



**CROP  
TRUST**

# **Feeding a Growing World**

Despite Climate Change





Global food production faces unprecedented challenges due to rising temperatures, more severe floods and droughts, new pests and new plant diseases.

## Food Security Depends on Crop Diversity

Over the next decade, the world's population is expected to increase by nearly one billion, reaching 8 billion people. By 2050, it may pass 9 billion. Conservative estimates suggest an increase in global food demand over the same period of at least 50%. Feeding our growing global population is not optional, however hard.

Thus we must increase food production, primarily through higher plant productivity as we cannot count on adding arable land. Historically, half of the increase in crop yields has come from conventional genetic improvement: Breeders identify useful genes in existing varieties of food plants and recombine them to develop new varieties that are more productive, more nutritious and more resistant to stresses – like higher temperatures or less water.

**We know that conserving the vast diversity within crops globally is the only way to guarantee that farmers and plant breeders will have the raw material needed to adapt to whatever the future brings.**

And while securing the world's food supply will require much work beyond crop diversity conservation – such as further advances in crop science, building efficient markets, and reducing the waste of food – none of this can be effective if the genetic base of our food supply is lost.

Our common challenge is to produce more – and more nutritious – food on less land, with less water and less energy, under increasingly unpredictable weather conditions. A greater diversity of genetic plant resources, stored in genebanks and available to all through an efficient global conservation system, is required to secure

the future food supply at stable and affordable prices. Ensuring biodiversity in agriculture is a prerequisite for food security.

## Coping with Climate Change

**Plants from anywhere in the world may hold the answers to climate challenges, including the wild relatives of our domesticated crops that can survive under extreme conditions.**

A report by Intergovernmental Panel on Climate Change stated that a 1° Celsius increase in temperature would decrease agricultural output by 2% per decade. Seen against further population growth and sharply rising demand for food, we are facing a creeping disaster. A climate-resilient agriculture is an adaptable agriculture, built on crop diversity: Plants from anywhere in the world may hold the answers to climate challenges, including the wild relatives of our domesticated crops that can survive under extreme conditions.

We will need the full array of this diversity – collected, characterized and available within a global system – if we hope to adapt to climate conditions not seen before. Within this diversity, there will be plant types that flourish and yield with lower inputs. In some cases, other varieties might also offer increased carbon sequestration. Whether mitigating the causes of climate change or preparing for its impacts, the world's crop diversity represents a heritage of human ingenuity that helps counter the man-made threat of our age.

LEARN MORE ABOUT THE  
IMPACT OF CROP DIVERSITY

[www.croptrust.org](http://www.croptrust.org)



## Safeguarding Biodiversity

Nature's original diversity is a treasure worth protecting in itself. Yet much genetic diversity was lost as agriculture developed, and cultivated species may contain only a fraction of the genetic diversity found in their wild relatives. Natural diversity includes genes for resistance to high temperatures, drought, pests and diseases. Genetic diversity is also critical for improving taste and nutritional composition and boosting yield: Wild species of crops are an important source of genes for plant improvement.

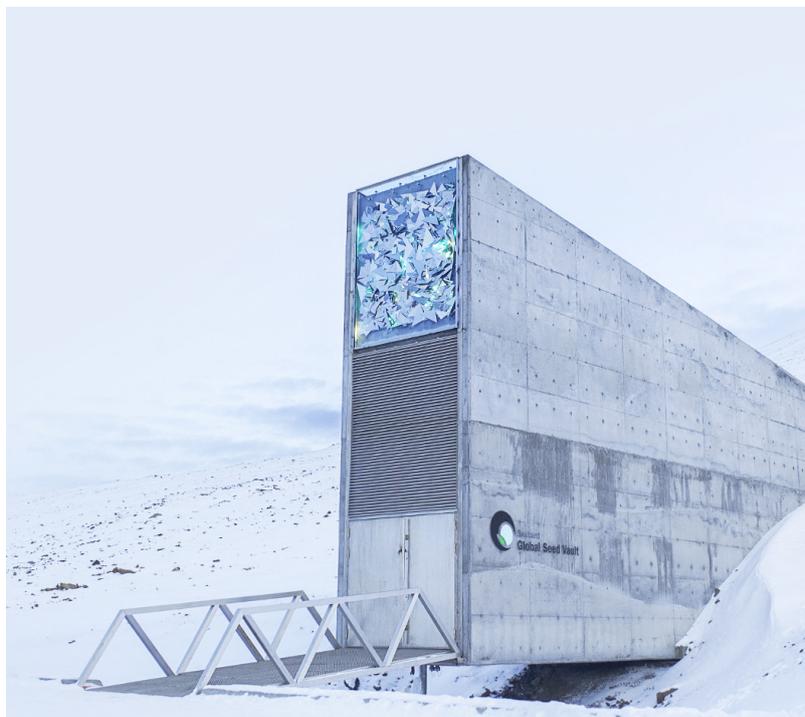
While the number of traditional plant varieties that have disappeared is not known, many can only be found in the seed collections established over the past fifty years. Genebanks conserve and make available genetic material, offering this through their databases to plant breeders, researchers and farmers who look among thousands of samples of crop diversity for sources of resistance to high temperatures and disease.

**Yet it can take upwards of ten years to develop a better plant variety, hence the urgency to secure the basis of agriculture today.**

## Assisting the Rural Poor

Agricultural production is the lifeline for many rural populations in poor countries. And access to affordable and nutritious food is indispensable for human and economic development.

**Crop diversity lays the basis for offering higher yielding and more reliable food plants to support farmers and consumers in low-income countries.**



*The Svalbard Global Seed Vault, a fail-safe seed storage facility, built to stand the test of time — and the challenge of natural or man-made disasters.*

## Protecting a Global Common Good

The Crop Trust works to safeguard the most important collections of crop diversity in genebanks around the world. There is universal recognition of the importance of crop diversity. The work of the Crop Trust responds to multiple calls for action from the international community over the last three decades.

The Crop Trust is an essential funding mechanism of the International Treaty on Plant Genetic Resources for Food and Agriculture, which came into force in 2004 and has been ratified by 136 countries. The Plant Treaty was created because...



...plant genetic resources for food and agriculture are a common concern of all countries, in that all countries depend very largely on plant genetic resources for food and agriculture that originated elsewhere.

This global system for ex situ conservation in genebanks must be rational – i.e. based on defined roles and international collaboration, while also being cost-effective – i.e. avoiding unnecessary duplication of efforts among players. It also requires strong information systems to ensure the accessibility and active use of the plant genetic material.

# The Cost of Conserving Forever

Only long-term, sustainable financial support from an endowment fund can secure a global system that is too important to leave to chance.

## Crop Trust Endowment



Crop collections require constant curation and care: Even brief disruptions can expose plant genetic material to the risk of permanent loss. The ex situ conservation of crop diversity is by its nature a long-term, never-ending task.

**The Crop Trust is building the Crop Diversity Endowment Fund of USD 850 million, which will generate some USD 34 million in annual income. This will safeguard the diversity of the major food crops of the world in genebanks and thereby the basis for food security.** At a cost of USD 34 million per year to the world community, this is unquestionably a highly affordable insurance policy.

The Crop Trust is committed to build its endowment over the next five years. By 2016, an international donors conference will be asked to add resources to the endowment fund, bringing this to USD 500 million so as to protect all of the key international crop collections. Additional resources will be sought for the endowment fund so as to safeguard a wider spectrum of the world's agricultural diversity.



*Conserving the vast diversity within crops globally is the only way to guarantee that farmers and plant breeders will have the raw material needed to adapt to whatever the future brings.*

It is an urgent need to safeguard the building blocks for the future of agriculture in a longterm perspective.

This task is essential for food security. It is not controversial, we know how to do it, and it is doable for only USD 34 million a year.

**Let us secure our food, our agriculture, forever.**

LEARN MORE ABOUT FOOD SECURITY  
ON OUR WEBSITE  
[www.croptrust.org](http://www.croptrust.org)



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