

Key to earth's survival in inhospitable North Pole

LA Times -Washington Post, October 17, 2007

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LONGYEARBYEN, October 16: High above the icy fjord, the vault is almost complete. Inside a frozen mountain not far from the North Pole, workers are building three concrete chambers to withstand global warming, floods and fires, wars and nuclear holocaust. This Arctic safe, nicknamed the “doomsday vault”, will protect millions of crop seeds here on the forbidding Svalbard archipelago, the northernmost inhabited spot on the planet.

The survival of Earth's agriculture is being entrusted to a land inhospitable to life, where only the toughest plants, animals and humans endure. At the entrance to the vault, visitors can see glaciers and frozen wilderness shimmering in the distance. Should the bleakest global warming scenario come true — a total meltdown of Antarctica and the Arctic, swamping the planet as sea levels rise — the seeds would be sheltered in their cave here, 400 feet above the Advent Fjord.

In case of an electricity blackout, the permafrost ensures that the seeds would remain refrigerated in the state-of-the-art Svalbard Global Seed Vault.

Recalling the opening scene of the old Get Smart television show, air locks, steel-reinforced doors and a video-monitoring system operated from Sweden hundreds of miles away are designed to protect the \$6 million vault deep inside the mountain. National seed banks around the world could be devastated by natural disasters or raided in a war, but the remoteness of the Svalbard vault makes it the ultimate safety backup.

“This is a library of life,” said Cary Fowler, director of the Global Crop Diversity Trust, an international foundation that protects the world's crop seeds. “We'll be taking the knowledge embodied in these genes to fashion new solutions.”

Agriculture continually must adapt to the changing conditions on the planet, be they climate shifts, new pests and diseases or increasing demand for food as the world's population grows. Earth's biological diversity, however, is facing its worst threat in centuries, brought on by more aggressive farming methods, environmental degradation and changing weather patterns. In the last century, as much as 75 percent of the genetic diversity — hundreds of thousands of plant varieties — has been lost, according to the United Nations Food and Agriculture Organisation. Every day, another plant variety becomes extinct. “We have a giant puzzle unfolding here,” Fowler said. “We don't know what the picture is going to be, so we don't need to be throwing away the pieces, especially when it's so cheap to conserve them and so expensive to lose them.” The vault's location on this rugged cluster of islands between the 76th and 81st parallels has been chosen carefully. Fewer than 3,000 settlers, mostly Norwegians and Russians, live in the Arctic archipelago governed by Norway.