



**Food and Agriculture
Organization of the
United Nations**



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

Item 17.2 of the Provisional Agenda

SEVENTH SESSION OF THE GOVERNING BODY

Kigali, Rwanda, 30 October - 3 November 2017

Report from the Global Crop Diversity Trust

Note by the Secretary

Pursuant to Article 3 of the Relationship Agreement with the Global Crop Diversity Trust, the Executive Board of the Crop Trust regularly submits reports on the activities of the Crop Trust to the Governing Body of the International Treaty. At its Sixth Session, by Resolution 8/2015, the Governing Body provided policy guidance to the Global Crop Diversity Trust regarding its work.

The report contained in the Appendix to this document provides an update on the institutional and programmatic developments of the Global Crop Diversity Trust that occurred during this biennium. Issues related to the cooperation with the Global Crop Diversity Trust are reported in a separate document before the Governing Body, which also contains draft elements of resolution as possible policy guidance to the Global Crop Diversity Trust for the next biennium.¹

Suggested Action

The Governing Body is invited to take note of the *Report of the Global Crop Diversity Trust* contained in the Appendix to this document, and to consider it in providing policy guidance to the Global Crop Diversity Trust for the biennium 2018-19.

¹ *Cooperation with the Global Crop Diversity Trust (IT/GB-7/17/20)*



Appendix

Report of the Global Crop Diversity Trust to the 7th Session of the Governing Body of the International Treaty on PGRFA

I. INTRODUCTION

Established in 2004 under international law as an independent international organization, the Global Crop Diversity Trust (Crop Trust) operates within the framework of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty) in accordance with the overall policy guidance provided by its Governing Body. The Crop Trust's objective as stated in its Constitution is "to ensure the long-term conservation and availability of plant genetic resources for food and agriculture with a view to achieving global food security and sustainable agriculture."

The Relationship Agreement between the Crop Trust and the Governing Body of the Treaty recognizes the Crop Trust "as an essential element of the Funding Strategy of the International Treaty in relation to ex situ conservation and availability of plant genetic resources for food and agriculture." It notes that the Crop Trust has established an endowment with the objective of "providing a permanent source of funds to support the long-term conservation of the ex situ germplasm collections on which the world depends for food security." The Agreement refers to the call in the first Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Global Plan of Action) for the "development and support of a rational, efficient and sustainable system of genetic resources collections around the world."

The Crop Trust addresses major portions of the Treaty, including Articles 5 and 6, and much of Articles 7, 8, 14, 16, 17. At its 6th Session in September 2015, the Governing Body approved Resolution 8/2015, Policy Guidance to the Global Crop Diversity Trust. The key areas that the Governing Body selected for policy guidance were: scientific and technical matters; the Global Information System; resource mobilization; communication and outreach. The Crop Trust is pleased to submit this report on both institutional and programmatic developments that occurred in the biennium 2016-2017 to the 7th Session of the Governing Body of the Treaty (some activities from 2015 are included for context). The above key areas for policy guidance are addressed in the report.

II. SCIENTIFIC AND TECHNICAL MATTERS

A. Global crop conservation strategies

In the first years of its existence, between 2004-2010, the Crop Trust gathered together groups of experts to develop a series of global crop conservation strategies, to help guide its support.² Following the recommendation by GB6 to continue supporting this process, the Crop Trust facilitated the development of a number of new strategies during 2016-2017:

- 1) Surveys were done in collaboration with US Department of Agriculture (USDA) on the status of apple genetic resources globally, and experts held a number of workshops to discuss the results and the way forward. The strategy is now being finalized.
- 2) A survey was also undertaken of, and consultations held with, experts on tropical and subtropical forages, with support from the Genebanks CRP (see below). A workplan has been put in place for prioritizing forage and potential forage species for conservation and use on a global basis.
- 3) Finally, a strategy for coffee has been prepared in collaboration with World Coffee Research, involving a survey of collections and a number of field visits to genebanks in Africa and Latin

² <https://www.croptrust.org/resources/>

America (including the Article 15 collection at the Centro Agronómico Tropical de Investigación y Enseñanza, CATIE). The document was finalized in mid-2017.

The global strategy for coconut, first drafted in 2008, among other things reflected the crop community's concerns about the vulnerability of the crucial Article 15 South Pacific genebank in Papua New Guinea (PNG). This large and unique field collection continues to be threatened by the spread of Bogia Coconut Syndrome from surrounding areas. With financial and technical support from the Australian Centre for International Agricultural Research (ACIAR), the Crop Trust convened a meeting at the site of the genebank in April 2015, during which 27 experts were able to assess the problem at first hand and develop a rescue plan. This plan, which involves moving the collection to a safe site in PNG, is now starting to be implemented by the Kokonas Industri Koporisin (KIK) of PNG in collaboration with the Pacific Community (SPC) and the International Coconut Genetic Resources Network (COGENT), with funding from the Government of PNG and the UK's Darwin Initiative. A follow-up proposal for funding has been prepared by the Crop Trust.

As the Governing Body recognized that the crop strategies are key guiding documents to rationalize ex situ conservation and to build collaboration, the Crop Trust is exploring funding to engage full-time staff to coordinate their continuous updating on a rolling basis, ensuring awareness of the strategies, as well as their continued relevance. This could be an opportunity for joint fund-raising with the Treaty. In addition, various activities under the new Genebanks Platform build on, and update, the relevant global crop conservation strategies (see below).

B. Long-term conservation and availability of crop diversity

At the core of the Crop Trust is the endowment fund (see below), created to provide financial security to globally important collections of crop diversity in perpetuity. To date, the Crop Trust has approved long-term grants from the endowment to 9 of the CGIAR genebanks and the genebank of SPC. The funding is partially supporting the conservation and availability of 20 international collections of 17 major crops.³ These collections serve an international role as crucial parts of a rational, efficient and effective global system. In addition, the Crop Trust funds the annual operating costs of the Svalbard Global Seed Vault (see below), another key component of the global system. Long-term grants now amount to more than USD 6.75 million annually, for a total of USD 27.7 million since 2006.

CGIAR-Crop Trust partnership on genebanks

In 2017, funding for the routine activities of all 11 CGIAR genebanks (AfricaRice, Bioversity, CIAT, CIMMYT, CIP, ICARDA, ICRAF, ICRISAT, IITA, ILRI, and IRRI), complementing the long-term grants from the endowment, was secured through the continued partnership of CGIAR and the Crop Trust in the CGIAR Genebank Platform. The six-year Genebank Platform takes over from the Genebanks CGIAR Research Program (CRP), which ran from 2012-2016. The Platform, managed by the Crop Trust together with the CGIAR Genebank Managers, aims to increase efficiencies and quality management, optimize conservation protocols, develop data management systems and promote use of the collections.

The genebank figures presented below are extracted from the Online Reporting Tool that has been developed by the Crop Trust to monitor progress of the genebanks towards performance targets.

³ Crops supported by the Crop Trust through long-term grants are: banana/plantain, barley, bean, cassava, chickpea, edible aroids, faba bean, forages, grasspea, lentil, maize, pearl millet, rice, sorghum, sweetpotato, wheat, and yam.

- 1) The CGIAR genebanks presently manage 757,767 accessions, including 23,682 in vitro and 29,122 held in the field. Approximately 77% of these are immediately available for international distribution. This continues the steady increase in the availability of accessions since the Genebanks CRP was launched in 2012, and is particularly significant when the ongoing distribution and acquisition of samples is taken into account.
- 2) Of the seed accessions, 56% is secured in safety duplication at two levels, and 88% of accessions of clonal crop collections is safety duplicated in the form of in vitro or cryopreserved samples.
- 3) Currently, 87% of the accessions have passport or characterization data accessible online.
- 4) Some 91,506 germplasm samples were provided by CGIAR genebanks to users in 2015 and 111,117 in 2016; in 2015, 32,850 distinct accessions were provided to users within CGIAR and 20,010 were distributed outside CGIAR directly to advanced research institutes and universities (43%), NARS (32%) and to farmers and the private sector (25%) in 114 countries. In 2016, 50,058 accessions were provided to CGIAR programs and 27,265 distributed to advanced research institutes and universities (40%), farmers and private sector (24%) and NARS (22%) in 102 countries. These germplasm flows represent the bulk of global distributions using the SMTA.

During 2015-2016, the CGIAR genebanks put in place the first phase of a quality management system (QMS). The objectives were to map all genebank processes, write key Standard Operating Procedures (SOPs), develop a risk management plan, barcode all accessions and promote capacity building of staff in genebank operations and best practices. Following the Governing Body's positive appraisal of QMS in 2015, significant progress has been made in the biennium in documenting SOPs in each CGIAR genebank, a central feature of QMS. A Crop Trust QMS specialist visited AfricaRice, Bioversity, CIAT, ICARDA, ICRAF, ICRISAT, IITA and IRRI to train and work with genebank staff, who have mapped 93 and drafted 39 SOPs to date. A one-week workshop on enhanced use of information technology in genebank operations to ensure quality (focusing on barcoding and mobile devices) was held in Germany in June 2016 for the documentation managers of all 11 CGIAR genebanks.

Two initiatives under the Genebanks CRP focused on ways to improve the longevity of germplasm in storage and thereby the efficiency of genebank operations:

- 1) CIP made major strides in cryobanking on a large scale. A team of technicians has been trained and workflows developed, allowing more than 450 potato accessions to be cryopreserved per year to stringent quality standards. This will enable much more effective and cheaper safety duplication of the collection as a whole and rationalization of the field and in vitro collections.
- 2) IRRI seed conservation specialists toured the CGIAR genebanks to review historical viability testing data and current practices. Initial findings suggest significant improvement can be made in both seed management practices and resulting seed longevity.

The CRP has supported the construction of a new AfricaRice genebank in Cote d'Ivoire, a process that the Crop Trust has actively facilitated. The original plan was for the genebank building in Cotonou to be dismantled and physically moved to Bouake but, after advice from genebank experts made available through the Crop Trust, the centre decided to construct an entirely new building. Building work by a South African contractor is nearing completion.

All 11 international genebanks of CGIAR have undergone review by external experts since the beginning of the Genebanks CRP, the last being ICRISAT, ICRAF and CIP in 2015 and ICARDA in 2016. All then implemented workplans to address priority recommendations addressing different aspects of genebank management, which were completed by the end of 2016.

The Genebanks CRP came to an end with 2016 and underwent an external review organized by the CGIAR Independent Evaluation Arrangement (IEA), chaired by Dr Michael Jackson. The report was

submitted to the IEA in early 2017 and gave strong endorsement to the work of the Genebanks CRP and its continuation under the Genebank Platform. In September 2016, on the recommendation of the System Management Board, the CGIAR System Council reviewed and approved a set of 11 CGIAR Research Programs (CRPs) and 3 Platforms, including the Genebank Platform, which started operating in January 2017.

The Genebank Platform is organized into three modules: Conservation, Use and Policy. Existing operations and activities on QMS, seed longevity, cryopreservation, and strengthened data management through GRIN-Global and Genesys (see below) continue. The Platform will have new activities on: (1) compliance and engagement in international plant genetic resources policy (through the Policy Module, for which governance is provided by the Article 15 Centres' Directors General and CGIAR System Management Board); and (2) upgrading and strengthening quality management in Germplasm Health Units. The Platform will also contribute to developing an improved measure for the coverage of diversity in collections, and addressing gaps, in partnership with NARS, as the Governing Body requested ex situ conservation to be inclusive beyond CGIAR collections. This process will build on, and update, the relevant global crop conservation strategies.

Crop Trust's support to regional and national genebanks

In 2011, the Crop Trust launched a 10-year project to support countries to collect high-priority diversity of the wild species related to 29 Annex 1 crops, to secure that diversity for the long-term, and to use it to prepare materials useful to breeding programmes around the world in adapting these crops to climate change. The project, "Adapting Agriculture to Climate Change", is funded by the Government of Norway and guided by an Advisory Group comprising subject-matter experts and representatives of CGIAR Centres, and of the Treaty Secretariat as an observer. It is being implemented in partnership with the Millennium Seed Bank (MSB) of the Royal Botanic Gardens, Kew, UK and with specialist institutes and national and international conservation and pre-breeding programmes around the world.

The crop wild relative (CWR) species in a total of 92 genera, including the project's target crops, have been catalogued and the database is searchable on the project's web portal as "The Harlan and de Wet Crop Wild Relative Inventory"⁴. An ecogeographic dataset has been assembled from numerous sources, representing the largest and most comprehensive resource on the spatial occurrence of the wild relatives of the world's major crops. This dataset has been analyzed to identify high priority species and regions for collecting.⁵

Following the prioritization exercise, collecting and conservation of CWRs are now being supported in national programmes in 24 countries: Armenia, Azerbaijan, Brazil, Chile, Costa Rica, Cyprus, Ecuador, Ethiopia, Georgia, Ghana, Guatemala, Italy, Kenya, Lebanon, Malaysia, Nepal, Nigeria, Pakistan, Peru, Portugal, Spain, Sudan, Uganda, Vietnam. These partnerships include technical backstopping; as part of this, country-specific field guides have been developed by MSB to support national partners in their collecting activities, and will represent a long-term resource and an important contribution to capacity building. As of December 2016, 2,276 samples have been collected and are being conserved by partners in 21 countries, from whence they will be available under the Treaty. Data from the CWR project collecting work is now available on a dedicated Genesys page.⁶

⁴ <http://www.cwrdiversity.org/checklist/>

⁵ <http://www.cwrdiversity.org/conservation-gaps/>

⁶ <https://www.genesys-pgr.org/project/CWR/overview>

In preparation for the pre-breeding phase of the project, crop-specific consultations were held with a wide range of breeders and other researchers. Pre-breeding projects are now underway, or have been concluded, on 19 crops, with all materials developed being made available under the Treaty. They involve a total of some 53 national and international partners in 32 countries, and all include a strong emphasis on capacity building:

Crop	Partners countries and CG Centres	Traits	Period
Alfalfa	Australia, Chile, China, Kazakhstan	Drought tolerance	2015 - 2018
Banana	Belgium, IITA, partner in Southeast Asia (TBD)	Drought tolerance	2016 - 2019
Barley	ICARDA, Germany, Morocco	Drought, heat and salinity tolerance, enhanced nutritional value, disease and pest resistance	2016 - 2018
Bean	Colombia, CIAT, Honduras	Heat, drought, waterlogging and root rot resistance	2016 - 2018
Carrot	Bangladesh, Pakistan, USA	Heat, salt and drought tolerance	2014 - 2017
Chickpea	ICARDA, Turkey, USA	Drought tolerance	2014 - 2017
Cowpea	Burkina Faso, Niger, Nigeria	Drought, heat	2016 - 2018
Eggplant	Cote d'Ivoire, Spain, Sri Lanka	Drought resistance, waterlogging, cold and heat tolerance, root system development	2013 - 2016
Finger millet	ICRISAT, Kenya	Drought tolerance, resistance to blast and striga, agronomic traits	2015 - 2018
Grasspea	ICARDA, India	Heat tolerance, low toxicity, broomrape (Orobanche), powdery mildew and aphid resistance	2016 - 2018
Lentil	Bangladesh, Canada, ICARDA, Nepal, Spain, Turkey	Drought tolerance, Orobanche and Stemphyllium-blight resistance	2013 - 2017

Pearl Millet	ICRISAT (India, Niger), India	Heat and terminal drought tolerance	2015 - 2018
Pigeonpea	ICRISAT, India	Salinity tolerance, Phytophthora blight and pod borer resistance, yield-related traits	2015 - 2018
Potato	Brazil, CIP, Uruguay	Heat and drought tolerance, late blight and bacterial wilt resistance	2013 - 2017
Rice	IRRI, USA	Yield-related traits under drought	2011 - 2016
Sorghum	Australia, Ethiopia, partner in West Africa (TBD)	Heat tolerance, cool soil conditions tolerance, water-use efficiency, rust, anthracnose, grain mold and downy mildew resistance	2015 - 2018
Sunflower	Canada, Uganda	Drought tolerance, early flowering, yield-related traits	2011 - 2016
Sweetpotato	CIP, USA, Mozambique	Heat resistance	2014 - 2019
Wheat (durum)	India, CIMMYT, ICARDA, UK	Yield potential, heat tolerance, drought tolerance, disease resistance	2014 - 2019

Negotiations with the Government of Norway have recently been positively concluded with the signature of a new funding agreement for Phase 3 (2017-2020) of the project. With the collecting activities under Phase 2 about to be completed, Phase 3 will focus on expanding pre-breeding work and evaluating germplasm derived from CWRs.

During this final phase, CWR-derived diversity will be deployed to those on the frontlines of the global struggle to adapt agriculture to climate change: farmers and breeders around the world. The pre-breeding and evaluation efforts that have been initiated in Phase 2 will be continued in Phase 3 and pre-bred material incorporating desired traits will be made available proactively to: (1) ongoing, successful breeding programs aimed at helping poor farmers in developing countries increase food production and quality, and (2) on-farm PGRFA management efforts and the farmers that benefit from them. In complement to the conservation and pre-breeding activities, efforts to strengthen the management and availability of information will also continue in Phase 3.

By the end of its final phase, the project aims to have made available under the Treaty a range of new and exciting adaptive options for agriculture that might otherwise have been lost, whilst helping protect biodiversity from irrevocable loss. The project will also have helped build capacity in developing countries and will have produced valuable information to assist complementary on-farm and in situ efforts.

A high priority has also been given during the biennium to strengthening the documentation systems of national and regional genebanks around the world. Progress in this area is described in a separate section below, but, in summary, detailed expert assessments of documentation systems and IT infrastructure have been carried out in 29 genebanks, and funds for upgrading will be provided to about 20 of these by the end of 2017.

In addition, through the Genebanks CRP's QMS initiative, the Crop Trust organized five Genebank Operations and Advance Learning (GOAL) workshops in 2015-2016, at:

- 1) CIAT (May 2015)
- 2) NBPGR, India with support from the Crawford Fund (November 2015 and November 2016)
- 3) IITA (March 2016)
- 4) ICRAF (September 2016)

In addition to staff from CGIAR genebanks, a total of 50 staff from national genebanks and research institutes attended the GOAL workshops and benefitted from the learning opportunities afforded. The five GOAL workshops organized thus far offer an excellent medium for raising and aligning standards not just across the CGIAR genebanks, but also beyond, to national partners.

Finally, the Crop Trust is also implementing a number of emergency grants to national/regional genebanks, with:

- 1) the national genebank of Nepal for the collection, conservation, and restoration of native crop seeds in earthquake-affected areas (signed February 2016).
- 2) the Kenya Agricultural and Livestock Research Organization (KALRO) for the refurbishment and upgrading of the conservation facilities at the Genetic Resources Research Institute (GeRRI), with support from Irish Aid (signed July 2016).
- 3) SPC for post-cyclone recovery of the genebank, with support from AusAID, Australia (signed March 2017).

The Crop Trust is also collaborating with the Treaty Secretariat on an assessment of options for the future of the CATIE genebank.

Recognizing the important role national genebanks play in the global system of ex situ conservation, and in the context of adapting agriculture to more challenging conditions, the Crop Trust is preparing to raise significant project-based funds to support national genebanks in developing countries. Support would be provided to: (1) upgrade key national ex situ collections of PGRFA; and (2) the routine operations of a selection of genebanks over the medium-term.

The Svalbard Global Seed Vault

The Treaty cites the need “to take appropriate steps to minimize or, if possible, eliminate threats to PGRFA” (Article 5.2) and the Second Global Plan of Action has as an objective “to provide for the planned replication and safe storage of materials not currently safety duplicated”. Safety duplication is recognized by the Genebank Standards for Plant Genetic Resources for Food and Agriculture as an essential element of good genebank management practice aimed at minimizing risk to ex situ collections. The Crop Trust supports the duplication under black-box conditions of the world's most important crop collections at the Svalbard Global Seed Vault, in Norway, as an ultimate safety net. A new 10-year agreement was signed in 2017 between the Crop Trust, the Government of Norway and NordGen for the management of the Svalbard Global Seed Vault.

Since its inception in 2008, the Vault has accepted deposits on 37 occasions, and now holds a total of 933,304 accessions from 73 institutes⁷, the deposit of about 70% of which was funded by the Crop Trust. This includes about 608,000 accessions from the international collections managed by CGIAR Centres. There have been 12 openings during the period 2015-2017, during which the following 31 institutes deposited a total of 131,576 accessions: AfricaRice, Agricultural Research Institute of Burundi (Burundi), Barley and Wild Plant Resources Center of the National University Corporation Okayama University (Japan), Centre for Genetic Resources (Netherlands), CIAT, CIP, CIMMYT, Crop Research Institute (Czech Republic), Genetic Resources Institute, University of Banjaluca (Bosnia and Herzegovina), ICARDA, ICRISAT, IITA, IRRI, Leibniz Institute of Plant Genetics and Crop Plant Research (Germany), Margot Forde Forage Germplasm Centre, AgResearch Ltd (New Zealand), National Bureau of Plant Genetic Resources India (India), National Institute for Agricultural Research (France), National Plant Germplasm System (USA), Natural Resources Institute Finland (Finland), Nordic Genetic Resource Center (Sweden), Parque de la Papa (Peru), Plant Gene Resources of Canada (Canada), Plant Genetic Resources Institute, National Agricultural Research Centre (Pakistan), Scientific Practical Centre of the National Academy of Sciences of Belarus for Arable Farming (Belarus), Seed Savers Exchange (USA), Temasek Life Sciences Laboratory Limited (Singapore), Chaipattana Foundation (Thailand), James Hutton Institute (UK), Norwegian Forest Seed Centre (Norway), World Vegetable Center (WorldVeg), Universidad de Costa Rica (Costa Rica).

ICARDA, previously located in Aleppo, Syria, became the first depositor to ask for deposited seeds to be returned. In September 2015, 38,073 accessions of wheat, barley, forage crops and other species were returned to ICARDA units in Morocco and Lebanon to help re-establish the active collections. These accessions are currently being multiplied. Over 15,000 samples have already been harvested and sub-samples returned to the Vault in February 2017. In late September 2016, ICARDA inaugurated its new genebank in Terbol, Lebanon.

C. Strengthening information systems for genebanks

Article 17.1 of the Treaty requires that Contracting Parties “cooperate to develop and strengthen a global information system to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture, with the expectation that such exchange of information will contribute to the sharing of benefits by making information on plant genetic resources for food and agriculture available to all Contracting Parties.” Articles 13.2(a) and 12.3(c) address requirements to make information available. Priority Activity 15 of the Second Global Plan of Action calls for “Constructing and strengthening comprehensive information system for plant genetic resources for food and agriculture”.

CGIAR and Crop Trust are continuing to support the implementation of two initiatives to enhance the management and availability of information about PGRFA: GRIN-Global⁸ and Genesys⁹. Close collaboration with the Treaty’s Global Information System (GLIS) in the biennium has focused on building synergies and complementarities within the Governing Body-approved Programme of Work. As DOIs have been established as a priority area for GLIS on the advice of the Scientific Advisory Committee (the Crop Trust has participated in all Committee meetings), the Crop Trust has facilitated the planning by both the CGIAR genebanks and Genesys to start supporting DOIs by the end of 2017. Along the same lines, the GRIN-Global community is also planning to include DOI support to the software.

⁷ <http://www.nordgen.org/sgsv/>

⁸ <https://www.grin-global.org/>

⁹ <https://www.genesys-pgr.org/welcome>

GRIN-Global

The Crop Trust partnered with the US Department of Agriculture (USDA) and Bioversity International to develop and deploy an advanced genebank data management software package, GRIN-Global. Version 1.0 was released at the end of 2011, and an improved version 1.9 replaced the original USDA's own GRIN system in November 2015. In 2016, the USDA GRIN-Global team won the Secretary of Agriculture's Award for personal and professional excellence for this accomplishment.

GRIN-Global has been adopted or is being evaluated by 26 genebanks, in CGIAR centres (CIMMYT, CIP, CIAT, Bioversity, IITA, AfricaRice, ICRAF, ICRISAT) and national programmes.



A GRIN-Global Frontrunner position has been established at CIMMYT to provide a helpdesk service to national and international genebanks staff who wish to explore the possibility of adopting GRIN-Global. About 200 requests for support have been addressed in 2015-16. Four GRIN-Global training workshops have been organized in the same period:

- 1) CIAT, May 2015: 10 participants from CIAT and CORPOICA (Colombia)
- 2) INIAF (Bolivia). September 2015: 22 participants from INIAF
- 3) Czech Republic, February 2016: 7 CGIAR genebanks and 6 national genebanks: Lebanon, Costa Rica, Tunisia, Azerbaijan, Portugal, Jordan
- 4) CIAT, April 2016: 7 national and regional genebanks in Latin America: Ecuador, Mexico, Costa Rica, Chile, Bolivia, Colombia, Uruguay

Genesys

In furtherance of Article 17.1 of the Treaty and Priority Activity 15 of the Second Global Plan of Action, CGIAR and the Crop Trust are continuing to support through the Genebank Platform the development of Genesys as a fundamental component of an effective global conservation system. Genesys has been managed by the Crop Trust since 2014, with the Treaty Secretariat participating in the advisory committee since the beginning of the initiative. Genesys now allows searching passport data across some 3.6 million active accessions held in 482 collections. The Crop Trust works continuously with existing data providers to help them share up-to-date information about their collections and actively promotes and encourages data publication (automated when feasible) from new genebanks. Genesys now measures and presents a Passport Data Completeness Index as part of its summary views. The interface was redesigned in 2016.

Since late 2015, agreements to publish passport data on Genesys have been signed with the following institutes:

- 1) Australian Pastures Genebank (Australia)
- 2) EMBRAPA (Brazil)
- 3) CIAT
- 4) Genetic Resources Research Institute (GeRRI, Kenya)
- 5) Malaysian Agricultural Research and Development Institute (MARDI, Malaysia)
- 6) SADC Plant Genetic Resources Centre (SPGRC)
- 7) Seed Savers Exchange (USA)
- 8) South Australian Research and Development Institute (Australia)
- 9) SPC

A 2-year project funded by the Federal Office for Agriculture and Food (BLE), Germany started in September 2016 and will focus on providing new, well-documented and accessible datasets of phenotypic (characterization and evaluation) information to complement existing passport data. A staff member has been recruited to coordinate this work with the following partners: Banque Nationale de Gènes (Tunisia), CATIE, GeRRI, MARDI, National Plant Genetic Resources Laboratory (NPGRL, Philippines) and WorldVeg,

IT assessments and upgrading

The Crop Trust has assisted genebanks with the analysis of their documentation needs, and, if they so wish, with the adoption of GRIN-Global and with making information on their collections available through Genesys. To that end, genebank documentation experts visited 29 national and regional genebanks between 2014 and early 2017: Azerbaijan, Bolivia, CATIE, Chile, Colombia, Cuba, Cyprus, Ecuador, Egypt, Guatemala, Jordan, Kenya, Lebanon, Mexico, Morocco, Nigeria, Peru, Philippines, Russia, Rwanda, SPGRC, Sudan, SPC, Tunisia, Turkey (x2), Uganda, Vietnam, Zambia. Based on the results of these assessments, support to strengthen capacity for data management was provided to the national and regional genebanks in the following countries: Azerbaijan, Bolivia, CATIE, Chile, Colombia, Guatemala, Kenya, Lebanon, Morocco, Nigeria, Peru, Philippines, SPC, SPGRC, Tunisia, Vietnam. Discussions continue with a further 5 genebanks, with upgrading work expected to be completed in 2017.

III. RESOURCE MOBILIZATION

General

In addition to the Executive Board, the Donors' Council oversees the Crop Trust's fundraising efforts. Government donors who contribute USD 25,000 or more are invited to join the Donors' Council; for

private sector donors, the threshold is USD 250,000. The Council meets twice a year and provides financial oversight and advice to the Executive Board.

The primary focus of the Crop Trust's fundraising remains growing the endowment fund to provide predictable and reliable long-term funding to key, globally important, national and international genebanks. The ultimate objective is to provide USD 34 million a year to fund national and international genebanks, as well as running costs of the Svalbard Global Seed Vault and operational costs of the Crop Trust. Availability of 34 million annually requires an endowment fund of USD 850 million (calculation based on 4% rate of return plus inflation).

As of June 2017, the Crop Trust has received USD 185 million in paid-in contributions to the endowment fund since 2005, with total contributions presently being processed reaching USD 251 million. This includes a EUR 50 million loan for which part of the interest is to be paid by a donor. The current market value of the endowment fund, which includes investment income earned over time minus all withdrawn funds (USD 22.8 million), stands at approximately USD 203 million.

The Pledging Conference

In spite of low markets and the refugee crises at its peak, the Crop Trust decided to go ahead with its planned Pledging Conference in April 2016. The event took account of all results achieved since adoption of the Fundraising Strategy by the Executive Board of the Crop Trust in October 2013. At that time, it was decided that all donor funding pledged since October 2013 would count towards the outcome of the pledging conference.

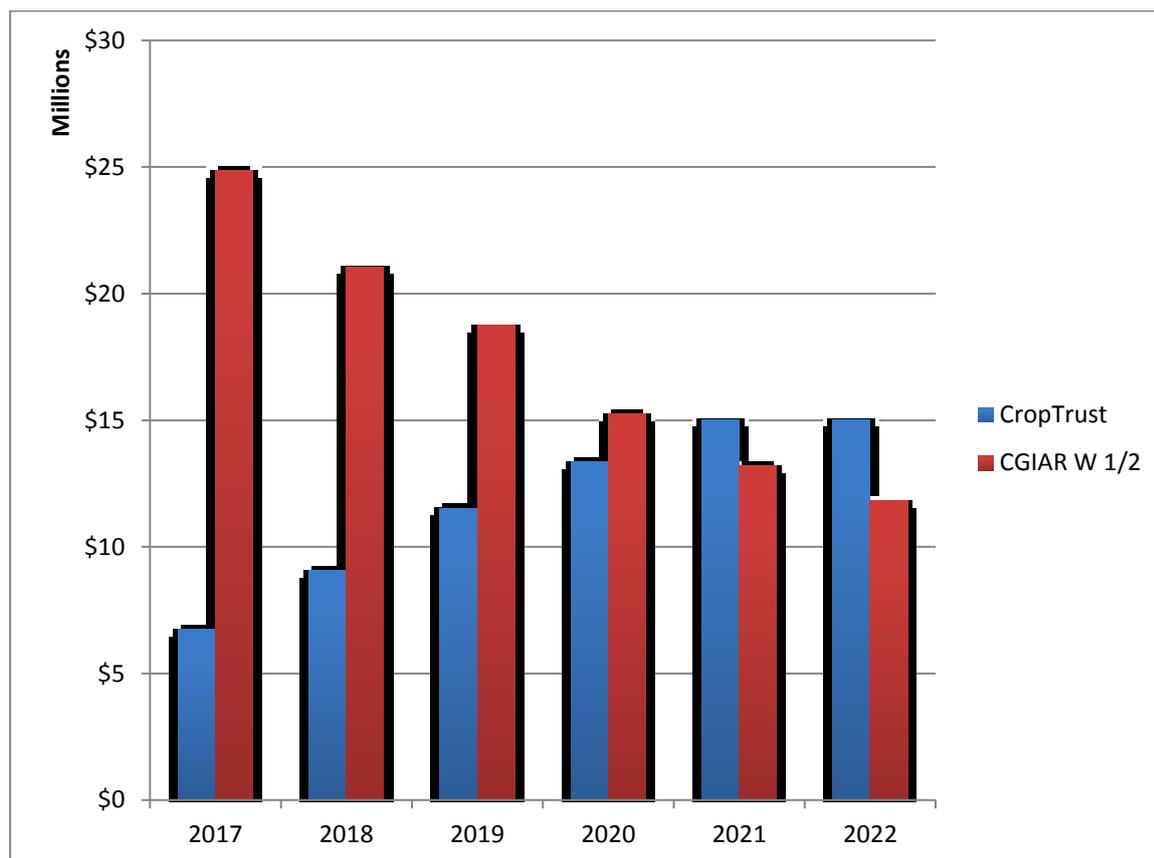
As of October 2013, contributions pledged to the endowment fund of the Crop Trust stood at USD 141.9 million. Total donor pledges, including the endowment fund, projects and operational support, stood at USD 315.5 million. As of April 2016, after the Pledging Conference, the foundation has been laid to double the Endowment Fund to USD 313.9 million. Total donor pledges to the Crop Trust have reached USD 512.2 million. This is summarized in the table below:

	Endowment	Projects	Operations	Total Pledged
Pledges as of October 2013	141.918.015	155.978.257	17.601.871	315.498.143
New Donor Pledges	172.019.133	21.702.140	3.026.931	196.748.204
Total pledges as of April 2016	313.937.148	177.680.397	20.628.802	512.246.347

The Crop Trust is extremely grateful to all donors that have contributed to the endowment, to projects and to operations.

Funding of international collections

The Genebank Platform has a unique financing mechanism made up of long-term grants from the Crop Trust plus funding from CGIAR. The graph below highlights the total cost of the Platform each year for the period 2017-2022. The amount contributed by the Crop Trust increases over time while the contribution from CGIAR decreases accordingly.



By 2023, total costs of USD 26.9 million are expected under the Platform, with the Crop Trust providing USD 15 million. The Crop Trust will provide a cumulative total of USD 70.7 million under the Genebank Platform from 2017-2022, with CGIAR providing the balance of USD 105 million.

A more diversified fundraising strategy

Before the Pledging Conference, fundraising was primarily targeted towards governments. After the Pledging Conference, this is now under revision. It is clear that the Crop Trust, in order to reach its goals, will need to rely more on funding from sources other than governments. Government funding for Official Development Assistance seems generally to be levelling out, and an increasing share goes to emergencies and other short-term efforts. Therefore, a new and more diversified fundraising strategy has been discussed by the Crop Trust Executive Board, and will be formalized at its October 2017 meeting.

Although there is a limit to what can be expected in terms of non-earmarked funding for the endowment from governments in the years to come, they will continue to be the primary source of this funding in the foreseeable future. However, the Crop Trust will continue trying to expand the donor universe and focus more on developed economies which are established funders in the fields of agriculture, food and nutrition, economic development, climate change and related public goods themes. An expansion of the donor base will also target selected major emerging economies, primarily among the G20 countries.

The Crop Trust will undertake every effort to mobilize short-term grant funding from governments to complement investment income withdrawals from the endowment fund, so as to meet the projected overall annual contributions by the Crop Trust to the CGIAR genebanks over the period 2017-2022. This includes working with selected donors to provide time-bound funding to cover the annual operating expenditures of individual genebanks over a number of years. Donors may also be asked to support specific projects for the upgrading of individual crop collections; such projects will prioritize

collections and crops that are included under Article 15 and Annex 1 of the Treaty as well as genebanks identified under the National Collections Strategy of the Crop Trust. Such near-term resource mobilization efforts will be deployed in parallel with the medium-term objective of building up the endowment.

Funding will be sought to support the operational expenditures of the Crop Trust Secretariat and the Svalbard Global Seed Vault as long as the endowment remains below its target size. Some donors have provided such resources in the past, and the Crop Trust hopes to continue mobilizing financial support for operational expenditures over the next several years so as to limit the withdrawal of resources from investment income.

Furthermore, the Crop Trust will try to build new and broader relations with private sector partners. This includes foundations as well as private corporations, bearing in mind the need for appropriate due diligence assessments. The Crop Trust will also use its web presence to attract further interest in its mission and to motivate, and process, additional individual donors.

Donors can target support for the conservation of specific crops and the collections that preserve them, provided that this is aligned with the objectives of the Crop Trust. Such crop-based funding is expected to be a more compelling approach for potential private donor partners, such as food industries dependent on a particular crop. Such crop-based approaches will be a fundraising priority in the coming years. Crops will be selected based on their value for food security, threats to collections holding unique diversity, as well as their contribution to improving the livelihoods of rural populations.

Beyond mobilizing traditional grant funding from donors, the Crop Trust is, as already mentioned, in discussion with selected government agencies and multilateral lenders about sourcing long-term, low-interest foreign-aid loans, under its Concessional Borrowing Framework. The loan proceeds would be invested in the Crop Trust endowment over the lifetime of the loan, generating additional investment income (after payment of any loan interest) in support of operating expenditures of international and national crop collections. These soft loans in effect constitute bridge funding, offering a long time horizon for the Crop Trust to replace the loan proceeds over time with permanent grant funding from donors.

The Crop Trust has recently established an innovative Investment Sharing Facility, which aims to mobilize private investment funds for the purpose of channeling dividend income towards PGRFA conservation activities. To receive such donations, the Crop Trust has created a charitable foundation in the test market of Germany. Should this pilot be successful, such an instrument may be developed for other markets.

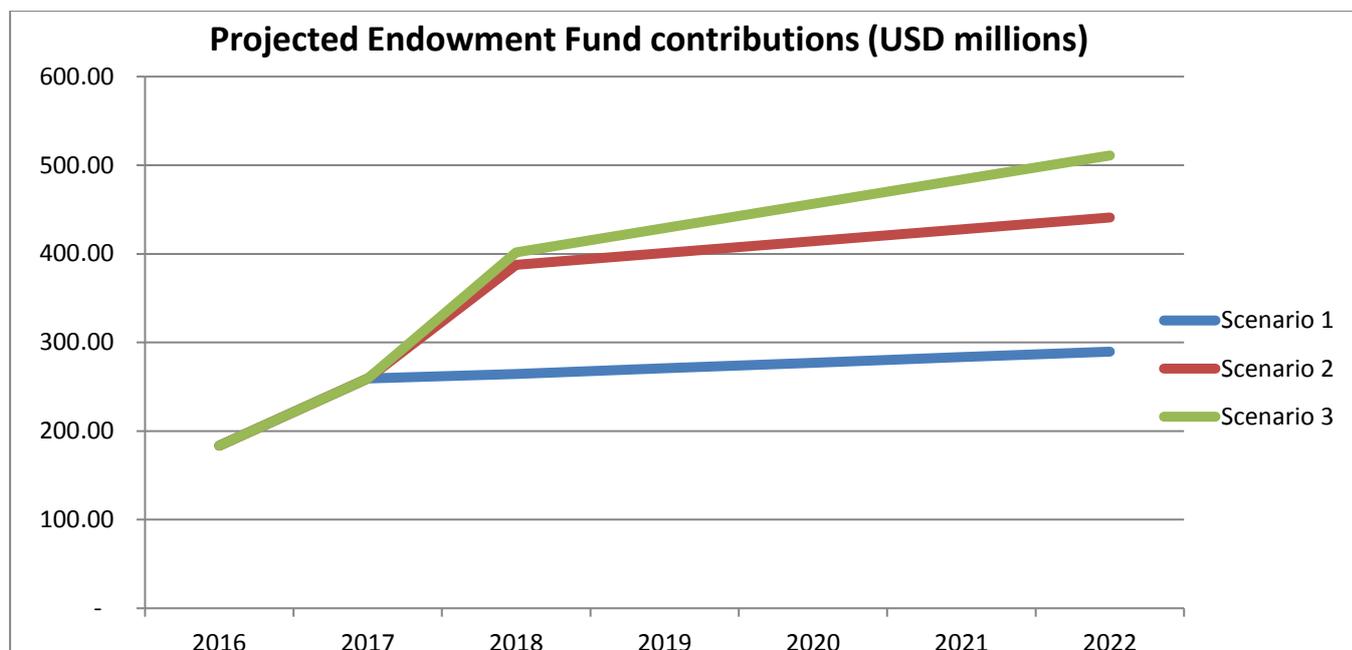
Finally, the Crop Trust will test the potential of crowdsourcing approaches. Web-based campaigns may target households as individual contributors. The initial expectation will be to broaden the base of contributors and cultivate ownership of the Crop Trust's mission at an individual level.

Crop Trust assets are managed in accordance with investment objectives and policies approved by the Executive Board and documented in the Investment Policy Statement. A much strengthened Finance and Investment Committee advises the Executive Board. The Crop Trust is a signatory to the United Nations Principles for Responsible Investment, an international framework for incorporating sustainability into investment decision-making.

Building the endowment in the years to come

The table below presents three scenarios for endowment fund levels by 2022. Scenario 1 (worst-case scenario) represents the value of the endowment fund if it remains at its current level, plus an additional USD 5 million in contributions per annum. This would bring the endowment fund to USD 290 million by 2022. Scenario 2 (most-likely scenario) anticipates USD 10 million per annum from new donors, a concessional loan of USD 100m from the Green Climate Fund (GCF) and an increase in

the cap on US contributions to the endowment fund from 25% to 33%, which would increase the value of the fund to USD 441 million by 2022. Finally, Scenario 3 (best-case) anticipates the outcomes in Scenario 2 and also further contributions from the GCF towards the expenditure committed to the Platform. This scenario anticipates an endowment value of USD 511 million by 2022. All of these options are currently in discussion with potential donors and represent real opportunities to bring the endowment fund to its target.



Cooperation with the Treaty Secretariat

The Treaty's Chair and Secretary are invited to participate in all Crop Trust Board meetings. They both have full access to Board documents and deliberations, except for closed agenda items dealing with personnel issues. The Crop Trust has been invited to Treaty Bureau meetings, limited to the agenda item where cooperation with the Crop Trust is discussed specifically. The Crop Trust has been invited, and contributed, to the Treaty's Ad Hoc Advisory Committee on the Funding Strategy. The Treaty Secretariat and the Crop Trust have developed a 2-page document describing the complementarity of the two organizations in fundraising. The document is being used in meetings with donors.

IV. COMMUNICATION AND OUTREACH

In the biennium, the Crop Trust has initiated Food Forever, an awareness raising campaign to underpin implementation of Target 2.5 of the United Nations Sustainable Development Goals. The initiative was launched in Stockholm on 11 June 2017¹⁰. The Treaty Secretariat has been invited to join the initiative. FAO's formal response is pending.

The Crop Trust's communication and outreach efforts focus on two overarching goals:

¹⁰ <https://www.food4ever.org/>

- 1) raising awareness of the important role crop diversity plays for our food, now and in the future; and
- 2) highlighting the technical work that our partners are doing to make sure that crop diversity is indeed conserved and available.

These messages have received major media attention over the past biennium and introduced new champions for the cause, highlighting that, perhaps more than ever, people are recognizing the value and urgency of conserving agrobiodiversity, and are speaking up.

To better address a growing audience, the Crop Trust expanded its online news section and Crop Topics newsletter to include two new sections: a Science Blog and a Spotlight feature. In the biennium, the Crop Trust also continued the #CropsInColor campaign and expanded photographic storytelling efforts with a new interactive platform. As a result, the first three interactive stories are online, as well as image galleries and videos. The Crop Trust will continue to explore opportunities for a second phase of #CropsInColor. The Crop Trust also continues to support Genesys and the CWR project through quarterly newsletters and an active web and social media presence.

Supporters old and new continue to make the case for conserving crop diversity. In support of the 2016 Pledging Conference, the Crop Trust was pleased to share a video address by H.E. Ameenah Gurib-Fakim, President of Mauritius, and keynote speeches by Jan Eliasson, Former Deputy Secretary-General of the United Nations, and Ewen McDonald, Deputy Secretary of the Department of Foreign Affairs and Trade of Australia. A number of key media pieces were published as a result of the conference. At the start of 2017, the Crop Trust welcomed a keynote by Dr David Bergvinson, Director General of ICRISAT, at the Ministerial Luncheon in Berlin entitled “Less Rain, More Grain.” The Crop Trust has also supported the launch of the Food Forever Initiative, which took place in Stockholm, Sweden in June 2017. This global endeavor advocates for concrete actions and ideas in support of implementation of the United Nations Sustainable Development Goal Target 2.5.

The Crop Trust has strengthened its media outreach in both traditional and social outlets. For example, the release of two major papers garnered much media attention, including the publication of a CWR gap analysis study in *Nature Plants*. The Svalbard Global Seed Vault also continues to be a popular news focus, with strong coverage of the 5 deposits that occurred in the last 18 months, including an AJ+ video that went viral on Facebook with over 30 million views, 370,000 shares and 165,000 likes. Overall, the Crop Trust’s social media presence continues to grow: over 2,000 new followers have joined in the biennium on Twitter and over 2,300 new followers on Facebook.