

Probing Question: What is seed banking?

April 30 2010, By Jesse Hicks



Nearly 1,000 kilometers north of Norway stands an impressive vault. Dug deep below the permafrost into solid rock, so far north that four months out of the year the sun doesn't shine, the vault contains some of mankind's most precious resources, preserved at a constant minus-8 degrees Celsius. What lies inside? Gold? Irreplaceable art or fundamental human knowledge? No. These treasures are tiny, modest, unassuming: seeds. The Svalbard Global Seed Vault is home to nearly half a million specimens from around the world and the most well-known example of a practice called "seed banking."

So what is seed banking, and why is it important?

"Global seed banking conserves [genetic diversity](#) in plants -- or animals

for that matter -- in conservation facilities outside the areas where they evolved," said Surinder Chopra, associate professor of maize genetics at Penn State. These facilities, from the massive Svalbard vault to smaller local banks, function as a back-up system in case of environmental catastrophe. Were an entire crop to be wiped out, the thinking goes, planters could turn to the reserve to start again.

Seed banks also are a safeguard against disease. Industrial agriculture has made many crops less genetically diverse, Chopra explains, with only a small number of varieties dominating the market. This lack of diversity can make crops more susceptible to disease, blight and pests, by decreasing the possibility of natural disease-resistance.

But preserving genetic diversity in seed banks, Chopra said, does more than provide protection in the event of a catastrophe. In the long term, that [gene pool](#) "provides researchers and breeders with [genetic material](#) for breeding activities including [genetic engineering](#)." Without seed banking, much of this genetic material would be lost forever.

"It is a fact that biodiversity, including agricultural biodiversity, is being lost at an unprecedented rate," Chopra said. "At the ecosystem, species and genetic levels, diversity continues to be lost from many production systems throughout the world. This has far-reaching consequences, especially for the poorest communities," which are less able to weather agricultural misfortune, and accustomed to locally sustainable, indigenous farming.

In response to these concerns, 193 countries have become parties to international treaties such as the United Nations' Convention on Biological Diversity (the United States has signed but not ratified the treaty). Other groups, including Bioversity International and the Global Crop Diversity Trust, devote themselves to funding seed banks around the world. The United Nations has also declared 2010 the International

Year of Biodiversity.

And more than 1,400 seed banks around the world, from St. Petersburg, Russia, to Portland, Ore., to Lima, Peru, safeguard humanity's future in the form of modest, unassuming seeds.

Provided by Pennsylvania State University

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