

## Human Impact on Climate Change

Escalating climate change means that our world is changing at a rapid pace. Rising temperatures, increasing sea levels and extreme weather patterns are having a profound, and potentially irreversible, effect on human, plant and animal life. We are not completely at the mercy of nature however; The Intergovernmental Panel on Climate Change (IPCC) has reported that human activity has been a key cause of the changes seen during recent decades, the largest contribution to which comes from the burning of fossil fuels which release carbon dioxide gas into the atmosphere.

Greenhouse gases affect the global climate by altering incoming solar radiation and out-going infrared (thermal) radiation – key parts of the planet's energy balance. Since the start of the industrial era, the overall effect of these changes in the atmosphere has been a warming of the climate; in the last one hundred years alone, the Earth has warmed by 0.75 degrees Celsius. Global sea levels have risen, glaciers and sea ice have melted, and severe weather events, such as floods and droughts, have increased. The human impact on the earth's climate greatly exceeds that attributed to changes in natural processes, such as solar changes and volcanic eruptions.

## The Economic Impact of Climate Change

The costs of climate change are likely to be grave. The Stern Review on the Economics of Climate Change is a 700-page report which estimates that overlooking its effects could cost between five and twenty per cent of global Gross Domestic Product (GDP) every year. In comparison, reducing emissions to mitigate the most severe impacts of climate change may only cost around one per cent of global GDP each year. Indeed, the Association of British Insurers (ABI) estimates that UK households will pay up to four per cent extra each year due to extreme weather events.

**Impact on Agriculture:** As a result of temperature and rainfall patterns changing, crop yields are expected to drop in Africa, the Middle East and India, as water shortages become a dominant factor. The demand for improved water infrastructure and new technologies to facilitate its recycling will become vital. Agriculture accounts for seventy per cent of all fresh water usage globally. Add to this the growing demand for food that will arise from a rapidly expanding population and it is clear that demand for water usage in the future is certain to increase.

**Impact on Disease:** According to the World Health Organisation (WHO), temperature increases could result in diseases such as malaria and dengue fever spreading to other parts of the world: up to 290 million additional people could be exposed to malaria by the 2080s. A number of prominent Pharmaceutical organisations have ploughed significant investment into drugs which aim to curb the advancement of these diseases in the developing world.

**Impact on Forestry:** Large areas of the Amazon and central African rainforests may be lost if climate change results in a big decrease in rainfall, in addition to the large amounts of the forest currently being destroyed to clear land for agriculture. Such forests are responsible for absorbing large amounts of carbon dioxide that would otherwise be released into the atmosphere. A transition to more sustainable methods of farming and improved carbon efficiency will be key drivers if governments and industries are to limit the impact of climate change on society.

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