



Generation Challenge Programme

Product management, delivery and marketing

Concepts, evolution and perspectives

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*NOT FOR CITATION
DRAFT FOR DISCUSSION by GCP Management Team*

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Introduction

How does GCP define products and users?

GCP's new [Strategy Framework](#)¹ requires a clear definition of GCP products, singling out products that guarantee useful returns on value-adding investments. The GCP [Delivery Strategy](#),² defines products and users. A product is defined as any output from any research stage, designed to meet the demands of an identified set of users, who will in turn process the product for yet another set of users, all the way through the value chain to farmers and consumers. A 'user' is defined as anyone who uses a product developed by GCP.

Product management and product delivery are intrinsically related and both areas of work make the link in connecting upstream research and the deployment of research-based products that will have tangible impacts on agriculture.

GCP management is paying increasing attention to product management and delivery. Consequently, and looking back at the evolution of GCP through time, we realigned the Management Team to better address this renewed emphasis on product management and delivery. SP3 coordinates and compiles outputs from the other subprogrammes, with a view to ensuring the flow of products, identifying products for value-adding in GCP's research projects, and validating these products. Once products may be routinely used, SP5 is responsible for their delivery through marketing and distributing them outside the Programme.

1. Product management

Product management comprises identification, value-adding and validation of the various products. It is invaluable in:

- Identifying the best options for returns on investments. It helps sharpen research focus and direction (from upstream to downstream) by clarifying what efforts need to continue and which ones should be discontinued.
- Adding value to products for breeding purposes
- Validating their usefulness in priority farming systems

1.1. Product identification

The spectrum of GCP products is broad. GCP products can be clustered into five broad categories—genetic resources, genomic resources, validated markers for breeding, new tools and methodologies, and training materials. . Products generated in the GCP can be used directly in breeding or at any step of the pipeline. For instance, the germplasm characterisation conducted by SP1 can lead to the identification of diversity to be used in pre-breeding activities by local national programmes, but may also help identify contrasting lines for genetic studies under SP2, or lines with favourable alleles for desirable traits to be used as donor lines in SP3 experiments.

To streamline identification, at the proposal stage PIs fill templates listing and characterising expected products. The templates inform the Product Manager, who may start planning based on expected products, and facilitate project monitoring by the PI and the SP Leaders.

Note: Soon, PIs might use the assistance of the Project Development Guide (PDG) now under development.

¹ GCP's new Strategy Framework available at http://www.generationcp.org/comm/gcp_framework_final.pdf

² GCP's Delivery Strategy available at http://www.generationcp.org/capcorner/Final_Delivery_Strategy.pdf

The Project Manager gathers more and more information of prospective GCP products through PI presentations during GCP's Annual Research Meeting, project reports and on-site visits and discussions with GCP scientists.

This process will improve by establishing proper documentation of projects (including proposals, progress reports and product templates) and a search engine for easy access to comprehensive information.

Implementation

A first step in product management is their identification/description. This is not an easy task, since products are of very different types (e.g., germplasm, genes, markers), are generated by very diverse SPs projects, and have very diverse potential users within or outside the GCP.

A compilation of products is needed to identify them adequately. Because this was not requested since the beginning of the GCP, the information is collected from technical reports, and completed with additional information provided by the PIs. The catalogue provides a list of products classified in six categories, i.e., genetic resources, genomic resources, markers for breeding, new tools and methodologies, training material, and publications. It offers information on the project having generated the product: title, PI contact details, start date, end date (if applicable), status (in process vs. finished), funding (amount of funds received), and a short description of the activities that allowed the generation of the product.

The catalogue will be linked to Axapta, the project database used by the Project Officer to monitor reporting and manage the disbursements of funds. This will connect the administrative and scientific information and will facilitate the calculation of the "return on the investment" per project (products delivered by the project in relation to funding received). Information provided by the catalogue concerning a given product also includes its date of release, the type of quality control applied (within the project) and its availability (whether germplasm, marker or tool). In the case of germplasm, the catalogue will stipulate if seeds have been multiplied and their available quantity. Finally, the catalogue will also indicate whether the product has already been used by another project, within or outside the GCP, whether it has been validated (see Product Value-Adding and Validation) and whether the information concerning its development or its description has already been published. In this last case, the complete reference of the publication (also considered as a product) is provided by the catalogue.

With new projects, the task will be streamlined by requesting PIs to describe the expected products at the time of their proposal. Starting in 2007, all projects will fill a delivery plan to help Product Management and Delivery. The delivery plan will be filled at the beginning of the project and an updated version will be required with each report. More on delivery plans below.

1.2 Adding value to products

The GCP must ensure that all outputs and products generated share the acceptable quality to be considered useful for the purpose they were created. Product quality control within each subprogramme is the responsibility of the respective Subprogramme Leader. Then, once within the subprogramme quality is assured, SP3 coordinates advancement of subprogramme products to the next level.

Ideal candidates for value-adding were identified as in the previous section. The Product Manager, in consultation with the MT, proposes the progress of the candidate products for value-adding through commissioned projects. SP3 will take advantage of possible synergies between ongoing

projects on genetic improvement, comparative advantages of scientific approaches, the match with needs in priority farming systems and the likelihood of success for delivery.

Implementation

Products generated by GCP projects can be used by other GCP projects (e.g., a reference set may be phenotyped by another project; an EST library may be used for genotyping, etc...). This “within GCP” use will be stimulated by the SP3 Leader and Product Manager. For this, he will use the Catalogue of Products and the Delivery Plans described above.

Value-adding in SP3 will work, as much as possible, through the establishment of complementary, collaborative crop-specific ‘platforms’. These platforms will stimulate product exchange, facilitate gap filling but also raise awareness about upcoming products and promote demand. Platforms to sustain product exchange are already developed for, among others, New Rice for Africa (NERICA), cassava, cowpea and rice. Establishment and motivation of platforms will be a shared task between SP3 and SP5.

Establishment of platforms will be a multi-step process that includes:

- considering priority crops/regions based on the *GCP Strategy Framework*
- evaluating the potential strategic impact of the platform, based on socio-economic analysis (nutritional importance of the crop, economic importance in the region, development perspectives, etc...)
- determining optimal partnerships, based on similar environments and technologies already in use, to complement ongoing activities.
- assessing GCP’s comparative advantage in assisting a particular platform.

Such platforms can help:

- to better develop comparative advantages in scientific approaches
- to have a better continuum in the delivery chain of products
- to better identify the bottleneck in this chain
- to generate additional (synergetic) outputs and products
- to better identify further needs and implement new commissioned validation projects
- to identify audiences needing and able to use GCP products

1.3 Product validation

All GCP products take one of two forms:

1. final products that can be validated for direct use; and,
2. semi-final products that must undergo further processing within GCP before their validation.

The purpose of validation is two fold:

1) demonstrating product efficacy when the product is used by users who were not involved in the research for its development, and 2) determining the local value and relevance of a given product.

Product validation will be conducted for final products moving downstream for direct delivery to users, the main ones being breeders. Validation confirms the accuracy and potential value of a given product in a given environment (such as a marker for aluminum toxicity for sorghum in acid soils in Niger, a marker for salinity tolerance for rice in Bangladesh). Validation of a given product is a pre-requisite for delivery by SP5.

Validation, similar to value-adding, may require further research through specific protocols and experimental design, and is mainly realised through SP3 commissioned projects. In 2008 for example, almost 70% of projected SP3 commissioned projects and resources will be devoted to validation. Some of the validation activities are conducted jointly with SP1 and SP2. Moreover, strong collaboration with SP5 will be imperative to ensure NARS breeders have the capacity and expertise to integrate validated products to their ongoing work. Examples are the reference collections developed by SP1 (wheat, cowpea, chickpea and sorghum) that will be evaluated in target environments, and some genes/markers identified by SP2 to be validated by NARS in Africa (for example, aluminium toxicity genes from SP2 projects). SP3 validation projects will increase in proportion to the increasing GCP products.

Implementation

Products validation concerns downstream, final products that may be further delivered directly to breeders. Several options can be considered for gene/marker validation, depending on i) the nature of the germplasm available, ii) the nature of the target trait/environment (simply inherited versus polygenic traits) and, iii) the nature of alleles to be transferred. Most of the strategies will be based on the development of molecular markers identifying the gene of interest or directly assaying products related to specific gene function. The expression of the new genes in relation to the trait of interest and the use of corresponding markers will however need a validation in field conditions. The main objective of the validation phase is to confirm the accuracy and potential value of a given product in a given environment (e.g., marker of aluminium toxicity in acid soils in Africa, marker of salinity tolerance under saline conditions in Bangladesh, etc...). Validation of downstream, final, "breeding targeted" products is a requisite for its further delivery outside the GCP. Since validation needs additional research efforts and specific protocols and designs, it is mainly realized through new (mainly commissioned) projects developed by SP3. These new "validation" projects focus on crops, crop systems and regions defined as priorities by the GCP Strategic Framework and potential partners are chosen according to their capacities and facilities and to eventual existing partnerships. As far as more and more products are generated by the GCP, there is a need for an increasing number of SP3 validation projects. This will be reflected by significant changes in the resources allocation between SPs.

Those validation projects constitute the link between SP3 activities *per se* and products management activities. Once validated, these products can be delivered largely outside the GCP and this delivery phase is under the responsibility of SP5.

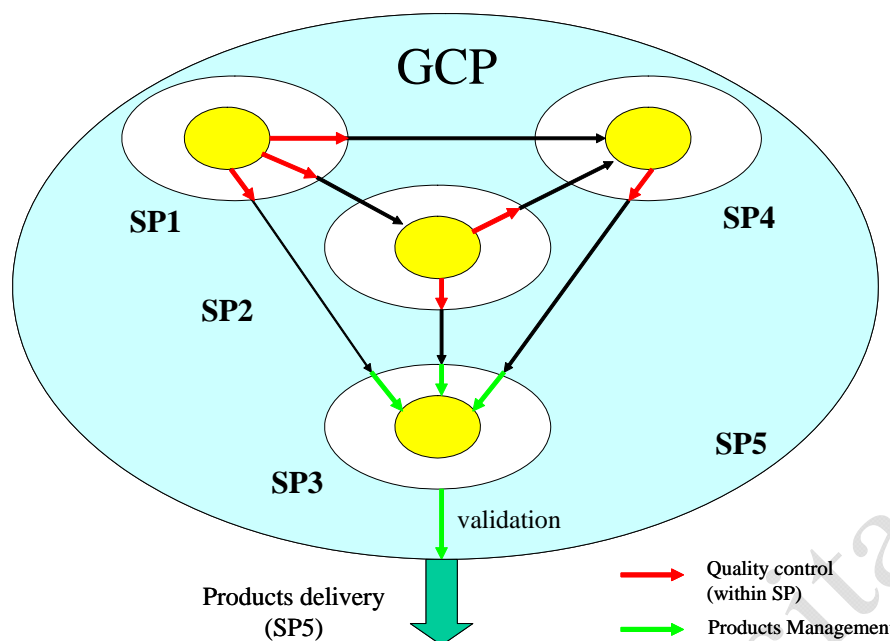


Fig. 1. The GCP product-delivery progression

2. Product delivery

The delivery of validated GCP products to the widest possible audience is the job of SP5. The scope and direction of product marketing and dissemination are defined by potential impact and the priorities in GCP’s Strategic Framework.

Product delivery entails four interlinked phases—(i) delivery planning, (ii) marketing (iii) dissemination, and, (iv) assessing impact. Delivery plans at the project inception result in an advanced map with clear and well-defined actions and milestones to guarantee product delivery. Marketing pulls together activities and tools to achieve the goal of getting the products used by the target users. Product dissemination ensures reaching further audiences. Impact assessment focuses on both quality and quantity of products delivered and identifies efficiencies and flaws in the product delivery pathway.

2.1 Delivery plans

The goal of GCP’s delivery plans is to ensure—from conception through implementation to completion of research projects—that GCP products reach the next level of users, who will in turn be able to produce another product, or set of products, in the value chain linking laboratories to breeding programmes and to farmers’ fields.

Implementation

At the planning stage, GCP’s Project Development Guide (PDG) will not only enhance the quality of GCP proposals through clear planning from the outset, but will also maximise timely supply of products. By providing guidance on key elements to consider during the entire project lifecycle, the PDG illuminates the pathway for each project, highlighting risks and dependencies—critical inputs

for both contingency plans and strategic planning to ensure product delivery. Note: The use of the PDG is not compulsory.

At the onset of the project, each team is requested to prepare a delivery plan. This will be done by filling the Delivery Plan Kit (DPKit), which is a set of Excel spreadsheets (to be developed into a web-based tool) that help the project teams linking their activities with the expected outputs and products, the primary and secondary users of each product, the constraints to the transfer of products to the next set of users, the capacity building needs of the primary users to ensure a successful uptake of the products, the proposed solutions to overcome these needs, IP considerations involved at the onset of the research and at the level of the generated products, and a timeline for product delivery and transfer.

By clearly defining producers and recipients, and potential pitfalls and stepping stones, the DPKit helps to identify appropriate interventions for product delivery. The DPKit outlines the actions necessary to link one activity to the next, thus ensuring the product transfer plan takes into account contextual issues. In addition to serving as a tool for planning product delivery, the DPKit familiarises PIs with the GCP strategy and helps contextualise projects in the larger agricultural research-for-development environment.

Delivery plans are now compulsory for all new GCP projects. Project principal investigators will be given guidance to fill the DPKit, either online or at pre-implementation project kick-off workshops. An updated version of the DPKit will be required with the yearly report of GCP projects.

Selection panels of competitive projects will include 1 or 2 experts to evaluate delivery plans. Delivery plans of commissioned projects will be evaluated by the Product Managers and by selected external experts.

Monitoring of evolution of delivery plans will be done as updated versions are received with annual project reports. Based on annual reports and for advanced projects the Product Managers may schedule a number of on-site visits to follow the delivery of products and the process of being taken up by users as projected in the DPKit.

2.2 Marketing

The next major step to consider is effective marketing. Research projects must ensure that the products created move along the value chain and reach the intended users, which are identified in the delivery plan. In addition to this, the GCP has assumed the responsibility to endeavour to widen the audience of potential users for GCP research products.

The marketing strategy is defined by the target users and their environment, their needs and gaps. This in turn defines the packaging and promotion of GCP products to ensure that they reach intended users. An effective product marketing (and dissemination) strategy starts with a clear identification of users and the needs the product was created to fulfil.

To ensure delivery and impact of GCP products, the following is needed:

- 1) Quality products, i.e. products that solve consistently the demand of the target users
- 2) Appropriate product packaging
- 3) Awareness of the results and products generated –dissemination of information
- 4) Understanding of the problem being addressed by the results –research collaboration
- 5) Understanding of the opportunity to uptake the products –research collaboration

- 6) Skills to use and apply the products –personnel capacity building and training
- 7) Infrastructure to apply the products –capacity building
- 8) Commitment of the generating and of the recipient institutions
- 9) Appropriate partnerships
- 10) Enabling policies

The marketing strategy is the mechanism to pull together activities and tools (meetings, informal communications, articles, publications, presentations, media releases, etc...) to achieve the goal of getting the products used by as many target users as possible with the ultimate goal of having the desired impact.

Implementation

Every year the Management Team will allocate an appropriate time for the selection of products to market at one of the face to face meetings (e.g. April). First, the Product Delivery Manager will request each SPL to make a preliminary selection of products generated in the respective SP. Then, there will be a consultation among the Product Managers to draw from the information available in the Catalogue of Products. The Product Delivery Manager will present a draft plan for marketing of a number of candidate products based on the result of the pre-selection and the list of criteria above. Different products will be subject to different treatment regarding marketing and dissemination.

The final selection of products to market will consider:

- Appropriateness of the target user community with the priority farming systems of the GCP Strategy Framework
- Size of the target user community
- Complexity of the packaging needed
- Potential for impact
- Sustainability of the product
- Readiness of use
- Available budget

After final selection by the Management Team, the Product Delivery Manager will refine and implement the marketing plan per each product selected. The plan will consider all steps needed for packaging and dissemination and will develop a number of indicators for measurement of impact.

2.3 Dissemination

SP5's efforts target a very broad audience, well beyond the GCP Consortium: we aim to reach as many users as possible since GCP products are international public goods. Thus marketing and dissemination are to a large extent inevitably linked to GCP's communication strategy. Good marketing and dissemination become the vital 'glue' that holds the various elements together by ensuring a seamless transition from one set of users to the next.

Since most GCP products target multiple users, the products are in multiple formats and are disseminated through multiple media, depending on the target audience and their environment. Examples include print, CDs and online helpdesk, tools and support services. Three online helpdesks have already been established for [data templates](#),³ [IP issues](#)⁴ and the [Interactive Resource Center](#)⁵ that assists scientists on research protocols and data management, among others.

³ Accessible via our Bioinformatics portal at <http://www.generationcp.org/bioinformatics.php?da=0782837>

⁴ IP Helpdesk accessible at: <http://www.generationcp.org/iphelpdesk.php?da=0629604>

⁵ The Interactive Resource Centre is a collaboration with Cornell University and accessible at <http://irc.igd.cornell.edu/>

Support services for genotyping are in its implementation stage while for phenotyping are at definition stage (in collaboration with SP1 and SP3). These self-help resources are designed to be self-sustaining, requiring minimal maintenance costs once they have been established. SP5 is also working with SP4 on a helpdesk for statistical support to enhance the genotyping support service.

One other tool for marketing and disseminating GCP's research is the Genotyping Support Service (GSS) for both genotyping germplasm and for routine application of validated markers in marker-assisted backcrossing. GSS may be complemented by an online helpdesk.

In expanding the use of GCP products, while we remain committed to producing international public goods, we will selectively borrow some of the strategies of commercial marketing so we can effectively package and promote GCP's products. Monitoring product performance and production efficacy are central in commercial marketing. In the GCP we are keen to establish from the outset how products will be transferred to the next set of users, and to clarify GCP's role (proactively or providing oversight) to guarantee this transfer.

Implementation

Together with the individual marketing plan for every product selected, the Product Delivery Manager will develop a dissemination plan in close coordination with the Communications Manager and the support of the Communications Unit. The plan will be approved by the GCP Director.

2.4 Impact assessment

From a product delivery perspective, and just as in commercial marketing, impact assessment evaluates both product performance and the production process for impact and efficiency respectively. This reveals efficiencies—and flaws—in the product delivery pipeline. Effective impact assessment itself depends on developing solid and measurable performance indicators at the planning stage. One challenge in impact assessment is that it will in some cases inevitably involve peripheral partners not very strongly connected to GCP.

Impact assessment completes the product delivery cycle. However, it is not always an end in itself since it also provides valuable inputs for better future planning—thus linking back to the first stage in product delivery.

Implementation

Measurement of impact will be an important consideration for all products generated through GCP research funding, and especially for those products for which the GCP will invest in marketing and dissemination. Every year, the indicators of impact will be run against selected products, with the assistance of socio-economy experts if so needed, and the results presented to the Management Team and Programme Steering Committee.