



5. Critical developments



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Critical developments in our environment are equally critical developments for us humans. Without sufficient natural habitat, there can be no life on Earth that is fit for humans.

Some illustrative examples from a long list include:

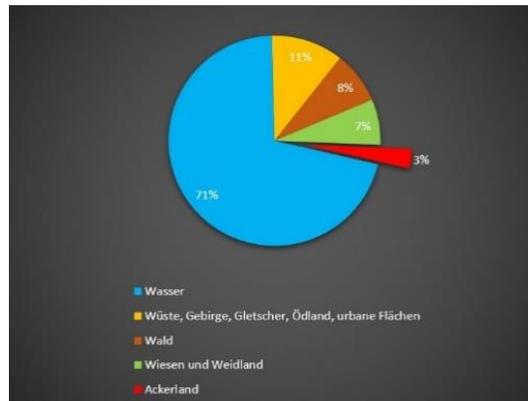
- **In just 200 years, the world's population has grown from 900 million to nearly 8,000 million people.**
By the year 2100, according to the UNO an estimated 10,000 - 11,000 million people are to live on our Earth.



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- **The exploitation of valuable mineral resources and the overfishing of the oceans are progressing without restraint, regardless of the legitimate needs of future generations.**
The extraction of raw materials also causes major environmental pollution.
- **In the past 150 years, almost half of the fertile soil on Earth has disappeared.**

Our Earth - Available agricultural land
Source: UN - World Prospects: The 2015 Revision



- Every day, about 100 living species die on our planet.**
FAO [Food and Agriculture Organization of the United Nations] launches the first-ever global report on the state of biodiversity that underpins our food systems.
[State of the World's Biodiversity for Food and Agriculture](#). 2019
- Waste such as plastic, pharmaceutical products, pesticides, etc. are spreading in nature across the globe and increasingly entering the food chain, even food we humans eat.**
Thousands of new substances are synthesised annually and many of them are released into the environment, with mostly unknown effects on plants, animals and humans.
- We pollute drinking water worldwide with serious consequences for millions of people.**
Around 2,000 million people currently have no access to clean drinking water.

Our Earth - Percentage of salt water, fresh water and drinking water



- Our protective shield against harmful solar radiation - the ozone layer - has already been weakened.**
- In the past 200 years, 90 percent of the moors have disappeared.**
Although they make up only three percent of the land area, they store more CO₂ than all forests together. The current global drainage of the moors produces a CO₂ output that makes up about 5 percent of the CO₂ emissions caused by humans year for year.

- **We are changing the climate, with uncertain consequences for both us humans and nature.**



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- **Globally, the proportion of livestock has increased to 65% and that of us humans to 32%. The proportion of all wild animals, however, has dropped to 3%.**
[Percentage of biomass of all vertebrates].
- **70 % of all birds alive at this moment are poultry - mostly chickens for us to eat.**
No other consumer product in the world requires more land than the production of meat and milk. Although only 17 percent of humanity's calorie requirement is from animals, they need 77 percent of the global agricultural land.



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A much-discussed concept in science:

The nine Planetary Boundaries - A safe operating space for humanity

[Stockholm Resilience Centre](http://www.stockholmresilience.org/)



- If we exceed these boundaries, abrupt or irreversible environmental changes could occur.
- If we do not exceed them, humanity will be able to evolve and thrive over generations.

We have already passed four of the nine boundaries:

[marked in red]

1. Climate change
2. Biodiversity loss and species extinction
3. Degradation of the ozone layer
4. Acidification of the seas
5. Nitrogen and phosphorus flow into the biosphere and oceans
6. Altering ecosystems
7. Use of fresh water
8. Exposure of the atmosphere with aerosols
9. Chemical pollution and entry of new substances

We also do not know

- whether the changes on Earth caused by our pollution will continue to progress *gradually*, or
- whether individual systems such as the climate or the Gulf Stream in the Atlantic will suddenly and unexpectedly tip over.

The question is not *how?*

The question is, *when* do we start to live sustainably?

