



Prize Winner

Science Writing

Year 3-4

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Food of the future

By Grace Bloor

Introduction

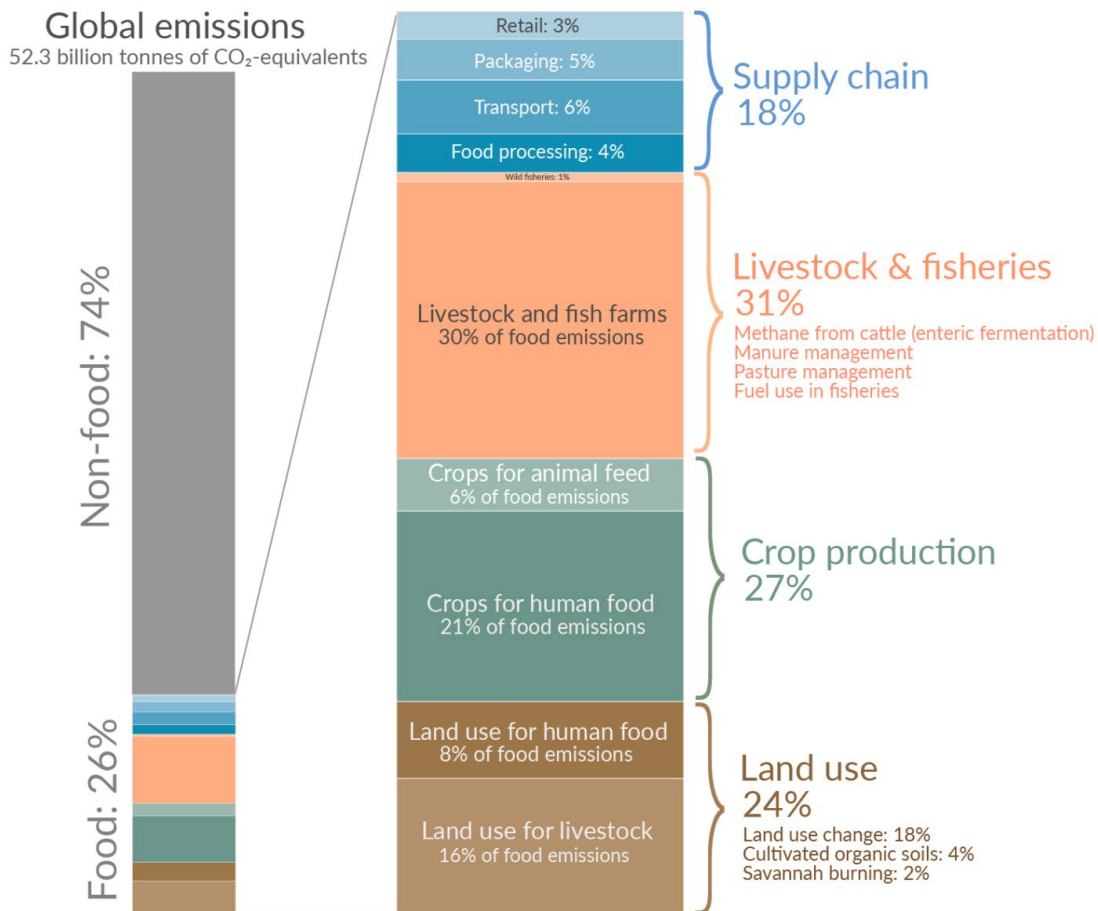
With more people exploring sustainable living and climate change there is a lot of interest in future food sources. Many popular food sources come at a big price for the planet and contribute to greenhouse gas emissions. With the population rapidly growing, The Food and Agriculture Organization estimates that by 2050 the world's population will reach 9.1 billion people, this means food production will need to increase by an estimated 70%.

How can the planet cope with such a big increase? We must find more sustainable food sources or future food. What does food of the future look like you may ask? Many people are already eating more plant based foods such as beans, lentils, tofu and plant based meats but there are scientists working on finding new protein sources like lab grown meat, fish and milk. We will explore lab grown foods and what we might be eating in 2050.

The impacts of our everyday food has on our environment

Our impact on nature is very important because it changes our planet's future which is why we must find alternative food sources besides meat, fish, dairy and eggs. By eating so many animal products we are increasing greenhouse gas emissions and contributing to global warming. Food production is responsible for around 26% of all greenhouse gas emissions and Livestock and fishing account for 31% of greenhouse gas food emissions. Many of the emissions are methane from cattle used for meat and dairy.

Global greenhouse gas emissions from food production



Data source: Joseph Poore & Thomas Nemecek (2018). Reducing food's environmental impacts through producers and consumers. Published in *Science*. Licensed under CC-BY by the author Hannah Ritchie (Nov 2022).

Image taken from <https://ourworldindata.org/food-ghg-emissions>

Many people around the world rely on fish as their protein source. This is leading to the oceans being overfished at unsustainable levels.

The IUCN red list of Threatened Species extinction risk status shows that many species of fish, sharks and other marine species are at risk of extinction because of overfishing.

Farmed fish produce large amounts of waste harming the environment and other fishing methods damage by catching other marine life by accident, nets, hooks and equipment lost or left behind.

Laboratory grown milk

Lab grown milk has been in creation since 2013 and is set to be available in supermarkets by 2024. Scientists claim it tastes the same and will have the same nutritional value as cows milk but with less damage to the planet.

Scientists use yeast to create proteins that make the milk. The proteins are nature-identical to the ones that form in the cow's stomach. The process uses a lot less water and land than traditional farming and because there are no cows used there are no methane emissions.

Laboratory grown meat

Laboratory grown meat or cultured meat as it is also called, is being created using animal cells. Scientists take stem cells from a live animal, they are then cultivated and placed in a large tank called a bioreactor. Muscle, fat and connective tissue grow and are then used to form the meat. There are around 60 companies trying to make different types of laboratory grown meat from chicken to kangaroo.

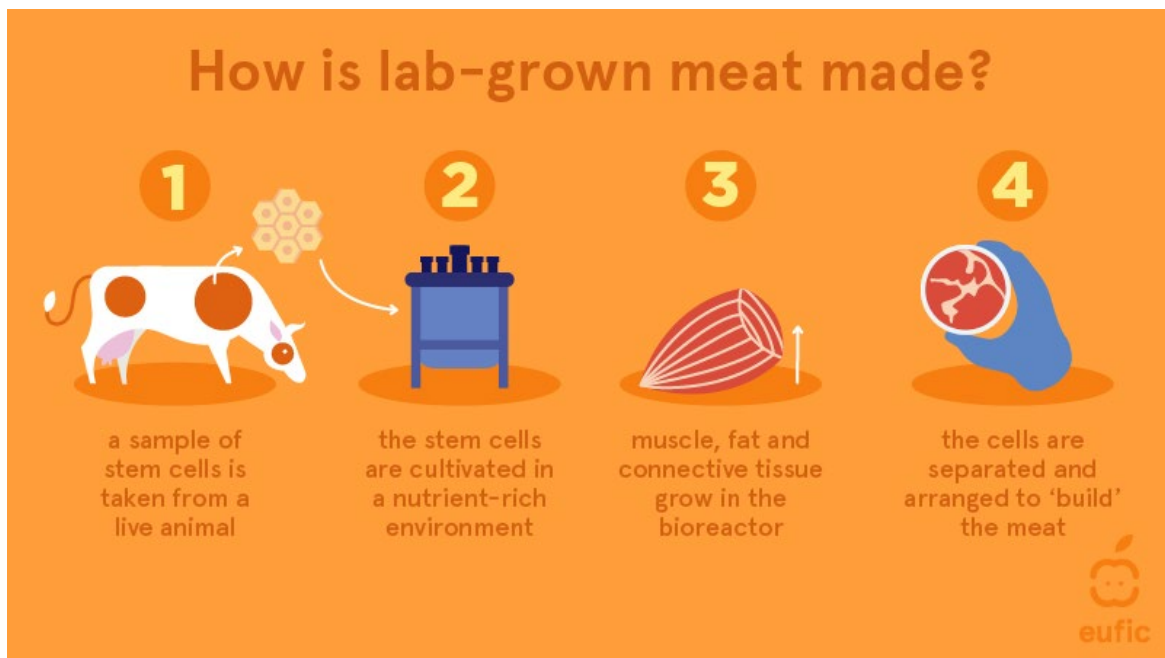


Image taken from <https://www.eufic.org/en/food-production/article/lab-grown-meat-how-it-is-made-and-what-are-the-pros-and-cons>

Laboratory grown seafood

A German seafood company called Bluu seafood is one of many companies investing in laboratory grown fish. They take a biopsy from live fish and then use the cells to create their product in the lab. They only need their initial samples and everything after that is self-sufficient. This means there is no need for fish farms making it more sustainable and cruelty free.

Is laboratory grown food the future?

Some studies have shown that lab grown foods may create large levels of CO₂ emissions over time. It also requires a lot of energy to create and unless the energy used is renewable like solar or wind it could cause more pollution than it stops. For lab grown food to be sold in supermarkets people need to buy it and some people do not like the idea of food grown in a

lab. Because it is still very new, the impact it could have on people's health is still being tested and they still have to pass regulatory testing to be approved for sale. Animal cruelty could also be a problem. To get the cells to produce lab grown meat and fish they need biopsy samples taken from live animals. They use large needles and it is a painful process for the animal.

Conclusion.

In conclusion, Lab grown food could solve many problems for the planet and its growing population but it could also cause some more problems for our environment. With so many companies investing in creating lab grown foods they are likely to be on our supermarket shelves in near future. By 2050 you might have lab grown food on your plate.

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