

# To what extent can unsustainable living contribute to global warming?

by 

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### **Introduction**

With a temperature increase in more than 1.5 degrees celsius, it is estimated that the Mediterranean region will have approximately 9% less freshwater accessible.<sup>13</sup> (Silberg, 2016). Currently, the earth's surface temperature is around 0.95 celsius degrees warmer than the 20th century average.<sup>20</sup> (Lindsey and Dahlman, 2020). In the last few years, global temperatures have been consistently among the hottest on record. The reason behind this temperature increase is said to be linked to the mass usage of fossil fuels, single-use plastics, overuse of natural resources, and the accumulation of waste produced by us. This report will be investigating the extent to how unsustainable living affects global warming by discussing the causes mentioned above and providing possible solutions. Thus to fully understand the extent of global warming, we will also be looking at it from a variety of viewpoints, from environmentalists to policymakers.

### **Causes and Consequences**

For every issue, there are causes and consequences. One of the causes of global warming is the colossal amount of 'greenhouse gases' produced and the effects are detrimental in many ways. The mass use of fossil fuels to generate power, run our vehicles, and in many manufacturing processes produce greenhouse gases, such as carbon dioxide. For instance, as the USEPA (2015) stated, factories in the US account for around 22% of the greenhouse gases produced in the country, while transportation accounts for 28.2%.<sup>9</sup> An average passenger car produces approximately 4.6 metric tons of carbon dioxide per year. About 1.4 billion vehicles are used presently, meaning 6.44 billion metric tons of carbon dioxide is released into the atmosphere yearly. These gases form a layer around the Earth's atmosphere, allowing the heat from the sunlight to enter but not radiate back into space, warming up the Earth's surface. If the temperature rises too much, glaciers will melt, increasing the sea level. Animals may be forced to migrate, losing their habitats and the whole ecosystems will be disrupted. Less fresh water will be available, diseases are more likely to spread. Earth will become uninhabitable.<sup>12</sup>

For instance, the earth's temperature rising will lead to the melting of the ice caps, low-lying coastal areas, from Hawaii to Venice, to Philippines and India will be at risk of flooding.<sup>14</sup>. Not only will people living in those areas be affected, animals are also being forced to migrate as they lose their habitats; this could disrupt the balance of the ecosystem. For example, the loss of sea ice forced polar bears around Hudson Bay to relocate to dry land where their main food source, seals, are not available, causing a major decrease in its population. Starving polar bears are also prone to unusual behaviours such as cannibalism. In addition, moving to dry land indicates an increased risk of interaction with humans, resulting in the 110 recent attacks reported. This is unusual as "Hudson Bay has had an impartially peaceful record of co-living with these creatures, with only two evidenced fatal attacks from them since 1717 until now. (Goldenberg, 2013)<sup>10</sup>

Deforestation is another cause of greenhouse gases in the atmosphere. Trees play an important role in reducing the amount of carbon dioxide, a type of greenhouse

gas, in the atmosphere through photosynthesis. However, trees are being cut down and forests are being burnt to clearway for agriculture, logging and other business purposes. The process of deforestation would release carbon dioxide stored in the trees back into the atmosphere, further increasing the buildup of greenhouse gases. A major incidence in recent years was the Amazon fire that intensified during August 2019. It was reported on 20 August that "the smoke plume from the fires caused the sky to darken over Sao Paulo - which is almost 2,800 kilometres away from the Amazon basin on the eastern coast." (BBC, 2019). Approximately 15-17% of the Amazon was destroyed, the home to around 30% of the world's animals was destroyed.<sup>18</sup> (Irfan, 2019). The fire also led to the extinction of 26 animals and plant species. Over 2.3 million animals perished trying to escape the scene. As Yeung (2020) highlights, "Scientists and environmentalists claim that farmers are deliberately starting blazes in an effort to clear land for crops or livestock". Iberto Setzer, a scientist at Brazil's National Institute for Space Research (INPE), estimated that humans intentionally start 99% of all Amazon rainforest fires."<sup>4</sup>

As technology advances, we produce more rubbish every day due to convenience - excessive packaging, plastic shopping bags, takeaway paper cups and containers and many more. This accumulates to up to 2.01 billion metric tons of rubbish each year. They vary from plastic bottles, which takes up to 450 years, plastic bags that take 10-20 years, and fishing lines that take 650 years to fully decompose.<sup>19</sup> (TX, 2013). This contributes to the problem of global warming as methane, another type of greenhouse gas with an unpleasant odour may be produced during the process of decomposition. Methane is the predecessor gas of a harmful air pollutant, tropospheric ozone. According to the C&CA (2014), "Tropospheric ozone is a highly reactive oxidant that significantly reduces crop productivity as well as the uptake of atmospheric carbon by vegetation.". Although methane doesn't have direct impacts on human health, tropospheric ozone is held accountable for approximately 1 million premature respiratory deaths globally.<sup>17</sup>

Another issue is the exploitation of the Earth's natural resources by extracting a numerous amount of minerals, oil, natural gases, and other elements in the

biosphere<sup>1</sup>. Overconsumption of natural resources tires out the planet's life system support, leading to environmental degradation. Eventually resulting in climate change, disruption of ecosystems, pollution of all kinds, and the deterioration of the environment<sup>15</sup>. For instance, the over extraction of groundwater in Bangalore, India led to groundwater depletion - the concentration of impurities like nitrates, calcium, iron and fluorides in the freshwater that citizens drink has increased intensively. Over 37% of the water there has been reported to be undrinkable.

### **Solutions**

I am choosing to provide solutions to ease the effect of deforestation and the mass usage of fossil fuels on global warming. Deforestation destroys habitats, affecting the ecosystem while the mass use of fossil fuels and decomposition of wastes produce a tremendous amount of greenhouse gases. We need to act now to alleviate the issue by cutting down paper use, reducing the waste produced, and using renewable energy.

Out of the 8.3 billion metric tons of garbage produced, 25% of it is paper waste. Although paper waste only takes around 2-6 weeks to decompose in landfills, a billion trees worth of paper is being cut down every year. (Smith, 2020). Some companies implement incentives to encourage less paper use, such as Starbucks, which charges \$4 less when customers bring their own tumbler. By limiting paper use, we are lowering the demand of deforestation. Compared to paper waste, plastic wastes take much longer to decompose and are taking up space in landfills in the meantime. <sup>8</sup> Taiwan is one of the countries that have come up with a solution to target the problem of excessive household waste production. They have introduced a "Pay as You Throw" waste-charging program in 2000, where citizens are required to purchase garbage bags given by the government and have to be charged more for extra bags if they were to produce more wastes. Since the usage of the program, Taiwan's waste production has been reduced by one-third and the amount of reusable materials has increased largely. Lowering the amount of waste produced would highly reduce the amount of greenhouse gases released into the atmosphere, therefore, lowering global warming.

In the long run, both solutions would impact the environment positively as it decreases paper use through the use of reusable containers, and encourages less waste production. However, this may increase the financial burden on some people. Low-income families will be affected negatively as there is a high possibility that they would opt for convenient takeaway food served in paper or single-use containers which is a lot more affordable, and will, in turn, produce more wastes.



Using renewable energy may be one of the long term solutions to the issue. Sources like wind and solar energy are infinite and are not harmful to the environment compared to the burning of fossil fuels, which worsens the problem of global warming. Iceland is a successful example of using renewable energy as a solution to the problem.<sup>5</sup> The majority of Iceland's primary energy source is from renewable sources. 73% of electricity used is provided by hydropower plants, while 26.8% comes from geothermal energy. While the positive effect is clear, some argue that Iceland is able to use renewable energy as they have an advantageous location that provides them with excessive access to renewable sources. Other countries might find it difficult to follow as it takes a large geographical imprint to mass-produce energy and may be costly for them to transport renewable energy from neighbouring countries. This is a disadvantage of renewable energy, along with the expensive price of large scale renewable energy plants, and the intermittency; although renewable sources are said to be infinite, the availability of some depends on certain seasons and conditions.

### **Evaluation**

I am going to be evaluating three of the sources that I have used, EPA, CNN and Liebertpub.

The information about greenhouse gas emissions and its statistics was taken from the EPA. It seems to be a reliable source as it is a reputable agency of the US Government. The information was last updated in May 2020, making it relevant to the report now. The EPA aims to raise awareness about the benefits of living sustainably and provides information on how to do so. <sup>3</sup>

CNN is a reliable source, seeing that it is a well-known media company internationally. It was updated in recent years, proving the accuracy of the information. The article aiming to inform about the Amazon fire, referenced from CNN, included professional opinions by prominent researchers and environmental organisations in the field like Christian Poirier, the program director of Amazon Watch, and INPE, Brazil's space research centre. <sup>4</sup>

Furthermore, the Liebertpub. It can be seen as an unreliable source, due to the fact that it is an essay from a less-known website. It is fairly outdated, seeing that it was last updated on the 6th of November, 2007. Information from back then could have varied to now. The essay's purpose was to inform people about the environmental degradation in India, that was consequenced by industrialization. <sup>15</sup>

### **Conclusion**

Concluding, in my opinion, living unsustainably can have a massive impact on global warming. By living the way we are now, it is slowly making Earth inhabitable, as the water level rises rapidly, the surface temperature goes up and the frequency of extreme weather events increases. Furthermore, global warming, the main issue discussed in the essay, is mostly caused by human activities. Our actions have a direct impact on the environment we are living in, while what we do also have an impact on ourselves in the long run. Our actions have a direct impact on the environment we are living in, while what we do also have an impact on ourselves in the long run. Personally, I would like to act upon the issue as well, I'll try to reduce my electricity usage daily, keep the rubbish produced at the utmost minimum, cultivate more plants, reduce my showering water usage, and avoid taking as much private transport.

Before my research project, I did not have much knowledge about how our actions could impact the seriousness of global warming. But throughout my research, I became more aware of the causes and effects. I have also found different ways in which we can contribute and help with the situation. By using renewable energy, we are limiting greenhouse gases emissions from fossil fuels which adds to global warming. By cutting down plastic use, we are slowly reducing the amount of garbage produced and decreasing the demand of deforestation. As we are all living on this planet and using its resources, it is only fair that we play our role and take actions to conserve our environment through living sustainably.

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