



At a glance

Phase II (2009–2013)

- Stocktaking on Phase I: achievements and lessons learnt
- Emphasis on refinement and focus to advance and disseminate Phase I results through product management and sustainability
- **Targets:**
 - Seven trait–crop Challenge Initiatives (CIs) as the top priority for resource allocation
 - Three platforms for genetic resources, genomics and marker-assisted breeding (MAB)

Phase I (2004–2008)

- Laying the foundation for the Programme: defining operational structure, research portfolio and appropriate partnerships
- Identifying ‘winners’ to be prioritised in Phase II
 - **Target at beginning of Phase I:** 21 crops in the developing world
 - **Target towards the end of Phase I:** 15 farming systems and 12 priority crops

The evolution of our research strategy

(Please read this section from *Laying the foundation* [2004–2005], working your way up)

Delivering research into use

1) Greater research focus

Seven Challenge Initiatives (CIs): significant resources to trait–crop initiatives in selected focus countries.
Rationale: Cohesion and focus to maximise impact by 2013.
The seven CIs are:

Cereals

1. Improving drought tolerance in rice for Africa
2. Improving drought tolerance in wheat for Asia
3. Improving drought tolerance in sorghum for Africa
4. Comparative genomics to improve cereal yields in high-aluminium and low-phosphorous soils

Legumes

5. Improving drought tolerance in cowpeas for Africa
6. Improving drought tolerance in chickpeas for Africa and Asia

Root and tubers

7. Improving cassava yield in Africa’s drought-prone environments

Three platforms

Designed to support and boost plant breeding by facilitating access to selected modern plant science technologies and making available to genetic resources, plant genotyping, plant phenotyping and molecular breeding analytical tools and services. The platforms are on:

1. Genetic Resources and Support Service
 - For quality control, maintenance and distribution of genetic stocks, for further genetic studies.
 - An integrated service to distribute, among others:
 - a) reference sets
 - b) collections of mutants
 - c) introgression lines
 - d) mapping populations
 - e) near isogenic lines
2. Genomics
 - For quality control, maintenance and distribution of genomic resources
 - The resources include:
 - a) molecular markers
 - microsatellite kits
 - DaRTs
 - gene-based markers
 - b) BAC library
3. Marker-assisted breeding (MAB)
 - To provide access to molecular breeding services, analytical tools and decision-support applications
 - Components
 - a) molecular breeding portal
 - b) information system
 - c) services

2) Product management and sustainability through platforms and communities of practice

Establishing region- and crop-based platforms and communities of practice to support genetic resource supply and molecular breeding, and to enhance cohesion, collaboration, and product distribution and reach.

Strategising, targeting and prioritising

Critical questions arose in GCP’s 3rd year (2006)...

- How should resources be balanced to ensure GCP contributes to scientific knowledge, while also still delivering products for the ultimate benefit of resource-poor farmers?
- With the above goal in mind, how should GCP prioritise regions and crops?

...Resulting in...

- The 2006 Strategic Framework to provide pointers in identifying priority geographical locations (farming systems). Where should GCP be working, and on what crops?
- ‘Reference studies’ to complement and implement the Strategic Framework

... a key reference study...

- Reference study to assess the concurrence of drought and poverty worldwide
- Study identified:
 - 15 priority farming systems: five in Africa, nine in Asia and one in Latin America, where drought coincides with high levels of poverty
 - 12 staple food crops in these systems that the rural dwellers heavily rely on – barley, beans, cassava, chickpeas, cowpeas, groundnuts, maize, millet, rice, sorghum, sweet potatoes and wheat

...and thematic research

- 2008 (3rd round) theme-based competitive projects, plus all focused on drought tolerance
- Theme-based 2006 (2nd round) competitive projects
- Theme-based commissioned projects

Laying the foundation

- Establishing and implementing an operational structure and research portfolio
 - Research projects based on 21 GCP mandate crops (listed further below)
 - Establishing and retaining partnerships
 - Attracting innovative concepts and ideas, and implementing the viable ones through commissioned and competitive research, therefore...
 - ...1st call for competitive research open for all GCP mandate crops and viable research areas
- Target: 21 crops in the developing world – Andean roots and tubers, barley, cassava, chickpeas, coconut, cowpeas, finger millet, forages, groundnuts, lentils, maize, *Musa*, pearl millet, *Phaseolus*, pigeonpeas, potatoes, rice, sorghum, soybeans, sweet potatoes, wheat and yam

2009-2013

2006-2008

2004-2005

Focus

Targeting and prioritising

Foundation