

2nd Online article

Climate change and sustainability education with Minecraft

At the project "**SUSTAIN** / Biodiversity Education for Sustainable Development", we are concerned with the communication of topics such as sustainability, biodiversity and air pollution. Here, of course, current news from politics and society are of high importance. The Paris agreement for climate protection concluded in 2015 committed the about 197 signatory countries to limit global warming to 1.5° Celsius compared to pre-industrial times. According to the latest report of the Intergovernmental Panel on Climate Change (IPCC), this target can no longer be met. That has now become clear. Nevertheless, there is also good news. The European Commission has set the goal of **making Europe climate neutral by 2050**. Europe would thus be the first climate-neutral continent. Various measures have been defined for this ambitious goal.

The first stage goal was determined with different resolutions and measures for 2030.

For example, targets include increasing organic farming by 25%, restoring at least 25,000 km of rivers to free-flowing, protecting at least 30% of the EU's land area and 30% of its seas, and incorporating biodiversity reporting into businesses and directing investments toward greener options. It also aims to reduce greenhouse gas emissions by 55% compared to 1990 levels.

These measures are necessary to give **ecosystems** and **biodiversity** in general in Europe enough suitable space to regenerate. Because currently, many species and ecosystems that need to be protected, such as peatlands, are in poor or very poor condition. However, thanks to ongoing efforts to reduce negative impacts on species and ecosystems, such as pollution from pollutants, some areas are showing **signs of recovery**. In addition, both the number and area of protected areas under the so-called Natura 2000 network are increasing in Europe. The Natura 2000 network is an interconnected network of protected areas within the EU that has been established since 1992 in accordance with the requirements of the Habitats Directives. The aim is to protect endangered animal and plant species in their natural habitats across national borders.

In addition, the EU is currently working on a **restoration law** that will not only protect and preserve nature in Europe, but also restore it.

For implementation to succeed, investments and finances must support sustainability. The energy and mobility sectors in particular must find and implement sustainable solutions. The **energy sector** in particular causes the most greenhouse gas emissions in almost all European member states according to an evaluation from 2017, with Germany showing the highest energy consumption.

The largest share of energy consumption is attributable to the manufacturing industry in almost all member states. In addition, the energy sector and the non-industrial sector consume the most water in Germany and the Netherlands. Spain has even higher water consumption overall, but similar to Greece in the non-industrial sector.

In order to protect the climate and biodiversity in the long term, the **education sector** is of course also of crucial importance. Children as well as adults must continue to be educated about climate change, biodiversity loss and air pollution in order to be motivated and empowered to think and act sustainably.

Against this backdrop, the **SUSTAIN** project aims to engage especially students in the issues of biodiversity and air pollution. The first step was to create a teachers' manual with the necessary background knowledge for the teachers. This has now been completed and translated into all languages of the project. The next step is to create Minecraft worlds for the students, which will provide a stimulating learning environment for dealing with the above-mentioned topics and acquiring sustainability competencies.

The Consortium

