

# Who Contributes to Climate Change?

An essay on the causes of climate change, and how we can combat it:

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Climate change, defined as a long-term shift in weather patterns, is a complex and multifaceted phenomenon that has been the subject of scientific investigation for decades. While there is some natural variability in the Earth's climate, most scientists agree that the current trend towards warming is primarily the result of human activity. In this essay, we will examine the various causes of climate change and their impact on the environment.

The most significant contributor to climate change is the emission of greenhouse gases (GHGs) into the atmosphere. These gases, including carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and nitrous oxide (N<sub>2</sub>O), trap heat from the sun and prevent it from radiating back into space<sup>1</sup>. The



burning of fossil fuels, such as coal, oil, and natural gas, is the main source of human generated GHGs. The transportation sector, particularly cars and trucks, is a significant contributor to CO<sub>2</sub> emissions, while power plants are the largest source of CO<sub>2</sub> emissions from the energy sector.

Deforestation and land use change are also important factors in climate change. Trees and other vegetation absorb CO<sub>2</sub> from the

atmosphere as part of the process of photosynthesis<sup>2</sup>. When forests are cleared or burned, the stored carbon is released back into the atmosphere, contributing to GHG concentrations.

Additionally, deforestation reduces the number of trees available to absorb CO<sub>2</sub> in the future, exacerbating the problem. The agricultural sector is another significant contributor to climate change. The production of meat, particularly beef, requires a large amount of energy and resources, including water and feed. The methane produced by cows and other ruminant animals is also a potent GHG<sup>3</sup>. Additionally, the use of fertilizers and other chemicals in agriculture can contribute to the release of N<sub>2</sub>O, another GHG. Industrial processes, such as cement production, are also responsible for significant GHG emissions. The production of cement requires large amounts of energy and releases significant amounts of CO<sub>2</sub>. Additionally, the extraction and processing of raw materials used in manufacturing, such as metals and plastics, can also be energy-intensive and contribute to GHG emissions.

While the causes of climate change are numerous and complex, the impact of these changes is already being felt around the world. Rising sea levels, more frequent and intense heatwaves, droughts, and floods are just a few of the consequences of global warming. These changes are not only harmful to the environment but can also have significant economic and social impacts, particularly in vulnerable communities. To address the problem of climate change, it is necessary to reduce GHG emissions significantly. This can be achieved through a combination of measures, including transitioning to renewable energy sources, improving energy efficiency, and reducing reliance on fossil fuels. Governments around the world are taking steps to address the problem, including through the Paris Agreement, an international treaty designed to limit global warming to well below 2°C above pre-industrial levels. In addition to government action,

individuals can also take steps to reduce their carbon footprint. This can include reducing energy consumption in the home, using public transportation or electric vehicles, and adopting a plant-based diet. Additionally, supporting policies that encourage sustainable practices and environmentally friendly businesses can help drive systemic change.

In conclusion, climate change is a complex and multifaceted phenomenon caused primarily by human activity. The emission of GHGs, deforestation, agricultural practices, and industrial processes are all significant contributors to global warming. The impacts of climate change are already being felt around the world and are likely to become more severe in the future. Addressing the problem will require significant action from governments, businesses, and individuals alike, but the benefits of doing so are substantial. By reducing GHG emissions and transitioning to a more sustainable future, we can help protect the environment, safeguard communities, and ensure a prosperous future for generations to come.

#### References:

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