

20 years



**CROP
TRUST**

Crop Trust

Annual Report 2023



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Cover image: Finger millet in Eastern Kenya. Photo: Michael Major/Crop Trust.

Crop Trust **Annual Report 2023**

Securing our food, forever.



2023 marked the International Year of Millets. The BOLD finger millet project aims at increasing and sustaining production and resilience of finger millet to enhance the food and nutrition security of small-scale farmers in East Africa.



Photo: Britta Skagerfalt/Crop Trust.

In This Report

Introduction	07 - The Year in Numbers 08 - Letter from the Chair of the Executive Board, Catherine Bertini 09 - Letter from the Executive Director, Stefan Schmitz
Highlights	10 - Food Forever: 2030 Strategic Plan 12 - Global Crop Diversity Summit 14 - Tackling Genebank Emergencies 15 - Svalbard Global Seed Vault Turns 15
Programs	17 - System Development: Towards a Global Genebank System 20 - Putting the Global Crop Conservation Strategies into Action 21 - Go BOLD or Go Home 23 - BOLDER: Building Opportunities for Lesser-known Diversity in Edible Resources 24 - Sowing the Seeds of Resilience Across Africa 25 - Sweetpotatoes on Ice
Governance	26 - Partnerships and Communications 27 - Operations 28 - Finance and Investments 30 - Leadership
Appendix	32 - Acronyms and Abbreviations

Where to find more information:

[Crop Trust Annual Report 2023 Web version](#)

[Crop Trust Financial Statements 2023](#)

Our Partners

The Crop Trust works with over 120 partners in more than 50 countries including national genebanks, international collections, international organizations and universities.

More than **120** partners
in over **50** countries

Crop Trust Headquarters, Bonn, Germany

Svalbard Global Seed Vault

1,267,127 seed samples
from **102** genebanks
safely backed up

The Year in Numbers

Crop diversity conserved:

USD 16.6m

was provided to projects and other activities that strengthen the conservation and use of the diversity of everything from banana to rice.

Crop diversity safely backed up:

70,000+ seed samples

were added to the Svalbard Global Seed Vault. As of December 2023, the Svalbard Global Seed Vault safeguards 1,267,127 seed samples from 102 genebanks and research institutions worldwide.

Crop diversity used:

200,000+ seed samples

of germplasm were distributed by the international genebanks of CGIAR in 2023, marking the highest number of distributions in a single year in the past 40 years. In the last three years, the Crop Trust has contributed almost 30% of the total costs of essential operations of the CGIAR genebanks, helping to maintain this precious crop diversity viable and available, forever.

Crop diversity highlighted:

2.5m people reached

every month across social media channels, 3,433 media mentions and 1,700 people welcomed—in person and online—at the Global Crop Diversity Summit.

Crop diversity documented:

71% of the 4.3m accessions

in Genesys were updated in 2023. Genesys enables users worldwide to explore, identify and request crop diversity for breeding and research.

Crop diversity financially secured:

USD 305m

was the market value of the Endowment Fund at the end of 2023. New contributions were received in the amount of USD 5.9 million.

Letter from the Chair of the Executive Board, Catherine Bertini



The Crop Trust experienced another year of excellent progress in 2023 in our mission to fortify the global genebank system. We owe this success to the unwavering dedication of our staff and partners, whose tireless efforts, along with the generous contributions of our donors, drive our ambitious agenda.

Genebanks play a pivotal role in ensuring the climate resilience of our food systems, and hence global food security. They serve as repositories of crop diversity, which is essential for the future sustenance and prosperity of humanity. Our work remains indispensable in conserving these vital agricultural resources across the globe, empowering breeders and researchers to develop resilient crop varieties and enabling farmers to cultivate diverse crops capable of feeding a growing population in the face of climate change.

While our technical endeavors are critical to our impact, they are not the only thing we do. Raising awareness of the importance of crop diversity is also an important part of our work.

In 2023, I was delighted to see crop diversity garnering attention at key international events, such as Africa's Food Systems Forum 2023, NYC Climate Week, the UN COP28 and the Global Crop Diversity Summit. These platforms allowed us to underscore the significance of our mission and spur collective action to address the intertwined challenges of food insecurity, climate change, and biodiversity loss.

We are grateful for the continued support and engagement of our expanding community of donors. Their contributions to our Endowment Fund, combined with strong investment returns, allowed it to grow in value from USD 277 million to USD 305 million. While this is indeed a significant sum, it is important to remember that sustaining genebanks is not a one-time purchase, but rather requires ongoing commitment and resources from both our existing and new donors.

My heartfelt appreciation goes to the Governments of the United Kingdom and United States of America, the Bezos Earth Fund and Limagrain, for their generous contributions and pledges in 2023. Your support gets us closer to safeguarding crop diversity forever.

In 2023, we expanded our long-term support to the genebanks of the International Center for Tropical

Agriculture (Alliance of Bioversity International and CIAT, Colombia), the International Institute of Tropical Agriculture (IITA), Nigeria and the World Vegetable Center (WorldVeg). These vital collections of crop diversity are a step closer to sustainable, forever funding.

On behalf of the Executive Board, I extend gratitude to all who champion our *Food Forever* vision. We recognize the challenges ahead and are pleased to welcome the appointment of Dr. Geoffrey Hawtin and Dr. Josette Lewis to our Executive Board; they will take up their positions in 2024. Geoff, the Crop Trust's first ever Executive Director, brings a wealth of experience that will be invaluable as we navigate the complexities of ensuring global food security. Josette's diverse background and complementary perspective will also be invaluable.

Please take a moment to peruse our annual report. Your ongoing support is fundamental to our continued success. Together, I am confident we can make 2024 another year of significant achievements.

Thank you,

Catherine Bertini
Chair of the Executive Board, Crop Trust

Letter from the Executive Director, Stefan Schmitz



In 2023, the Crop Trust made significant strides in advancing the conservation of crop diversity — and indeed its celebration — around the world. And in our Strategic Plan 2030, unveiled under the banner of *Food Forever*, we show how we intend to continue the progress over the next seven years, aiming to secure vital collections of crop diversity and enhance their accessibility.

At the Global Crop Diversity Summit, the Crop Trust and the International Treaty on Plant Genetic Resources for Food and Agriculture brought together key stakeholders to showcase the critical role of genebanks in reshaping agrifood systems. The Communique presented at the end of the Summit underscored the urgent need for transforming agrifood systems in response to the intertwined crises of food security, climate change and biodiversity loss. It emphasized the pivotal role of plant diversity in enhancing agricultural productivity, sustainability and resilience, calling for greater

collaboration within the global genebank community to safeguard crop diversity and promote sustainable agriculture. The Communique also highlighted the necessity for increased funding to support genebank operations and proposed the establishment of an annual “Crop Diversity Day” to raise awareness and advocate for continued support for crop diversity conservation.

Partnerships remained paramount, with long-term agreements signed with key CGIAR institutions like the Alliance of Bioversity International and CIAT, and the IITA to support their genebanks. The Crop Trust adopted an innovative financing approach with help from the Bezos Earth Fund, which contributed USD 440,000 to the Endowment Fund as part of a larger research grant to The Alliance of Bioversity International and CIAT. It is the first time that a donor has agreed to include an additional contribution that explicitly recognizes the importance of long-term conservation and availability of crop diversity for research purposes. We were selected as an official partner of the City of Bonn for 2023 and have the wonderful opportunity to deepen the relationship with our host city and highlight the importance of crop diversity.

During the year, we extended support to genebanks in Sudan and Laos through our Emergency Reserve for Genebanks, while launching initiatives like Building Opportunities for Lesser-known Diversity in Edible Resources (BOLDER) at COP28 to amplify the availability of relatively neglected crops. By providing farmers with more options, BOLDER contributes to the Adapted Crops and Soils (VACS) initiative, launched in 2023 by the U.S State Department with the African Union and others.

As a VACS Champion, we also contribute to the initiative through the global crop conservation strategies, the BOLD and Seeds for Resilience projects and Genesys.

2023 was also a time to celebrate milestones. The Svalbard Seed Vault – which the Crop Trust co-manages with the Norwegian Ministry of Agriculture and the regional genebank Nordic Genetic Resource Center (NordGen) — marked its 15th anniversary, representing a symbol of hope and partnership in saving seeds for future generations. And Ghana became the 100th depositor to place duplicates of its collection inside the Seed Vault, which continues to welcome new members to its ‘family’ every year.

The year ahead has much in store as the Crop Trust celebrates its 20th anniversary. This will be a moment to take stock of our past achievements and our goals for the next 20 years. In 2024, our resource mobilization efforts will focus on fundraising as we strive towards additional support for the Endowment Fund.

To all staff, partners, donors and fans of crop diversity, I am deeply grateful for your unwavering support and enthusiasm. I hope you will join us as we embark on even bigger and better things in 2024.

Sincerely,

Stefan Schmitz
Executive Director, Crop Trust

Food Forever: 2030 Strategic Plan

The Crop Trust has a clear vision: a world in which crop diversity is permanently conserved and made available in support of sustainable, resilient and healthy agrifood systems. Achieving this vision is no easy task and certainly not one that can be done overnight. It is important to prioritize carefully along the way to this goal, one sensible step at a time. The [Crop Trust 2030 Strategic Plan](#), adopted in 2023, sets out the targets to be met by the end of the decade and provides a roadmap for achieving them.

The Road to a Global Genebank Partnership

There are now some 827 crop genebanks worldwide, conserving around 5.8 million accessions, or samples of diversity. To ensure that these accessions are permanently conserved and accessible to researchers, plant breeders and farmers, it is imperative not only that each genebank function properly, but that all genebanks work closely together in a cohesive system. There must be more technical collaboration and knowledge-sharing among genebanks, more mutual learning and capacity development, better communications with all stakeholders, and stronger bridges to their users. To achieve this, the Crop Trust will invite all genebanks to collaborate in a Global Genebank Partnership over the next years, paving the way to higher overall efficiency and effectiveness, and more impact of the system as a whole.

The Crop Trust's Operations: a Long-Term Mission

The most important task of the Crop Trust is to provide long-term support for the essential operations of key genebanks. These operations include the acquisition, storage, monitoring, safety duplication, regeneration, multiplication, documentation and distribution of crop diversity. This support is an ongoing task that will never end. The long-term nature of the task justifies financing it from the income of the Endowment Fund, an income stream designed to last forever.



Goal 1:**Long-term Support for the Maintenance of Essential Genebank Operations**

The first goal of the Strategic Plan is thus to permanently cover the costs of the essential operations of all international genebanks recognized under the Plant Treaty by 2030. Securing the essential operations of key genebanks forever is necessary but not sufficient to ensure the efficiency and effectiveness of the global system as a whole. For that, specific, strategic, system-wide support is needed, which will complement the support given to individual genebanks and be mainstreamed through capacity-building. These actions include strengthening information systems, harmonizing quality management standards and performance reporting, enhancing knowledge management and related training, and facilitating better collaboration and division of responsibilities among genebanks.

Goal 2:**Time-bound Support for the Upgrading, Collecting and Use of Crop Diversity**

While the Crop Trust will focus on using its own financial resources to fully support the permanent tasks of the international genebanks and to provide the necessary system-wide support by 2030, it will also support national genebanks through time-bound project funds. Accordingly, the second goal of the Strategic Plan is that, by 2030, the Crop Trust will have significantly increased time-bound support for upgrading genebank facilities, monitoring threats to crop diversity, conserving threatened crop diversity in genebanks as appropriate and enhancing the availability of crop diversity and the linkages between genebanks and researchers, plant breeders and farmers.

Goal 3:**Increasing Global Awareness of the Importance of Crop Diversity**

To achieve all this, the Crop Trust needs more financial resources. Raising such resources depends on greater public awareness of the importance of crop diversity. Our cause needs greater political weight. With the third goal of its new Strategic Plan, the Crop Trust aims to significantly increase global awareness of the importance of crop diversity by 2030. It will have broadened and deepened its institutional partnerships and, through strategic communications and outreach, moved crop diversity considerably higher on the global development agenda and raised awareness of its importance to all.

To boost resource mobilization, the Crop Trust will engage in a major fundraising initiative to support the growth of the Endowment Fund. Since crop diversity is a global public good, the Crop Trust will continue to approach public donors, but will also reach out to private foundations, high-net-worth individuals, and the corporate world. Compelling fundraising narratives and donor communications will be developed to highlight the key importance of the Crop Trust's mission and mandate at the nexus of global dialogues on climate change, food and nutrition security, health and nutrition, and biodiversity conservation.

There are now some 827 crop genebanks worldwide, conserving around 5.8 million accessions, or samples of diversity.

The Global Crop Diversity Summit

On 14 November 2023, under the patronage of the German Federal President, Frank-Walter Steinmeier, the Crop Trust and the International Treaty on Plant Genetic Resources for Food and Agriculture convened key stakeholders in crop diversity from around the world at the first-ever [Global Crop Diversity Summit](#).

The Summit marked the first milestone in the implementation of the Crop Trust 2030 Strategic Plan. The main objectives of the Summit were to draw political attention to the risk of losing crop diversity, highlight the great opportunities for using this diversity and emphasize the need for sustainable financing of genebanks. In addition, it aimed to take the first steps towards greater cooperation among genebanks in a Global Genebank Partnership.

Over 250 people attended the event in person and the livestream reached more than 1,500 people. The diverse line-up of speakers represented all regions of the world and included high-level political representatives from Brazil, Colombia, Germany, Norway, and the United States, along with numerous panelists from NGOs, UN agencies and other organizations. Youth representatives, chefs and artists further emphasized the diversity of voices and perspectives.

The scientific background paper '[Empowering genebanks to transform agrifood systems](#)', written by ten authors, formed a central basis for informing the debate. This paper underscores the urgent need for transforming agrifood systems to address the global challenges of food insecurity, climate change and biodiversity loss. The preservation and use of crop diversity, maintained in genebanks, is crucial. Crop diversity, at species and genetic levels, enhances productivity, resilience, sustainability, equity and health in agrifood systems. The paper also emphasizes the importance of empowering genebanks through sustainable funding to drive this transformation and concludes with an urgent call for action in support of genebanks.

A [Communique](#) shared at the Summit highlighted the key actions needed to safeguard future food security, which should be prioritized for support by governments and other donors:

- **Greater international cooperation:** Working towards a Global Genebank Partnership to facilitate cross-sector collaboration and research.
- **Urgent investment:** Ensuring the sustainable operation, maintenance, and expansion of genebanks worldwide.
- **Raising awareness:** Establishing an annual Crop Diversity Day to raise awareness of the global importance of this vital resource.
- **Supporting national crop diversity efforts:** Championing the importance of crop diversity at a policy level.

The Communique was presented to the 10th Session of the Governing Body of the Plant Treaty in November 2023 in Rome, where several delegates lauded the event. It was also presented at COP28 in December 2023 in Dubai, where key findings on the importance of crop diversity for mitigation and adaptation to climate change were highlighted.



#SeedsToSolutions

 **Cem Özdemir**
Federal Minister of Food and Agriculture
Federal Republic of Germany

  

GLOBAL CROP DIVERSITY SUMMIT 2023



At the Global Crop Diversity Summit, the Crop Trust and the International Plant Treaty brought together key stakeholders to showcase the critical role of genebanks in reshaping agrifood systems.

Tackling Genebank Emergencies

On the long road of conservation of crop diversity, emergencies occasionally arise, and it is then important to provide rapid assistance to genebanks facing the risk of losing their collections forever. In 2023, genebanks in Laos and Sudan faced such emergencies.

In response to conflict and extreme weather, the Crop Trust and the International Plant Treaty pledged over USD 100,000 from their jointly managed [Emergency Reserve for Genebanks](#) to support these at-risk genebanks. Launched in 2021, the Emergency Reserve supports genebanks in low- and middle-income countries to prevent catastrophic loss of their collections.

In Sudan, armed conflict disrupted the energy supply, essential for maintaining the cold conditions needed to preserve seed samples. The Emergency Reserve pledged USD 92,760 for a solar power system to ensure a stable energy source. The Agricultural Plant Genetic Resources Conservation and Research Centre in Sudan conserves over 17,000 samples, including indigenous wild relatives of key crops. However, only 17% of these collections are duplicated in the Svalbard Global Seed Vault, leaving the majority at risk.

In Laos, USD 9,800 was made available to the Rice and Cash Crops Research Center to purchase a new generator, providing a backup energy source during power outages caused by heavy rains and typhoons. This genebank safeguards nearly 15,000 seed samples, including important local landraces of glutinous and black rice.

Such emergencies underscore the importance of fully duplicating genebank collections, including in the Svalbard Global Seed Vault.

Image right: Rice and Cash Crop Research Center, National Agriculture and Forestry Research Institute (NAFRI), Vientiane Capital, Laos. Photo: Michael Major/Crop Trust.



Svalbard Global Seed Vault Turns 15

In 2023, the [Svalbard Global Seed Vault](#) marked its 15th anniversary with notable deposits, and also 'opened' its doors to the world by launching a new virtual [tour](#). The Seed Vault was first opened in 2008.

In February, 20 genebanks added 19,585 seed samples, including first-time depositors from Albania, Benin, Croatia and North Macedonia.

In June, the Seed Vault welcomed 40,507 more seed samples from nine genebanks, including collections from Latvia, Morocco, Taiwan, USA, the Netherlands, Israel, Poland, Zambia and Italy. The deposits ranged from cereals and legumes to vegetables, aromatics and medicinal plants.

In October, at the last opening of the year, Ghana became the 100th depositor to deposit seeds, an important step towards ensuring the long-term protection of the country's food crops. Ghana joined 15 other institutions, including one other first-time depositor—the Bonn University Botanic Gardens (Germany). A total of 11,673 samples were deposited.

Key partnerships played a pivotal role in facilitating these deposits. The BOLD Project, supported by the Government of Norway, provided funding for seed regeneration and safety duplication, expanding the reach of the Seed Vault beyond national genebanks to include communities, universities, and NGOs in low- and middle-income countries. The Seed Vault now houses over 1.3 million seed samples, solidifying its position as the world's largest crop diversity collection in a single location.

*Image right: The Svalbard Global Seed Vault located on the Norwegian island of Spitsbergen.
Photo: Riccardo Gangale/Crop Trust.*



System Development: Towards a Global Genebank System

Long-term Support of Individual Genebanks

Genebanks need to work together to ensure the long-term conservation, availability, and use of crop diversity. Through the Global Genebank Partnership (GGP), the Crop Trust facilitates technical collaboration and knowledge sharing all around the world.

The GGP is intended to provide a platform for partners to strengthen a rational, cost-efficient global system of conservation of crop diversity that can provide timely, scalable solutions to the interrelated global challenges of food and nutritional security, climate change and biodiversity loss.

The GGP builds on the success of the CGIAR Genebank Platform (2017-2021) by engaging additional international and national genebanks while continuing to focus on a clear set of priority activities. It serves as a framework that underpins all the Crop Trust's technical programs.

The Crop Trust provided more than USD 5.4 million during the year for the long-term support of crop collections held by the international genebanks, including the CGIAR genebanks. The Crop Trust also contributed to the operations of the Svalbard Global Seed Vault, which is a crucial component of the global genebank system as the ultimate safety back-up for crop diversity.

As part of its monitoring and evaluation function, the GGP facilitated the reviews of three international genebanks in 2023: the Centre for Pacific Crops and Trees (CePaCT), the International Rice Research Institute (IRRI) and the World Vegetable Center. The genebank reviews assess progress in achieving key performance indicators, ensure compliance with the FAO genebank standards and confirm eligibility for long-term support. In 2023, new Long-Term Partnership Agreements (LPAs) were signed with IITA in Nigeria and the Alliance of Bioversity International and CIAT in Colombia.

Meanwhile, a Joint Funding Facility was established together with the International Plant Treaty to mobilize resources for Article 15 collections that are not part of the One CGIAR system. Additional funds have been secured to support the rescue and rejuvenation of the international collections of coffee in Costa Rica and cocoa in Trinidad and Tobago.

In 2023, the GGP provided support to the Independent Advisory and Evaluation Service (IAES) for the review of the CGIAR Genebank Platform. The extremely positive [evaluation report](#) highlighted the enhanced efficiency and effectiveness of the CGIAR genebanks.

“Genebank reviews play a crucial role in ensuring the long-term availability of crop diversity for future generations. They validate the conservation status of crop collections and assess efficiency and effectiveness in genebank operations and management. The reviews identify strengths and weaknesses, enabling targeted improvements and strategic planning, and promote transparency and accountability in the conservation of valuable plant genetic resources.”

Paula Bramel, Genebank Reviewer (Scientific advisor and former Deputy Executive Director, Crop Trust).



Genebank Data: Just A Click Away

The Crop Trust supports the management and availability of information on crop diversity at the global scale through the online platform [Genesys](#), and internally in genebanks with the freely accessible, open-source software [GRIN-Global Community Edition](#) (GGCE). Both systems contribute to the Global Information System (GLIS) of the International Plant Treaty.

The development and maintenance of Genesys and GGCE are supported by the Crop Trust's Endowment Fund and enhanced with project funding and partner contributions. Genesys publishes information on 4.3 million accessions from 52 data providers on behalf of 513 genebanks. A total of 13 new genebanks agreed to share data on the platform in 2023. Twelve of them are BOLD Project partners: Azerbaijan, Cuba, Egypt, Laos, Lebanon, Madagascar, Morocco, Pakistan, Tanzania, Uganda, Vietnam, Yemen. Niger also agreed to publish data on Genesys. In 2023, the Crop Trust assisted 36 genebanks with data cleaning and publishing through webinars, workshops and the helpdesk.

A total of 535 new users signed up to Genesys in 2023, and 246 requests for material were relayed to partner genebanks.

Embedded Genesys is our solution to make data from Genesys visible on other websites. IITA, the International Livestock Research Institute (ILRI), the World Vegetable Center, the International Center for Biosaline Agriculture (ICBA) and Nigeria's National Centre for Genetic Resources and Biotechnology (NACGRAB) are using Embedded Genesys on their own institutional websites to highlight and promote their genebanks.

GGCE is an integrated data management system for internal use in genebanks to support their workflows. It facilitates barcoding of the collection and makes it possible for all genebank staff to directly interact with data as part of their daily work. During the year, the [GGCE website](#) was released, with user manuals and guides.

Our Genebank Information Systems team further developed and documented GGCE, while providing support to genebanks for evaluation and adoption of the software. The Crop Trust assisted IITA, CePaCT, Kenya's GeRRI and Nigeria's NACGRAB to adopt GGCE for managing all or part of their collections, following in the footsteps of the World Vegetable Center and CIAT, which started doing so in 2022.

“In 2023, our collaboration with the Crop Trust was fundamental for migrating the management of our bean collection to GGCE. The strong backend development team at the Crop Trust, together with the mobile apps for barcode scanning and printing made by our team, will enable us to create a system that supports best practices for inventory management really robustly.”

Juan Carlos Guerrero, Information Technology Manager at the Alliance of Bioversity International and CIAT.

The Crop Trust convenes the Community of Practice on Data Management to discuss and resolve issues related to data-driven management of genebank collections and the publication of genebank data for use in breeding and research. Monthly meetings are organized separately for English, Spanish and French-speaking members of the community, which welcomed 36 new members from 20 genebanks in 2023, bringing the total to 133.

The team also organized two week-long regional workshops on genebank data management, including the use of Genesys and GGCE: one for Latin American genebanks in Uruguay and one for the Near East and North Africa (NENA) in Azerbaijan.



Genebank Quality and Risk Management

The Crop Trust strives to raise quality standards in national and international genebanks through partnerships and projects.

In 2023, our partners made significant strides towards implementing a more robust quality management system (QMS) to consistently deliver crop diversity and services that meet user expectations. Through in-person and online events, partner genebanks develop their capacity to continuously improve their administrative, technical and operational performance in alignment with established standards.

During the year, the Crop Trust organized a range of events to help improve genebank quality and risk management.

Three in-person Genebank Operations and Advanced Learning (GOAL) workshops were organized in Morocco, Germany and Ethiopia with the objective of building the capacities of national and regional genebanks to manage crop diversity in alignment with international standards and agreements.

Thirteen QMS Community of Practice presentations were organized for national partners in 2023. The monthly online sessions tackled various technical aspects of conservation and allowed staff to discuss topics such as the new FAO Practical Guides, post-entry



quarantine management and phytosanitary regulations, distribution standards, collecting procedures, the preservation of genetic integrity and risk management.

In addition, four in-person “QMS intensives” were held in Ethiopia, Ecuador, Azerbaijan and Pakistan. The purpose of the QMS intensives is to provide hands-on assistance to technical staff in the development of QMS documentation and to support improvements in the overall workflow and operational efficiency. On-site visits were organized to evaluate and validate procedures against essential QMS elements and established standards.

The Crop Trust also offered a QMS audit program for distribution, collecting and information management. The program was intended to help partners comply with FAO Genebank Standards (2014), FAO Practical Guides (2022) and all relevant international treaties and conventions. Documentation audits were executed remotely on standard operating procedures (SOPs) to provide the first step toward the technical examination of conservation methodologies and their adherence to relevant standards. Seventeen SOPs from 17 national genebanks were audited and improved in 2023.

In 2023, five [Genebank Resources on the Web \(GROW\) webinars](#) were organized to tackle new issues in the conservation and use of plant diversity, and the role of genebanks. Topics included responsive agriculture, increasing the benefits from plant breeding, breaking seed dormancy, expanding cryopreservation and the bioeconomics of plants.

“The experience gained by seedbank staff through QMS training under the Seeds for Resilience project has laid a solid foundation for genebank management, which will enhance operational efficiencies for many years to come.”

Sunday Aladele, Research Director at NACGRAB in Nigeria.



Test tubes at CePaCT in Fiji.

Putting the Global Crop Conservation Strategies into Action

Between 2004 and 2019, the Crop Trust facilitated the development of 26 global crop conservation strategies by experts around the world. But to stay relevant, these strategies need to be regularly updated. In 2019, thanks to a grant from the German Federal Ministry of Food and Agriculture (BMEL), the Crop Trust began a project called “Breathing New Life into the Global Crop Conservation Strategies.” This aimed to update five existing strategies—for potato, yams, *Vigna*, millets and sorghum—and to develop 10 new ones—for brassica, citrus, cucurbits, eggplant, groundnut, pea, peppers, sunflower, temperate forages and vanilla. In May 2023, this project ended with the publication of global crop conservation strategies for citrus, sunflower and *Vigna*.

To transition to the next phase in the evolution of the strategies, a follow-up project entitled “Mainstreaming the Global Crop Conservation Strategies in Plant Treaty Processes” began in December 2022. This three-year initiative is also funded by BMEL and is led by the Crop Trust in collaboration with the International Plant Treaty.

The data, results and recommendations of the global strategies can strengthen evidence-based decision-making in International Plant Treaty processes. For example, data from the strategies can be used by the *Ad Hoc* Technical Committee on Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture (ACSU) to support the effective implementation of Articles 5 and 6 of the International Plant Treaty. In 2023, the strategies were included in the terms of reference of the ACSU.

The Crop Trust also published a [“White Paper on Mainstreaming Global Crop Conservation Strategies in Plant Treaty Processes”](#) for the 10th session of the Governing Body (GB10) of the Plant Treaty.



“Linking the *Ad Hoc* Technical Committee and the Global Crop Conservation Strategies is a major step in mainstreaming the strategies in International Plant Treaty processes,”

Peter Giovannini, Crop Strategies Coordinator at the Crop Trust.

Go BOLD or Go Home

[Biodiversity for Opportunities, Livelihoods and Development \(BOLD\)](#) is a decade-long project, funded by the Government of Norway, which extends the successes of the Crop Wild Relatives Project (2011-2021). It started operation in 2021. Led by the Crop Trust in partnership with the Norwegian University of Life Sciences (NMBU), NordGen, and the International Plant Treaty, BOLD safeguards crop diversity in genebanks and facilitates its accessibility for breeders and farmers. Moreover, it endeavors to develop improved crop varieties to fortify smallholder farmers' resilience to climate change, thereby advancing food and nutrition security.

Capacity and Resource Development

In 2023, BOLD partnered with 12 national genebanks in Africa, Asia, and Latin America: Azerbaijan, Ecuador, Egypt, Laos, Lebanon, Morocco, Pakistan, Sudan, Tanzania, Uganda, Vietnam and Yemen. This collaboration aims to upgrade essential equipment, improve processes and train staff to ensure effective genebank operations. The first face-to-face partner meeting was held in May 2023 in Bonn, Germany, combined with training sessions at the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK) in Gatersleben. Through the Emergency Reserve for Genebanks, BOLD supported genebanks facing extraordinary challenges, such as replacing a power generator at the National Agriculture and Forestry Research Institute (NAFRI) in Laos to ensure continuous operations during the typhoon season.

Making New Diversity Available

Building on the work of the Crop Wild Relatives (CWR) Project, another BOLD component supports the development and use of new crop diversity for climate change adaptation and food security in 20 partner countries. In July 2023, a landmark event in Almaty, Kazakhstan, promoted new breeding lines of resilient alfalfa. In Morocco, durum wheat and barley lines derived from wild relatives showed up to 20% higher yields and superior nutritional value under severe drought conditions, highlighting the potential of crop wild relatives in breeding programs.



BOLD workshop in Bonn, Germany.



GBioS Genebank field staff at the Sèdjè-Dénou regeneration site located in the municipality of Zè.

Genebanks and Seed Systems

A third project component, led by NMBU, focuses on research to make crop diversity more accessible to farmers. In 2023, workshops were held to strengthen linkages between genebanks and seed system actors in Bhutan, Ecuador, Tanzania and Uganda. Outreach activities included a postgraduate course at Wageningen University, lectures at the 12th Annual Cornell Corteva Plant Breeding Symposium, and the African Union's High-Level Dialogue on Inclusive Seed Sector Development. The team also published an article on developing resilient and inclusive seed systems for farmers that can be used as a model by others around the world interested in amplifying the impact of genebanks on the livelihood of farmers.

Safety Duplication at the Svalbard Global Seed Vault

By the end of 2023, BOLD had signed agreements with 43 partners, targeting 40,438 accessions for regeneration and 39,382 for safety duplication in the Svalbard Global Seed Vault. Five partners deposited 3,419 accessions during the year, with those from Albania, Croatia, North Macedonia and Benin making inaugural deposits under the BOLD Project.

Communications, Engagement, and Outreach

A Communications Community of Practice (CCOP) was launched to provide communication training and orientation to national genebank staff. Through online and on-location sessions, Crop Trust staff will sharpen skills in photography, video interviewing, writing, editing, social media, and event coverage. The aim is to develop a comprehensive communications plan and create key materials for each genebank. The CCOP will also offer opportunities to find compelling stories, engage audiences like policy-makers and donors, and interact with genebank stakeholders.

“Keep doing the good work. What you guys do is very important. This BOLD Project has really helped us to put germplasm and conservation as the core of our work, where it belongs.”

Jerry Tjoe Awie, Director of the Anne van Dijk Rice Research Centre (ADRON), Suriname.



Photo: Luis Salazar/Crop Trust.

BOLDER: Building Opportunities for Lesser-known Diversity in Edible Resources

Launched at the COP28 in Dubai, BOLDER is an addition to the BOLD project that will support food and nutrition security across Africa. It is generously funded by the Norwegian Government with USD 22.4 million until 2030.

BOLDER will work with multiple partners across four African countries to enhance the conservation, production, and consumption of crops that are nutritious, robust, environment-friendly, and important for local communities but have been comparatively ignored by research and development. Often called neglected and underutilized species (NUS) or orphan crops, examples include millets, grasspea, Bambara groundnut and an array of traditional African leafy vegetables. NUS can help reduce pests and diseases in farming systems, yield more reliable harvests even in unpredictable climatic conditions, increase soil fertility, prevent soil erosion and suppress weed growth.

BOLDER is aligned with the VACS movement, launched in February 2023, through collaboration between the U.S. Department of State, the African Union (AU) and FAO. The VACS movement seeks to use diverse, nutritious and climate resilient crops for more sustainable and healthy food systems.

In response to the growing and interrelated threats of climate change and malnutrition across Africa, the project will be rolled out in Benin, Ghana, Tanzania and Uganda. Throughout 2024, the Crop Trust and its partners will work closely with local stakeholders in each country to prioritize species that best fit farmers' needs in different regions. This work will increase communities' access to foods with high nutritional value and bolster efforts to develop and climate-proof agriculture.

BOLDER will be a collaborative effort, partnering with NMBU, the International Plant Treaty, CGIAR, the World Vegetable Center, National Agricultural Research Systems (NARS), universities, NGOs, farmer households and the private sector.



Photo: Neil Palmer/Crop Trust.

Sowing the Seeds of Resilience Across Africa

In 2023, the Seeds for Resilience (SFR) Project, supported by the German Development Bank (KfW), continued its work on African crop diversity. Collaborating with five national genebanks, the project aims to enhance agricultural resilience by conserving, sharing and utilizing key crop collections, including climate-resilient varieties.

The SFR partners include the Ethiopian Biodiversity Institute (EBI), the Plant Genetic Resources Research Institute (PGRRI) of Ghana, the Genetic Resources Research Institute (GeRRI) of Kenya, NACGRAB of Nigeria and the National Plant Genetic Resources Centre (NPGRC) of Zambia.

In 2023, SFR organized workshops from genebank staff on crop regeneration, genebank management, and leadership. Standard operating procedures for various genebank processes and risk management systems were developed and audited. Safety duplication of collections was carried out, with NPGRC, NACGRAB and PGRRI shipping 4,040 accessions to the Svalbard Global Seed Vault.

Infrastructure improvements included installing an irrigation system at NPGRC in Zambia, aiding the maintenance of over 200 sweetpotato accessions. Specialized lab and IT equipment enhanced operations, and partners trialed the GGCE genebank data management software. NACGRAB and GeRRI adopted GGCE, serving as guides for other genebanks.

The project also focused on making available accession information online via Genesys, with partners publishing 108,373 records. To ensure collections reach end users, field evaluation trials with farmers identified important climate-resilient varieties for local use, particularly partners are now developing action plans to guide other national genebanks in sharing collections with user groups.

Top right image: CSIR-PGRRI farmers and scientists in Kumasi, Ghana. Photo: Neil Palmer/Crop Trust.

Bottom right image: Mary Adiat Adegoke undertaking viability tests at NACGRAB genebank to test seed vigor. Photo: Georgina Smith/Crop Trust.



Sweetpotatoes on Ice

Since 2022, the Crop Trust, the International Potato Center (CIP), the Zambia Agricultural Research Institute (ZARI) and Fiompiana Fambolena Malagasy Norvéziana (FIFAMANOR) in Madagascar have collaborated on the “Sweetpotato, a model for food security and long-term conservation of biodiversity” project, funded by the UK Government’s Darwin Initiative.

Sweetpotato, propagated by cuttings, is usually conserved in field or *in vitro* collections. However, cryopreservation, using liquid nitrogen to store plant parts at ultra-low temperatures, is the best long-term conservation method. This process can potentially conserve plant samples for centuries.

The project employs a ‘clean & share’ conservation approach for sweetpotato landraces. Vines from Madagascar and Zambia are sent to CIP’s facility at the Kenya Plant Health Inspectorate Service (KEPHIS). They are cultured *in vitro* and cleaned of diseases using heat treatment on meristems. The disease-free material is then multiplied and offered to farmers, and also sent to CIP in Peru for cryopreservation.

In 2023, the project focused mainly on vine multiplication for dissemination to farmers for planting in both partner countries. More than 350 *in vitro* plantlets certified as free of infectious diseases from 30 landraces were repatriated to Madagascar from CIP in Nairobi, with plants from 28 landraces surviving. Over 600 clean plantlets from 23 landraces were repatriated to Zambia, with plants from 22 surviving shipments.

In 2023, the Sweetpotato Project also held two virtual capacity-building workshops for partners. One focused on DArTseq, a cost-effective platform for plant DNA analysis, while the other workshop covered sweetpotato disease management. The training on DNA analysis allows our partners to interpret molecular data to quantify the genetic similarity between vines, allowing them to prioritize new diversity to be conserved by cryopreservation.



Test tubes with sweetpotato at CIP in Kenya.

Partnerships and Communications

The Crop Trust's success depends on the dedication and commitment of its many partners. In 2023, we renewed existing partnerships and forged new ones at several global events, including Climate Week NYC in New York, COP28 in Dubai and the African Food Systems Forum (AGRF) in Dar es Salaam, Tanzania. The Crop Trust was also chosen to be the annual partner of the German City of Bonn—which hosts our organization—in 2023.

In September, the Crop Trust's Endowment Fund received a welcome boost at Climate Week NYC when Andy Jarvis, Director of the Future of Food program at the Bezos Earth Fund, announced a new contribution of USD 440,000 through Bioversity International, USA. The new donation will help achieve the Endowment Fund's long-term goal of generating sufficient returns to secure key collections of crop diversity in genebanks worldwide.

"This contribution embodies our shared responsibility to safeguard the genetic diversity that underpins our agriculture, enabling us to navigate the challenges of climate change with adaptability and resilience," Jarvis said. "Investing in the conservation of crop diversity means investing in lasting innovative solutions."

At COP28 in December, the Crop Trust contributed its expertise to discussions on biodiversity, agriculture and climate resilience, aiming to foster collaboration for a sustainable future. Crop Trust representatives organized or participated in seven sessions during the week and Executive Director Stefan Schmitz delivered a statement during the high-level segment. The Food Forever experience brought together high-level delegates and officials from governments, civil society and the private sector to combine a delicious meal with the chance to dig into crop diversity issues relating to biodiversity, climate change and sustainable agriculture.

At the African Food Systems Forum in September, the Crop Trust helped secure the future of some of Africa's most beloved staple crops, including important legumes, when it signed a Long-Term Partnership Agreement with IITA. Through this landmark partnership, the Crop Trust commits to providing a guaranteed source of funding for IITA's genebank, the Genetic Resources Center, in perpetuity.



Visitors at the 10th Meeting of the Governing Body of the International Plant Treaty had the opportunity to take a virtual tour through the Svalbard Global Seed Vault.

Flags and banners around the City of Bonn.



Photo: Marta Millere/Crop Trust

In November, the Crop Trust commemorated its partnership with the City of Bonn at a reception in the Old Town Hall of the former German capital. Speakers included Professor Maximilian Weigend, director of the Bonn Botanical Gardens, and Xavier Longan, deputy director of the UN SDG Action Campaign. They discussed the importance of the Crop Trust's mission of conserving crop diversity and making it available for use globally, forever, for the benefit of everyone. Ursula Sautter, Bonn's deputy mayor, delivered an opening address for the guests.

The activities highlighted above are not just milestones; they represent the tangible outcomes of our donors' continued dedication and support. We express our deepest gratitude for being an indispensable part of this transformative journey.

Operations

Gender, Diversity and Inclusion at the Crop Trust

The Crop Trust recognizes the importance of mainstreaming Gender, Diversity and Inclusion (GDI) in achieving its mission, and 2023 saw several important achievements in this respect.

For the first time, GDI was introduced as a separate category in the institutional risk matrix. As such, the organization's GDI risks were identified and their respective mitigating actions were put into place. This was followed by the establishment of a GDI Committee, an important milestone to ensure that the Crop Trust's operations, policies and programs are inclusive and equitable for all, regardless of their background, gender, ethnicity or any other characteristics.

To support the implementation of the GDI Action Plan, the GDI Committee led a workshop during the staff retreat in August 2023 to assess awareness and gather feedback from staff on GDI-related topics. Staff ideas and suggestions were aligned with the Action Plan, and the resulting recommendations were endorsed by senior management. The Action Plan emphasizes the importance of inclusive leadership, an inclusive workplace culture, diverse representation and partnerships that adopt a GDI lens.

Finance and Investments

Endowment Fund at a Glance

The Crop Diversity Endowment Fund is at the heart of the Crop Trust. It provides a sustainable, long-term funding mechanism for the critical work of protecting crop diversity in perpetuity. The Crop Trust invests donated monies in a diversified range of financial instruments to generate sufficient returns for this purpose. Each year, a portion of the fund (up to 4% of the average market value of the fund over the previous twelve quarters) is withdrawn and used to ensure that crop diversity held in key genebanks is well conserved and made available for use.

2023 was a successful year for the Endowment Fund, with its value rising from USD 277 million to USD 305 million. This gain is due to new contributions received from donors, as well as strong investment returns in the capital market. Investment gains, net of fees, amounted to USD 32 million, a return of 10.5% for the year.

A total of USD 5.9 million was received thanks to the support of our donors: USD 5.4 million from the Government of the United States of America, USD 460,000 from the Bezos Earth Fund and USD 55,000 from Limagrain.

As part of the new 2030 Strategic Plan, the Crop Trust is in the process of implementing its financing strategy, with early signs of success in mobilizing contributions for the endowment. New donors, such as the Bezos Earth Fund, contributed for the first time in 2023 and additional support was secured from existing partners, such as the Government of the United Kingdom. The Government of the United Kingdom made a new pledge of GBP 7 million. Announced at COP 28, the latest funding underlines the UK Government's commitment to support future-proofing the global food system. The UK has been a steadfast supporter of the Endowment Fund, contributing more than USD 19 million since the Crop Trust's creation in 2004, not including this latest pledge.

Concessional Loan

The EUR concessional loan from the German Development Bank, KfW, is held in a euro investment fund, and at the end of the year had a market value of USD 49.2 million. This fund also had a positive year, with a return of 7.9% for 2023.

Statement of Financial Position

	2023 (USD '000)	2022 (USD '000)
Current Assets	29,302	27,106
Non-current Assets	355,145	327,037
Total Assets	384,447	354,143
Current Liabilities	17,549	16,104
Non-current Liabilities	47,616	50,958
Total Liabilities	65,165	67,062
Unrestricted Net Assets	11,858	12,003
Permanently Restricted Net Assets	307,424	275,078
Total Net Assets	319,282	287,081
Total Liabilities and Net Assets	384,447	354,143

Income and Expenditure

	2023 (USD '000)	2022 (USD '000)
Income from Crop Trust Resources	8,410	7,602
Donor Grants	1,183	993
Project Income	10,859	7,254
Total Income	20,452	15,850
Genebank Grants	5,632	5,415
Coordination & System-wide Support	1,287	901
Genebank Support Expenditures	6,919	6,316
Project Expenditures	9,698	6,302
Partnerships & Communications Expenditures	1,372	1,057
Administration Expenditures	2,462	2,176
Total Expenditures	20,452	15,850

Financial Results

In 2023, the Crop Trust continued to demonstrate strong financial stability, with total revenues amounting to USD 19 million, up from USD 17.6 million in the previous year. Total expenditure was USD 20.5 million, of which USD 16.6 million related to program activities. These activities provide both long-term and time-bound support aimed at preserving and using the world's most important collections of crop diversity. Additionally, USD 1.4 million was expended to increase global awareness of the importance of crop diversity, while broadening and deepening institutional partnerships. Administration-related expenditure amounted to USD 2.5 million, reflecting the necessary operational costs, crucial for supporting the effective implementation of our mission and programs, including management, governance, information technology and facilities.

Financial Support

The Crop Trust would like to thank all individuals and institutions that made financial contributions to our endowment and ongoing work in 2023, a total of USD 19.4 million.

The following donors provided funding above USD 25,000 during the year:

- Bezos Earth Fund
- European Commission, Directorate General for International Cooperation and Development
- Food and Agriculture Organisation of the United Nations (FAO)
- Germany, Federal Ministry of Food and Agriculture (BMEL), through a project led by the Federal Office for Agriculture and Food (BLE)
- Germany, Federal Ministry for Economic Cooperation and Development (BMZ), through a project led by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- Groupe Limagrain, France
- Norway, Norwegian Agency for Development Cooperation (Norad)
- Templeton World Charity Foundation
- United Kingdom, Darwin Initiative
- United States of America, United States Agency for International Development (USAID)

Financial Audit

The financial statements of the Crop Trust for the year ended 31 December 2023 were prepared in accordance with International Financial Reporting Standards and audited by PriceWaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (PwC).

The full [Financial Statements](#) and Independent Auditor's Report are available on the Crop Trust website.

Leadership*

Members of the Executive Board

- [Catherine Bertini](#), Chair of the Executive Board
- [Mercedes Aráoz](#), Vice-Chair of the Executive Board
- [Carlos Furche](#), Executive Board Member
- [Jean-Christophe Gouache](#), Executive Board Member
- [Geoffrey Hawtin](#), Executive Board Member
- [Dagfinn Høybråten](#), Executive Board Member
- [Masaru Iwanaga](#), Executive Board Member
- [Wanjiru Kamau-Rutenberg](#), Executive Board Member
- [Josette Lewis](#), Executive Board Member
- [Joachim von Braun](#), Executive Board Member
- [Stefan Schmitz](#), Executive Board Member, Ex-officio
- [Kaveh Zahedi](#), Executive Board Member (non-voting), FAO Representative
- [Sonja Vermeulen](#), Executive Board Member (non-voting), CGIAR Representative

Members of the Executive Committee

- Stefan Schmitz, Executive Director
- Sarada Krishnan, Director of Programs
- Jaspreet Stamm, Director of External Affairs
- Anne Clyne, Director of Administration
- Luigi Guarino, Chief Scientist
- Christoph Beck, Chief of Human Resources & Corporate Operations
- Hannes Dempewolf, Chief Strategic Adviser

External Members of Executive Board Subsidiary Committees

- Victoria Sant, Chair of the Investment Committee
- Alex Readey, Member of the Investment Committee
- Stephan von Stenglin, Member of the Investment Committee
- Steven Lainoff, Member of the Finance, Risk and Audit Committee



AMARILLA PERUANA
K 1.80
5x900

HUAYANIANGA ARENOSITA
K 2.50
SOLES

AMARILLA PERUANA
K 2.20

AMARILLA PERUANA
K 2.80

AMARILLA LEGITIMA
K 2.80

HUAMANTANEI Arenosita
K 3.00

AMARILLA PERUANA
K 2.00

AMARILLA LEGITIMA
K 2.00
SOLES

LINECA PARA FREIR
K 5.700
X SOLES

YINEAY Comica Amarilla
K 5.650

Potato diversity in Huancayo central market.

Photo: Michael Major/Crop Trust.

Acronyms and Abbreviations

ACSU	Ad Hoc Technical Committee on Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture	IITA	International Institute of Tropical Agriculture
ADRON	Anne van Dijk Rice Research Centre	ILRI	International Livestock Research Institute
AGRF	African Food Systems Forum	INRA	National Institute for Agricultural Research
AUC	African Union Commission	IRRI	International Rice Research Institute
BMEL	German Federal Ministry of Food and Agriculture	KEPHIS	Kenya Plant Health Inspectorate Service
BOLD	Biodiversity for Opportunities, Livelihoods and Development	LPAs	Long-Term Partnership Agreements
BOLDER	Building Opportunities for Lesser-known Diversity in Edible Resources	NACGRAB	National Centre for Genetic Resources and Biotechnology
CCOP	Communications Community of Practice	NAFRI	National Agriculture and Forestry Research Institute
CePaCT	Centre for Pacific Crops and Trees	NENA	Near East and North Africa
CGIAR	Consultative Group on International Agricultural Research	NGO	Non-governmental organization
CIAT	International Center for Tropical Agriculture	NMBU	Norwegian University of Life Sciences
CIFOR-ICRAF	Center for International Forestry Research and World Agroforestry	NORAD	Norwegian Agency for Development Cooperation
CIP	International Potato Center	NordGen	Nordic Genetic Resource Center
COP	Conference of the Parties	NPGRC	National Plant Genetic Resources Centre
CWR	Crop Wild Relatives	NUS	Neglected and Underutilized Crops
EBI	Ethiopian Biodiversity Institute	PGRFA	Plant Genetic Resources for Food and Agriculture
EUR	Euros	PGRRI	Plant Genetic Resources Research Institute
FAO	Food and Agriculture Organization	PwC	PriceWaterhouseCoopers
FIFAMANOR	Fiompiana Fambolena Malagasy Norvéziana	QMS	Quality Management System
GAIN	Global Alliance for Improved Nutrition	SDG	Sustainable Development Goal
GB10	10th session of the Governing Body of the International Plant Treaty	SFR	Seeds for Resilience
GBP	British pound sterling	SOPs	standard operating procedures
GCCS	Global Crop Conservation Strategies	UN	United Nations
GDI	Gender, Diversity and Inclusion	UNFCCC	United Nations Framework Convention on Climate Change
GeRRI	Genetic Resources Research Institute	USD	United States dollar(s)
GGCE	GRIN-Global Community Edition	WorldVeg	World Vegetable Center
GGP	Global Genebank Partnership	ZARI	Zambia Agricultural Research Institute
GLIS	Global Information System		
GOAL	Genebank Operations and Advanced Learning		
IAES	Independent Advisory and Evaluation Service		
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics		



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