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Global Warming: An Ecological And Economic Crisis

In the recent years term “global warming” has become all too familiar for many people. Articles expressing concerns about rapid climate change appear on the news all over the world and a handful of organizations are being created to protect our planet from its harmful impact. As ethical as those actions are, not everyone expresses the same concern towards this problem; moreover, some are even against the movements fighting with climate change. Such people deny the problem of global warming. Such people deem the idea of Earth being in danger of ecological crisis a hoax. Be it because some people didn't experience the changes themselves, have little trust in science because of their religious beliefs or cultural background, or simply aren't concerned because the changes won't affect them right away - those people disagree with climate change activism. Global warming is not only an ecological problem – the changes will affect all our lives in many aspects. Its impact may not be so rapid but long-term effects it can have, may become a catastrophe for our planet. We may not be able to witness it during our lifetime, but future generations will be left to survive in the harsher environment and continue to struggle with more severe climate change we could prevent.

The term “global warming” was popularized by American scientist Wallace Smith Broecker (Broecker, 460–463). Although the scientist brought this topic almost 40 years ago,

humanity will have to face this problem in the current day and age. Winters are gradually becoming less cold while summers get hotter. The main cause of global warming is presumed to be a process called the “greenhouse effect”. The energy emitted by the Sun warms the surface, while some of this energy is reflected back to space or absorbed by clouds and atmosphere, another part of it is being absorbed by the surface. Because the surface is much colder than the Sun, it radiates back into space mainly infrared lights but there are many gases in Earth’s atmosphere that actively absorb those infrared wavelengths, thus keeping the part of the heat that was supposed to be radiated back to space in the atmosphere. The gases that absorb infrared lights are named “greenhouse gases” and the infrared absorption process is what is called “greenhouse effect”. The chemical composition of the atmosphere consists of six greenhouse gases: water vapor (H₂O), methane (CH₄), carbon dioxide (CO₂), nitrous oxide (N₂O), and ozone (O₃).

By itself, the greenhouse effect isn’t a harmful process, it is the reason Earth’s surface stays warm thanks to solar energy, without it life on Earth wouldn’t have a way to exist since the water would exist only in form of ice. But the greenhouse effect is being increased by the human factor at the expense of excessive emissions of greenhouse gases. According to the report of *USA Environmental Protection Agency*, the primary sources of greenhouse gas emissions in the U.S in 2018 were: generated from transportation by burning fuel (28%), electricity production (27%), industry (22%), commercial and residential (12%), forestry (11%) and agriculture (10%). In the sources listed above, greenhouse gas emissions primarily come from fossil fuel burning, livestock, and rice production.

As we can see, every company or farm emits greenhouse gases, accelerating climate change by doing so. The most logical solution would be to reduce emissions and increase the

number of greenhouse gas absorbers, like forests, but it is not an easy task to fulfill. But because of deforestation, there are fewer and fewer forests remaining in the world.

Now, climate change is the most complex environmental problem causing global temperature change that can lead to dreadful consequences. One of which is rising sea levels. Coastal countries are especially vulnerable to having a part of their territories sink while some islands may even disappear from the world map. For example, Pacific islands are currently at the major risk due to being low-lying. The Netherlands is probably the European country under the greater threat of losing a big part of its territory to water, as most of the areas of the country are located below the sea level. However, global warming possesses dangers not just to coastal countries, as the global temperature will rise, it will affect the climate as a whole. This will lead to a shift of climatic zones; insects and pests that could be seen in hot countries would multiply and spread to the north, bringing dangerous diseases like malaria and tropical fevers with them.

Climate change would have a profound impact on nature. Plants and animals are also affected by this; climate change will affect distribution, abundance, and invasions, which can lead to local and global extinction of certain species.

Soil erosion will increase and so landslides will become more frequent. The risk of natural disasters such as cyclones, droughts, fires, floods, hurricanes will become more common even in areas where they weren't under concern (Rossati). Forest fires are a huge ecological threat that can only worsen the global warming, not only do they help the amount of CO₂ and CH₄ emissions increase, but also reduce the number of natural absorbers (Houghton). Agriculture is also under a major risk because of climate change, even a 1°C rise of global temperature can result in major crop losses that will affect international trade. That brings us to another aspect of the global warming problem, the economic crisis. In

agriculture, irrigation measures will need to be taken, therefore the yield and quality of crops will change and ultimately it will affect the livestock. With the decreased yield, the agricultural income will fall which will be a major catastrophe in countries where agriculture is an important sector of the economy and depend on the production of food since the national trade will be affected as well. Climate change will eventually lead to natural resource scarcity; humanity may be short even on freshwater. Moreover, shortage of resources increases the cost of doing business, affect infrastructure and natural ecosystems. Furthermore, urban water management systems will have to be redesigned which will require major expenses, the cost of cooling power plants will increase as well (Tol).

Since the effects of global warming unquestionably affect the whole world, countries have to cooperate to fight with it. Today, the most powerful international agreements in the field of climate change are the *UN Framework Convention on Climate Change (UNFCCC)* and the *Kyoto Protocol* that extends to it.

Overall, climate change had become a major problem and a topic of discussion in recent years. The prognosis for future climate change and consequences related to it clearly highlights the requirement to take necessary measures and intensify efforts to mitigate and adapt to climate change. If no actions will be taken, the world will never be like it once was, not only the ecosystems will be disturbed, and living in certain areas will become dangerous due to the increased risk of natural disasters, but also some countries may simply disappear underwater. It will affect not only ecology but the economy too, natural renewable sources like freshwater will be scarce, living costs will increase and some countries will have a harder time surviving because the agricultural industry that once was flourishing will wither. Global warming is a global problem that needs attention to protect our planet and assure a safe environment thus assuring a healthy future for today's humanity and the next generations.

Works Cited

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