronutrient content. Progress during the first phase of the project focused on: exploring the genetic variation for iron, zinc and B-carotene in rice, wheat, maize, cassava, beans and sweetpotato germplasm; applied breeding; testing the stability of micro-nutrient expression; and dissemination of seed of basic breeding materials and advanced lines to collaborators. New initiatives include the feasibility of a HarvestPlus China program, similar to HarvestPlus and to be funded by the Chinese government and other donors. (www.harvestplus.org)
- “Water and Food” is improving water productivity in agriculture in nine river basins (Andean system, Indo-Gangetic, Kharheh, Limpopo, Mekong, Nile, Sao Francisco, Volta, and Yellow river). In its first year, 33 research projects led by 18 different institutions involving over 150 partners have been launched with a total investment of \$60 million. A diverse set of activities are underway, including research programs on coastal management in Bangladesh and Vietnam, exploring and evaluating supplemental irrigation techniques in Syria, and improvements in rain water and nutrient use efficiency in Niger. (www.waterandfood.org)
- The Sub-Saharan Africa Challenge Program (SSA CP) developed by a CGIAR partner, the Forum for Agricultural Research in Africa (FARA), is focusing on jumpstarting agricultural development in Sub-Saharan Africa. Fully supported by the CGIAR, this is the first Challenge

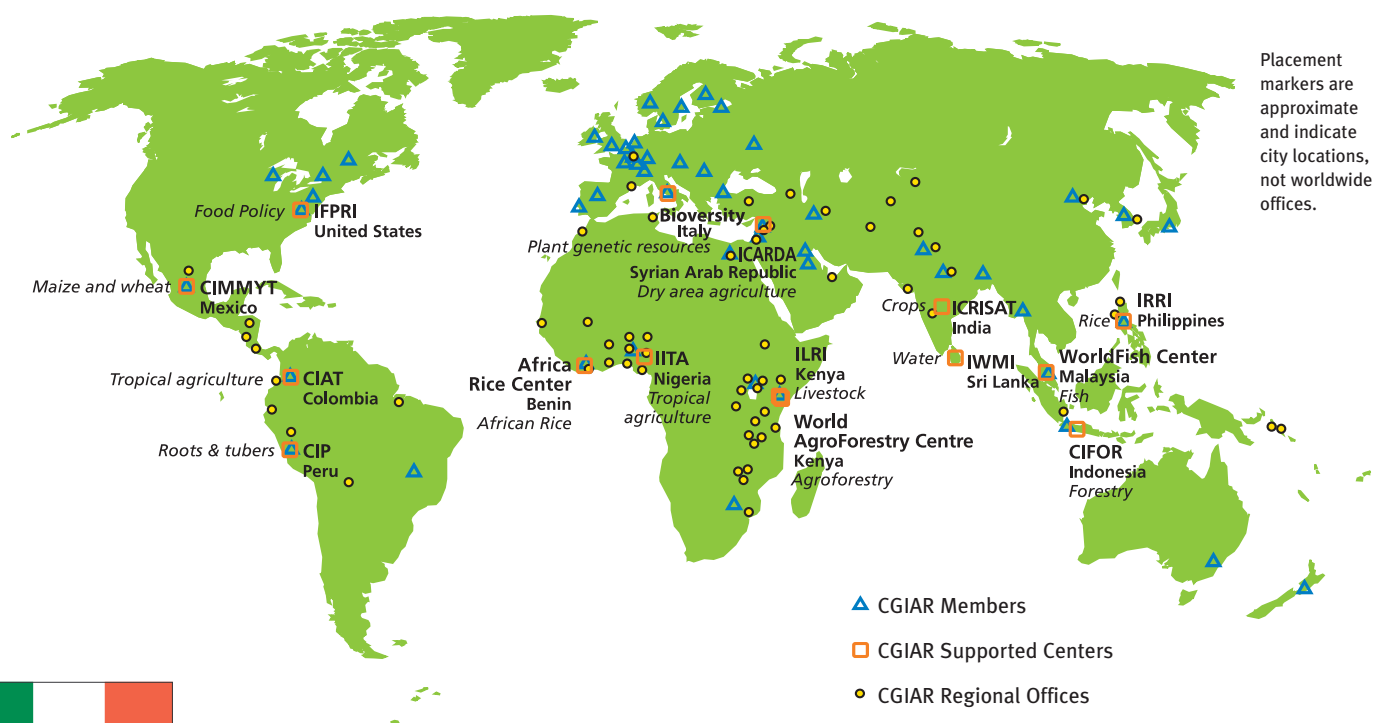
Program with responsibility for implementation assigned to a partner institution in Africa. The SSA CP is promoting research that will provide options for smallholders to improve input and output markets for smallholder and pastoral produce, and to intensify use of limited resources while maintaining food security and the use of natural resources in a sustainable way. The research will be conducted by Pilot Learning Teams with the communities at different Pilot Learning Sites, which have already been selected through a participatory process. (www.fara-africa.org)

The CGIAR partnership is open to all countries and organizations sharing a commitment to a common research agenda and willing to invest financial support, and human and technical resources. From twelve members in 1971, today's membership of sixty-four includes a majority of developing countries. Membership is poised to grow further.

CGIAR Members contributed \$426 million in 2006, the single-largest public goods investment in mobilizing science for the benefit of poor farming communities worldwide.



A Global CGIAR



Centers supported by the CGIAR

Africa Rice Center (WARDA)
www.warda.org

Bioversity International
www.bioversityinternational.org

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

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

International Center for Tropical Agriculture (CIAT)
www.ciat.cgiar.org

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

International Food Policy Research Institute (IFPRI)
www.ifpri.org

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

International Livestock Research Institute (ILRI)
www.ilri.org

International Maize and Wheat Improvement Center (CIMMYT)
www.cimmyt.org

International Potato Center (CIP)
www.cipotato.org

International Rice Research Institute (IRRI)
www.irri.org

International Water Management Institute (IWMI)
www.iwmi.cgiar.org

World Agroforestry Centre (ICRAF)
www.worldagroforestry.org

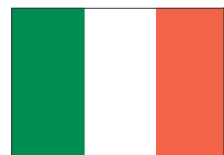
WorldFish Center
www.worldfishcenter.org

Research is a collaborative enterprise

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 partnership.

CGIAR Members

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





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