Circular Economy Lab & Observatory

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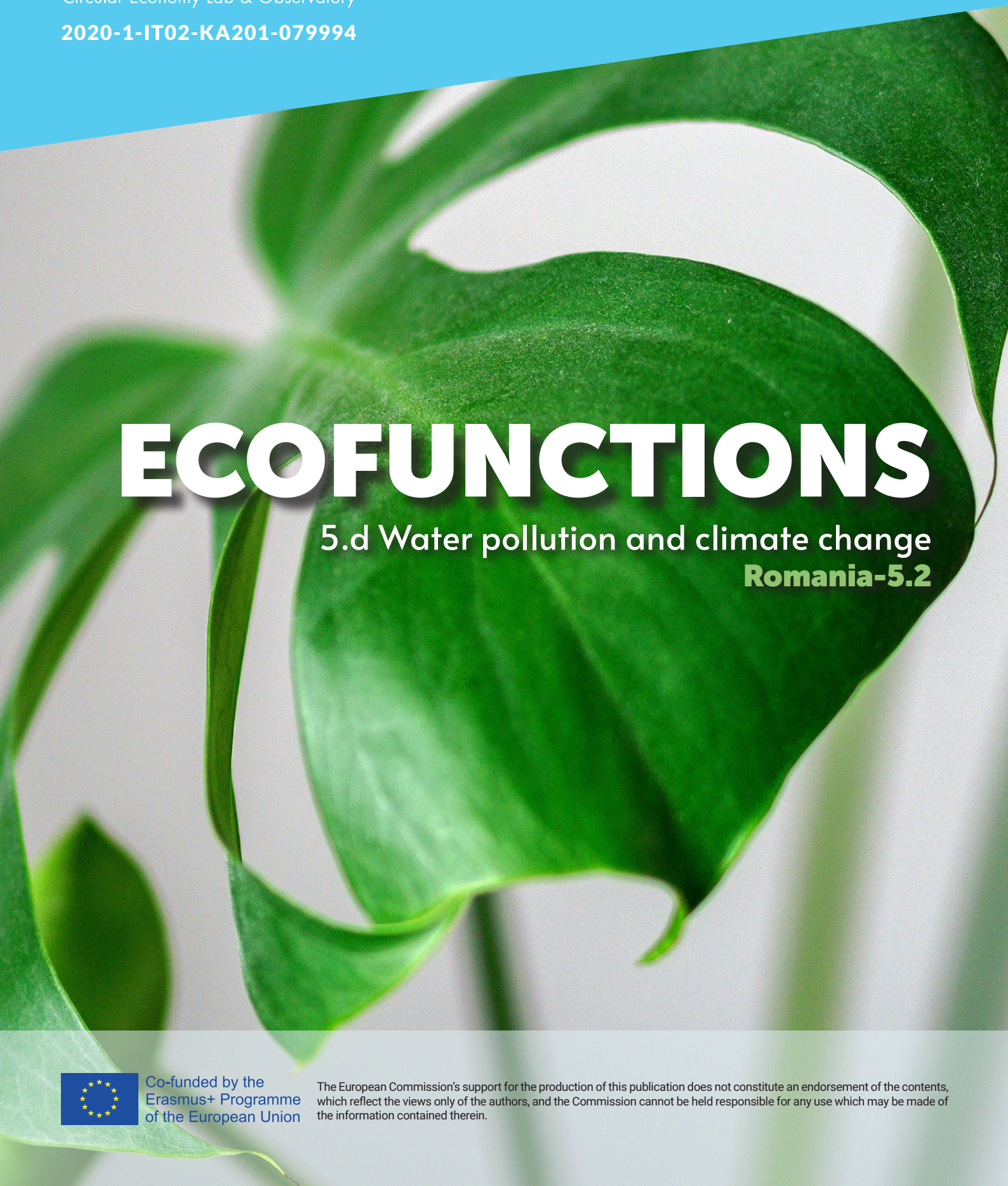

ECOFUNCTIONS

5.d Water pollution and climate change

Romania-5.2

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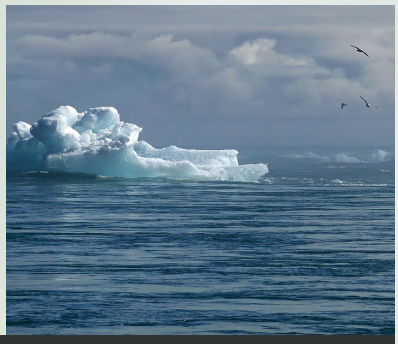
Introduction

Water pollution:

When pollutants or bacteria enter a stream, river, lake, ocean, groundwater, or other body of water, their quality starts to deteriorate, and they become toxic for both humans and the environment. This is known as water pollution.

Natural or artificial activities that affect the structural, chemical, or biological properties of water can have a direct or indirect effect on water quality. The consumption of polluted water is not recommended. Examples of pollution include continuous, as in the case of garbage from cities; or industrial waste that has leaked into the water; accidental, under situations of damage; irregular, occurring at predictable intervals of time.

Particularly vulnerable to pollution is water. More substances can be dissolved by water than by any other liquid on earth, giving it the name “universal solvent”. Kool-Aid and brilliant blue waterfalls exist because of this. It is also the reason groundwater is so easily contaminated. It is easily decomposed and mixed with toxic substances from industries, townships, and farms, which causes water pollution.



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Climate change:
Climate change can refer to both modifications in precipitation and temperature as well as climate change in the context of longer-term average conditions. Climate change is caused by a variety of reasons, including biological processes, variations in the amounts of solar energy that the Earth receives, plate tectonics, and volcanic eruptions.

Certain human activities have been shown to be the main causes of the current climate change, also commonly known as global warming, changes in the weather and temperature variations. These changes could be caused by natural processes like oscillations in the solar cycle. But since the 19th century, human activities—the burning of fossil fuels like coal, oil, and gas—have been the primary cause of climate change. Burning fossil fuels causes emissions of greenhouse gases that act as a blanket around the earth, keeping the sun's radiation and rising temperatures at bay.

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Carbon dioxide and methane are two examples of greenhouse gas emissions that are contributing to climate change. These are generated, for example, when coal is burned, or gasoline is heated to heat a building. Carbon dioxide can also be released during forest and land clearing. Methane emissions are primarily produced by waste landfills. Among the major emitters are energy, industry, transportation, buildings, agriculture, and land use.

Problem's description
a) Water pollution: Since 1970, we have lost 83% of freshwater species populations and 33% of the remaining waterways, which appear to be essential for maintaining life on Earth. Unfortunately, the problem will only worsen as the effects of climate change are "most instantly and painfully felt through water." We function more efficiently in freshwater ecosystems now than ever.

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That can occasionally be affected by nature, such as when mercury contaminates oceans, rivers, lakes, canals, and reservoirs after filtering out of the Earth's crust. However, human activity and its impacts—which are described in more detail below—are the most frequent causes of water that has poor quality.

1. Due to global warming As a result of the decreased oxygen content in the water caused by CO_2 emissions, less oxygen is present in the water.
2. Deforestation Deforestation can decrease water supplies and produce organic waste that serves as a haven for dangerous, microorganisms.
3. Livestock farming, industry, and agriculture. One of the most important contributors to water eutrophication is the chemical discharge from these industries.
4. Garbage and excrement disposal According to the UN, more than 80% of the polluted water produced worldwide makes its way into oceans and rivers.

b) Climate change: Deserts are getting larger and larger as a consequence of climate change, and increasing temperatures and wildfires are becoming more frequent. Arctic ice melting, glacial retreat, and a decrease in sea ice have all been impacted by increasing temperatures in the Arctic. Storms, wildfires, and other weather extremes are becoming more intense as a result of rising temperatures.

Numerous species are being forced to move or go extinct due to the rapid environmental changes happening in the Arctic, coral reefs, and mountains. People are at risk from food and water problems, increased flooding, intense temperatures, an increase in illness, and economic loss due to climate change.

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Conflict and human migration are potential outcomes. Climate change is regarded by the World Health Organization (WHO) as the biggest threat to world health in the 21st century. Some effects will continue for centuries, even if efforts to limit future warming are successful. Sea level rise and warmer, more acidic oceans are two such examples of this. Current climate change includes both the consequences of global warming and the Earth's natural weather conditions.

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Climate change has happened in the past, but the current changes are significantly more severe and not the consequence of natural causes. Instead, they are brought on by the emission of greenhouse gases, principally methane and carbon dioxide (CO_2). Most of these emissions are produced by the use of fossil fuels for energy.

Additional sources include particular industrial processes, farm activities, and deforestation. The Earth's surface is heated by sunlight because greenhouse gases are transparent to it. The gases absorb the infrared radiation that the Earth releases as heat, keeping it close to the surface and contributing to global warming.

Possible solutions
Some Great Ways to Reduce Water Pollution:
1. Use as little plastic as you can.
Due to this difficulty in disintegrating plastic, almost all of the plastic we utilize finds its way into the world's freshwater resources. In order to help the planet become a bit happier and more successful, attempt to use as little plastic as you can. Our rivers and oceans are overloaded with plastic, making it even more difficult to collect and recycle it securely.

2. Reuse something as frequently as you can when it is possible. Try to reuse things as often as you can whenever you purchase something that cannot be recycled, which includes the majority of plastics. When you do this, we will reduce the amount of plastic that ends up in the world's rivers, lakes, streams, and oceans, thereby reducing the amount of plastic on Earth. Use toxic chemicals with extreme caution.

3. There is a major problem with ammonia, chlorine, paint, paint thinner, and several other extremely toxic substances. Consequently, it is crucial to dispose of things in a responsible and safe way. Remember that there are recycling centers and drop-off locations for a safe method of disposal if you have to deal with them. These companies can collect old paint, used motor oil, and other chemicals and recycle them more safely. We now have a variety of alternatives since companies are selling less harmful cleansers and even insecticides that degrade naturally.

The reduction of greenhouse gas emissions, which must reach zero as soon as possible, is the fundamental component of all climate change solutions. Increasing the natural capacity of forests and oceans to absorb carbon dioxide can help stop global warming because both play crucial roles in controlling our climate.

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The major strategies for stopping climate change are to put pressure on business and government to:

1. Keep using fossil fuels just like coal, oil, and gas; as more of these are extracted and used, climate change will worsen. As soon as possible, all countries must transform their economies away from fossil fuels.

2. Make investments in green energy. The greatest solution to quitting fossil fuels is to switch to sustainable, renewable energy as our primary energy source. These include innovations in geothermal, wave, ocean currents, and wind energy.

3. Switch to sustainable and environmental transport. Fossil fuels are used in petrol and diesel automobiles, airplanes, and ships. Air pollution will decrease as a result of reducing spending on flying, moving to electric vehicles, and reducing car use.

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4. Help us to keep our houses warm. Buildings should not be dusty and cold because doing so is expensive and uncomfortable during the winter. The government can also provide assistance to homeowners who want to heat their homes in a socially and environmentally responsible manner, such as by insulating the walls and roofs and switching to heating systems instead of oil or gas boilers.

Conclusions

We should be careful about what we do next, think before we throw trash in the environment, and recycle as much as we can for a long time if we wish to improve the environment we live in and protect it from being further harmed. And we should organize more recycling activities and the collection of trash that has been released into the environment in order to speed up this process.

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Another thing we can do for our own benefit is to spread the word about how important recycling is for the environment and how long trash will continue to have an impact on our lives. Climatic changes, wildfires, and heavy rainfalls are just a few examples of such changes that are taking place more quickly than previously thought by scientists.

Modern humans have not seen the observed changes in our global climate before, and some of these changes are irreversible over the next hundreds to millions of years. The organization was formed to analyze the science of climate change and the environment. Scientists are very confident that the increase in global temperatures, which is primarily caused by greenhouse gases produced by human activity, will continue for many decades. The path that future human activities take will impact how significant the impacts of climate change are. More climatic catastrophes and extensive negative effects on our planet will come from increasing emissions of greenhouse gases.

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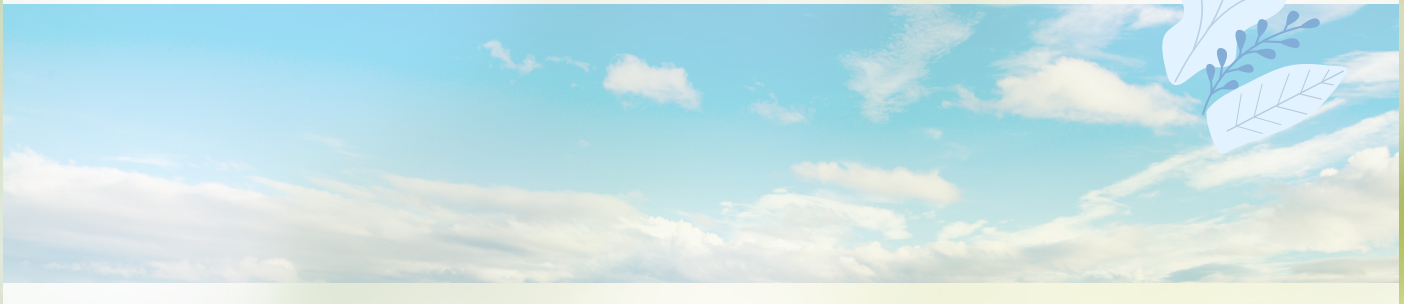
However, the degree to which we produce carbon dioxide will determine these long-term repercussions.

Therefore, some of the worst effects might be avoided if we could lower emissions.



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GROUP

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