

Vietnamese merchant selling a variety of produce on a floating market on the Mekong River Delta. (Photo: Hachiyah)



An Endowment for the Ages

Crop diversity is under threat. Changes in land use, extreme weather events, shifting pests and diseases, even human conflict and strife, all mean that we cannot take the future existence of this diversity for granted. But what can we do about it?

CIAT genebank. (Photo: Shawn Landersz/Crop Trust)



Crop diversity impacts us all, regardless of where we live and what we enjoy eating. Take an apple. On the surface, we know that a Red Delicious and Golden Delicious are different because of the colour of the skin. But unseen are genetic differences that make some varieties better able to withstand heat, or diseases and pests, or that make them more nutritious or more productive. This kind of diversity *within* a crop is absolutely essential to adapting agriculture to meet the challenges of the climate crisis, so that it can provide sustainable, nutritious food for all.

Then there is diversity *among* crops. Of around 20,000 different crops that people have eaten in the past, we only eat about 6,000 now and about 200 provide most of our food. This kind of diversity underpins the nutritious diets that provide what people in different places and cultures need to live healthy lives.

Securing the Future of Crop Diversity

One place where the future of crop diversity can be safeguarded is in a genebank, although the future of genebanks can also be precarious. The Crop Trust exists to overcome that precarity, to conserve and make crop diversity available for use, forever and for the benefit of everyone, globally.

The Crop Trust was launched in 2004 by Bioversity International and the Food and Agriculture Organization of the United Nations with the primary goal of supporting an international network of genebanks in perpetuity.

Genebanks contain living things, or parts of them, such as seeds, which themselves contain the collection of different genes that make each plant variety or animal breed unique. Genebanks ensure that these genetic materials are safely conserved and available for people to use.



To achieve this, the Crop Trust set out to build an endowment fund, disbursing part of the proceeds each year to support key genebanks around the world. In this way, the Crop Trust Endowment Fund overcomes that classic weakness of project funding: its unpredictability.

Genebanks cannot plan for the long-term if their budgets depend on short-term funding cycles. And a genebank's job is never done – we will always need to have access to the diversity it safeguards.

By the close of 2021, the Endowment Fund had received USD 245 million and was valued at USD 339 million.

Since its inception, global genebanks have received more than USD 60 million in support.

Keeping Our Options Alive

Other projects managed by the Crop Trust support researchers, farmers and plant breeders to make use of crop diversity, for example, scouring wild plants for traits that may be important and preparing those traits for breeding into their domesticated cousins.

The Endowment Fund is currently supporting conservation activities of the genebanks of some 10 international research centers, and contributes, with the government of Norway and the Nordic Gene Resource Centre, to the running of the Svalbard Global Seed Vault. Collectively, these genebanks hold the largest collections of crop diversity worldwide, which they have agreed to make available to all under the International Treaty on Plant Genetic Resources for Food and Agriculture.

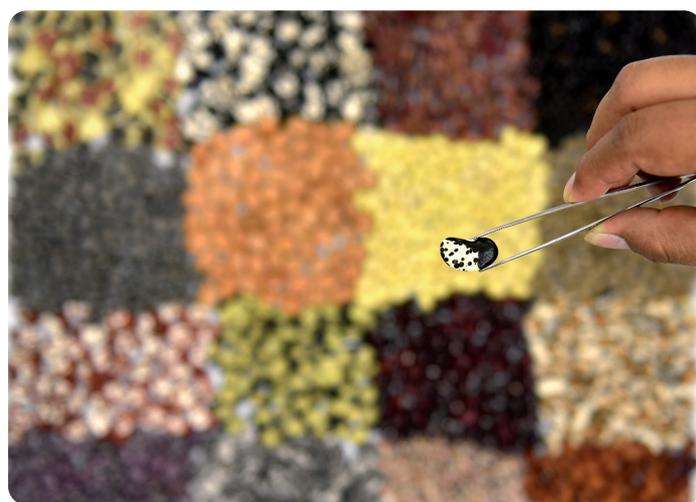
The Endowment Trust is essentially keeping humanity's options open. Once a crop variety or wild relative is extinct, it is extinct forever. By supporting the conservation and use of crop diversity through genebanks, donors to the Endowment Fund ensure our ability to adapt agriculture to all the challenges we face, and will ever face.

Good Reasons to Invest in Diversity

As in agriculture, so in finance; the Endowment Fund is invested in a diversified range of low-risk financial instruments that give it the resilience needed to withstand short-term changes, so that it can continue to provide for genebanks. Ideally, the Crop Trust calculates that the Endowment Fund needs to reach about USD 850 million, which would conservatively provide about USD 34 million a year. That sounds like a lot, but is roughly the same amount as what the world spends in fossil fuel subsidies every 75 minutes. While much of the Endowment Fund so far has come from government donations, the Crop Trust welcomes donations from institutions and private individuals. It doesn't take much. On average, USD 775 is enough to keep a single crop variety available forever.

The return on that investment is hard to calculate, because the benefits may lie far in the future, when the need for that variety's diversity becomes apparent. FR13A, the rice that today enables productive rice varieties to survive up to two weeks under water, was originally collected in India in the 1950s. At that time, nobody could have guessed how important it would become in the face of extreme floods and climate change: FR13A's superpower depended on a gene called *Sub1* which, when bred into modern rice varieties, enabled them to bounce back, quite literally, after being submerged, and thrive until it was time for them to be harvested.

The present value of a new crop variety offers another reason to invest in genebank conservation. One study looked at the benefit of a single potato variety – Victoria – to farmers in Uganda. Almost 75% of Victoria's genetic make-up came from varieties conserved in the International Potato Center's genebank. The study estimated that Victoria had provided Uganda with gross benefits of USD 1.04 billion so far, since its release in 1991. That is more than the entire operating cost of the genebank over its entire lifetime, for one variety of one crop in one country.



Can you think of a better investment?

