

**FOR INFORMATION**

**Programme Report – Global System Project**

**Purpose**

To provide Members with an update on progress with the implementation of the Global System Project.

**Background**

The Project was described in detail at EB1, and progress during the first four months was reported at EB2.

The Project aims to further the development of an effective and efficient global system for conservation and use of PGRFA and has the following areas of activity:

- Regeneration and safety duplication of threatened and unique, collections
- Upgrading of key genebanks holding multiple globally important collections
- Safety duplication of collections at the Svalbard Global Seed Vault
- Development of information systems for better management of, and access to, collections
- Evaluation of collections and enhancement of breeding capacity to promote use
- Development of improved methods to conserve vegetatively-propagated crops

The Project is funded primarily by a grant from the UN Foundation/Gates Foundation, with some activities supported by a grant from GRDC, Australia.

**Progress**

The Project is built upon partnerships with a large range of organizations that contribute financially and in kind to achieve shared objectives. Not surprisingly, developing the necessary types of contracts has demanded extensive consultations with our partners to establish the necessary level of agreement on expectations and needs. We have also made an effort to ensure that national institutions fully understand that our support is contingent on the collections being duplicated for safety and available under the terms of the International Treaty.

Among the most important milestones:

1. Timely deposit of a third of the total global “in trust” collection (200,000 accessions) at the Svalbard Global Seed Vault;
2. Strong willingness shown by national institutes to work in partnership with the Trust under the terms and conditions of the International Treaty for regeneration and safety duplication of their accessions — of the 47 institutes (not including networks) invited to submit a proposal only two are unable to proceed;
3. CGIAR partners already being proactive in providing backstopping to priority collections regenerating material and in planning the safety duplication of unique accessions, firmly linking the regeneration project with the long-term grants for in trust collections;

4. A landmark agreement developed with the *Musa* network involving a partnership of 13 field collections and the global collection held in Belgium, plus the development of world-class capacity for virus-indexing and cryopreservation in the Philippines and India.

A brief overview of progress on all Project activities follows.

#### *Regeneration of threatened, unique collections*

This core element of the Project focuses on the regeneration and safety duplication of unique accessions that are at risk of loss in developing countries. We are implementing the initiative through 2 crop networks, MusaNet (banana) and COGENT (coconut), 14 regional plant genetic resources networks and up to 45 individual national institutes. Project development is underway with all partners and, to date, we have concluded grant agreements with 10 national institutes and MusaNet. Each agreement is developed with individual attention to the regeneration requirements of the specific crop, the capacity of the partner institute and its linkages with breeders, farmers and the institute receiving safety duplicates. For example, in Ecuador the regeneration of the potato collection involves coordination with farmer field days and fairs, associated molecular studies and *in vitro* conservation of accessions for the safe transfer of unique accessions to the International Potato Center (CIP) in Peru; and in Benin, given the complicated taxonomy of yams and the ongoing domestication of wild yams, characterization activities are planned with the participation of farmers at 5 project sites.

The Trust has made partners and potential partners fully aware of the conditions of its support, in particular the availability of regenerated material under the terms of the International Treaty's multilateral system of access and benefit-sharing, and its safety duplication in a genebank meeting international management standards. We are working with 11 institutes from countries that are not Parties to the Treaty. For these institutes the Trust requires that an appropriate authority sign a Solemn Undertaking guaranteeing the availability of germplasm in accordance with the Treaty's Standard Material Transfer Agreement (SMTA).

#### *Upgrading key genebanks*

Projects are underway with Bioversity International for the cryopreservation of remaining accessions in the global *Musa* collection and with the Tropical Agricultural Research and Higher Education Centre (CATIE) to regenerate important collections and upgrade the genebank. Project agreements are at an advanced stage with the World Vegetable Center (AVRDC) and the NI Vavilov Institute, Russia. We have invited the Ethiopian Institute of Biodiversity Conservation to enter into such a project partnership and are awaiting a response.

#### *Back-up of collections at the Svalbard Global Seed Vault*

The Project aims to safeguard 450,000 unique accessions of seed crops in the Seed Vault, including, materials from the international in trust collections and other priority collections as well as duplicate copies of accessions regenerated through the Project. Over 200,000 samples were deposited in time for the Vault's opening in February, representing about a third of the total of in trust accessions (600,000) and 10,000 from priority collections held by Kenya, Pakistan, the Philippines and Russia. Project staff organized the procurement of packaging materials and the shipment of deposits in coordination with the managers of the Vault, the Nordic Genebank.

### *Information systems*

The development of a genebank management system tailored to the needs of genebanks of all sizes is underway through a project with USDA, building on investments they have made over many years and are now making to improve GRIN, the US genetic resources information system. The first "draft" or "beta" version of the new "GRIN-Global" is expected to be ready for testing in the final quarter of this year. Bioversity will be responsible for the deployment of the system and training users. In addition, Bioversity, on behalf of the CGIAR System-wide Genetic Resources Programme (SGRP), is being contracted to develop an accession-level information system building on the European (EURISCO) and SGRP (CGIAR-SINGER) information systems. This new system will allow the cross-searching of passport, characterization and evaluation data at a global level. This project is being developed in consultation with the Secretariat of the International Treaty to ensure that it incorporates or links with the necessary features for preparing and archiving the Treaty's SMTA.

### *Evaluation and breeding capacity*

The first call under our competitive grants scheme for evaluation resulted in the submission of 110 proposals. The focus is on evaluating the 22 project crops for traits of importance to the poor in the context of climate change. The review of the proposals was conducted with five experts from FAO, the CGIAR and national programmes, and 13 proposals have been selected for grant awards in this first round. While the response to the call was greater than anticipated, the quality of many submissions was relatively low. We will take these issues into account in refining the criteria for the second call, due in September.

The Project provides support to the Global Initiative on Plant Breeding (GIPB) through a grant agreement with FAO. This aims to develop capacity in pre-breeding and breeding in developing countries. GIPB is a partnership of stakeholders from the public, private and civil society sectors, led by FAO.

### *Conservation of vegetatively propagated crops*

The priority crops and partner institutes for the development of cryopreservation protocols have been identified. The work will focus on yam, sweet potato and aroids, and specific genotypes of cassava that are not responding to existing protocols. The research will be conducted by specialist laboratories in Belgium and France in conjunction with the major collections of the target crops, held by IITA, CIP, CIAT and the Secretariat of the Pacific Community (SPC). In addition, we are investing in the global coconut conservation system to enable, for the first time, the large-scale movement of germplasm. This project involves the transfer of expertise and refinement of an embryo transfer technique, which is presently only successfully implemented on a large scale on one genotype in one country, among the key coconut collections which are part of the COGENT network, especially focusing on the major field collection in Cote d'Ivoire. This collection is under potential threat from the spread of lethal yellowing disease. Accessions will be regenerated and safety duplicated at the same time as the protocol is tested.

### *Implementation considerations*

This Project has no precedent, and the development of a complex suite of partnerships in the context of the Project's terms and conditions has resulted in a protracted initiation phase. However, the time spent to ensure robust, coherent projects will be justified if, as hoped, it leads to more successful outcomes. The remaining regeneration projects will be moved to the grant agreement stage in the coming month. We are keeping the Secretariat of the International Treaty informed of progress and countries' responses to the Project's

terms and conditions, which we believe are consistent with and in furtherance of the International Treaty.

**Action**

That Members note the progress made with this Project.