



Biodiversity for Opportunities, Livelihoods and Development – The BOLD Project

BOLD is a new 10-year project funded with USD 58 million by the Government of Norway that addresses the impacts of our changing climate on food and nutrition security by supporting the conservation and use of crop diversity.

Led by the Crop Trust, BOLD builds on the Crop Wild Relatives (CWR) Project (2011–2021), which conserved and used the wild relatives of crops to help future-proof the world's food supply.

The Challenge

The world's climate is becoming increasingly extreme and unpredictable. Global temperatures soar, droughts are increasingly frequent and severe, and pests and diseases are emerging in areas where they were not found before. These changes present crops and the farmers who grow them with new challenges.

These challenges are combining to destabilize agricultural yields and change where and how our current crops can be grown successfully. All this at a time when the world's population is 8 billion people and more than 820 million people are affected by hunger, with the number increasing rapidly.

A BOLD Solution

More resilient crops, robust production systems and diets that are better for people and the planet – all start with crop diversity.

We urgently need new crop varieties that are tolerant to drought or floods, that flower and set seed earlier to avoid summer droughts, that are resistant to the new pests and diseases that climate change is bringing, and that are more nutritious.



Genebanks are central to the conservation of crop diversity, but conservation alone is not sufficient. We have to make sure that all those who can use that diversity – farmers, plant breeders, seed producers and the like – know what diversity is available, where and how to access it, and have the skills and knowledge to put it to use. This includes pre-breeding where breeders make the initial crosses between distantly related plants and their domesticated relatives to introduce new diversity. We must put in place mechanisms to strengthen the connection between genebanks and others involved in seed systems to make sure that farmers and plant breeders have access to the crop diversity they need.

The BOLD Project addresses all these aspects, from strengthening the conservation and safely backing up germplasm, through breeding and evaluating the results to engagement with key audiences to raise awareness of the importance of crop diversity to our future food and nutrition security.

BOLD takes a five-pronged approach to address the key challenges facing the conservation and use of crop diversity around the world.

1 Capacity and Resource Development

BOLD is working with 15 national genebanks in Africa, Asia and Latin America to strengthen their capacity to manage, document, conserve and back up the crop diversity that they hold. Building on this, the project is helping the genebanks make their collections available to farmers, plant breeders and others who can put them to use in productive, resilient production systems that enhance food and nutrition security.

What is BOLD?

The BOLD Project focuses on strengthening food and nutrition security worldwide by supporting the conservation and use of crop diversity.



Medium-term storage facility at the Lao National Genebank. Photo: Michael Major for Crop Trust

Emergency Reserve for Genebanks

Genebanks and the collections they hold are not indestructible. Natural disasters, political crises, conflict, pest and disease outbreaks, equipment failure can place them in jeopardy, and trigger catastrophic loss of the invaluable resources they conserve.

But until recently there was no ready source of funds to help genebanks in their time of need.

The “Emergency Reserve for Genebanks” – a component of BOLD – was set up to fill this gap. Established jointly by the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (International Plant Treaty) and the Crop Trust, the Reserve provides a funding mechanism that can respond rapidly whenever there is an imminent threat to collections of crop diversity that fall under the framework of the Plant Treaty.

Emergency Support for the Yemen National Genebank

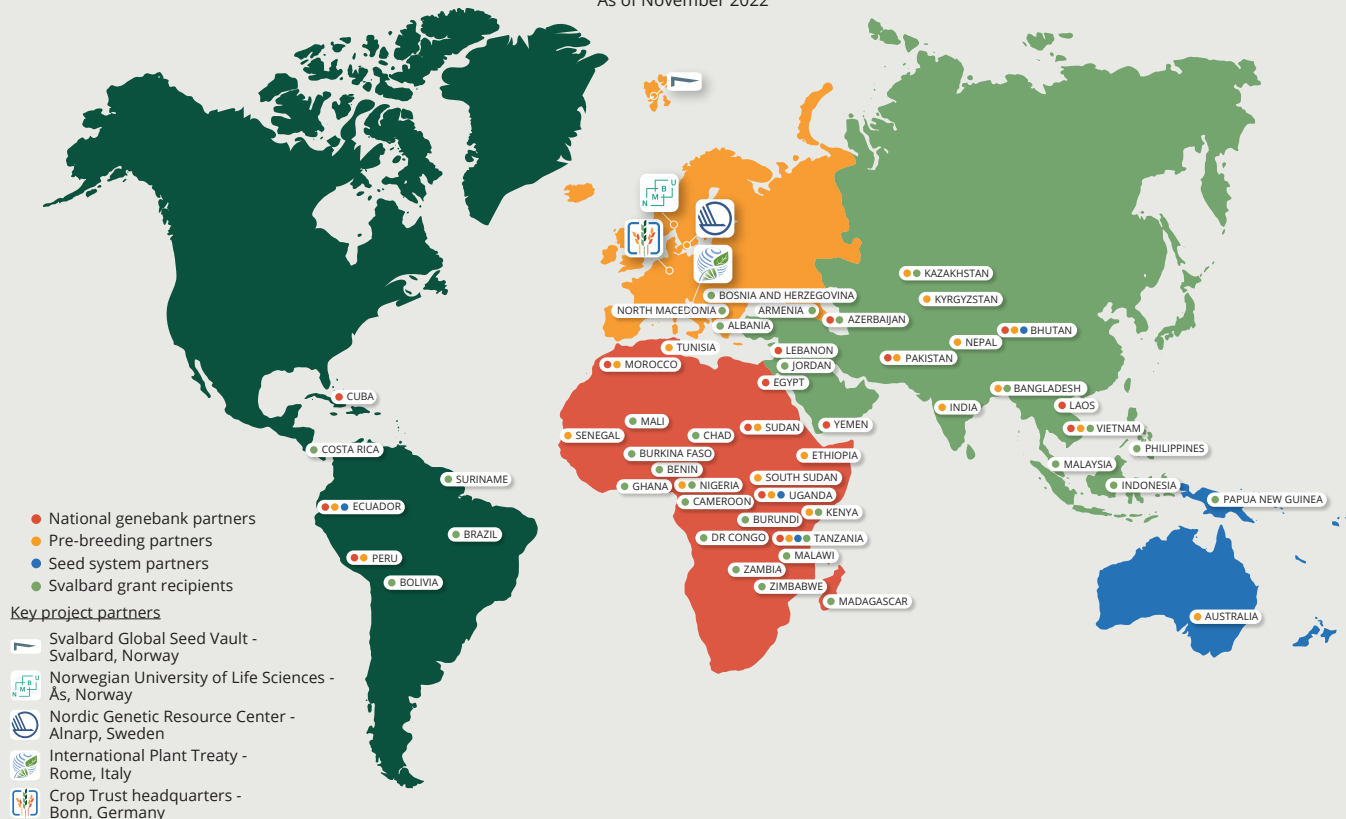
The National Genetic Resources Center in Yemen was the first genebank to receive funds under the Emergency Reserve. The Center depends on solar panels to run the freezers in which its collection is stored, but the batteries that store the electricity generated during the day were failing. A USD 10,000 grant from the Emergency Reserve has restored this vital backup system and alleviated the risk to the collection.



Cold storage at the INIA (Instituto Nacional de Investigaciones Agropecuarias) in Ecuador. (Photo: Luis Salazar/Crop Trust)

BOLD Around the World

As of November 2022



2 Making New Diversity Available

Building on the foundations laid by the pre-breeding and evaluation work done under the CWR Project, BOLD is continuing efforts to broaden the genetic base of seven key food and forage crops: alfalfa, barley, durum wheat, finger millet, grasspea, potato and rice. This will involve farmers and other stakeholders in breeding and testing the resulting products in the field, thus ensuring that these efforts meet the needs of farmers and the demands of consumers.

3 Genebanks and Seed Systems

Genebanks should not be “museums” where seeds are kept frozen in time and admired from behind panes of glass, but rather should be a dynamic part of the seed systems that farmers use to diversify their crop options and that underpin resilient production systems and diversified diets. Seed systems include all of the activities that contribute to variety development and making sure that crop diversity makes it to farmers’ fields. Research is underway, led by the Norwegian University of Life Sciences, to identify how best to strengthen the connection between genebanks and others involved in seed systems in developing countries to make sure that farmers and plant breeders, in particular, have access to the crop diversity they need. The project is working with partners in Bhutan, Ecuador, Tanzania and Uganda to understand their seed systems and to use this knowledge to develop models of genebank engagement that other countries will be able to use and adapt.



BOLD is working with partners in Australia to make alfalfa diversity available to farmers worldwide. Photo: Michael Major/Crop Trust



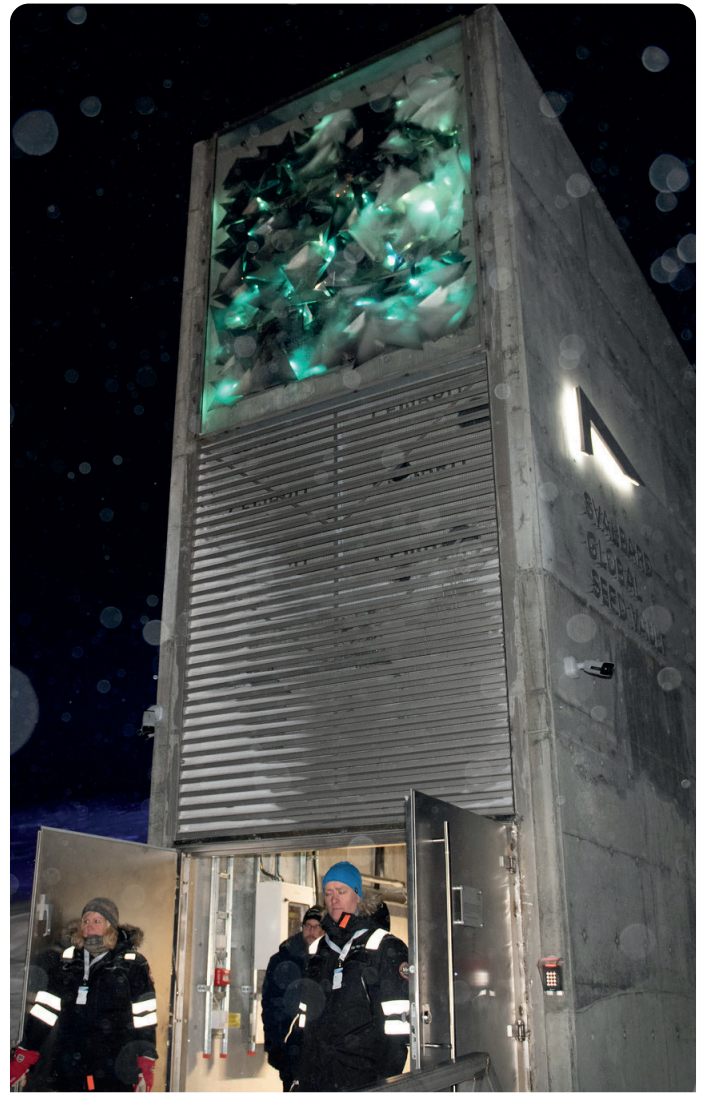
BOLD pre-breeding crops: potato, barley, durum wheat, finger millet, rice, grasspea, and alfalfa

4 Safety Duplication at the Svalbard Global Seed Vault

Keeping crop diversity in a genebank is an important first step in ensuring that diversity is preserved and available to plant breeders, farmers and others. But keeping seeds in only one place is also a major risk – if anything goes wrong, the whole collection can be lost. BOLD is providing technical and financial support to more than 30 partners around the world to help them regenerate seeds from their collections and to back them up both at another genebank and send them to the Svalbard Global Seed Vault for long-term safe-keeping.

5 Communications, Engagement and Outreach

The BOLD Project works with genebanks, plant breeders, farmers, seed producers and other stakeholders to raise awareness of the value of crop diversity and to advocate for the necessary financial, legal, technical and institutional support at national and international levels. BOLD is building a sustainable community of practice among partners to improve communication, outreach capacity and knowledge exchange. This will ensure that the genebanks, plant breeders, farmers, seed producers and others involved in seed systems have the skills and knowledge to continue to advocate for this work long after the project has ended.



Svalbard Global Seed Vault deposit ceremony. Photo: Cierra Martin for Crop Trust



Genebank evaluation at the national genebank of Uganda. (Photo: Paul Neate for Crop Trust)



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