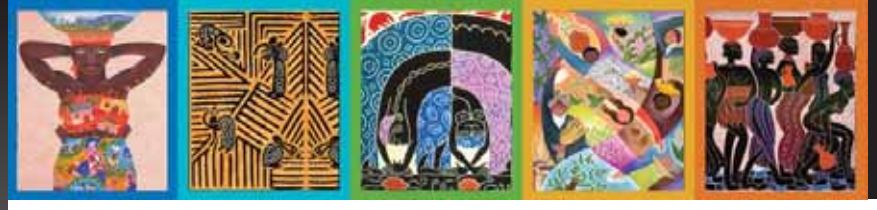


Generation Challenge Programme
CULTIVATING PLANT DIVERSITY FOR THE RESOURCE-POOR

Introducing the CGIAR Generation Challenge Programme

"In the next 50 years, the world's population will likely increase by more than three billion and global demand for food will double. Most of the world's best agricultural land is already under production, so without better-performing crops, agriculture will continue to spill into more marginal areas and destroy fragile environments. The enormous genetic diversity found in plants may hold the keys to improving staple crops and help assure adequate food supplies. Tools and technologies are now being developed that allow us to tap into that diversity to find important traits, such as pest resistance and drought tolerance. I challenge the next generation to use these new scientific tools and techniques to address the problems that plague the world's poor."

—Norman Borlaug, Agricultural scientist and 1970 Nobel Peace Laureate at the launch of the UN Millennium Development Goals, 2000.

The Generation Challenge Programme (GCP) of the Consultative Group on International Agricultural Research (CGIAR) rises to this challenge by building global partnerships to explore plant genetic diversity and develop crops with improved stress tolerance, for the resource-poor. GCP was established in 2003 with a 10-year horizon (Phase I, 2004–2008; Phase II, 2009–2013).

Our Mission:

To use plant genetic diversity, advanced genomic science and comparative biology to develop tools and technologies that help plant breeders in the developing world produce better crop varieties for resource-poor farmers

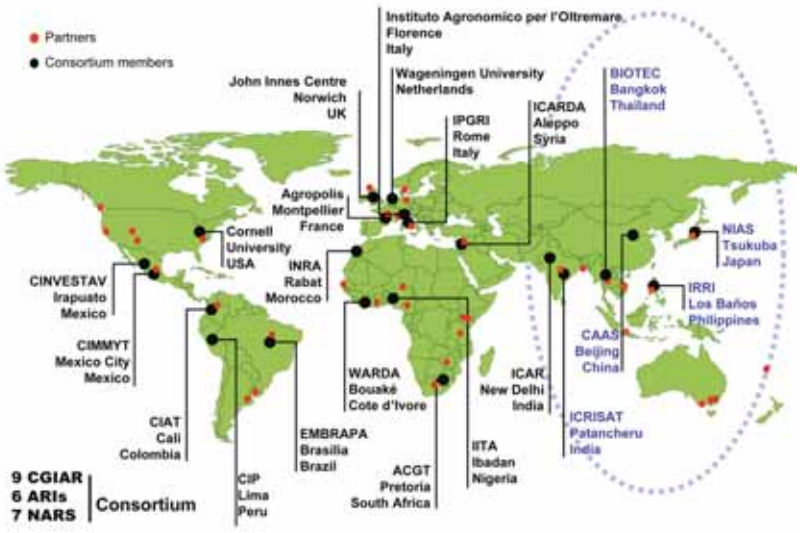
Our Vision:

A future where plant breeders have the tools to breed crops in marginal environments with greater efficiency and accuracy for the benefit of the resource-poor farmers and their families.

Our objectives:

- Provide access to, and promote use of, plant genetic diversity
- Develop and sustain a public platform of genetic and genomic resources and tools
- Generate and apply knowledge across crops and demonstrate the potential of comparative genomics for improving plants
- Use genetic diversity and advanced science to develop plant breeding products to improve the livelihoods of resource-poor farmers in marginal, drought-prone environments.

Where in the world is GCP?



The unprecedented confluence of the remarkable revolutions in biotechnology, bioinformatics and communications, provide a unique opportunity for research results to reach farmers in the field. GCP is a multinational, multisectoral and multidisciplinary 'true' collaboration in the plant sciences, bringing together diverse partners to facilitate the flow of products and information to those who need them.

Our key focus is fortifying plants to withstand drought and other stresses such as pests and diseases, for the benefit of resource-poor farmers in harsh environments.

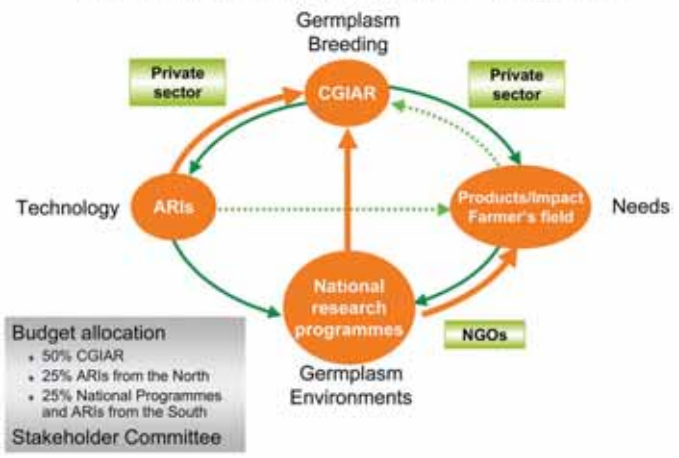
Joining hands with partners...

To achieve these objectives, GCP relies on a network that can leverage significant resources—funds, skills, equipment, knowledge and social capital—through partnerships with many institutions and initiatives in the public and private sector. The GCP Consortium comprises 22 members (nine CGIAR centres, seven national research programmes and six advanced research institutions). In addition to Consortium members, more than 25 advanced research institutes (ARIs) from the North and South and 30 national research institutes are active partners in GCP projects. A broad cross-section of stakeholders is represented, and participates, in GCP's governance.

...and working together

One of our key strengths—through our partners—is bridging the gap between basic and applied science in agriculture, thus providing new tools for plant breeding. Almost all our research projects involve an ARI, a CGIAR centre and a national research programme, from within or outside the Consortium. Our Stakeholder Committee serves as a neutral platform for inter-stakeholder dialogue, and as a link between us and our various stakeholders such as farmer groups, NGOs, CSOs and the private sector.

The GCP Network in 2007: 60+ Institutes



Inside GCP today

What we do...

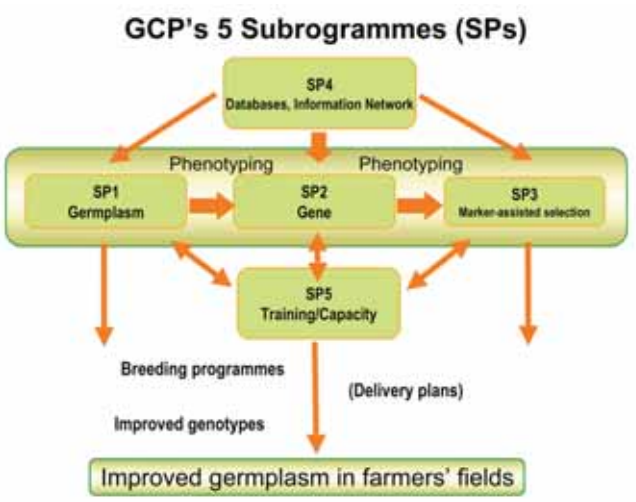
We selectively characterise the diversity of the most important crop germplasm for agriculture, including collections stored in gene banks under the custody of the CGIAR as well as by national research programmes. Using this diversity, we apply genomic tools and interdisciplinary approaches to better understand gene function and their interactions. This understanding of gene systems across crops helps to identify and tag genes which contribute desired agronomic traits. Selection of favourable alleles at those genes increases the efficiency, speed and scope of plant breeding. We also integrate information components and analysis tools into a coherent information gateway and provide support for data storage and analysis. To ensure impact, we empower scientists in developing country research programmes to use modern breeding.

...and how we deliver

We monitor the development and delivery of our research products through formal Delivery Plans: all GCP project must be conceived with a very clear vision of project products, and target users of these products.

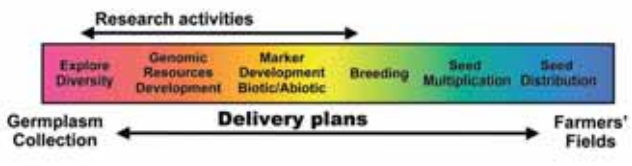
Another top priority is focusing and consolidating our research portfolio and concentrating on priority crops identified in GCP's target environments (details on our Web site and 'GCP in Asia' poster). Through our Delivery Strategy, we are attempting to change the mindset of upstream researchers so that in writing their research proposals, they forecast and take into account users and applications, anticipate possible pitfalls, and devise potential solutions to overcome these constraints. Our work is structured along five overlapping and interactive Subprogrammes.

GCP's 5 Subrogrammes (SPs)



The road ahead

Knowledge generation requires the freedom to experiment with new ideas across disciplines and crops, while product development demands a clear road map for translating knowledge into tangible products. GCP's research is premised on these twin pillars, thus ensuring appropriate knowledge is generated, and potential products tested and validated in target environments—all within the overall context of generating products useful to resource-poor farmers. The flow diagram illustrates our research-delivery pathway.



Our success is very dependent on the adoption, adaptation and application of our research outputs for the ultimate benefit of resource-poor farmers. However, our impact in their fields depends directly on national researchers being familiar with the science generated by GCP, and their capacity to apply this science to breeding so as to address the needs of the farmers and consumers for whom they work. If we are to be effective, it is imperative that we cultivate and maintain strong links with national research programmes, and that we substantively enhance their capacity.

In a relatively short time, we have woven a vibrant and active community of crop scientists and—through our partners—we have tangible products to put on the table as evidenced in our recent publications such as *Partner and product highlights 2006* and *2007 Project mid-year and final reports: competitive and commissioned projects*. These two publications, our Delivery Strategy, target environments, and more, are all downloadable from our Website. Please visit us online.