

Year of CfP: 2008

Project No 0802-027 Completed

Project title: Organisation of a workshop entitled "Reference sets of food crop germplasm for international collaboration"

Unit managing the project: AGAP (Genetic improvement and Plant adaptation) (CIRAD, INRA, Montpellier SupAgro)

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Country involved in the project: Mexico

Research units from the Foundation's scientific network involved: DIADE

Sub-thematic axis: IPB-1 (Integrative Plant Biology 1: *Genetics and genomics, plant breeding, ecophysiology*), STDI-1 (Socio-Technical Dynamics of Innovation 1: *Agri-environmental innovations, agri-ecosystems, resources management*),

Objectives:

Organisation of an international workshop on reference sets of food crop germplasm

Although core collections is a widely used concept, as far as representation or even preservation of genetic diversity is concerned, the choice and use of reference collection is less well understood once it deals with association studies.

Within the context of the Generation Challenge Program (GCP), a large effort has been made to characterize the genetic diversity of a "composite set" of 21 crop species. It is expected that from this set, collections that could be used for trait of interest and thus association studies, can be defined.

This led to a major GCP product: germplasm reference samples with validated data of reference markers, accessible as a global public good in a robust form. It is hoped that these samples will be widely shared and used, so that new data can be integrated in order to derive biological understanding useful for germplasm diversity management and use.

This project consists in organizing and holding a workshop where all these steps and aspects are described and discussed, as well as the perspectives and the mode of organization that is necessary for taking full advantage of the initiative. This will be an opportunity for coordination among various players engaged in germplasm management in international programs. Venue: Montpellier, France, November 13-17, 2008.

Action carried-out and results obtained:

71 participants from 28 countries, including crop specialists, breeders and germplasm managers have exchanged their background in term of definition and use of crop reference germplasm. This was done either through oral presentations and/or posters, and was structured as communications and brainstorming sessions. The main conclusions are :

- The Generation Challenge Program approach was affirmed in exploring, evaluating and using germplasm diversity, in defining reference sets on the principles that all GCP products must be delivered to users.
- The expectation extends also to related initiatives in the System-Wide Genetic Resources Program (SGRP) of the CGIAR, the Global Crop Diversity Trust and the Global Partnership Initiative for Plant Breeding Capacity Building (GIPB). GCP-derived reference sets can play a prominent role provided that there is clarity on political availability of the resource and

the attached data by placing them under the Multi-Lateral System and that research continues on their use as an entry to the broader collections. Their description and access have a natural place in the web system being put in place by the SGRP and Bioversity, which can therefore be used for publicising and ordering.

- Information has been shared about how many reference sets are available, how they were compiled and what their status is. Together with this, we have been made aware of the broad diversity of situations among crops and some limitations that need to be overcome, on representation and comprehensiveness of original composite collections, choice and justification of methodology to select reference sets, data quality of both collections, composite and reference, traceability of germplasm, availability of the minimum required information to be distributed with the material and quality control (label, certification, ...) of the material to be distributed

Prospects for the future:

Issues to be addressed and actions to be taken

- Governance: Who will decide which sets are ready to get the GCP seal of quality and approval? How will this decision be made?
- Multiplication: Who will do it? Who will finance it? (CG Centers vs NARS)
- Development of the sets and ensuring their quality and their readiness should go together with the development of the information systems to support them (to be developed in conjunction with Bioversity, Compliance with Multilateral System (MLS))
- Availability of methodologies is a must
- Survey on the situation crop by crop and past and current demand for minicore/reference sets

This WS has initiated the establishment of a Genetic Resource Support Service (GRSS) in the frame of the Generation Challenge Program.

Total Agropolis Fondation funding: € 36,031 (travel expenses)

Funding categorie(s): Agropolis Fondation small grants (support for the organisation of high-level scientific events e.g. conferences, seminars)

Project duration: 1 October 2008 – 30 September 2009

Keywords: germplasm – workshop – crop – genetic diversity