IEA

GENERAL TERMS OF REFERENCE FOR THE FINAL REVIEW OF THE GENERATION CHALLENGE PROGRAM 2004 – 2014

1. Background

The Generation Challenge Program (GCP – http://www.generationcp.org) was devised by the CGIAR and began operations in September 2004. The Challenge Programs represented a major component of the CGIAR reform of 2001 and were intended to foster a programmatic approach to research in the CGIAR. They were large, independently governed, multi-partner programs that were intended to be time-bound and oriented towards topics of high priority in an attempt to open up the CGIAR and raise the quality of its research. Of the five Challenge Programs that were created, all except the GCP have been merged into the new CGIAR Research Programs (CRP) approved in 2010–2013.

From the outset the GCP was planned to run for ten years. It links several CGIAR Centers and numerous other major partners in a research consortium. The GCP was founded on the theme of 'unlocking genetic resources for the resource-poor'. Thus, The GCP's mission became one of promoting the use of genetic diversity and modern plant science for crop improvement in developing countries by adding value to breeding for drought-prone and harsh environments. This is done through a series of Research Themes, each of which comprises several projects. CIMMYT, in Mexico, remains the host agent of the GCP and provides the legal framework within which it operates.

The GCP comprised two phases: Phase I (2004–2008) concentrated on exploration and discovery in crop diversity through genomic research and molecular breeding. Phase II (2009–2014) focuses on delivering services to breeders via research-for-development networking. An independent, external review in 2008 commissioned by the CGIAR made several recommendations on governance, management and program content that largely shaped the direction of Phase II. Program governance was reformed principally to enhance independence from GCP consortium members. The GCP has had an Executive Board since 2008 for setting scientific direction and for managing finances and risks. The Executive Board reports to the GCP Consortium Committee.

During Phase I, the GCP supported work on all 21 CGIAR mandate crops, and the objective was to explore crop genetic diversity in general terms. During Phase II, breeding efforts are focused more narrowly on nine priority crops, and the work is being implemented through a set of crop- and region-specific Research Initiatives (RIs) addressing drought tolerance, complemented by an Integrated Breeding Platform (IBP– https://www.integratedbreeding.net).

Other platforms have been developed in the areas of crop information, capacity-building and product delivery. The RIs focus on promoting the use of modern, integrated breeding approaches, while the IBP seeks to generate knowledge and technology to facilitate the dissemination of germplasm. The IBP includes molecular, genomics and informatics technology and information, high-throughput laboratory services and capacity-building components.

The five Research Themes are:

1) Comparative and applied genomics
2) Integrated crop breeding
3) Crop information systems
4) Capacity building
5) Product delivery

The seven Research Initiatives (Phase II) that cut across the Research Themes are:

1) Cassava
2) Legumes (beans, groundnuts, cowpeas, chickpeas)
3) Maize
4) Rice
5) Sorghum
6) Wheat
7) Comparative genomics

The GCP operates through partnerships and non-CGIAR partners receive a substantial portion of its funds. Multiple projects are included under each Research Theme. Projects under Theme 3, for example, cover four objectives: (i) user support (ii) data management and quality (iii) methodology development and (iv) infrastructure. Under Theme 4 the RIs and an IBP were addressed via establishment and support of communities of practice (COPs) supplied with breeding services and research support. Theme 4 also provides a genotyping support service (GSS) that facilitates access to modern breeding technologies.

A key feature of the GCP approach is one of partnerships spanning CGIAR centers, ARIs, NARS, academia, regional and national research programmes, and private firms. The GCP states[1] that '**"Perhaps the most important value of GCP thus far, is the opportunities it has provided for people of diverse backgrounds to think collectively about solutions to complex problems and in the process to learn from one another."** The extent to which this has been the case will be evaluated during this review.

2. Rationale for the review

The GCP Management and Executive Board (with the consent of the GCP Consortium Committee) have requested the IEA to undertake an independent external review of the Program. The review will take place at the end of 2013,

[1] http://www.generationcp.org

approximately one year before the ten-year program is set to close. It will provide an opportunity to look back on the evolution of the Program and all its component activities and to determine whether or not it has met its objectives. Furthermore, it will provide an opportunity to learn from one of the first multi-Center, multi-partner programs that were the predecessors of the current CRPs.

In this review it will be determined to what extent the GCP has provided support to genomics research and molecular plant breeding for developing country partners. In addition, as the GCP represented a new business model for international agricultural research in the CGIAR, the review should determine whether the model has been useful and to what extent particular aspects of it might be replicated in the current CRPs.

It will be important to identify and document lessons that can be drawn upon to assist in designing better programs for the future. It is planned to transfer the crop-specific programs into the appropriate CRPs, and while there are no specific plans for extending the GCP beyond its ten-year mandate, it is possible that the IBP and other activities will be continued. Determining what these activities might be will represent a facet of this review, although not necessarily a major one.

Attempts must be made to canvass the opinions of all major stakeholders in the GCP and to determine whether the requirements of the primary beneficiaries have been met. In this way the results of this review will be useful to a broad audience.

3. Purpose of the review

The principal purpose of the review is to provide an account of achievements of the ten-year program to all the major stakeholders, including donors, member centres, CRP representatives, national programs and other beneficiaries. The review is also expected to identify lessons for the CGIAR on the programmatic approach to research and partnership. The review will not be a full-scale evaluation – it will be an assessment of accomplishments of the GCP over its nearly ten-year lifetime The review will also provide advice on assessing planned GCP activities until the end of 2014 for i) ending, ii) transferring into CRPs, or iii) perpetuating elements of GCPs work. To the extent possible, the review will make recommendations for future activities relating to genomics research and molecular breeding.

With a view to reducing duplication, and in coordination with the EC, the review will make all efforts to meet the EC requirements for terminal review.

4. Stakeholders

The stakeholders of this review comprise:

(i) Those primarily interested in the performance of the Program and lessons that can be learned: resource partners (in particular the EC), the GCP Consortium Committee, the GCP Executive Board and

partners who have been associated with the program. The donors will be interested in seeing the value of their investments and the partners will be interested in seeing how certain activities will be continued beyond the end of the GCP.

(ii) Those who potentially can help sustain the results of the GCP: *inter alia* the GCP management, CGIAR centers and plant breeders. GCP management will be keen to bring the program to closure efficiently and effectively while other stakeholders will be more interested in building on the successes of the GCP and replicating useful models developed by the GCP.

5. Scope and evaluation criteria

The review will cover both Phase I and Phase II of the GCP. Since a thorough external review was carried out in 2008, the emphasis of this review will be put on developments during Phase II, many of which were based on recommendations made at the end of Phase I. In addition, results are available of numerous internal and donor-commissioned external reviews and these will be useful for this end-of-program review. This review is not intended to be a fully-fledged evaluation of the GCP over its ten years of operation, but rather a review of the most important issues associated with the GCP.

The review will cover all aspects of the GCP, including, research, service provision activities, partnerships, management and governance. This will allow the review team to identify the achievements of the Program (possibly relative to other comparable programs) and will represent the major part of the review. The review will address issues associated with the use of technologies and methodologies developed by the GCP.

The review might also identify components of the GCP that could be continued beyond the 2014 deadline by other organizations or programs within or outside the CGIAR. Therefore, recommendations based on lessons learned will be provided by the review team that will have a bearing on future activities in genomics research and molecular breeding as initiated by the GCP. This forward-looking component will not represent full-scale planning for the post-GCP period. Such an exercise would require a different participatory process and far more time and resources than are currently available.

The GCP will be evaluated according to **evaluation criteria** appearing in the attached Evaluation Matrix. The evaluation criteria are consistent with the Evaluation Policy and Standards of the CGIAR. They cover relevance, effectiveness, efficiency, impact, sustainability and quality of science. Some of the many questions that might be answered are included in the matrix, but the main purpose of the matrix is to promote discussion among the review team members. The matrix is a framework and some of the questions may remain unanswered. The review team will further refine the matrix and will focus on issues that require addressing, in consultation with stakeholders, during the initial stage of the evaluation.

Relevance: The relevance will be assessed of both the scientific and organizational aspects of the GCP. The review will analyse important Program activities throughout its ten-year evolution. An attempt should also be made to assess future relevance of components of the GCP that could be continued as part of the activities of another organization or program. Much of the assessment of scientific relevance will be comparative given that molecular biology and genomics, and their application to plant breeding, are areas of science that are in a state of continual change and advance. Specifically, this will mean comparing activities of other organizations that can do what the GCP was originally set to do and assessing the comparative advantage of the GCP.

Effectiveness: The GCP has set itself targets in terms of outputs and outcomes and general objectives for enhancing the efficiency of plant breeding. Effectiveness refers to the extent to which the targets and objectives have been met or exceeded during the course of ten years and factors that impeded or contributed to these achievements. The extent to which GCP products (particularly information, technologies and methodologies) have been used to improve the application of knowledge to plant breeding among the partners, in particular the NARS, in practical terms should be gauged. Effectiveness also applies to organizational aspects of the GCP, including management, governance, partnerships and communication.

Efficiency: Efficiency deals with resource use and will therefore inevitably be assessed in terms of finance, human resources, communication infrastructure, timeliness of delivery, networks and coordination.

Impact: Impact will not address areas such as poverty alleviation and other issues that lie at the end of long and complex pathways. Rather the review will attempt to gauge what has changed among partners as a result of the GCP in its attempts to apply the results of genomics and molecular biology research to plant breeding in developing countries. To the extent possible, the review will assess how scientific approaches and techniques in genomics, informatics and training have advanced accessibility and capacity for NARS, including the extent of development of genomic and informatics tools made available to NARS. Some of the potential impacts will be difficult to quantify, but an attempt should be made to describe them if they exist and validate them through triangulation. Examples of areas of influence and impact to be explored could include raising scientific research standards with respect to drought tolerance in the mandate crops among direct partners, and even beyond them, and improving capacity among partner organizations.

Sustainability: The review will examine the extent to which benefits generated by the GCP are likely to continue beyond the life of the Program and to describe the conditions for sustainability. It might be considered useful were some of the GCP components to be made the responsibility of other organizations or programs in the future. This applies to web-based information systems, including the IBP and genomic and trait databases, and genomic resources. The assessment will therefore take into account the resources necessary to maintain

such products, keep them up-to-date and relevant, or even merge them with other products. An attempt should be made to determine if some GCP components could be usefully maintained in the future, by whom and by which means. Options to maximize sustainability in a cost-effective manner should be considered, realising that for public goods this is not necessarily easy, or indeed feasible.

Quality of science: One of the standard ways of assessing quality of science is to analyse data on publications in terms of numbers and journal impact factors, but alone this is insufficient. Qualitative assessment through peer review by members of the review team of a sample of random publications, or 'best' publications, could be used. The team could also look at Program management processes by which quality has been enhanced, such as use of competitive grants. A partnership survey should yield information on what has changed in plant breeding programs, in terms of the application of modern scientific methods, in partner organizations. If information is sought from outside the GCP partner organizations, it might be determined whether the GCP has had a general effect on the quality of science in terms of molecular biology and genomics and their application to breeding specific crops to improve drought tolerance.

Lessons learned: Because the GCP will be terminated in 2014, the recommendations will mostly relate to sustainability of some of its outputs – how the activities and achievements will be carried forward. The lessons learned from the GCP experience will be very useful to a broad range of interested parties, particularly donors and project planners. Lessons learned in terms of both research and organizational performance will not only help the CGIAR in planning future programs, but also national programs will benefit from this knowledge. Lessons from the competitive grants and M&E processes and partnership management, for instance, would be useful. It will be important that the review team detail comprehensively lessons learned from the GCP from its inception to its closure.

6. Team composition, roles and responsibilities

The review team will comprise five persons led by an evaluator with competence to assess management, governance and partnerships. In addition to the team leader, the core review team will also include a technical specialist who will take responsibility for the scientific aspects of the GCP. The skills of the team leader and the technical specialist will be complemented with those of a genetic resources/genomics expert, an expert on molecular breeding and an expert on economics/M&E with previous experience in evaluation of similar programs.

All team members will be internationally recognized in their own fields of expertise. Other requirements include: evidence of being able to work well in a team, familiarity with CGIAR research and experience in reviewing technical projects. Each team member will be issued with specific TORs in addition to these general TORs.

The team will work under the general guidance of the CGIAR-IEA Evaluation Manager and will have final responsibility for the report and all findings and recommendations, subject to adherence to the IEA Evaluation Standards.

The IEA will be responsible for:

- Planning and managing the review
- Appointing the team
- Quality control of the review process and outputs
- Making the final report and intermediate outputs publically available
- Supporting such follow-up processes as may be agreed upon

Special modalities: The GCP administration will be responsible for the provision of administrative and logistical support. It will issue contracts and facilitate payments subject to clearance by the IEA Head through the IEA Evaluation Manager.

7. Methodology

The review is to be carried out in conformity with the CGIAR Standards for Independent Evaluation. The review will adopt a consultative and transparent approach with internal and external stakeholders throughout the evaluation process. Triangulation of evidence and information gathered will underpin the validation of evidence collected and its analysis and will support conclusions and recommendations.

The review will use a mix of methods and tools, including:

- Review of extensive documentation and outputs produced by the GCP, including impact studies, using common assessment templates
- Review of evaluation and strategic reports etc. on the GCP
- Scientific article survey (products of GCP), including assessment of participation of non-CGIAR partners (e.g. using Scopus)
- Structured interviews of the GCP staff and with other key stakeholders; and
- Surveys of partners, potential users and beneficiaries

8. Review process and timetable*

June-July 2013: Define needs for review team, write TORs, estimate a budget, recruit review team members.
August 2013: Initiate the review following issue of contracts.
September 2013: GCP General Research Meeting 27th – 30th (Lisbon). Core review team briefing and opportunity for team to speak with range of partner representatives. Output: refinement of the evaluation matrix, methodology and workplan for the review.
October–November 2013: Review, including presentation of preliminary findings to the GCP Executive Board in November.
December 2013: Preparation of a draft report for comment by stakeholders (after review by the IEA Evaluation Manager)

January 2014: Final editing and distribution of the review report. Reporting back to the GCP management and Executive Board on review findings.
2014: Report results of the review to the ISPC meeting.

**This timetable will be subject to changes.*

9. Review deliverables

- Presentation by the team leader to the GCP management and the GCP Executive Board on preliminary findings and conclusions
- Draft report for feedback to stakeholders
- Final review report for e-distribution to the GCP staff