



English Learning for Curious Minds



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Episode #081
The Svalbard Doomsday Seed Vault | Noah's Ark for Seeds
18 August, 2020



[00:00:00] Hello, hello, hello and welcome to English Learning for Curious Minds by Leonardo English, the show where you can listen to fascinating stories and learn weird and wonderful things about the world at the same time as improving your English.

[00:00:21] I'm Alastair Budge and today we are going to be talking about the Svalbard Global Seed Vault.

[00:00:28] It is a place deep in the Arctic [Archipelago¹](#), where copies of almost all the seeds in the world are kept as a [backup²](#).

[00:00:38] It's an awesome project that I only recently found out about, so I'm thrilled to share this episode with you today.

¹ a small group of islands

² something that you use to replace something else if it is lost or damaged



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[00:00:47] So, let's just get right into it.

[00:00:50] Deep inside a mountain, on a super remote island to the north of Norway, is this amazing place called the Svalbard Global Seed Vault, or Svalbard globale frøhvelv in Norwegian. Apologies to any Norwegians listening if my pronunciation was a little [off³](#), but I think that was about right.

[00:01:12] The Svalbard Global Seed Vault is essentially the world's [backup](#) for seeds.

[00:01:19] If you think of [backing up⁴](#) your photos or files on an external hard drive, and then putting that somewhere safe, that is one way to think about what the Svalbard Global Seed Vault is, apart from it's for seeds, for the things that form [crops⁵](#).

[00:01:40] There are over 8 billion people on the planet right now, and that obviously requires a [mammoth⁶](#) amount of food to keep us all alive.

[00:01:51] Despite the fact that there are more people on the planet today than ever before, and we require more food than ever before, the diversity of plants and animals that exist today is less than any time in history.

³ incorrect

⁴ see 'backup'

⁵ plants grown by farmers

⁶ very large



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[00:02:08] For **crops**, for the plants that we eat, the diversity has reduced and reduced, as humans tend towards a bunch of **crops** that are the easiest and cheapest to grow.

[00:02:21] The others are pushed out, and once the last one dies, unless there is a seed from which more can grow, they are gone, they are **extinguished**⁷ from the world.

[00:02:35] Indeed, now only about 30 different **crops** provide 95% of all of our food.

[00:02:43] In China, before mass agricultural **reform**⁸ and the mass production of crops, a wide variety of different kinds of rice was eaten.

[00:02:55] Now, only 10% of the rice varieties that were eaten in 1950 are **cultivated**⁹. The rest is gone, or at least, not in use.

[00:03:07] If you are surprised by this, I don't blame you. I was too.

[00:03:13] But if you're thinking, 'so what', then it's worth talking about why concentrating our food supply into such a small number of crops is a problem, or at least a risk.

[00:03:27] There's a phrase in English which is 'variety is the spice of life', and in the case of crops, it's pretty true.

⁷ disappeared, extinct

⁸ improvement by making changes

⁹ grown



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[00:03:37] Having an [effective¹⁰ monoculture¹¹](#), where there really isn't much variety, means that we are at a much greater danger of things like diseases that affect an entire type of [crop](#), or [unforeseen¹²](#) weather patterns that have a huge effect on another kind of [crop](#). If you have hundreds of different varieties, and one gets wiped out, it gets destroyed, that's not a huge issue.

[00:04:05] But if you only have one or two varieties, and one gets wiped out, then obviously you are in trouble.

[00:04:14] The idea behind the Svalbard Global Seed Vault is to act as the world's [backup](#). Almost every country has its own [backups](#), its own reserves of seeds in its own vault, but since its founding in 2008, the Svalbard Global Seed Vault has served the role of [backup](#) of the [backup](#).

[00:04:38] If a country runs out of a particular crop, and there are no seeds left available in its own storage, its own [backup](#), then it can go to the Svalbard Global Seed Vault and retrieve the seeds that it deposited there.

[00:04:55] Pretty cool, right?

[00:04:57] And not just cool in theory, but also cool in practice.

¹⁰ in practice

¹¹ growing just one crop

¹² not predicted



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[00:05:01] In 2015, after the civil war, Syria lost access to its own [gene bank¹³](#), its own store of seeds. The Syrian scientists and researchers who were working with these kinds of seeds had lost all access to their seeds.

[00:05:20] Luckily, Syria had deposited seeds with the Svalbard Global Seed Vault, and the scientists were able to get their samples of wheat, chickpeas, lentils, and other seeds, and start work again. They planted the seeds, generated more seeds, and have now been able to redeposit seeds back in the bank, to put more seeds back in the bank.

[00:05:47] This is an example of how it works in practice, and fortunately this wasn't a completely catastrophic situation that needed to be resolved - these seeds did exist, the scientists just didn't have access to them.

[00:06:03] But you can imagine how, in the case of some huge plague, [nuclear holocaust¹⁴](#), or something else that completely [decimated¹⁵](#) the food supplies of an entire country or region, you can see the vital role that the Svalbard Global Seed Vault plays.

[00:06:23] It's a pretty amazing idea, that there is this one organisation that exists for the benefit of everyone in the world.

¹³ a repository that preserves genetic material

¹⁴ an event where a nuclear explosion destroys large parts of an area

¹⁵ destroyed



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[00:06:34] It is a non-political organisation. It's managed by three different parties - the Norwegian government, something called the Crop Trust, and the Nordic Genetic Resource Center.

[00:06:48] But there is no international diplomacy required, no rules about what countries can and can't use it.

[00:06:56] There are seeds from North Korea that sit next to seeds from South Korea, and close to seeds from the United States. There was a quote I liked from a spokesperson for the seed vault, a man called Brian Lainoff, who said "the seeds don't care that there are North Korean seeds and South Korean seeds in the same [aisle](#)¹⁶. They are cold and safe up there, and that's all that really matters."

[00:07:23] In the [era](#)¹⁷ of countries viewing each kind of international agreement as a way to play political games and get an advantage over another country, I think this is a pretty special thing. Of course it's in the advantage of every country for us to preserve the diversity of seeds around the world, but making this happen is less obvious.

[00:07:49] You could say that it's obvious that every country should work together to solve global health problems or to reduce the impact of climate change, however we

¹⁶ a long, narrow space, normally between seats or shelves

¹⁷ period of time



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all know with both of these examples that just having the right [intentions¹⁸](#) isn't always enough.

[00:08:08] To achieve what the Svalbard Global Seed Vault has done is very impressive, and it's worth just spending a few minutes thinking about how it has managed to do it.

[00:08:21] Firstly, it's partly managed by the Norwegian government, and Norway has proved to be a country that is sufficiently wealthy, isolated, and independent that it doesn't need to be entering into agreements with other countries and playing global politics.

[00:08:41] Secondly, the location of the vault helps. You heard at the start that it is deep in the Arctic [Archipelago](#), but it's worth stressing just how far that is away from anywhere.

[00:08:56] It's over 2,000 km from Oslo, 800 km north of the [northernmost¹⁹](#) part of Norway, and it's only about 1,000 km from the North Pole.

[00:09:10] The distance from Oslo to the global seed vault is only just less than the distance from London to Greenland, so that gives you a sense of quite how isolated it is.

¹⁸ things that you want to do

¹⁹ furthest north



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[00:09:25] Being that close to the North Pole, in summer there almost isn't a night, and in winter, night never really ends. The tiny island that it is on is home to only around 2,000 people.

[00:09:41] The vault itself is cut right into a mountain, and it is about 150 metres underground. There's a large tunnel that leads to it, and it consists of three rooms which are filled with boxes of seeds.

[00:09:59] Being almost at the North Pole, and [submerged²⁰](#) under a large icy mountain keeps it pretty cold, but the temperatures are monitored closely to make sure that it's always minus 18 degrees Celsius in the vault, to keep the seeds frozen.

[00:10:17] So, the fact that it is so isolated, completely in the middle of nowhere, and that it's on an island with polar bears means you don't have to invest in the same kind of security that you would do if the vault were in the middle of a populated country.

[00:10:36] And since it opened, in 2008, this seed vault has been used by almost every country in the world. It is able to store 4.5 million varieties of seeds, and each variety can have 500 different seeds, so there is space for 2.5 billion seeds.

[00:10:58] The good news is that it's not full yet.

²⁰ underneath something else



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[00:11:02] It currently holds just under a million types of seeds, from [bog standard](#)²¹ things like major varieties of corn or wheat, through to [obscure](#)²² types of seeds from countries all over East Asia, South America, and Africa. Seeds that might not be in danger now, but if there's a drought or an [infestation](#)²³ of pests, and if the original [backups](#) in those countries are lost, for whatever reason, then the Svalbard Global Seed Vault is the world's insurance policy for those seeds.

[00:11:40] And to make things even better, and to remove any [barriers](#)²⁴ that a country might have from depositing seeds with the Global Seed Bank, it's completely free for countries to deposit seeds there. The Norwegian government and The Crop Trust pay for the operational costs of keeping the seeds, the countries don't pay a penny.

[00:12:05] There is, however, some bad news, and some problems that are lying ahead for the Global Seed Bank. Ironically enough, one of the problems that the vault is facing is one that the vault was created, at least partially, to protect against - global warming.

[00:12:25] The seed bank needs to be kept at -18 degrees for the seeds to keep, for them to be preserved.

²¹ completely normal

²² not known to many people

²³ a situation where there are too many insects, ants etc

²⁴ obstacle, things that would stop you doing something



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[00:12:33] The area around Svalbard is heating as the ice melts, and the vault is having to deal with more and more pressures to keep the seed bank at the same, freezing temperature.

[00:12:45] It's a cruel [twist of fate](#)²⁵, but a reminder of how these challenges affect us all.

[00:12:52] Like an insurance policy, the aim for the Svalbard Global Seed Vault is for it never to need to be called upon, never to be used. It exists as a backup of a [backup](#), something to be turned to after all other possibilities have been [exhausted](#)²⁶.

[00:13:10] It has been [dubbed](#)²⁷ the Noah's Ark of seeds. We just have to hope that the tide never rises, and we don't have a need for that particular boat.

[00:13:21] OK then, that is it for this episode on the Svalbard Global Seed Vault.

[00:13:28] It's the story of what happens when countries [collaborate](#)²⁸ for something that is in everyone's benefit, and the story of what can be achieved when we actually do so. It's an example for us all, and there are a lot of learnings that we can all take from its story.

²⁵ something that happens by chance, often in an unfortunate or strange way

²⁶ used up

²⁷ called by people

²⁸ work together



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[00:13:48] As always, I would love to know what you thought of this episode.

[00:13:52] If you have ever been to the Svalbard Global Seed Vault, I would love to know what your experience was. It's not a tourist attraction, it's a working vault, but the island does sound absolutely amazing.

[00:14:05] Or even if you haven't been there, please do get in touch - I'd love to hear from you.

[00:14:10] The email is hi hi@leonardoenglish.com.

[00:14:16] You've been listening to English Learning for Curious Minds, by Leonardo English.

[00:14:21] I'm Alastair Budge, you stay safe and I'll catch you in the next episode.

[END OF PODCAST]



Key vocabulary

Word	Definition
Archipelago	a small group of islands
Backup	something that you use to replace something else if it is lost or damaged
Off	incorrect
Backing up	see 'backup'
Crops	plants grown by farmers
Mammoth	very large
Extinguished	disappeared, extinct
Reform	improvement by making changes
Cultivated	grown
Effective	in practice
Monoculture	growing just one crop
Unforeseen	not predicted



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Gene bank	a repository that preserves genetic material
Nuclear holocaust	an event where a nuclear explosion destroys large parts of an area
Decimated	destroyed
Aisle	a long, narrow space, normally between seats or shelves
Era	period of time
Intentions	things that you want to do
Northernmost	furthest north
Submerged	underneath something else
Bog standard	completely normal
Obscure	not known to many people
Infestation	a situation where there are too many insects, ants etc
Barriers	obstacle, things that would stop you doing something
Twist of fate	something that happens by chance, often in an unfortunate or strange way
Exhausted	used up
Dubbed	called by people



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