

Year of CP: 2011

Project 1100-001 Completed

Project title: Meeting on the Global Strategy for the conservation and use of banana and plantain genetic resources

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

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Countries involved in the project: Czech Republic, Australia, Puerto Rico, Cameroon, India, Brazil, Costa Rica, The Philippines, Thailand, Indonesia, Uganda, Colombia, Hawaii, French Polynesia, Fiji, Belgium, Finland

Subthematic axes: IPB-1 (Integrative Plant Biology 1: *Genetics and genomics, plant breeding, ecophysiology*), IPB-2 (Integrative Plant Biology 2: *Plant pests and diseases, integrated crop protection, population ecology*), STDI-1 (Socio-Technical Dynamics of Innovation 1: *Agri-environmental innovations, agri-ecosystems, resources management*), STDI-2 (Socio-Technical Dynamics of Innovation 2: *Agrifood innovations, food and non-food use of plant crops*)

Objectives:

The project consists in organizing a meeting on the Global Strategy for the conservation and use of banana and plantain genetic resources in Montpellier in March 2011. The development of a global framework for collaboration on the conservation and use of *Musa* genetic resources is critical to prioritize urgent actions and attract funding from donors such as the Global Crop Diversity Trust, the CGIAR Research Programmes especially through the forthcoming CGIAR Research Programme – Roots, Tubers and Bananas (CRP-RTB) and others.

It is expected that the workshop will lead to launching a new Network.

The MusaNet Workshop objectives are:

- To critically review the Global Strategy for the Conservation and Use of Banana Genetic Resources, its implementation to date and incentives for participation
- To promote a coordinated approach for detailed characterization of *Musa* genetic resources
- To strengthen the component of the strategy related to increasing the use of *Musa* genetic resources
- To agree on the mechanism and its functions to ensure the efficient coordination and implementation of the Global Strategy and stimulate the involvement of partners, i.e. establishment of MusaNet.

Action carried-out and results obtained:

A first Global Musa Strategy was developed in 2005 with the involvement of national, regional and international partners. The Strategy aims to set priorities, to engage partners and users and facilitate the sharing of knowledge between researchers and end-users of bananas and plantain. The MusaNet meeting held in Montpellier from 28 February to 3 March 2011 aimed to agree on the collaborative framework to review the Global Strategy and its implementation to date, to encourage incentives for participation and establishment of the Global Musa Genetic Resources Network (MusaNet) aiming at ensuring the long-term conservation on a cooperative basis, facilitating exchanging of material and increasing the utilization of *Musa* genetic resources globally.

A total of 47 participants attended the meeting, representing different stakeholders' groups, from 21 different institutes, located in 15 different countries and representing the 13 Musa genetic resources collections.

Musa germplasm-related priorities were identified, namely, the need for : germplasm enrichment and integrity; proper maintenance of resources and collections; conservation of priority germplasm under controlled conditions; enhancement of the use of diversity and dissemination especially within the scope of the multilateral system of the International Treaty; characterization of traits on phenotypic and genotypic basis; multi location participatory evaluation for major traits, addressing issues like virus affected germplasm, cleaning of germplasm and virus indexing, availability of clean planting material; development of regional system for the safe exchange of germplasm; data management and proper documentation; capacity building in database management and documentation. Particular focus was made on potential users (farmers, breeders, pathologists, curators...), their specific needs and necessary associated information.

MusaNet will rely on existing networks, information systems and the forthcoming CGIAR Research Programme on Bananas, Roots and Tubers. It will rely on major and recent scientific advancements, including molecular diversity resolutions, generation of markers and genome mapping as well as on efficient genetic resources information systems.

With a view to improve the global strategy to optimize the utilization of genetic resources the future role of MusaNet needs to be clearly in terms of facilitating access to genetic resources, collaboration incentives, coordination of policies, fund raising, networking with research providers. There is a need to better identify users and focus on their needs (existing and/or new resources, priority traits, evaluation, documentation...). Access and exchange of material needs to be strengthened through increased partnership. Some main incentives for collaboration were identified, like greater access to information and material, training, focussed participatory projects, acknowledgement to providers of material and information particularly in publications, common methodologies and standards to tighten the network and facilitate access to funding, and focused strategy.

Four working groups were organised to define the major outputs and users' needs of the global strategy for conservation and use of Musa genetic resources.

The genetic diversity gap filling, taxonomy and characterization group focused its attention on how diversity could be enriched (ex. missing taxa and how to recover them). Key regions for future exploration and collection were identified. The group made recommendations for phenotypic and molecular characterisation.

The germplasm evaluation group focused on potential users and traits that could be of interest on a global, regional and local basis. Regional evaluation would lead to more focussed emphasis on the types of bananas and evaluation needed (traits, methodologies...), the way it should be done in partnership and interactions with other networks (Promusa...).

The germplasm information and documentation group also focussed on users' needs. Priority actions would concern characterisation, namely field verification, data quality, the updating of current databases, improved quality of data and methods for its acquisition, training actions in the field of characterisation, and strengthening the networking ProMusa - PI@ntNet – MusaNet

Finally the conservation group identified main focused actions for the different types of conservation (on farm, ex-situ conservation, in field, International Transit Centre...), the role of in-vitro, cryoconservation, field genebanks as well as the national responsibilities, and the status of the different collections. Some main priority actions identified concerned the inventory of available germplasm, safe movement (indexing/ guidelines), and guidelines for management of collections.

Prospects for the future:

MusaNet was proposed as a network of scientists with expertise and interest focused on genetic resources management and use, and part of the interest of the National Programmes. It will provide advice and be involved in development projects and their implementation. MusaNet could play a key role in rationalisation of collections. It will rely on strong partnership. The establishment of MusaNet as the "Expert Committee" responsible for implementing the Global Strategy will rely on the four working groups that will proceed consolidate the work initiated during the workshop, the representatives of the four regional networks, and Promusa.

Total Agropolis Fondation funding: €20,000

Funding categorie(s): Support for the organisation of high-level scientific events (conferences, seminars, workshops, etc.)

Project duration: 4 January 2011 au 15 April 2011

Keywords: conservation, banana, plantain, genetic resources, Musa, Network