



The Generation Challenge Programme

CULTIVATING PLANT DIVERSITY FOR THE RESOURCE-POOR

For millennia, generations of farmers have known about—and used—plant genetic diversity. Farmers identify plants with particular traits, or plants that thrive in unfavourable conditions. Seeds and cuttings from these selected plants are guarded and saved for the next sowing season. This ancient breeding practice is now the root of novel plant science.

Who we are

The Generation Challenge Programme (GCP) is a broad and true network of partners from advanced research institutes and national programmes collectively working to improve crop productivity in drought-prone environments. GCP partners draw on plant diversity and new technologies to improve crops with desired traits and resilience to withstand disease and other stresses. GCP is a programme of the Consultative Group on International Agricultural Research (CGIAR).

Why is plant genetic diversity important?

Plant genetic diversity is obvious: for the same crop, some plants are tall and some short, some survive extreme climate, or are naturally resistant to pests. The full set of the plant's genetic information—called the plant genome—tells us the cause of these differences. It is this variation that crop breeders use to generate better adapted offspring (progeny). Through the years, researchers have gathered select genetic material from crops and their wild relatives, thus safeguarding these natural resources for future generations. This material is preserved in 'gene banks'—the custodians of genetic diversity.

What is GCP's core business?

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 national research programmes. Using this diversity, GCP applies 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.

GCP also integrates information components and analysis tools into a coherent information gateway and provides support for data storage and analysis. To ensure impact, GCP empowers scientists in developing country national programmes to use modern breeding. As GCP approaches the end of Phase I (2004–2008) and beginning of Phase II (2009–2013), our new strategy emphasises product management and delivery as crucial cornerstones of GCP's work in the coming years: concepts and ideas at GCP founding are increasingly evolving into useful GCP products, and we remain committed to delivering practical and relevant products to end-users and farmers.

Why GCP?

GCP links basic science with applied research. The network generates knowledge and develops practical tools such as molecular markers for desirable genes to complement field selection in plant breeding. Through our network of partners in the CGIAR, and in the public and private sector, GCP implements programmes that bring together plant scientists from different disciplines to improve crops for the ultimate benefit of resource-poor farmers. GCP works with the most powerful and innovative plant biology research partners, and augments the efforts of the CGIAR and the broader agricultural research-for-development community.

Created by the CGIAR in 2003 as a time-bound 10-year programme, GCP's goal is to add value to crop breeding, targeting farmers in drought-prone marginal environments. Through capacity-building and by assisting national researchers to tap into a broader and richer pool of plant genetic diversity, GCP strives to ensure that crops improved by cutting-edge science will reach farmers in the developing world.



For more information on the Generation Challenge Programme, please visit our
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