

Safeguarding crop diversity, the first fifteen years of forever





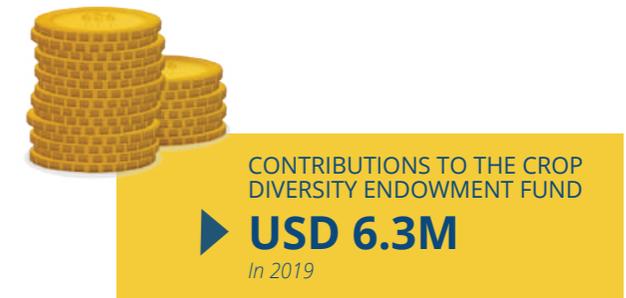
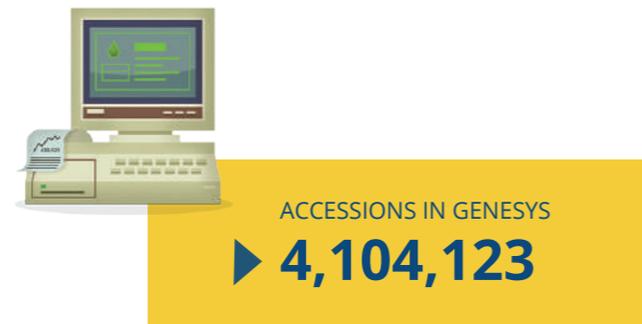
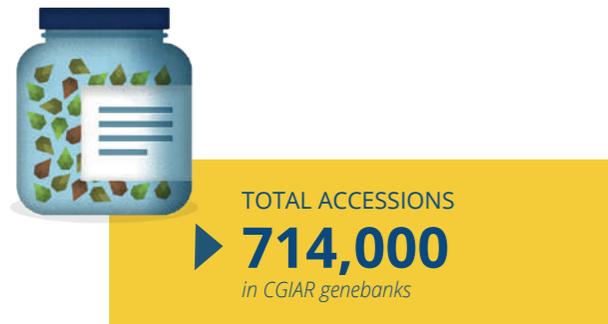
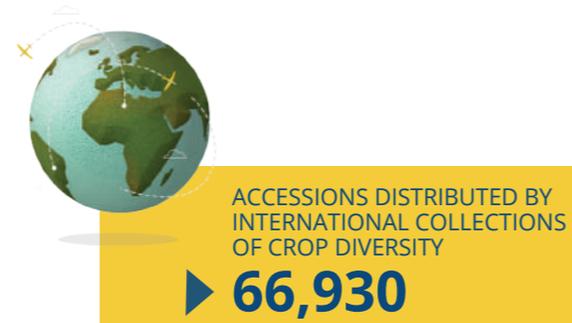
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WELCOME

KEY FIGURES



LETTER FROM THE CHAIR OF THE EXECUTIVE BOARD

SIR PETER CRANE



This year we celebrated 15 years of progress towards our goal of an effective, sustainable global system for the *ex situ* conservation of crop diversity. Crop diversity is essential to the future of agriculture, and we must conserve it if we are to use it to solve the problems that agriculture is facing and will continue to face.

As we transition into a new phase of our work, we can do so confident in our ability to deliver on the vision of our founders. A strong structure is in place, our methods have been proved, and we have the team to get the job done.

Some of the 2019 transitions were of a personal nature. We said farewell to long-serving Board members Prem Lal Gautam, Mary Ann Sayoc and Gebisa Ejeta, all of whom contributed their expertise and passion selflessly over the past several years to help the Crop Trust deliver on its mission. We are deeply grateful for their dedication and service and wish them well in their new adventures.

There was unfortunately also a more tearful goodbye, occasioned by the sad passing of Tim Fischer, my predecessor as Executive Board Chair of the Crop Trust. Tim was a tireless leader and a lifelong advocate for biodiversity. He made lasting contributions to the global system of conserving crop diversity and helped bring the Crop Trust vision to life. We miss him already.

We closed 2019 with Marie Haga, who as Executive Director led the Crop Trust with energy and passion for seven years, moving in to a new job. Marie's commitment to the Crop Trust was unwavering, and we are grateful for her exceptional contribution. We wish you well in your new adventure with IFAD, Marie.

At the same time, we are delighted to welcome our new Executive Director, Stefan Schmitz, a long-time friend of the Crop Trust, and a powerful advocate of biodiversity and sustainable food systems. Prior to joining us, Stefan was Deputy Director-General and Commissioner for the "One World - No Hunger" Initiative

at the German Federal Ministry for Economic Cooperation and Development (BMZ), a major partner to the Trust.

The Crop Trust team is made up of passionate, committed people, and their contributions are lasting reminders of the roles all of us play in safeguarding crop diversity.

Our partners, in particular, work tirelessly worldwide: genebank managers and staff, pre-breeders, breeders and farmers are all champions of diversity who make hugely important contributions to the cause. Here we spotlight them, recognizing the dedicated specialists who keep the world's most important crop diversity alive for generations to come.

2019 was a busy year, and one of transition. In that spirit, I invite you to read on and learn about all we accomplished together in 2019.



As we transition into a new phase of our work, we can do so confident in our ability to deliver on the vision of our founders.



LETTER FROM THE EXECUTIVE DIRECTOR STEFAN SCHMITZ



Recently, I had the pleasure of visiting the Svalbard Global Seed Vault during the largest deposit since the Vault's opening in 2008. I was humbled to witness at first-hand genebanks from all over the world making deposits of seeds of several hundred different species. The importance of the Vault and the broader global family of genebanks as fail-safes for our planet's future food supply has never been so apparent. I was struck by the enormity of the task we have in front of us.

In November 2019, it was my honor to accept the position of Executive Director of the Crop Trust. I am familiar with much of the Crop Trust's excellent work under the leadership of my predecessor, Marie Haga, and I look forward to building on that strong foundation. With our partners, much valuable work has been carried out to support meeting SDG Target 2.5, which we celebrate in this report.

The United Nations SDG Target 2.5 calls for the international community to safeguard and share the genetic diversity of both crops and livestock by 2020.

Meeting Target 2.5 embodies the mission of the Crop Trust. The endowment fund guarantees the long-term conservation and availability of the building blocks of our food system, contributing to securing the planet's future food supply in a climate emergency.

Our mandate also feeds into a broader spectrum of the SDGs, and the targets set by the Paris Climate Agreement - and it is my mission to ensure we play a pivotal role in contributing to the



The importance of the global family of genebanks as fail-safes for our planet's future food supply has never been so apparent.



global sustainable development agenda.

Collections of crop diversity require constant maintenance, and even brief disruptions or variations in funding can leave material at risk of permanent loss. So, as we look ahead to 2030, and arguably the most important decade of the century, the growth of the endowment fund will remain a priority for the Crop Trust.

The Crop Trust also manages projects that closely complement the work funded by the endowment. In 2019, with enormous thanks to our Norwegian donors, our partners concluded a six-year effort to collect crop wild relatives, and we were able to continue to support the pre-breeding programs that will put key traits from these wild species in the hands of breeders and farmers.

In partnership with CGIAR, in 2019 we completed the third year of the five-year program, the CGIAR Genebank Platform. The Platform ensures that the international genebanks managed by CGIAR centres are running efficiently, their crop collections are conserved to a high standard, and that as many samples as possible are immediately available when they are needed by scientists, farmers and other users.

In our newest initiative, Seeds4Resilience, we partner with five national genebanks in Africa. The project provides the financial and technical support for these national genebanks to reach international conservation standards and ensure their collections are both safe and available for the long term.

Food Forever is a campaign to raise awareness, aimed to shed light on the crucial importance of SDG Target 2.5. Its flagship event series gives the public a glimpse of an exciting food future. By working with innovative chefs to cook dishes using lesser-known ingredients, the Food Forever Experience plants the seed for important conversations about a more diverse and sustainable food future.

There is much to challenge and excite us in the year ahead. But for now, I hope you enjoy this Annual Report for the challenging and exciting year that was 2019.



WHAT
WE DO

CGIAR GENE BANK PLATFORM



The Genebank Platform is at the peak of its activities. We have already achieved so much and are hoping to do more, with an effort to help build the capacity of national partners to collect and conserve landrace diversity in some of the most under-represented countries in the world.



*Charlotte Lusty,
CGIAR Genebank Platform Coordinator*

This year, the CGIAR Genebank Platform completed the third year of its five-year lifespan. The Platform ensures that the CGIAR genebanks are running efficiently, that the crop collections they manage are conserved to a high standard, and that as many samples as possible are immediately available when needed.



KEEPING SEEDS ALIVE FOR LONGER

A series of research projects overseen by Aarhus University in Denmark is working under the Platform to improve seed quality and longevity in storage based on the best scientific evidence.

The initiative examines factors that impact seed quality and viability and thus affect the time that seeds can remain in long-term conservation. The International Rice Research Institute (IRRI), for example, has been working with a tailor-made imaging machine to automate the process of sorting seeds for conservation. Both IRRI and the International Maize and Wheat Improvement Center (CIMMYT) are trialing imaging-based germination scoring systems. IRRI hosted a workshop on seed quality management in June to discuss the latest findings on automation and image analysis, seed longevity, post-harvest handling, and seed dormancy.

FINDING THE NEEDLE IN THE HAYSTACK

CGIAR genebanks distribute around 100,000 germplasm samples per year. Some requestors use the online portal Genesys to search for the crop diversity they need. But the information available to users is often limited or difficult to interpret, which risks that requestors receive a lot of material that they don't want. Genesys now allows users to select seed samples by reviewing pre-selected germplasm subsets, groups of samples that genebank scientists have carefully selected and tested for particular purposes. For example, there is a subset of wheat varieties that are particularly nutritious and suitable for milling, baking and producing tasty flours, and one for lentils with *Ascochyta* blight resistance.

In 2019, the Genebank Platform launched a project led by the International Center for Tropical Agriculture (CIAT) and the International Center for Agricultural Research in the Dry Areas (ICARDA) to develop an online tool that will allow genebank users to customize selections of material based on climate and environmental conditions or the likely presence of traits associated with specific environments, using the passport, characterization and trait data available in Genesys. This selection tool will be designed to work with any collection for which there is latitude and longitude data.

INTO THE FAST LANE WITH GREENPASS

Demand for germplasm from CGIAR genebanks continues to rise. The occurrence of new pests and diseases puts constant pressure on CGIAR Centres to ensure that only healthy seeds and other materials are disseminated across borders. The international movement of germplasm is dependent on the controls of national phytosanitary agencies – shipments can be delayed or destroyed if nothing is in place. The community of CGIAR germplasm health units (GHUs) have high standards of operation and are working to facilitate the international movement of germplasm. To ensure that CGIAR GHUs can guarantee a high standard of operation and compliance with international standards, the GHUs are working with FAO and national phytosanitary agencies to develop the "GreenPass" system, an efficient, streamlined approach to the provision of comprehensive phytosanitary assurance.

IMPACT FACTOR

The Impacts Fellowship program was launched by the Platform in 2018. In 2019, the seven recipients of fellowships completed a six-month mentorship program giving them hands-on experience in evaluating the impact of international genebanks, and support for publishing high-quality scientific briefs and papers, in four main areas:

Good as I've bean to you

Donald Villanueva focused on the contribution of the International Rice Genebank to yields of rice in India, using survey data from nearly 9,000 farmers in Eastern India. Vivian Bernal-Galeano combined analyses of biological, agricultural and market data to measure the contribution of the CIP genebank to the development of improved potato varieties in low-income countries. Stefania Selitti investigated the contribution of the CIAT genebank to the development of seven iron-biofortified varieties of climbing beans. Hafid Aberkane tapped large datasets and searched pedigrees to trace accessions of "goat grass," a wild relative of wheat, to modern varieties grown on farms through the development of synthetic hexaploid wheat (SHW).

A tree with roots

Kavengi Kitonga surveyed key informants and genebank users who provided evidence of improved food security, higher incomes, increased milk production, reduced vulnerability to drought and enhanced soil fertility due to the adoption of tree species by livestock and maize farmers. The study validated the unique role of the World Agroforestry Centre's (ICRAF) genebank as the main source of tree planting material for many Kenyan smallholders.

I can ear you

Vanessa Ocampo-Giraldo described the concept of rematriation as a dynamic model of conservation that involves combining *ex situ* (conservation in genebanks) and *in situ* (conservation on-farm) approaches. The system is being developed to maintain the genetic diversity of an unusual maize landrace in Mexico called Jala, which has the longest known ears in the world.

Together through life

Sefra Alexandra underscored the role of collaborative efforts to collect, conserve, and breed taro in response to the taro leaf blight (TLB) catastrophe that occurred in Samoa in the 1990s. She conducted ethnobotanical fieldwork in Fiji, Vanuatu and the Cook Islands, and interviewed more than 50 taro experts and farmers, to understand how essential the exchange of genetic diversity from different regions was to overcoming the disease.



Genebank Impacts Fellow Sefra Alexandra (center) with CePaCT staff members in Suva, Fiji.

COLLECTING CROP WILD RELATIVES



The Crop Wild Relatives Project has supported the collection and conservation of thousands of seed samples and is already seeing the contribution this new diversity can make in farmers' fields.



*Hannes Dempewolf,
Senior Scientist - Head of Global Initiatives, Crop Trust*

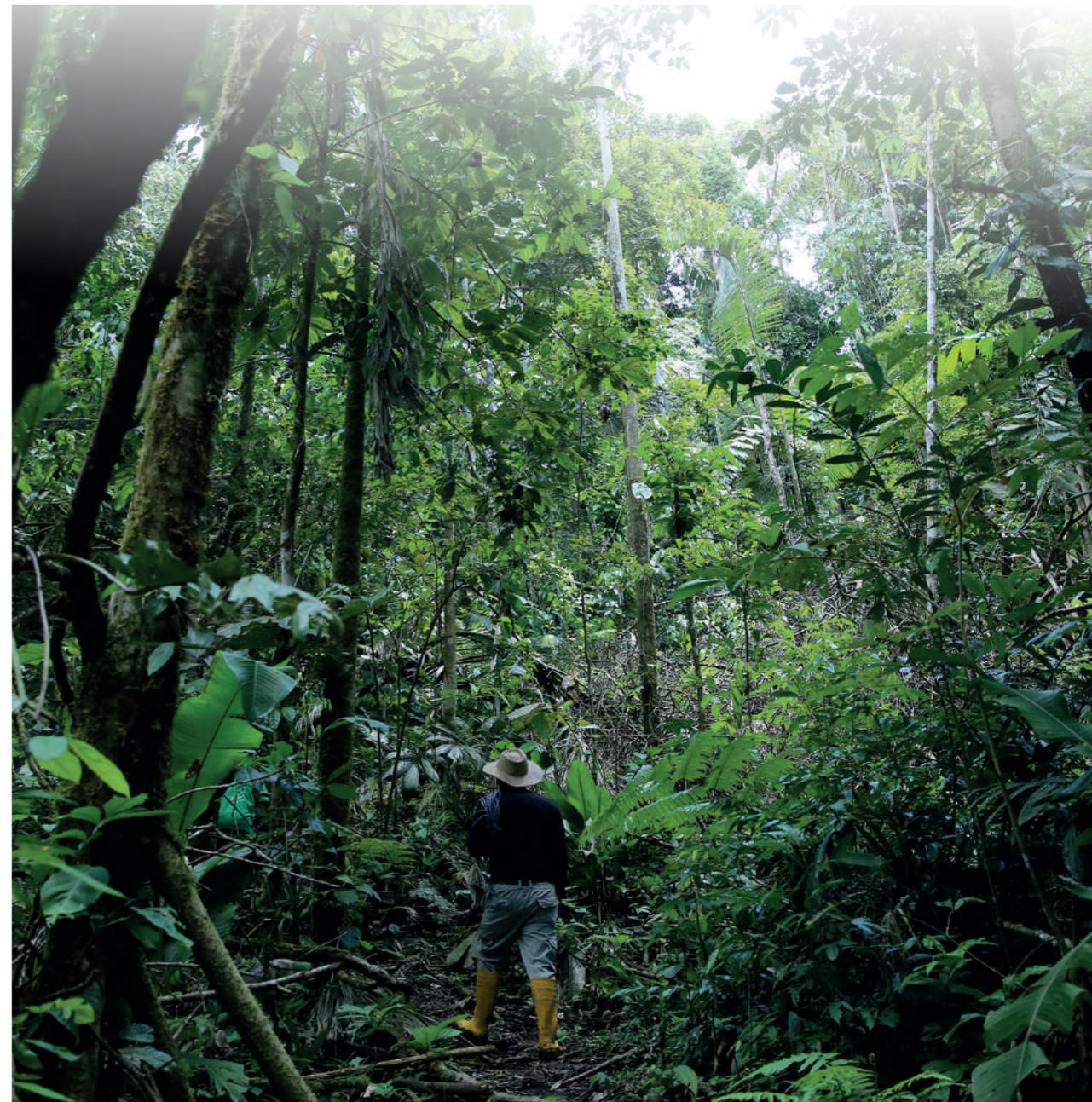
Crop wild relatives (CWR) represent a source of genetic diversity that can be used to transform agriculture when farmers need to produce more with less, while facing increasing erratic climatic conditions. But they are challenging for plant breeders to use, and many are threatened in the field. The Crop Trust is addressing both these challenges.

In 2011, the Crop Trust, with support from the Government of Norway, embarked on a global, 10-year project to collect, conserve and use CWR. The project is implemented in partnership with the Millennium Seed Bank (MSB) of the Royal Botanic Gardens, Kew, UK and with dozens of specialist institutes and national and international conservation and pre-breeding programs around the world.

SAFEGUARDING DIVERSITY

Over six years, project partners were in the field for a combined 2973 days, in 25 countries all over the world, to collect and safeguard 4644 seed samples of 371 different species of crop wild relatives, far exceeding expectations. Many species were collected multiple times – on different continents, in different countries and in different regions within a country. Capturing and conserving as much diversity as possible both within and among species was at the core of this global collecting effort.

CWR seed samples collected during the project were conserved in the national genebank of the partner country and also shipped to Kew's MSB and other genebanks, where they will be available according to the terms of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Plant Treaty).



WILD SEEDS, I THINK I LOVE YOU

“

It is farmers who will plant seeds from our projects in their fields. So we are turning to them to lend their voices, knowledge and experience.

”

*Benjamin Kilian,
Senior Scientist Plant Genetic Resources, Crop Trust*



The CWR Project’s pre-breeding work has brought together more than 100 national and international partners in 49 countries. All projects have strong capacity-building elements and involve both North-South and South-South partnerships.

The work is transitioning from creating new materials derived from CWR to actually

growing them in farmers’ fields. This allows researchers to obtain production data from various locations and enables farmers to evaluate new material and communicate their preferences to scientists.

The most promising pre-bred material, and their associated data, will be available under the terms of the Plant Treaty.



IMPACT IN THE FIELD

Alfalfa

A CWR-derived alfalfa variety has survived record cold snaps in Inner Mongolia and is also drought tolerant. This variety, Zhongcao No. 3, was released to farmers in 2019. The Chinese Academy of Agricultural Sciences (CAAS) is developing a participatory seed multiplication project with smallholder farmers who will be able to keep, use and sell the seeds of Zhongcao No. 3 as part of a new seed sharing scheme.

Cowpea

The International Institute of Tropical Agriculture (IITA) has identified CWR in Africa that have more tolerance to heat and drought and resistance to aphids than the domesticated cowpea. They have crossed the best of these CWR with high-performing cowpeas and evaluated a number of promising climate-smart lines in Nigeria, Burkina Faso and Niger.

Durum wheat

Initial results coming from the International Center for Agricultural Research in the Dry Areas (ICARDA) indicate that CWR-derived lines of durum wheat are performing better than currently available commercial varieties in terms of both yields and quality. Farmers throughout Morocco are evaluating this material and reporting that they believe some lines are drought tolerant.

A HELPING HAND FOR GRASSPEA AND FINGER MILLET

Grasspea and finger millet are prized for their nutritional value and ability to survive temperature extremes, drought and poor soil. A new project funded by the Templeton World Charity Foundation, Inc. will help improve the productivity of these crops.

The diversity needed to improve the yield and nutritional quality of grasspea and finger millet and adapt them to changing climatic conditions is limited. However, in recent years, pre-breeders supported by the CWR Project have expanded diversity by tapping into wild and ancient domesticated forms of these crops. With the Templeton Project, the activities of the CWR project will be expanded to other countries.

A second element of the Templeton project aims to explore new, innovative avenues of funding to contribute to the further development of the Crop Trust's endowment fund.

The three-year project, Safeguarding Crop Diversity for Food Security: Pre-breeding Complemented with Innovative Finance, began in August 2019.



The Templeton Project allows us to build on the work of the CWR Project for two crops badly in need of a funding boost. ”

*Benjamin Kilian,
Senior Scientist Plant Genetic Resources, Crop Trust*



AFRICAN RICE BEATS THE HEAT

African rice flowers at dawn and goes through its reproductive cycle before the day begins. Early morning temperatures have risen, exposing the crop to stressful conditions. A Crop Trust project, funded by the Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF), set out to find types of African rice which would flower earlier in the morning, and thus beat the heat.

Scientists and pre-breeders at the Africa Rice Center (AfricaRice), based in Côte d'Ivoire, systematically explored the collection of rice diversity conserved in the center's genebank.

After two years of recording data on more than 2,000 samples grown in controlled field conditions, the team at AfricaRice identified 15 samples that flowered earlier in the morning, providing a goldmine of genetic diversity for rice breeders. Breeders will now be able to use them in their efforts to develop high yielding, heat-tolerant African rice varieties.



This is a clear example of how conserving crop diversity for the long term, and studying it, can help us to adapt our food crops to new challenges. ”

*Benjamin Kilian,
Senior Scientist Plant Genetic Resources, Crop Trust*

THE SVALBARD GLOBAL SEED VAULT

In October 2019, packed into 95 sealed boxes, 30,000 seed samples found a new home in Svalbard.

NEWCOMERS POLAND AND SLOVAKIA JOINED BY RETURNING DEPOSITORS

In 2019, the Seed Vault received deposits on four separate occasions from eight institutions, including two first-time depositors: the National Agricultural and Food Centre of Slovakia and the Plant Breeding and Acclimatization Institute (IHAR) of Poland.

The second-largest in the European Union, Poland's national genebank at IHAR holds over 75,000 samples of crop diversity. With its first deposit to Svalbard, including varieties of wheat and barley, two of the world's most important food crops, Poland began the process of duplicating a critical collection of plant genetic resources. Slovakia, an early contributor to the Crop Trust

endowment fund, is now entering a new phase of collaboration with its first shipment to the Seed Vault. Samples deposited included oats, vetch and emmer wheat.

Returning depositors included the Agricultural Plant Genetic Resources Research and Conservation Centre (APGRC), who contributed Sudan's third box since the nation's first deposit in 2010, protecting over 300 more accessions of sorghum, cowpea and the forage kikuyu grass. The International Center for Agricultural Research in the Dry Areas (ICARDA), contributed its 190th box of seeds, containing samples of lentils and chickpeas, and cereals such as wild oats and barley.





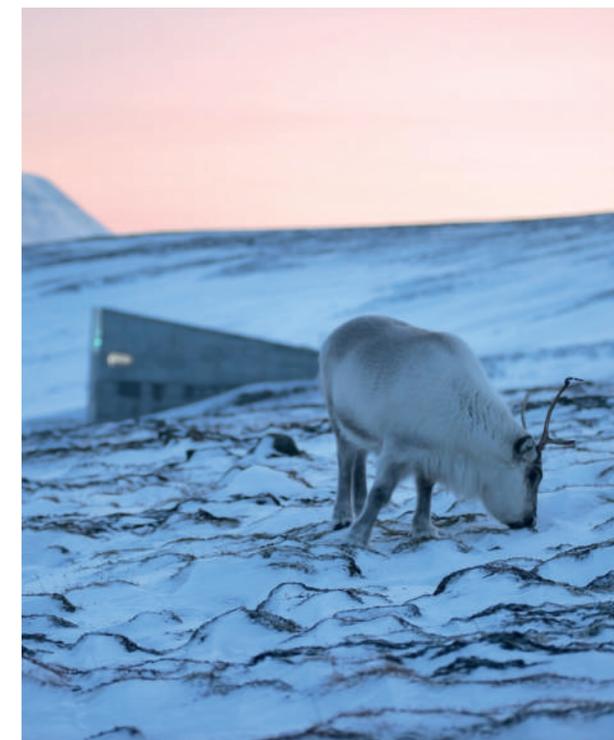
AN UPGRADE FROM THE NORTH SEA

After 10 years of operation, the Norwegian Government decided to implement a number of improvements to the Seed Vault due to recurrent minor leaks in the entrance tunnel during the snow melting season. In accordance with technical advice, the Norwegian Government invested 200 million NOK (20 million EUR) in an upgrade of the facility.

The project, completed at the end of 2019, included a new watertight access tunnel, improved security procedures and the installation of a more efficient new cooling system. To build and seal the new access tunnel, the construction team turned to technology used by Norway's oil and gas industry on oil platforms in the North Sea. In addition, a new parking lot and office building were constructed and a communications campaign will be launched in 2020 to generate greater awareness of the Vault's global importance.

Accessions conserved in the Seed Vault at the end of 2019

992,032



SUPPORTING NATIONAL GENE BANKS

“

National genebanks in sub-Saharan Africa can help drive agricultural development and are integral to the future prosperity of the region.

”

*Nora Castañeda-Álvarez,
Project Manager, Seeds4Resilience, Crop Trust*

Farmers in sub-Saharan Africa are facing the triple challenge of climate crisis, food and nutritional insecurity and a rising population. To help drive more resilient and diversified food production, the Crop Trust kicked off the Seeds4Resilience project in 2019. This new five-year initiative funded by the Government of Germany through the German Development Bank (KfW), works with national genebanks in Nigeria, Zambia, Kenya, Ethiopia and Ghana to conserve and share collections of key local crops such as sorghum, millets and cowpea.

These five national genebanks conserve thousands of important seed samples that could help scientists develop more resilient, productive and nutritious crops, but inadequate and irregular funding have put their collections at risk.

Seeds4Resilience provides financial and technical assistance to help these national genebanks reach and maintain international conservation standards. By upgrading equipment, improving internal processes, enhancing the technical capacity of staff and expanding links to users, the work of each genebank will become more efficient, effective and user-driven, sensitive to the needs of farmers, scientists and policymakers.

In late 2019, project team members conducted site visits and reviews of the five genebanks, providing updated information on the viability, uniqueness and availability of their material, as well as on how genebank operations are managed.



INFORMATION SYSTEMS



We cannot use crop collections if we do not know what they contain. At the same time, data management evolves all the time. As genebank documentation specialists, we can never rest.



Matija Obreza,
Information Systems Manager, Crop Trust

A STRONGER GENESYS

During 2019, Genesys -- the online one-stop shop for information on genebank samples -- received a major upgrade. Genebanks can now publish images of accessions, make information available on tailor-made subsets of their collections and present the results of characterization and evaluation work done on their material.

Search

Full-text search and powerful data filtering mechanisms allow users to explore over four million records of accession passport data from more than 400 collections with ease.

Images

Genebanks can now publish images and other documentation, such as scanned collecting forms, on their accessions. Currently, Genesys hosts 160,000 images of 115,000 accessions from nine CGIAR genebanks.

Subsets

Subsets help users find germplasm by creating made-to-measure groups of accessions that address specific needs. A subset can be determined by end-use (e.g. wheat for tortillas or high-yielding timber trees) or any number of other criteria, from yield potential and nutritional content to stress tolerance or cultural value. Genesys now hosts 118 subsets, including “the top 20 most distributed potatoes” and “sources of crown rot tolerance in wheat.”

Characterization & evaluation datasets

Genebank staff grow crop varieties in the field and document their attributes as part of their basic operations. These observations are increasingly available on Genesys. Such datasets help to better describe accessions to potential users, making it easier for them to make decisions about what to order.

CAPACITY BUILDING

The Crop Trust has supported a series of Genebank Operations and Advanced Learning (GOAL) workshops on globally accepted standards for genebank management since 2015. In 2019, two GOAL workshops were held on IT practices and data management in genebanks.

A GOAL workshop held in October in Vietnam was hosted by the Plant Resources Center (PRC) of the Vietnam Academy of Agricultural Sciences (VAAS, MARD) and supported by the Government of Norway under the Crop Wild Relatives Project and the Crawford Fund of Australia. The workshop brought together data managers from 12 national and regional genebanks in Asia and focused on addressing best practices in genebank documentation management. It also provided an introduction to Genesys and updated participants on new developments in GRIN-Global, a genebank data management software the Crop Trust supports through the Genebank Platform.

A similar GOAL workshop was held in Montevideo, Uruguay from 3-5 December with support from the Instituto Nacional de Investigación Agropecuaria (INIA). Genebank staff from nine South American countries attended this workshop, which was held in Spanish.

STRENGTHENING GENE BANK INFORMATION SYSTEMS

Updating information systems is a critical step in strengthening documentation processes in genebanks. Under the Crop Wild Relatives Project supported by the Norwegian Government, experts have visited 37 national and regional genebanks since 2014 to assess the state of documentation management and make recommendations for improvement. Based on these assessments, the Crop Trust has supported 21 genebanks to bring systems up to date. In 2019, the GRIN-Global genebank data management software was introduced at the National Agricultural Research Center in Jordan, and IT infrastructure was upgraded at the National Genebank of Bhutan.



Number of accession records updated in Genesys in 2019

3,074,839
72.92%





SECURING
OUR FOOD,
FOREVER

GLOBAL STRATEGIES



Crop conservation strategies provide an important global framework for all of our work. Without the information they bring together and critically analyze, we'd lack the global scientific evidence base that is so crucial to everything we do.



*Hannes Dempewolf,
Senior Scientist - Head of Global Initiatives, Crop Trust*

A new three-year project, funded by the Government of Germany, focuses on developing and updating global crop conservation strategies. The Crop Trust has supported the development of global crop conservation strategies for 27 crops since 2006.

These strategies take stock of the status of the conservation and availability of crop diversity and provide recommendations for priority activities. They recognize that the specific actions needed to conserve crops may differ significantly depending on the biology of the crop, on the representativeness of current collections and how they are being managed.

The Federal Agency for Food and Agriculture of the German government (BLE), a strong advocate for crop diversity, is funding the Breathing New Life into the Global Crop Conservation Strategies Project. The Crop Trust gathered a group of international experts to identify the crops on which the project should focus. They determined that five of the existing global crop conservation strategies should be updated: potato, yams, cowpea, millets and

sorghum. And that nine new strategies should be developed: groundnut, cucurbits, temperate forages, sunflower, eggplant, pea, brassicas, peppers and citrus fruits.

Based on desk studies, surveys and various types of consultations with stakeholders, the new and updated strategies will provide a global roadmap for the conservation of the genepool, including key priority actions.

At the end of the project, we will recommend a dynamic system for developing, implementing and updating crop conservation strategies beyond the timeframe of the funding we are receiving. We will then have not only the strategies themselves but a strategy for sustaining them.

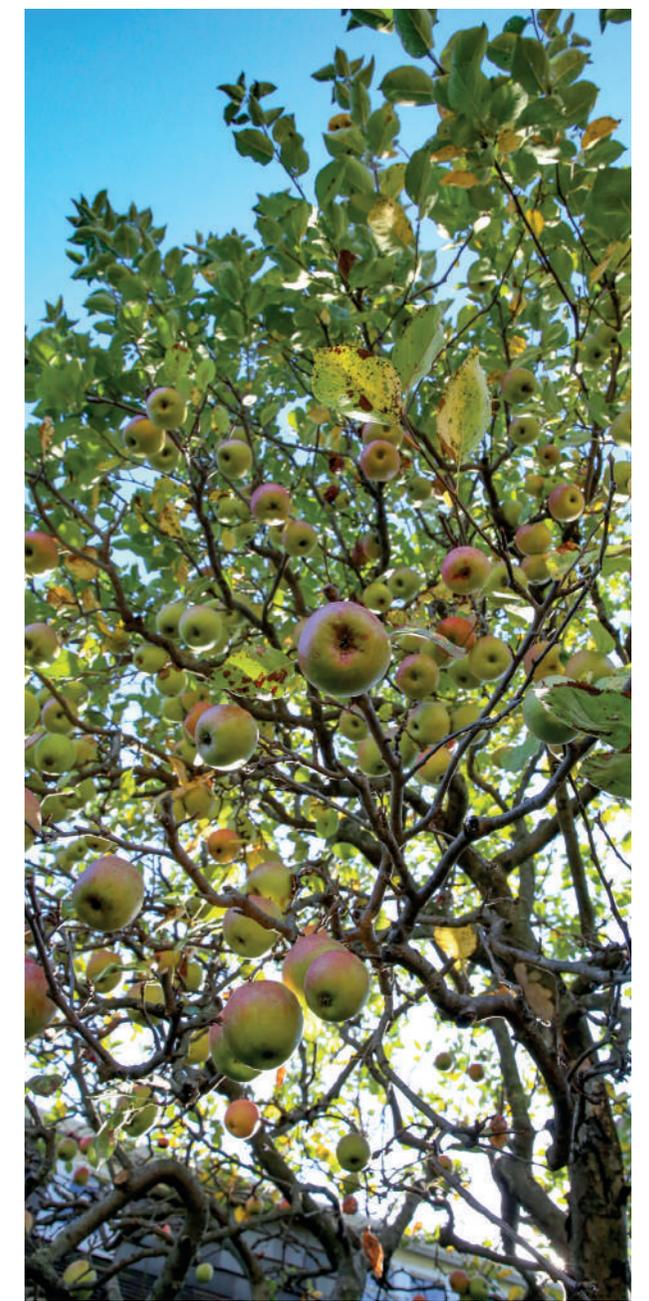
The Crop Trust is collaborating with the Secretariat of the Plant Treaty to position the strategies so they will become evidence-based guiding documents for the further development of the Multilateral System.

A STRATEGY FOR APPLES

The latest crop conservation strategy focuses on apples, which are amongst the most popular fruits in the world and one of the most diverse in terms of varieties. The Global Strategy for the Conservation and Use of Apple Genetic Resources, released in 2019, addresses the need to ensure we have sufficient genetic diversity conserved in genebanks and in the wild.

The strategy was developed with input from more than 60 apple genebank curators and researchers in North America, Europe, New Zealand, China, Japan, Russia and Kazakhstan. It brings together a review of the apple's ancient and modern history, a survey of the status of major collections, extensive expert consultations and reports of visits to key genebanks.

The strategy serves as a framework to bring together stakeholders at all levels to build long-term support through greater awareness, increased capacity, greater community engagement and sustained funding.



GOING GLOBAL WITH FOOD FOREVER

The Food Forever Initiative is hosted jointly by the Crop Trust and the Government of the Netherlands and supported by the Governments of Norway, Germany, Switzerland and the Netherlands in close cooperation with FAO. It is a campaign to raise awareness of Target SDG 2.5 among key global audiences.

In 2019, five new champions joined the Food Forever network: Dr. David Nabarro and Lawrence Haddad, World Food Prize laureates and international experts on food and nutrition; Gerda Verburg, Coordinator of the Scaling Up Nutrition (SUN) Movement; Michiel Bakker, Director of Global Workplace Programs at Google; Haile Thomas, founder of the HAPPY foundation and a strong promoter of better nutrition in schools and April Redmond, Vice President of Savory Brands at Unilever. We also welcomed the SDG2 Advocacy Hub, the World Food Prize Foundation, the Livestock Conservancy, ICRIAT and Pocono Organics as partner organizations.

We took the Food Forever Experience global in 2019 with nine events in eight different countries: San José, Bonn, Cusco, Stockholm, Chicago, Rome, London, Washington D.C and Abu Dhabi. One of our most notable events was in Cusco, Peru, where we were honored by the attendance of the President of Peru, Martín Vizcarra, the first signatory to Food Forever's Declaration of Interdependence. Since then, we've amassed over 440 signatures.

You can join this growing list by visiting food4ever.org/a-declaration-of-interdependence



“Chefs can help raise the profile of biodiversity higher on the international agenda and in the hearts and minds of consumers. It's wonderful to see so many amazing chefs advocating for these unique ingredients through the Food Forever Initiative.”

Food Forever Champion, Marie Haga



GOVERNANCE

An overview of the activities of the Crop Trust Executive Board and Donors' Council

THE EXECUTIVE BOARD

Upperville, Virginia, United States (May 2019)

The Executive Board met at the Oak Spring Garden Foundation in Upperville, Virginia, United States for its first meeting of the year. The Board elected Sir Peter Crane of the United Kingdom to serve as the Executive Board Chair for the period 2020 – 2021, and Marico de Miranda Santos of Brazil to serve as Deputy Vice Chair until 31 December 2019.

In addition to endorsing the IT Digital Roadmap project, which will upgrade the Crop Trust's data management, information sharing, and financial accounting systems, the Executive Board considered recommendations from the Donors' Council and its Innovative Finance Working Group.

The Executive Board expressed strong support for the Innovative Finance Working Group to continue its work, and agreed that the Crop Trust Secretariat should explore the implementation of new financing mechanisms. Finally, Board members encouraged the Crop Trust Secretariat to continue pursuing endowment fund contributions from both public and private donors.

Bonn, Germany (October 2019)

The Executive Board's second meeting of the year was held at the Crop Trust's Headquarters in Bonn, Germany. Board members approved the revised Investment Policy Statement and Statement of Investment Beliefs and agreed to convene a joint Executive Board and Finance and Investment Committee meeting in late 2020 to review the implementation plan for the revised Investment Policy Statement.

Board members discussed the results of the Crop Wild Relatives Project external review, which provided ample evidence on the effectiveness of its capacity development activities in seed collecting and processing, pre-breeding and information management. They commended project staff on the extremely positive outcomes of the review.

The Executive Board also reflected on the signing of the historic Long-term Partnership Agreement (LPA) with the International Rice Research Institute (IRRI) in 2018 and agreed it provides proof of concept for a key element of the Crop Trust's work. This momentous agreement guarantees sustainable, long-term financial support for the essential operations of arguably the world's most important rice genebank.



THE DONORS' COUNCIL

Rome, Italy (March 2019)

The first Donors' Council meeting of 2019 took place in Rome in March and was chaired by the Netherlands, represented by Hans Hoogeveen, Ambassador and Permanent Representative of the Netherlands to the UN Organizations for Food and Agriculture. Topics of discussion included the new Seeds4Resilience project, an agreement with the Government of Germany to support the upgrading and long-term support of national genebanks in Africa.

The Innovative Finance Working Group also provided an assessment of each proposed mechanism. Based on its recommendations, members of the Donors' Council determined which of the Innovative Finance mechanisms should be prioritized for implementation: a food security bond, member country loans and crop-based fundraising approaches.

Rome, Italy (October 2019)

The Donors' Council has the responsibility to fill four of the seats on the Executive Board. During this meeting, participants moved to unanimously appoint Ms Mercedes Fernandes Araújo, the Vice President of Peru, to fill a vacancy on the Crop Trust Executive Board.

THE PLANT TREATY GOVERNING BODY

Crop Trust staff attended the latest session of the Governing Body of the Plant Treaty in November 2019. Our report was well received, and we are in discussion with the Secretariat as to how best to address the policy guidance we in turn received. The Governing Body also approved four new Executive Board members from Japan, Norway, Brazil and Rwanda.



TAKE ACTION

SPREADING THE MESSAGE

In today's saturated media landscape, our role is to support and promote the critical work of the Crop Trust and its many valued partners - and tell their stories in as many compelling ways as possible to engage an ever broader audience.

Our audience is as diverse as the crop diversity we help safeguard. It includes scientists from the entire crop diversity value chain from conservation to use. It also includes governments and other donors, seed and food companies, civil society, farmers, chefs, foodies, journalists, artists, teachers... and you. We thank all our audiences for their commitment and continued support.

In 2019, we published 105 stories on our four websites and shared them through newsletters and various social media channels.

We address our diverse audience through diverse vehicles, such as animated videos and the #CropsInColor interactive stories.

On the Genebank Platform website, we shared the latest news from the global system of genebanks, and published profiles of

genebank managers. Our Director of Science writes a Science Blog on a wide range of topics relating to crop diversity conservation and use.

We also publish Q&As with experts in the field, such as Sebastien Carpentier, one of our CWR project partners, who is wild about bananas and evaluates the drought resistance found in different wild relatives of this popular fruit.

We maintain close relationships with a growing network of partners in the food and agriculture community, press, and journalists to reach ever wider audiences. In 2019, the Crop Wild Relatives Project's collecting wrap-up story received widespread media coverage in outlets ranging from NPR to National Geographic and many others.



TAKE ACTION

“

Some of humanity's most valuable global assets are being preserved in perpetuity so future generations can have diverse, healthy foods in increasingly unpredictable climatic conditions.

”

*Emmy Simmons,
Crop Trust Executive Board Member*

Today, agriculture is defined by challenges. It's threatened by the climate crisis, degradation of soil and water resources, land use issues and emerging pests and diseases. Biodiversity is dying out as people and agriculture move into new areas and a more limited range of crops dominates production. Poor diets lacking diversity are adding to the global burden of disease.

But there are solutions. Biofortified bean varieties are changing the nutritional profile of whole countries, scientists are helping farmers to prepare their rice for floods and droughts and pre-breeders are giving cultivated bananas the adaptive superpowers of wild bananas.

This is why I have been supporting the Crop Trust mission since 2000. As a representative of USAID at a CGIAR meeting in Dresden that year, I sat with a like-minded group to highlight the long-term interests of conservation in the short-term budget environment of global agricultural research. The idea of an endowment fund that could maintain crop collections forever was an exciting one 15 years ago and today it's even more exciting to see the results of the enormous effort, collaboration and creative thinking that has gone into the Crop Trust.

And this is just the beginning. Substantial, rapid action is needed to secure crop conservation. And what is conserved must not stay on the shelf. Diversity can play a larger role in food and nutritional security - it can make our food crops resilient to unknown challenges. The Crop Trust and its partners are busy making sure that happens and there's no time like now to join us in action.



EMMY SIMMONS

Emmy Simmons is a member of the Crop Trust Executive Board and the Global Panel on Agriculture and Food Systems for Nutrition. She is a respected consultant on international development, agriculture and food issues, having completed a nearly 30-year career with the United States Agency for International Development.

THANK YOU

The Crop Trust deeply appreciates the support and commitment from its many donors, without whom none of our work would be possible.

We are immensely grateful to our donors. The support received in 2019 further highlights the growing understanding that preserving global crop diversity is essential to achieve food security in increasingly unpredictable and severe climatic conditions.

In 2019, we received contributions from new and existing donors whose support makes a lasting global impact on farmers and plant breeders:

- The United States demonstrated its continuing support with a new Farm Bill that commits \$5.5 million per year to the endowment.
- Germany announced €11.5 million in new endowment funding this year and committed a further €10 million for 2020.
- Norway's continued long term support drives much of the Crop Trust's work, in particular, the Svalbard Global Seed Vault and the global Crop Wild Relatives (CWR) Project.

- Japan's Ministry of Agriculture, Forestry and Fisheries supported pre-breeders at the Africa Rice Center in evaluating thousands of genebank samples, which uncovered climate-critical early flowering traits.
- The Templeton Foundation gave finger millet and grasspea pre-breeding efforts a boost to help farmers harness wild traits found in crop wild relatives.
- The Oak Spring Garden Foundation supported an expansion of the #CropsInColor campaign, which highlighted stories of crop diversity from Appalachia to Rwanda to Costa Rica.
- FELCO, a family-owned pruning tools company, supported the implementation of a global coffee conservation strategy.
- and last but certainly not least, Unilever, ensured that tea now has a global strategy too.

Because of this support, we are now one step closer to securing the foundation of our agriculture—and our food— forever.





FINANCIAL

RUNNING THE NUMBERS

A summary of the financial performance of the Crop Trust and its endowment fund.

THE ENDOWMENT FUND

The endowment fund is the Crop Trust's key financial instrument to fulfill its mission. Investment income generated by the fund is used to support genebanks that conserve crop diversity – the biological basis of agriculture. In 2019, donors contributed USD 6.3 million to the endowment fund.

The value of the endowment fund, including the KfW loan proceeds but minus amounts to be withdrawn to fund the genebank platform commitment, amounted to USD 313 million as at 31 December 2019 (2018: USD 273 million).

SIZE OF THE ENDOWMENT

The endowment fund had a strong performance in 2019 with an overall return rate of 18.4%, compared to -8.8% in 2018. The Crop Trust is fortunate to have strong liquidity and a very long-term perspective. The endowment fund is highly diversified and structured for the long-term so that short-term market fluctuations, whether positive or negative, do not trigger structural changes to the strategic asset allocation of the portfolio. The investment objectives and policies of the Crop Trust permit the annual withdrawal of up to 4% of the endowment fund's average market value over the previous 12 quarters, subject to the

discretion of the Executive Board. In 2019, 4% (USD 9.1 million) was withdrawn, of which 98% was provided in long-term grants to the international genebanks of CGIAR.

In addition to building up the endowment fund, the Crop Trust supports the conservation of crop diversity in genebanks with annual funding. Combined with bilateral contributions from donors, the total contribution to CGIAR amounted to USD 11 million, up from USD 9 million in 2018. This annual contribution to CGIAR will rise to USD 13.35 million in 2020 and USD 15 million in 2021.

The Crop Trust is an official signatory to the United Nations Principles for Responsible Investment (UN PRI), an international framework for incorporating sustainability into investment decision-making. The Crop Trust believes that the application of the UN PRI improves the alignment of its investment portfolio with its overall mission and with the broader objectives of society. As part of its commitment, the Crop Trust undertakes annual PRI reporting and achieved "A" ratings in the reporting period 2018/19 in the areas of strategy and governance, listed equities, fixed income (corporate non-financial) and private equity.

PROGRAM AND OPERATIONAL EXPENDITURE

The total expenditure of the Crop Trust was USD 36 million, of which USD 34 million related to program activities. The Crop Trust continues to follow a course of cost-effectiveness, which is vital in order to achieve its objectives and maintain the trust of donors and partners. In 2019, the Crop Trust Secretariat incurred expenditures for management and general services of USD 1.3 million, or 3.7% of total direct expenditures. Fundraising expenditure amounted to USD 0.2 million or 0.6% of total direct expenditure. Overall operational expenditures accounted for 4.3% of total direct expenditures in 2019, down from 5.71% in 2018.

FINANCIAL AUDIT

The Financial Statements for the year ending 31 December 2019 were prepared in accordance with International Financial Reporting Standards (IFRS). They were audited by PriceWaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC) with an unqualified audit opinion. PriceWaterhouseCoopers GmbH has served as the Crop Trust's external auditor since 2013.

The Crop Trust's financial strategy for 2020 is to continue to operate within budgeted resources; work with donors to secure operational and Genebank Platform support as well as endowment fund contributions; protect the endowment fund from income withdrawals where possible; deliver on our program commitments and seek out new program opportunities; prioritize cost management, procurement and efficiency initiatives and assess financial and investment risks on a regular basis. In 2020, we will continue to work with the Innovative Finance Working Group to implement the recommendations of the Donors' Council and the Executive Board.

We thank all our donors and partners for their continued support, and for working with us to ensure that humanity conserves and makes available the world's crop diversity for future food security.

The full Financial Statements and Independent Auditor's Report can be downloaded at report.croptrust.org/2019/





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