

## GLOBAL FACTS ON WORLD FOOD AND AGRICULTURE

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### **Growing population**

The world population is growing. According to the UN, around 9.7 billion people will live on Earth by 2050 – two-thirds of them in cities. To feed this population, agriculture must produce about 50% more food than in 2012, according to FAO. Products must remain affordable and reach consumers in good quality. 2.3 billion people suffer from moderate or severe food insecurity. Up to 720 million people go to bed hungry every day. FAO therefore calls on all countries to ensure sufficient supplies of affordable and healthy food. [1] [2]

### **Threat from climate and pests**

Besides population growth, climate change is the second major challenge. Extreme weather events are increasing. Heatwaves, droughts, and floods will become more frequent. Agriculture is both a victim and responsible for 22% of global greenhouse gas emissions. Climate change also increases pest pressure. [For example, locust swarms in 2020 caused food shortages for 25 million people in East Africa alone, according to UNICEF.](#) [3] [4]

### **Threat to food safety**

Contaminated food poses a serious risk. Recently, baby food had to be recalled due to cereulide toxin produced by *Bacillus cereus* bacteria, which can cause meningitis in newborns. Plant diseases are also a threat. The WHO warns about mycotoxins produced by molds. Fungicides help reliably control such risks. [5]

### **Scarce water supplies**

Agriculture already uses 72% of extracted freshwater. The UN expects five billion people to live in water-scarce countries within 30 years. Improving water efficiency and heat tolerance of crops is essential. The industry invests billions in plant breeding and crop protection. [3] [6]

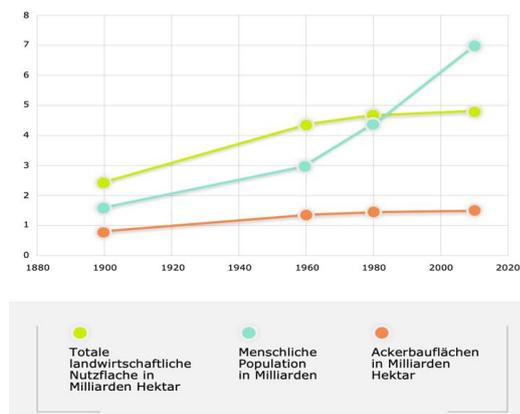
### **Limited agricultural land**

Over 40% of soils are already degraded. Agricultural land cannot be expanded further without releasing massive amounts of CO<sub>2</sub> from forests and wetlands. Urs Niggli notes that even with rising yields, an additional 200 million hectares of cropland and 400 million hectares of grassland would be needed by 2050 – about one and a half times the size of the EU. [7] [8]

## Increase in productivity allows second and third sectors to grow

Without increased productivity, 370 million more hectares of land would be used for agriculture today.

This corresponds to 60 percent of the Amazon rainforest.



Since the 1960s, there has been a decoupling of population growth and agricultural land: Since then, 80 percent more food has been produced on practically the same amount of land, making it possible to feed eight billion people instead of just three billion. This is due to the findings of agricultural science and an agricultural sector that makes use of them. More productive agriculture also compensates for the migration of labour to the second and third sectors. Thanks to progress, they can be provided with enough food without having to work in the fields themselves. [9] [10] [11]

## Global responsibility

In view of the global challenges facing agriculture, Switzerland must not opt out of production. An organic and import strategy is fraught with ecological question marks and must also be rejected on ethical grounds. The burden on the environment would be outsourced to the countries of origin of the imports. Switzerland has a global responsibility and must be able to supply itself to a large extent. This can only be achieved with a further increase in productivity of around 30 percent. [1] [11]

## Resource-efficient agriculture

A further increase in productivity is possible using all available technologies. Switzerland has excellent conditions in the field of basic and industrial research. New technologies such as digitization or improved breeding with CRISPR/Cas offer huge opportunities. Green genetic engineering has been used for over 30 years in many regions of the world (e.g. USA, Latin America, numerous countries in Asia) and has a long tradition of safe use for the environment and humans. A global meta-study has shown that the average yield benefits of green genetic engineering are about 22%. Pesticide use, on the other hand, can be reduced by an average of 37%. [Sustainable agriculture is resource efficient in a holistic way](#). The goal is to increase yields with fewer inputs (labor, capital, land) and only the least possible environmental impact. [12] [13] [14] [15] [16]

**Only thanks to technological progress and modern crop protection will we be able to conserve our resources in the future and at the same time feed more and more people in a healthy and affordable way.**

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