

## PARTNERSHIP INITIATIVES INFORMATION SHEET

### Name of the Partnership/Initiative

A CGIAR Partnership Challenge Program: **'Unlocking Genetic Diversity in Crops for the Resource-Poor'**

**Expected date of initiation:** 2003

**Expected date of completion:** 2013

### Partners Involved:

Intergovernmental organizations:

Future Harvest Centers of the CGIAR (Consultative Group on International Agricultural Research), in particular

- CIMMYT
- IRRI
- IPGRI

Major groups:

National Agricultural Research Systems (NARS), in particular

- EMBRAPA, Brasil
- CAAS, China

Advanced Research Institutes in developed countries, in particular

- John Innes Institute, UK
- Plant Research International, NL
- Cornell University, USA
- NIAS, Japan
- Agropolis, France

*Leading Partner:*

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### Main objectives of the Partnership/Initiative

Please provide a brief description:

The CGIAR System is itself a non-negotiated partnership formed by approx 60 countries, international organizations and private foundations. In addition to providing general funds and very specific funds for research directed to food security, poverty eradication and protection of the environment, with an emphasis on the rural areas in developing countries, the members of the CGIAR want to support targeted large participatory research initiatives: **Challenge Programs**. Challenge programs focus research, knowledge development and capacity building on major challenges to sustainable agriculture, with a clear emphasis on developing countries or countries in transition.

**'Unlocking Genetic Diversity in crops for the Resource-Poor':**

**Development Goal:** To increase food security and improve livelihoods in developing countries by unlocking the genetic potential and enhancing the use of public genetic resources in plant breeding

programs through the concerted generation, management, dissemination, and application of comparative biological knowledge.

**The Problem:** The rate of increase in potential and realized productivity of keystone crops is leveling off. Rural and urban populations continue to grow. Chronic environmental stresses continue to limit productivity, while catastrophic events, such as floods, sustained drought, and fire, cause nearly total losses in crops, which in most countries are not buffered by food reserves. The development of state-of-the-art (bio)technologies has been primarily a private initiative, and owing to access and ownership issues, this technology may never be fully available to help those who need it most.

**The Opportunity:** The genomics revolution is contributing unprecedented quantities of information about biological systems, while the information age is providing unprecedented abilities to store, access, and process data; together they offer the ability to uncover new biological phenomena at the gene level. New molecular-based as well as traditional approaches will be developed and used to identify plant materials with superior genetic characteristics, in particular drought tolerance, to allow plant breeders to easily transfer these genes to crops for resource-poor farmers, especially farmers in marginal agricultural environments, to alleviate chronic and acute deficiencies in food production and quality.

Please also provide a brief description of the relationship of the Partnership/Initiative with the objectives of Agenda 21 as well as relevant goals and objectives of the United Nation Millennium Declaration:

This partnership will contribute to both the realization of Agenda 21 and the MDG's. More specifically to the objectives as set out in chapters 12(Desertification & drought), 14 (SARD), 15 (Biological diversity) and 18 (Fresh water) of Agenda 21, and to MDG 1 (Poverty) and 7 (Environment).

### **Expected results:**

Please provide a brief description:

The Challenge Program will generate new science-based enabling and intermediate technologies. The management of the intellectual property will be consistent with the Guiding Principles for the CGIAR on Intellectual Property Rights Related to Genetic Resources, the Convention on Biological Diversity, and the International Treaty on Plant Genetic Resources for Food and Agriculture (as though it were already in force).

The partnership will bring together scientists and stakeholders from across the world, but in particular in developing countries and countries in transition, to collaborate in an organized and focused manner to solve obstacles to sustainable agriculture, and develop the strategies to make use of the new knowledge. Apart from the ten core parties, other parties will be able to participate and contribute through a system of competitive grants.

**The new knowledge concerns all three cross cutting themes of WSSD: social, economical and environmental in particular in the fields of agriculture, biodiversity and water.**

### **Specific targets of the Partnership/Initiative and timeframe for their achievement:**

#### **Outcomes in the *first five years*:**

- Accessions in genetic resource collections identified with variants of genomic regions or alleles of candidate genes having a favorable impact on priority traits that can be transferred to germplasm for

resource-poor farmers in accordance with internationally agreed arrangements for access and benefit sharing for genetic diversity.

- Candidate genes and genomic regions underlying critical traits identified; functional characterization of those candidate genes or genomic regions accelerated.
- An information network established for genomic and phenotypic data integrating advanced genetic resources, genomic, and crop information systems, thus enhancing the efficacy of public and private plant breeding programs for the international community.
- Capacity among partners greatly expanded through collaboration and advanced training of scientists.
- An extended global network of CGIAR Centers, NARS, public ARIs, and private institutes established for effective deployment of advanced technologies for crop enhancement for developing countries.
- The Challenge Program integrated approach validated by the case study on drought tolerance.

**Outcomes in the *second five years*:**

- Information and genetic resources derived from this research deployed for use in research and in crop improvement programs in the public domain.
- The understanding of the genetic control of priority traits greatly enhanced and made available to the global research community.
- Breeding lines containing new alleles that will directly improve productivity or quality developed and deployed in the public domain. These lines, with further breeding and selection, will enhance productivity and quantity of food crops for resource-limited farmers worldwide.
- The most promising materials advanced to on-farm trials for evaluation of productivity and acceptability to growers and consumers.
- Assessment of socio-economic impact completed.

**Coordination and Implementation mechanism**

Please provide a brief description of expected coordination/implementation mechanism of the Partnership/Initiative.

A Program Steering Committee (PSC) will serve as a Board of Directors and comprise the Chief Executive Officers, or their designees, of the Core Participants. The PSC, chaired by an independent chairperson, will receive independent advice from a Program Advisory Committee. The Challenge Program will be managed by an internationally recruited Program Director who will be assisted by a Lead Scientists for each of the four subprograms; together, this team will guide the operation of the Challenge Program.

**Arrangements for funding**

Please describe available and/or expected sources of funding for the implementation of the Partnership/Initiative (e.g. donor government(s); international organization(s)/financial institution(s); foundation(s); private sector; other major groups, etc.)

The ten Core Participants in this Challenge Program will contribute the equivalent of 25 fulltime researchers per year (a total value of US\$ 5.726 million). The implementation of this Challenge Program requires initial funding of US\$ 8 million per year; an additional US\$ 4 million per year will ensure that a full program of competitive grants is in place. The CGIAR and its partners are developing a system to make available funds for Challenge Programs like this one, which is likely to involve donor governments, financial institutions and foundations. Several potential donors have expressed preliminary interest to support Challenge Programs in general, and this one in particular. It is furthermore expected that the participation of developed country partners will be supported from non development targeted

financial resources.

### **Arrangements for capacity building and technology transfer**

Please include information if the Partnership/Initiative provides for training, informational support, institutional strengthening and/or other capacity building measures. Please also provide here a brief description of expected arrangements for technology transfer (if applicable).

Since the subject of this partnership is research for development, capacity building and technology transfer are an integral part of the partnership. This will be achieved in the following manner:

- Through collaboration and advanced training of scientists.
- An extended global network of CGIAR Centers, NARS, public ARIs, and private institutes established for effective deployment of advanced technologies for crop enhancement for developing countries.
- Deployment of information and genetic resources derived from this partnership in research and in crop improvement programs in the public domain.
- The understanding of the genetic control of priority traits made available to the global research community.
- Breeding lines containing new alleles that will directly improve productivity or quality developed and deployed in the public domain. These lines, with further breeding and selection, will enhance productivity and quantity of food crops for resource-limited farmers worldwide.
- The most promising materials advanced to on-farm trials for evaluation of productivity and acceptability to growers and consumers.

### **Links of Partnership/Initiative with on-going sustainable development activities at the international and/or regional level (if any)**

Please provide a brief description:

The Challenge Program builds on the existing collaboration between the CGIAR System and research organizations in developed countries and countries in transition, but differs from these in the fact that the CP is strongly focused and targeted, time bound and provide for a wider partnership.

The CP is closely linked to the work of FAO, UNEP and UNDP, to the CBD, the CCC and CCD, and to GFAR at the international level, and to both national research systems and civil society initiatives at the regional levels.

### **Monitoring Arrangements**

Please describe expected arrangements for monitoring of progress in the implementation of Partnerships/Initiative after it will be launched at the WSSD:

(e.g. frequency/modalities of preparation of progress reports; electronic updates, news-letters, etc)

The structure and management of the Challenge Program provide opportunities at different levels for rigorous review and assessment of its performance. As noted, the Program Steering Committee will have primary responsibility for the performance of the Challenge Program in meeting its goals and objectives. An advisory committee will provide independent scientific advice to the Program Steering Committee to ensure both the excellence and relevance of the research. The Challenge Program Director will be directly accountable for the outputs of the Challenge Program.

Each of the four Subprograms will be headed by a Lead Scientist from one of the Core Participants, and this person will have responsibility for ensuring that objectives and milestones for his/her Subprogram are on target.

The Lead Scientists and key researchers from the Core and Supporting Participants will meet regularly (at

least four times per year) to discuss research issues and progress; these meetings will be convened by the Challenge Program Director.

Approval of all commissioned research, competitive grants awarded, and additional research projects through Supporting Participants will be referred to the Program Steering Committee. This will guarantee that decisions will be taken with full knowledge and authority and that the research of the Challenge Program is clearly focused on its mission.

An annual research meeting will be held for participants in the Challenge Program to review research progress and discuss related issues. This forum will be an important opportunity for research groups within and across the Challenge Program's Subprograms to meet and develop workplans for the coming 12 months. The annual meeting will also be an opportunity for stakeholders to interact with Challenge Program researchers and help ensure that the beneficiaries of the work of the Challenge Program contribute to its research planning.

The Program Advisory Committee will assist the Program Steering Committee to develop performance indicators that will form the basis for *ex ante* and *ex post* impact assessment. It is expected that the Program Advisory Committee will provide regular advice on scientific issues, and assess progress. A subgroup of the Advisory Committee may also be constituted in year 4 for a more formal review.

The impact of the Challenge Program may be measured at different levels. At the research level, timebased milestones offer a verifiable means of assessing progress. It should be noted that in the early stages of the Challenge Program, in addition to intermediate research products and enabling technologies, strategies for the use of new technologies will be an important output.

Impact analysis will also occur at the development level, when decisions about using new technologies and products are taken, and at a social level when the impacts of improved varieties may be measured in farmers' fields.

**Other relevant information:**

Web-site (if available): [www.cgiar.org](http://www.cgiar.org)

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