

THE ENVIRONMENT

People live on the **Earth**. It is **the only planet** where they live. Maybe there are some other planets where we could live but we **do not know how to get there** so we had better **take care of our planet** as well as we can. There are several problems that can make life on the Earth worse or impossible. Here are some of the **environmental problems** the Earth is facing at the moment.

PROBLEMS

Climate change

Climate change is another expression for **global warming**. The climate of the Earth changes **naturally** because of changes in the **amount of solar energy** that our planet receives. There have been seven **ice ages** during the last 650,000 years. The last ice age ended about 7,000 years ago. However, the **recent increase in average temperature** is almost certainly the **result of human activity**.

The planet's average temperature **has risen by almost one degree since the 19th century** and most of this warming happened **in the last 35 years**. The most probable cause is the **greenhouse effect**. There are certain **gases** in the atmosphere that **block heat from escaping** – like glass in a greenhouse. Some of these gases are **methane, carbon dioxide, and water vapour**. The burning of **fossil fuels** such as coal **has increased the concentration of carbon dioxide (CO₂)**.

Global climate change has many **negative effects**. Scientists think that global temperatures will continue rising in the future. There are going to be **more floods and droughts** and hurricanes are going to be more intense. **Sea levels are going to rise** and some **coastal areas will be flooded by water**. The Arctic Ocean will probably be **ice-free in the summer**. Some **tropical diseases** will spread to the newly warmed places.

Deforestation

One of the dangers for our planet is deforestation. People are **cutting down too many trees** and do not give the forests enough time and space to grow again. Forests still cover **about 30% of the land area** but they are **disappearing fast**. Between 1990 and 2016, **more than 1 million square kilometres of forests was destroyed**.

Forests are important for many reasons. Trees **produce oxygen** which people and animals breathe. They also **absorb some of the greenhouse gases** and **slow down the warming** of the Earth. The forests – especially the tropical rainforests – are also home to many **endangered species of animals**.

Why do people cut down so many trees? They use **the wood to make furniture and paper**. They also use it to **make fire** and heat their homes. Often, people do not need the wood from the trees as much as they **need the land on which the trees grow**. They want to use the land as **farmland**. Some forests are not destroyed by people but by **wildfires**.

The largest rainforest in the world is the **Amazon Rainforest**. Its area is **more than 5 million square kilometres**. In the last 50 years, **about 17% of the Amazon Rainforest was destroyed**.

Extinction

Extinction is the **dying out of a species**. It is a **natural process** but it is happening **much faster and much more because of humans**. Some species **have already been made extinct** by people, for example **the dodo or the Tasmanian tiger**. Many well-known species of animals are **endangered** today, for example **pandas, tigers, gorillas, and orangutans**.

There are several ways in which people cause or **speed up extinction**. They (we) can **kill too many members of the species**: that is what happened to the dodo. Today, **hunting of endangered species is illegal**. However, some people do it anyway – for money or for “fun”. These people are called **poachers**. The destruction or pollution of a place where a species lives can also kill it pretty fast.

The extinction of many species of animals – for example the extinction of bees – could be **dangerous for all life on Earth**.

Overpopulation and overconsumption

Ten thousand years ago, there were **only a few million people** on Earth. In about 1800, there was **1 billion** of us. Today, there are **about 7.7 billion people**. It could be **almost 10 billion by 2050** and **over 11 billion by 2100**. Most of this growth will happen in **very poor countries in Africa**. On the other hand, the population of many **rich countries**, for example Japan, is getting **smaller and older**.

A related and perhaps even greater problem is **overconsumption**. According to Jared Diamond, people in **developed countries** in Europe, North America and parts of Asia consume **32 times as much energy and resources and produce 32 times as much waste per person** as people in **developing countries**.

This consumption could be reduced without reducing the quality of life by **using the resources more effectively**. On the other hand, poor people definitely **do not want to stay poor forever** (and who can blame them?) and if they become richer, their consumption rises.

The population growth has already **slowed down a lot** when compared to the situation 50 years ago. People in crowded countries like Bangladesh have much **smaller families than in the past**. In 1970, a woman in Bangladesh had 7 babies on average. Today, it is just 2.2.

According to Hans Rosling, a Swedish professor of global health, **the most important factors** in slowing down the population growth are **education of women, stability and relative economic prosperity, and survival of children** (because when a poor family knows that its children will probably grow up to be adults, they do not have so many of them).

If everything goes well, the growth of human population will **stop at 11 billion**. The best advice in this difficult situation may be the name of Hans Rosling's documentary on population growth (available on YouTube): **Don't panic!**

Pollution

Pollution is the process of making land, water, air or other parts of the environment **dirty**. It has serious impact on the planet and especially on the **people who are living in very polluted places**. Their **health is worse** and their babies **might be born with defects and lower intelligence**. There are several kinds of pollution and each of them brings its own problems.

Water pollution

Water pollution happens when **dangerous chemicals** get into water. It can be **pesticides, fertilizers, mercury, lead**, and other things. Some people also like to pee into water but unless it is a public swimming pool, it probably doesn't count. Water pollution can **kill fish and other creatures** that live in water. It can also kill or make seriously ill the animals and people who drink it. **More than 1 billion people do not have clean water to drink**. There is also a lot of **plastic** in water, especially in the oceans. The plastic can get into the bodies of animals and kill them.

Air pollution

Air pollution happens when **dangerous chemicals** get into air. A very common source of air pollution is the **burning of fossil fuels**. Another common type of air pollution are **dangerous gases** from factories. **Smoking** also pollutes the air. The greenhouse gases that cause global warming are also part of air pollution. Air pollution can cause serious **respiratory diseases**. If you want to have a better understanding of this problem, just move to Ostrava.

Land pollution

Land can become polluted by **household garbage** and by **industrial waste**. The waste can stay in landfills for thousands of years and be dangerous for the people living next to them. Or the chemicals can **get into soil** and pollute food and water.

Noise pollution

Too much noise is also considered pollution. The source of the noise can be **planes, industry, or loud-music-loving idiots** living next door. Noise pollution can cause serious **health problems** such as **high blood pressure**.

Light pollution

Artificial light makes the streets safer and helps you read and study all night. However, lights have **changed the way that days and nights work**. This can have negative effects on some kinds of animals. It also makes it difficult to watch the stars. Producing light also needs **a lot of energy** – lighting is responsible for about one-fourth of all energy consumption.

DISASTERS

If you are still feeling optimistic about the future of mankind, here are some **natural disasters** that happen from time to time. They are usually not people's fault although people can often do things that make these disasters worse.

Earthquakes

An earthquake is a period of **powerful shaking of the ground**. Earthquakes often take place in areas where **two parts of the earth are touching each other**, in places like California or Japan. One of the most famous earthquakes of all time happened in **San Francisco in 1906**. The deadliest recent earthquake took place in **Haiti in 2010**.

Floods

Floods happen when **lots of water gets to places that are usually dry**. River floods destroy the cities and villages located next to the river. The **deadliest floods** in history took place on the **Yellow River in China**. In the Czech Republic, there were **big floods in Moravia in 1997**.

Droughts

A drought is the **opposite of a flood**. It is a period of **dry weather**. It can **leave people without water** and it can kill all plants and create a period of **hunger**.

Tsunamis

A tsunami is a **large wave** that hits the coast. They are created by **undersea earthquakes**. Most tsunamis happen in **the Pacific Ocean**.

Volcano eruptions

Volcanoes are mountains from which **hot lava** erupts from time to time. They can be active or sleeping. The world's largest active volcano is **Mauna Loa in Hawaii**. The largest active volcano in Europe is **Mount Etna**, which is located in Sicily.

Hurricanes, Typhoons, Cyclones, Tornadoes

Hurricanes are **strong winds**. They occur mainly in the **West Atlantic Ocean**. When they hit the mainland, they **destroy cities and kill people**. In 2005, a really strong hurricane called **Katrina** hit **New Orleans** in the USA. There are similar wind in other parts of the world too. Strong winds in the **Northwest Pacific** are called **typhoons** and strong winds in the **South Pacific or Indian Oceans** are called **cyclones**. Strong dangerous winds that arise **over land** are called **tornadoes**.

Famines

Famines are periods where there **isn't enough food** and many people **die of hunger**. Today, they are rare but they were **common in the past** and happened regularly **every few years**. They can be the result of a **drought or some other catastrophe** but they can also be **created by people** to kill other people, like **the Russians did to Ukrainians in the 1930s**.

Epidemics

An epidemic happens when **a lot of people become ill at the same time**. In the middle ages, **plague epidemics** were common. The **Spanish flu** epidemic that happened in 1918 **killed more people than World War One**.

GOOD NEWS

In spite of all the problems and disasters listed above, the world is probably **better today than at any point in the past**. More than 1 billion people **escaped extreme poverty** in the last 25 years. There are **fewer nuclear weapons, fewer dictatorships, and fewer wars** are going on.

Medicine has made **great advances** and people are living **much longer**. For most of human history, the **average life expectancy was about 30**. Even in the most developed countries, a **third of children used to die** before the age of five. For most of human history, **famines** were common all around the world. Today, they only take place in **very poor countries when there is a war**.

Two thirds of the people in the world are living in **democracies** – much more than at any point in the past. Much more people can **read and write**. In the 19th century, people in Europe and America worked **more than 60 hours a week**. Today, they work **fewer than 40**. In the past, housework took **about 60 hours a week**. Today, it is **about 15**.

None of this is reflected in the **news**, which have become **more pessimistic** than in the past. This is dangerous because it can lead to **fatalism or radicalism**. If people become too pessimistic, they usually give up, even though the problems may be solvable. As Steven Pinker says, it is better to see the dangers listed above as **problems to be solved** rather than apocalypses that are ahead of us.

WHAT CAN YOU DO?

The solutions to these large problems have to be **systemic and coordinated**. However, everybody can do **a little bit to help**. Here are a few tips.

Recycling

A lot of materials can be recycled. In almost every place, you can find **special containers for paper, plastic, and glass**. The yellow container is for plastic, the blue container is for paper, the green container is for glass. They are soon going to appear even in our school, I am told.

Reducing consumption

If you don't buy something, you don't even need to recycle it later. Buy things with **minimal packaging**. Don't use **plastic bags** – take your own cloth bag instead. Some authors recommend buying **local food** rather than food that has to be transported for thousands of kilometres.

Save **water, energy and electricity**. Buy machines that use **less energy**. Turn the heating **down by one degree**. Take a **shower instead of a bath**. Drink **tap water**. Don't **boil** more water than you need. Put the **lids** on pots when you are cooking. When you are leaving the room, **turn off the lights**.

You can also find **new uses for old things** – when a washing machine stops working, your pet rabbit can still live in it quite comfortably.

Eating less meat

The meat industry contributes a lot to global warming. Cows **fart** all the time and that **releases methane**, which is a carbon gas. They also **need a lot of food and water**. You don't have to be a vegetarian or a vegan, but eating less meat can definitely help. Moreover, it is **healthy**.

Using public transport

Cars are one of the main sources of the gases that cause climate change. If you aren't in a hurry, you may **take a bus or a train** instead. Or you can **walk or cycle**. If you are buying a car, think about **how much fuel** it is going to consume.

This overview is largely based on the following articles and websites:

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- https://en.wikipedia.org/wiki/List_of_environmental_issues

Climate change

- <https://climate.nasa.gov/evidence/>

- <https://climate.nasa.gov/causes/>
- <https://climate.nasa.gov/effects/>
- <https://www.nationalgeographic.com/environment/global-warming/global-warming-effects/>

Deforestation

- <https://www.nationalgeographic.com/environment/global-warming/deforestation/>
- <https://www.worldwildlife.org/threats/deforestation>
- https://en.wikipedia.org/wiki/Amazon_rainforest

Extinction

- <https://en.wikipedia.org/wiki/Extinction>
- <https://www.britannica.com/list/10-of-the-most-famous-endangered-species>

Overpopulation and overconsumption

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- <http://www.bbc.com/earth/story/20160311-how-many-people-can-our-planet-really-support>
- <https://bigthink.com/robby-berman/hans-rosling-had-a-way-of-showing-the-meaning-of-data-well-miss-him>
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Pollution

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- <http://eschooltoday.com/pollution/land-pollution/types-of-land-pollution.html>

Disasters

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- <https://en.wikipedia.org/wiki/Holodomor>
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Good news

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What can be done

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- <https://www.betterhealth.vic.gov.au/health/HealthyLiving/climate-change-what-you-can-do>
- <https://www.express.co.uk/life-style/life/851038/recycling-waste-container-rubbish-tips-Rachelle-Strauss>
- *Earth in Danger*. An article from www.spoton.de from June 2009. © Macmillan Publishers Ltd 2010