



Quick Project Facts

“Adapting Agriculture to Climate Change: Collecting, Protecting and Preparing Crop Wild Relatives”

Our Project - “Adapting Agriculture to Climate Change: Collecting, Protecting and Preparing Crop Wild Relatives” – was launched in 2011 with US\$50 million in funding over a planned ten-year duration from the Government of Norway. Managed by the Global Crop Diversity Trust with the Royal Botanic Gardens, Kew, the Project is carried out in partnership with national and international genebanks and plant breeding programs around the world. A growing number of partners from all around the world are helping to implement the project. You can find out who our partners are [here](#).

What are crop wild relatives?

Crop wild relatives (CWR) are the rugged, hardy cousins of our more pampered domesticated crop plants. CWR are related to our food plants in the same way that the wolf is related to the dog. For example, *Oryza rufipogon* Griff. is a wild rice species found growing in several countries in Asia: rice was originally domesticated from something very like it.

How can crop wild relatives contribute to climate change adaptation and mitigation?

Crop wild relatives are distributed across a wide range of habitats, and have evolved many different strategies for surviving in diverse climatic conditions. Many of their traits are relevant for climate change adaptation.

CWR species can help with **climate change adaptation** when they possess a trait that has the potential to help crops become more resilient and productive under the new environmental conditions projected under climate change. Climate change is expected to increase the frequency and severity of droughts, increase growing season temperatures, increase soil salinity in coastal areas, and contribute to the spread of pests and diseases. Three examples of crop wild relatives possessing traits useful for climate change adaptation are:

- **Drought tolerance**
Aegilops geniculata Roth
- **Salt tolerance**
Helianthus paradoxus Heiser
- **Disease tolerance**
Oryza minuta J. Presl

CWR species also have the potential to contribute to **climate change mitigation** through the provision of traits that have the potential to allow crops to be grown less carbon-intensively (mainly through increased efficiency of input use). For example, introgressing a trait for nitrogen use efficiency into a given crop could allow the reduction of fertilizer use.



Overall, with enough investment, crop wild relatives have the potential to significantly contribute to climate change adaptation and mitigation and to help promote and facilitate the transition towards more resilient, low-carbon economies and societies.

What are the major components of the project?

The major activities of the Project include 1) prioritization; 2) collecting; 3) conservation; and 4) pre-breeding. Collecting of CWR is going to take place in about 20 countries, and pre-breeding projects on about 20 crops.

What crop wild relative species does the Project focus on?

The Project focuses on 450 crop wild relative species that are related to 29 priority crops:

- African rice
- alfalfa
- apple
- bambara groundnut
- banana
- barley
- wheat
- lima bean (butter bean)
- carrot
- chickpea
- common bean
- cowpea
- faba bean (broad bean)
- finger millet
- grasspea
- lentil
- oat
- pea
- pearl millet
- pigeon pea
- plantain
- potato
- rice
- rye
- sorghum
- sunflower
- sweet potato
- vetch

These crops and their wild relatives are all included in Annex 1 of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), which provides the policy framework for the Project.