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# COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

## Item 9 of the Provisional Agenda

### Fifteenth Regular Session

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## REPORT FROM THE GLOBAL CROP DIVERSITY TRUST

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## I. INTRODUCTION

1. Established in 2004 under international law as an independent international organization, the Global Crop Diversity Trust (the Crop Trust) operates within the framework of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty) as an essential element of its Funding Strategy and in accordance with the overall policy guidance provided by its Governing Body. The 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 Constitution further states that "*the Trust shall in particular, without prejudice to the generality of the foregoing,*

- *endeavour to safeguard collections of unique and valuable plant genetic resources for food and agriculture held ex situ, with priority being given to those that are plant genetic resources included in Annex I to the International Treaty or referred to in Article 15.1(b) of the International Treaty;*
- *promote an efficient goal-oriented, economically efficient and sustainable global system of ex situ conservation in accordance with the International Treaty and the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (hereinafter referred to as "the Global Plan of Action");*
- *promote the regeneration, characterization, documentation and evaluation of plant genetic resources for food and agriculture and the exchange of related information;*
- *promote the availability of plant genetic resources for food and agriculture; and*
- *promote national and regional capacity building, including the training of key personnel, with respect to the above."*

2. The Relationship Agreement between the Crop Trust and the Governing Body of the International 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 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*". In this regard, the Agreement highlights the call in the first Global Plan of Action for Plant Genetic Resources for Food and Agriculture (GPA) for the "*development and support of a rational, efficient and sustainable system of genetic resources collections around the world*", re-emphasized in the International Treaty's call for contracting parties to "*cooperate to promote the development of an efficient and sustainable system of ex situ conservation*".

3. The Crop Trust, in accordance with its Constitution and the Relationship Agreement with the Governing Body, focuses on *ex situ* (genebank) conservation and availability of plant genetic resources for food and agriculture. It addresses major portions of the International Treaty including Articles 5 and 6, and much of Articles 7, 8, 9, 14, 16, 17.

4. The Commission on Genetic Resources for Food and Agriculture (the Commission) at its Ninth Regular Session welcomed the establishment of the Crop Trust and appealed to donors to support it. At subsequent sessions, the Commission has noted the Crop Trust's efforts in mobilizing funding for *ex situ* conservation and in furthering the aims of the Global Plan of Action, and in particular the objective "*to develop a rational, efficient, goal-oriented, economically efficient and sustainable system of ex situ conservation and use for both seed and vegetatively propagated species*" (Priority Activity 6).

5. Building an efficient and sustainable global conservation system is at the core of the Crop Trust's work. The endowment fund provides long-term stable funding to crop collections of global importance, in particular the international collections managed by the CGIAR Centres under Article 15 of the International Treaty. The Crop Trust also funds specific work to further the development of

the global system and address challenges for PGRFA conservation and use, such as climate change. The Crop Trust's role in this regard is recognised in the Second Global Plan Action.

6. The Crop Trust is pleased to submit this report on the activities of the Crop Trust to the Fifteenth Regular Session of the Commission on Genetic Resources for Food and Agriculture. This report provides an update on both institutional and programme developments.

## II. INSTITUTIONAL DEVELOPMENTS

7. The Crop Trust was established by FAO and Bioversity International, on behalf of the CGIAR Centres, and jointly hosted by the two organisations in Rome pending a permanent host country agreement. The decision to accept the headquarter agreement offered by the government of Germany was taken by the Crop Trust's Executive Board after a thorough study of proposals submitted by a number of different countries. Accordingly, in January 2013 the Crop Trust started operating from its new offices in Bonn.

8. All Board members are listed on the Crop Trust website<sup>1</sup>. The Crop Trust has recruited a full complement of 25 staff<sup>2</sup> at the new location in Bonn, including a team of specialists on fund-raising, partnerships and communications.

9. The members of the Executive Board are nominated by the Governing Body of the International Treaty and the Trust's Donors' Council. In addition, there are non-voting members appointed by FAO and the CGIAR. The Board generally meets twice a year and reports of its decisions are available on the Trust website. Donors who have contributed USD 25,000 or more are invited to join the Trust's Donors' Council. The Council meets annually and provides financial oversight and advice to the Executive Board. The Council's reports and the complete list of donors can be found on the Crop Trust website<sup>3</sup>.

10. The Crop Trust has a broad and important mandate consistent with the requirements of the International Treaty and the Global Plan of Action, but financial resources are limited. The Crop Trust therefore focuses funding on activities that provide maximum global benefits, are cost-effective, efficient and sustainable. The Crop Trust operates on the basis of a Fund Disbursement Strategy, which was adopted by the Crop Trust's Executive Board in 2009 after consultation with the Governing Body of the Treaty and Donors. The Fund Disbursement Strategy can be viewed on the Crop Trust website<sup>4</sup>. Two further documents detailing the Crop Trust's direction, a Strategic Workplan and Fund-raising Strategy, were published in 2013.

11. To date, the Crop Trust has raised about USD 350 million, of which about USD 180 million are invested in the endowment<sup>5</sup>. However, the Crop Trust is still far from reaching its endowment target and the programmatic goals recognized in its Relationship Agreement with the Governing Body and set out for itself in its Constitution and Fund Disbursement Raising Strategy.

12. In 2012, the CGIAR Fund Council approved the Crop Trust-CGIAR Consortium 5-year programme for the management and sustainable funding of the collections of plant genetic resources managed by 11 CGIAR Centres (CGIAR Research Program for Genebanks, or CRP Genebanks). This funding commitment from the CGIAR Fund for the international collections includes management oversight by the Crop Trust together with the Consortium Office and aims to increase efficiencies, ensure accountability, nurture collaboration between genebanks, and most importantly, improve long-term stability of funding. The programme agreement calls for the commitment to "phase-out" annual funding while simultaneously building the Crop Trust's endowment, thus ensuring true sustainability.

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<sup>1</sup> <http://www.croptrust.org/content/board-members>

<sup>2</sup> <http://www.croptrust.org/content/staff>

<sup>3</sup> <http://www.croptrust.org/content/funds-raised>

<sup>4</sup> <http://www.croptrust.org/documents/WebPDF/GCDT%20Fund%20Disbursement%20Strategy%20FINAL.pdf>

<sup>5</sup> <http://www.croptrust.org/content/funds-raised>

13. The Crop Trust contributes significantly to implementation of the International Treaty and the Second Global Plan of Action. The Trust thus appeals to countries and donor agencies to summon the political will at the highest level to make the investment needed to secure crop diversity through its endowment fund.

### III. PROGRAMME DEVELOPMENTS

#### Long-term conservation and availability of crop diversity

14. Article 5.1e of the International Treaty requires that Contracting Parties “*cooperate to promote the development of an efficient and sustainable system of ex situ conservation ...*” and Priority Activity 6 of the Second Global Plan of Action has as an objective “*to develop a rational, efficient, goal-oriented, economically efficient and sustainable system of ex situ conservation and use for both seed and vegetatively propagated species*”. At the core of the Crop Trust is the endowment fund, created to provide financial security to globally important collections of crop diversity in perpetuity.

15. As the endowment fund grows, the income it generates is used to provide in-perpetuity funding to collections of crop diversity of global importance that are conserved at international standards and available in accordance with the terms and conditions of Part IV of the International Treaty.

16. To date, the Crop Trust has approved long-term grants to 9 CGIAR genebanks and the genebank of the South Pacific Community. The funding is supporting the conservation and availability of 20 international collections of 17 major crops<sup>6</sup>. The supported collections serve an exclusively international role as the backbone of the rational, efficient and effective global system. In addition, the Crop Trust funds the annual operating costs of the Svalbard Global Seed Vault.

17. Long-term grants now total USD 2.5m million annually and since their initiation in 2006, USD 15.8 million has been disbursed for long term grants from the Crop Trust endowment.

18. From 2012 to 2016 the funding for the CGIAR-managed international collections is ensured at a stable, agreed level under the Genebanks CRP, complementing the long-term grants.

19. Targets for the availability, safety duplication and data availability of the CGIAR-managed collections have been agreed, and Centers are investing in facilities, staff and operations to meet these targets by 2021.

20. Since 2012, seven of eleven CGIAR genebanks have received external reviews by crop diversity conservation and use experts from a wide range of institutes (Millennium Seed Bank, UK, Leibniz Institute of Plant Genetics and Crop Plant Research, Germany, National Plant Germplasm System, USA, Centre for Genetic Resources, Netherlands, National Agricultural Research Institute, Uruguay, Empresa Brasileira de Pesquisa Agropecuária, Brazil, International Potato Centre, Peru and Bioversity International, Malaysia). The reviewed genebanks are now implementing workplans to address recommendations.

21. As part of the Genebanks CRP, a minimum Quality Management System for genebanks is being devised, based on the Genebank Standards, and will be implemented in all genebanks receiving long-term support from the Crop Trust.

22. Since 2012, the Crop Trust has organized three Annual Genebank Meetings in Italy, USA and Tanzania. The meetings convene all of the genebank managers of institutes receiving long-term grants

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<sup>6</sup> Crops supported by the Trust through long-term grants are: banana and plantain, barley, bean, cassava, chickpea, edible aroids, faba bean, forages, grass pea, lentil, maize, pearl millet, rice, sorghum, sweet potatoes, wheat, and yam

together with expert reviewers, thematic specialists and partners, such as national genebank managers from the region.

### Safety duplication

23. The International 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 as an essential element of good genebank management practice aimed at minimizing risk to *ex situ* collections.

24. The Seed Vault, welcomed unanimously by the then 172 Members plus EU of the Commission, was officially launched in February 2008 and provides virtually fail-safe security for duplicate samples of PGRFA. Since it opened its doors in 2008, the Vault has accepted deposits from 60 genebanks around the world, and now holds a total of 824,625 accessions.

25. The Trust is contributing funding on an ongoing basis for the management and operation of the facility.

### Information and information systems

26. Article 17.1 of the International 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*”. The Crop Trust is continuing to support the implementation of three initiatives to enhance the management and availability of information about PGRFA:

- The Crop Trust partnered with the US Department of Agriculture (USDA) and Bioversity International to develop and deploy a state-of-the-art genebank data management software package, GRIN-Global.<sup>7</sup> Version 1.0 was released at the end of 2011 and an improved Version 2.0 is about to be released. The system has been introduced to 38 genebanks for evaluation and possible eventual adoption. CIMMYT is the first genebank to formally adopt the system.
- The Crop Trust and Secretariat of the International Treaty supported the Centres of the CGIAR, under Bioversity’s leadership, to develop a global on-line portal to accession-level germplasm information. The portal, Genesys<sup>8</sup>, builds on existing collaborative information systems, namely SINGER, EURISCO and GRIN. It allows searching across multiple genebank databases online and currently contains data on 2.77 million accessions held in over 350 genebanks, including evaluation data from USDA and some CGIAR Centres. A second version of the portal was released by the Crop Trust in 2014.
- The recently launched Diversity Seek.<sup>9</sup> The DivSeek initiative will develop an information management platform to provide ready access to both genotypic and phenotypic data associated with genebank accessions. An interim facilitation unit has been established while a permanent governance structure is developed by the DivSeek community. The Global Crop Diversity Trust hosts and implements the interim facilitation unit jointly with the Secretariat of the International Treaty, and operates it with additional inputs by the CGIAR Consortium, the

<sup>7</sup> [http://www.grin-global.org/index.php/Main\\_Page](http://www.grin-global.org/index.php/Main_Page)

<sup>8</sup> <http://www.genesys-pgr.org/>

<sup>9</sup> <http://www.divseek.org/>

Global Plant Council and other experts/organizations. Hosting arrangements for the facilitation unit will be formalized once the DivSeek consortium is officially established.

27. In furtherance of Article 17.1 of the International Treaty and Priority Activity 15 of the Global Plan of Action, the Crop Trust will continue to support to the development of Genesys and DivSeek as a fundamental components of an effective global conservation system. It will also continue to assist interested genebanks with the adoption of GRIN-Global, the implementation of other improvements to their documentation systems, and sharing selected information on their collections through Genesys, thereby contributing to a truly global system of *ex situ* conservation.

### **Adapting agriculture to climate change: collecting, protecting and preparing crop wild relatives**

28. The Commission at its Thirteenth Regular Session highlighted the importance of both *in situ* and *ex situ* conservation of wild relatives to enable adaptation to climate change. In 2011, the Crop Trust launched a 10-year project to collect high-priority diversity of the wild species related to 29 Annex 1 crops, to secure 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 is funded by the Government of Norway and guided by an Advisory Group comprising experts and representatives of the Secretariat of the International Treaty and CGIAR Centres. 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.

29. The crop wild relatives (CWR) in a total of 92 genera, including the project's target 29 focal crops, have been catalogued and the database is searchable at the portal Crop Wild Relatives & Climate Change.<sup>10</sup> A dataset containing about 4 million records has been assembled, representing the largest and most comprehensive resource on the geographic distribution of the wild relatives of the world's major crops.

30. The dataset has been analysed to identify high priority species and regions for collecting. The collecting is being funded through grant agreements with the Crop Trust which recognize all relevant national laws and international agreements and is being carried out by national institutions with technical back-stopping provided, as necessary, by staff of the Millennium Seed Bank and CGIAR Centres. Country-specific field identification guides are being developed by MSB to support approximately 25 national partners in their collecting activities, and will represent a long-term resource and important contribution to capacity building.

31. In preparation for the pre-breeding phase of the project, crop-specific consultations have been held with a wide range of breeders and other researchers who have experience in the use of CWRs. Two case studies on pre-breeding are underway, on rice and sunflower. These crops were chosen because considerable CWR diversity already exists in genebanks (though some gaps do also remain) and because the crops provide an interesting contrast in terms of level of past investment in breeding. A further four pre-breeding projects on carrot, eggplant, lentil and potato started to receive support in 2014. All are collaborative arrangements including a significant component of capacity building for pre-breeding programmes in developing countries.

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<sup>10</sup> <http://www.cwrdiversity.org>