

# Thousands of crop varieties from 4 corners of the world depart for Arctic seed vault

January 23 2008

---

At the end of January, more than 200,000 crop varieties from Asia, Africa, Latin America and the Middle East—drawn from vast seed collections maintained by the Consultative Group on International Agricultural Research (CGIAR)—will be shipped to a remote island near the Arctic Circle, where they will be stored in the Svalbard Global Seed Vault (SGSV), a facility capable of preserving their vitality for thousands of years.

The cornucopia of rice, wheat, beans, sorghum, sweet potatoes, lentils, chick peas and a host of other food, forage and agroforestry plants is to be safeguarded in the facility, which was created as a repository of last resort for humanity's agricultural heritage. The seeds will be shipped to the village of Longyearbyen on Norway's Svalbard archipelago, where the vault has been constructed in a mountain deep inside the Arctic permafrost. The vault was built by the Norwegian government as a service to the global community, and a Rome-based international NGO, the Global Crop Diversity Trust, will fund its operation. The vault will open on 26 February 2008.

This first installment from the CGIAR collections will contain duplicates from international agricultural research centers based in Benin, Colombia, Ethiopia, India, Kenya, Mexico, Nigeria, Peru, the Philippines and Syria. Collectively, the CGIAR centers maintain 600,000 plant varieties in crop genebanks, which are widely viewed as the foundation of global efforts to conserve agricultural biodiversity.

“Our ability to endow this facility with such an impressive array of diversity is a powerful testament to the incredible work of scientists at our centers, who have been so dedicated to ensuring the survival of the world’s most important crop species,” said Emile Frison, Director General of Rome-based Bioversity International, which coordinates CGIAR crop diversity initiatives.

“The CGIAR collections are the ‘crown jewels’ of international agriculture,” said Cary Fowler, Executive Director of the Global Crop Diversity Trust, which will cover the costs of preparing, packaging and transporting CGIAR seeds to the Arctic. “They include the world’s largest and most diverse collections of rice, wheat, maize, beans, potato, sweetpotato, cowpea, and other important food crops. Many traditional landraces of these crops would have been lost had they not been collected and stored in the genebanks.”

For example, the wheat collection held just outside Mexico City by the CGIAR-supported International Maize and Wheat Improvement Center (CIMMYT) contains 150,000 unique samples of wheat and its relatives from more than 100 countries. It is the largest unified collection in the world for a single crop. Overall, the maize collection represents nearly 90 percent of maize diversity in the Americas, where the crop originated. CIMMYT will continue to send yearly shipments of regenerated seed until the entire collection of maize and wheat has been backed up at Svalbard.

Storage of these and all the other seeds at Svalbard is intended to ensure that they will be available for bolstering food security should a manmade or natural disaster threaten agricultural systems, or even the genebanks themselves, at any point in the future.

“We need to understand that genebanks are not seed museums but the repositories of vital, living resources that are used almost every day in

the never-ending battle against major threats to food production,” Bioversity International’s Frison said. “We’re going to need this diversity to breed new varieties that can adapt to climate change, new diseases and other rapidly emerging threats.”

## **Why are genebanks important?**

Just from January to August of 2007, CGIAR centers distributed almost 100,000 samples. The materials mainly go to researchers and plant breeders seeking genetic traits to create new crop varieties that offer such benefits as higher yields, improved nutritional value, resistance to pests and diseases, and the ability to survive changing climatic conditions, which are expected to make floods and drought more frequent.

In addition, these collections have often been used to help restore agricultural systems after conflicts and natural disasters.

For example, among the 135,000 food and forage seeds maintained at the CGIAR-supported International Center for Agricultural Research in the Dry Areas (ICARDA) in Aleppo, Syria, 3,000 varieties are native to Afghanistan, and 1,000 are from Iraq. The seeds preserved have been used to help revitalize crop diversity in these war-torn regions.

“Svalbard will be able to help replenish genebanks if they’re hit,” said Cary Fowler. Iraq’s genebank in the town of Abu Ghraib was ransacked by looters in 2003. Fortunately there was a safety duplicate at the CGIAR center in Syria. Typhoon Xangsane seriously damaged the genebank of the Philippines national rice genebank in 2006.

“Unfortunately, these kinds of national genebank horror stories are fairly common place,” said Fowler. “The Svalbard Global Seed Vault makes the CGIAR’s genebank collections safer than ever.”

After the Asian tsunami disaster of 2004, the CGIAR-supported International Rice Research Institute (IRRI) used its collections to provide farmers with rice varieties suitable for growing in fields that had been inundated with salt water. The genebank at the CGIAR-supported International Center for Tropical Agriculture (CIAT) in Palmira, Colombia was instrumental in providing bean varieties to farmers in Honduras and Nicaragua in the aftermath of Hurricane Mitch in 1998.

According to Geoff Hawtin, Acting Director General of CIAT and former executive director of the Rome-based Global Crop Diversity Trust, “The shipments going to Svalbard from the CGIAR genebanks are a vital measure in conserving the world’s crop collections. With coming climatic changes, higher food prices, and expanding markets for biofuels, our best available options for progress, if not survival, lie in these collections and it is imperative we take every precaution to safeguard them.

Source: CGIAR

Citation: Thousands of crop varieties from 4 corners of the world depart for Arctic seed vault (2008, January 23) retrieved 27 April 2024 from <https://phys.org/news/2008-01-thousands-crop-varieties-corners-world.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.