



Projects Committee
12th Meeting
19 September 2016
London, United Kingdom

**The Crop Trust and World Coffee Research:
Global Coffee Conservation Strategy –
Protecting Coffee’s Genetic Resources, Forever**

Background

1. This document outlines the Global Coffee Conservation Strategy which has been developed by the Crop Trust Initiative in collaboration with World Coffee Research. The aim is to conserve the coffee germplasm collections around the world to ensure the future sustainability of the crop. In order to do this, cooperation between Members and the strategy’s creators is essential.
2. Mr Tim Schilling, Executive Director of World Coffee Research will present the strategy in further detail to Members of the Projects Committee during its 12th Meeting in September 2016.

Action

The Projects Committee is requested to note the attached document entitled ‘Global Coffee Conservation Strategy – Protecting Coffee’s Genetic Resources, Forever’.

GLOBAL COFFEE CONSERVATION STRATEGY

Protecting coffee's genetic resources, forever

THE PROBLEM

The global coffee crop is increasingly threatened by climate change and diseases and pests. It also appears as if *Coffea arabica*, which accounts for 70% of global production, is one of the least genetically diverse crop species in the world. To make matters worse, the limited coffee genetic resources we have are being lost at a rapid pace.

A germplasm collection is a “bank” for coffee’s genetic diversity that can be drawn upon by coffee breeders to solve current or future problems facing the crop. There are 19 coffee germplasm banks around the world, each containing a mixture of commonly cultivated species and varieties as well as wild coffee from the plant’s center of evolutionary origin in Africa.

Unfortunately, most of the main genebanks for coffee (called *ex situ* collections) are in disrepair. Coffee genebanks are all *field genebanks*, collections of living plants, which are expensive to maintain. Many critical coffee genetic resources have already been lost as trees die for lack of care and maintenance. Once a tree dies, if there is no duplicate, its unique genetics are lost forever. Rising temperatures and extreme weather are putting pressure on these essential assets; many field genebanks are located at altitudes considered too low for healthy coffee. In addition, *C. arabica*’s natural habitat in the highland forests of Ethiopia (the world’s only *in situ* collection) is rapidly disappearing. These losses, combined with coffee’s lack of genetic diversity, severely threaten the future of the crop.

Coffee breeders turn to genebank collections to find novel traits and their underlying genes to address challenges like rising temperatures, drought, and pests and diseases. The more genetic resources breeders have access to, the higher the likelihood they will be able to address threats to the crop, as well as to improve quality.

Despite the fact that the world’s coffee germplasm collections are in disrepair, they are still the main source of diversity available to coffee breeders. But these resources are rarely shared among coffee producing countries. In fact, only the CATIE coffee germplasm bank in Costa Rica is party to an international treaty on the open sharing of genetic resources for the improvement of crops. CATIE’s participation in the Plant Treaty enables breeders from around the world to obtain and work with genetic material to make critical improvements to the coffee crop. The other 18 coffee germplasm banks, many of which contain novel species and varieties not held in the CATIE collection, do not participate in the Plant Treaty and do not share their material with breeders globally.

THE SOLUTION

Creating a global coffee conservation strategy is key to addressing these challenges and providing a roadmap for the future sustainability of the crop and the livelihoods dependent on it. Working together with the Crop Trust, World Coffee Research is reviewing the world’s coffee germplasm collections—stored in field genebanks and



in native forests around the world—and assessing the challenges that coffee and its genetic resources face, including an assessment of the significant gaps in collections and their links to *in situ* conservation. The project will identify high priority actions that need to be taken and ensure commitment by the coffee industry to invest in these actions, securing the long-term conservation of globally available coffee through the Crop Trust’s Crop Diversity Endowment Fund.

IMPACT

The cost of failing to act to preserve coffee’s genetic resources could be catastrophic for the entire coffee industry. Any one coffee tree in a threatened germplasm collection could contain a trait that could protect against devastating droughts or crop pests. Every day that there is no global strategy for preserving coffee’s genetic diversity is a day we are losing vital resources. But protecting coffee’s genetic diversity isn’t just about averting disaster. The same tree could have a trait with as-of-yet undiscovered quality or health-promoting traits. Unless we protect coffee’s finite genetic resources, we’ll never know.

LOCATION:	USA, Costa Rica, Côte d’Ivoire, Madagascar, Brazil, Colombia
TIMELINE:	2016
LEADER:	Sarada Krishnan (Denver Botanic Gardens)
PARTNERS:	Crop Trust, International Coffee Organization
COST:	\$50,000