



The Svalbard Seed Vault is a vital extra step in preserving global seed collections and strengthening global food security.



## Are these seeds safe for eternity?

by Julie Stalker, AusAID

**Food security has become a global issue. It is no longer a concern for just developing countries, but a worldwide issue. So, is a global seed vault the saviour for all food needs of the world?**

Julian Laird, Director of Development and Communications at the Global Crop Diversity Trust, is certain that the Svalbard Seed Vault is a vital extra step in preserving global seed collections and strengthening global food security.

'The vault provides perfect conditions for seed storage. No seeds can survive forever, however, and so samples in Svalbard will need to be periodically refreshed. It is anticipated that this will be done at the same time that gene banks refresh their main collections, producing extra seed to send to Svalbard. I should also point out that the vault is a very small part of the trust's overall program

and that there are also crops (vegetatively propagated crops such as yam, banana, cassava) which cannot be stored as seed and which will not benefit from the vault,' he said.

The majority of the more than 1,400 seed collections (or gene banks) around the globe are still vulnerable not only to natural catastrophes and war, but also to simple and avoidable disasters such as mechanical failures. The Svalbard Vault was established to serve as a backup storage facility.

'The vault has also been built with worst-case climate change predictions in mind and so is high enough up the mountain to be above any possible rise in sea level, and is far enough inside the mountain to benefit from the protection of the permafrost in all those scenarios,' said Mr Laird.

'The vault houses some 650,000 unique samples and, after only three

years, it is the most diverse collection of seeds anywhere in the world. It is still growing rapidly.'

The trust, along with the Norwegian government, operates this specially-constructed site located 1,300 kilometres from the North Pole. Svalbard was officially opened on 26 February 2008. It is a low-tech, unmanned facility that does not have the capacity to store anything other than seeds. To date, there has not been a need to access any of the stored seeds.

Australian Ambassador to Denmark James Choi experienced the vault firsthand when he accompanied Wimmera (Victoria) grain farmer Dr Tony Gregson to deposit Australia's first seed consignment in mid-February this year.

'It was a privilege to be part of this historic occasion. The Nordic seed vault is a visionary endeavour with a vital objective. The commitment to this project

of Dr Tony Gregson and the Executive Director of the Global Crop Diversity Trust, Cary Fowler, is remarkable.'

Australia will contribute \$21 million to the trust by 2013 and has provided \$17.5 million since 2003. The Grains Research and Development Corporation has also pledged to contribute US\$5 million.

During an interview with the Australian Farm Journal, Dr Gregson said the seed vault would protect Australian seeds from destruction in the event of a disaster such as fire or flood.

'We're doing it as an insurance policy so that this pretty unique germ plasm is actually preserved in a very, very secure place,' Dr Gregson said.

'It really is very important from the point of view of global food security and Australia's contribution to that.'

The first consignment of seeds, from the Horsham Australian Gene Bank Grains Collection, includes 301 pea

varieties from China, and 42 chickpea varieties from the Middle East, which were imported to Australia about 35 years ago. Some of the chickpea lines are now considered to be very rare.

The box of seeds has been sealed by the Australian Quarantine and Inspection Service so that the seeds can be returned to Australia quickly for use. Australia retains control of its seeds at the vault and can retrieve them easily.

The seed vault is not the only program that preserves crops. The trust has another program at Leuven in Belgium that holds an international collection of bananas under the International Treaty on Plant Genetic Resources. This program uses liquid nitrogen to 'cryo-preserve' bananas. To date, this collection has not been called on to replace lost samples.

'The reality is that despite being called the doomsday vault in the media and linked to apocalyptic scenarios, the

vault will probably prove most valuable in redressing the attrition by less glamorous dangers such as the widespread underfunding of gene banks and the lack of importance placed on the conservation of our crops' genetic diversity,' Mr Laird said.

Will the Svalbard seed vault be the saviour for all food needs of the world? Let's hope not. Let's hope that it is used just as it is intended, as a backup for a disaster.

ABOVE LEFT: Seed vault entrance as seen at dusk. Photo: Mari Tefre/Global Crop Diversity Trust

ABOVE RIGHT: (left to right) Cary Fowler, Dr Tony Gregson and Australian Ambassador James Choi prepare to place Australian seeds inside the seed vault. Photo: Tone Sund/Global Crop Diversity Trust