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## **One of History's Biggest Biological Rescue Efforts Poised to Save 100,000 Critical Crop Varieties from Certain Extinction**

***Push by Global Crop Diversity Trust is Rapidly Reviving Ailing Seed Samples From 46 Countries That Could Provide Genetic Traits Vital to Maintaining Global Food Security***

CHICAGO (15 February 2009)—Only two years after launching an ambitious effort to save endangered crop species, the Global Crop Diversity Trust announced today it is on track to save from extinction 100,000 different varieties of food crops from 46 countries, making it one of the largest and most successful biological rescue efforts ever undertaken.

"We are moving quickly to regenerate and preserve seed samples representing thousands of distinct varieties of critical food crops like rice, maize, and wheat in 46 countries that were well on their way to total extinction," said Cary Fowler, Executive Director of the Trust. "I think it is fair to say that without this effort, many of them would have been lost forever."

In many countries, stresses as mundane as poor refrigeration and inadequate funding and as dramatic as war and economic collapse threaten seed collections of crop varieties that do not exist anywhere else in the world. The imperiled seeds targeted for rescue by the Trust are samples of staple crops stored in crop gene banks in Africa, Central Asia, South Asia, and Central and South America. They include rare varieties of barley, wheat, rice, banana/plantain, potato, cassava, chickpea, maize, lentil, bean, sorghum, millet, coconut, breadfruit, cowpea and yam.

Fowler said the Trust already has agreements in place with 49 institutes in 46 countries to rescue some 53,000 of the 100,000 crop samples identified as endangered. Agreements for preserving the remaining varieties are expected to be completed soon. The initiative is one of the biggest rescue efforts ever of any threatened biological species and by far the largest rescue of endangered domesticated crop varieties.

The main funding for the project was provided by the Bill and Melinda Gates Foundation, with additional support from the Grains Research and Development Corporation, an Australian farmers' organization.

While many of the imperiled varieties may no longer be growing in farmer's fields—and exist only in seed collections—they could be critically important to the future of global food production. For example, farmers in the developing world desperately need new crop varieties that can help them overcome pests and diseases, poor soils, and rapidly changing climate conditions while keeping pace with the food demands of a growing population. The plant breeders they turn to for help depend on publicly-accessible

national, regional and international crop gene banks to provide them with the widest variety of genetic traits that can allow farmers to overcome these challenges.

“Growing conditions and food demands change rapidly and breeders never know which variety stored in a crop gene bank somewhere in the world is going to be that proverbial needle in the haystack that will provide the critical trait that can literally make the difference between abundance and starvation,” said Fowler. “So while these seeds being saved represent crop varieties from the past, they could easily play a role in the crops of the future.”

In fact, most of the food crops widely planted today are the products of breeding efforts that owe their success to the genetic wealth stored in crop gene banks. For example, to create Sonalika, an incredibly successful variety of wheat widely planted in the developing world, breeders used traits from varieties of wheat collected from 17 countries.

The Trust identified seed samples in need of rescue by first consulting scientific experts who specialize in particular crop species and could identify the most important collections. The Trust then asked individual crop gene banks maintaining those collections to identify and regenerate the most threatened of their unique samples.

Generally, a sample of a particular variety is considered healthy if the number of living, viable seeds does not drop below 85 percent of the sample's original germination rate. Declines greater than this imply loss of diversity, and a threat to the very existence of the sample. Some of the samples of the varieties that became the focus of the rescue effort had fallen to below 50 percent germination rate, which means they must be quickly regenerated or they will be lost forever.

After the seeds have been regenerated, three sample lots are prepared. One remains in the genebank carrying out the regeneration. Another is sent to a gene bank meeting international standards for seed preservation as a safety duplicate. A third copy is sent to the Svalbard Global Seed Vault, built by the government of Norway, operated by Nordgen and supported financially and technically by the Trust. The so-called Doomsday Vault is amassing a comprehensive fail-safe collection of the world's agricultural biodiversity.

Fowler said one benefit of the rescue initiative is that producing new seeds requires growing the plant. This provides an opportunity to gather and record information on its appearance and performance that could help breeders and others determine whether the sample may be of use to them in their work.

“We're not preserving these samples to be museum pieces,” he said. “Even when we are regenerating a variety ostensibly to produce new seeds, breeders are looking at that plant for certain qualities, such as heat resistance, drought tolerance, weed or pest resistance, that could improve food production right now.”

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**The Global Crop Diversity Trust ([www.croptrust.org](http://www.croptrust.org))** The mission of the Trust is to ensure the conservation and availability of crop diversity for food security worldwide. Although crop diversity is fundamental to fighting hunger and to the very future of agriculture, funding is unreliable and diversity is being lost. The Trust is the only organization working worldwide to solve this problem, and has already raised over \$140 million. For further information, please visit: [www.croptrust.org](http://www.croptrust.org).