

Norway to boost climate change defences of 'doomsday' seed vault

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Norway plans to better protect a seed storage vault designed to protect the world's crops from disaster, after soaring temperatures caused water to leak

Norway on Saturday said it would boost protection of a seed storage vault designed to protect the world's crops from disaster, after soaring temperatures caused water to leak into its entrance.

Situated deep inside a mountain on a remote Arctic island in a

Norwegian archipelago, the Svalbard Global Seed Vault, dubbed the "doomsday" [vault](#), is the largest of its kind and can store up to 2.5 billion seeds.

Freezing temperatures inside the vault keep the seeds, sealed in packages and stored on shelves, usable for a long period of time. Permafrost and thick rock should guarantee the seeds are frozen and secured for centuries.

But in October 2016, the warmest year on record, melting permafrost caused water to leak about 15 metres (49 feet) into the entrance of a 100-metre tunnel inside the vault.

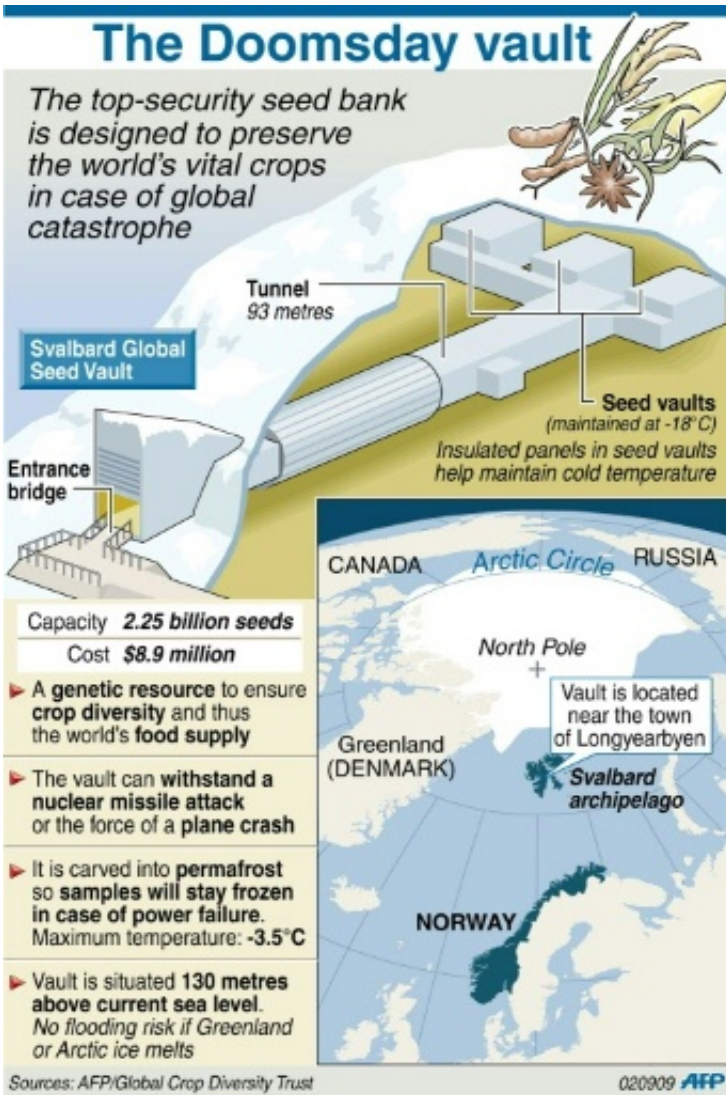
No damage was caused to the seeds and they remain safe inside the vault at the required storage temperature of -18 degrees Celsius (-4 degrees Fahrenheit).

But the vault's managers are now constructing a waterproof wall inside for additional protection, a Norwegian government spokeswoman told AFP, adding all heat sources would also be removed from inside the vault.

"It's not good to have unnecessary heat inside" if water is coming in and permafrost is melting, Hege Njaa Aschim said.

The Doomsday vault

The top-security seed bank is designed to preserve the world's vital crops in case of global catastrophe



Svalbard Global Seed Vault

Tunnel
93 metres

Seed vaults
(maintained at -18°C)
Insulated panels in seed vaults help maintain cold temperature

Entrance bridge

Capacity	2.25 billion seeds
Cost	\$8.9 million

- ▶ A genetic resource to ensure **crop diversity** and thus the world's **food supply**
- ▶ The vault can **withstand a nuclear missile attack** or the force of a **plane crash**
- ▶ It is carved into **permafrost** so **samples will stay frozen in case of power failure**.
Maximum temperature: **-3.5°C**
- ▶ Vault is situated **130 metres above current sea level**.
No flooding risk if Greenland or Arctic ice melts

Sources: AFP/Global Crop Diversity Trust 020909 AFP

The Doomsday Vault

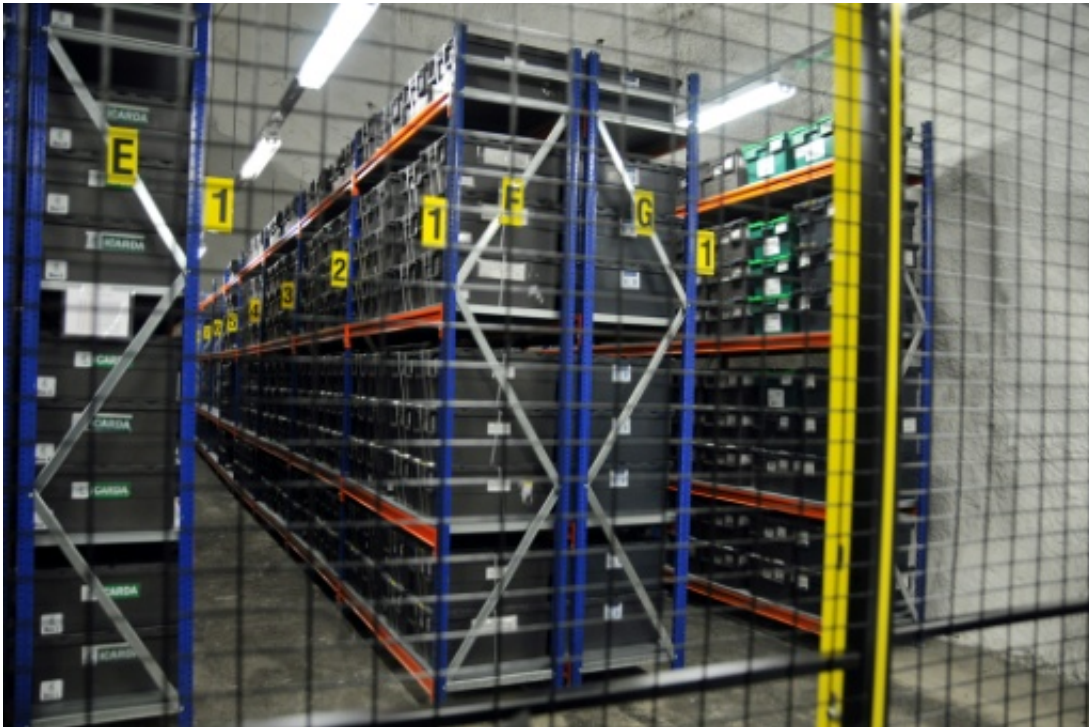
"We have to listen to climate experts (and) we are prepared to do anything to protect the [seed](#) vault," she added.

The vault currently stores more than 880,000 seed samples from nearly every country in the world, including food staples such as maize, rice, wheat, cowpea and sorghum from Africa and Asia.

It also protects European and South American varieties of aubergine, lettuce, barley and potatoes.

"The water that leaked in had turned into ice... we had it removed," Aschim said. Norwegian authorities are "taking this very seriously" and "following it continuously," she added.

There are 1,700 gene banks around the world that safeguard collections of food crops and many of these are exposed to natural disasters and wars, according to the independent Global Crop Diversity Trust.



A vault carved into the Arctic permafrost in Longyearbyen, Norway, is filled with samples of the world's most important seeds in case food crops are wiped out by a catastrophe

The Svalbard vault was opened in 2008 with the aim to provide a "fail-safe seed storage facility, built to stand the test of time and the challenge of natural or man-made disasters," the organisation says on its website.

"It is the final back up," it adds.

Each country that deposits the seeds into the vault have control and access to their own material.

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