

17.6: The Fifth Commandment

CLIMATE CONDUCTIVE TO LIFE ON EARTH MUST BE MAINTAINED AND ACCEPTABLE MEANS MUST BE FOUND TO DEAL WITH CLIMATE CHANGES THAT INEVITABLY OCCUR

The most plausible way that humans can ruin the global environment is by modifying the atmosphere such that global warming on a massive scale occurs. The most likely cause of such a greenhouse effect is release of carbon dioxide into the atmosphere from fossil fuel combustion as discussed in Section 10.6. Human activities are definitely increasing atmospheric carbon dioxide levels and there is credible scientific evidence that global warming is taking place. These phenomena and the climate changes that will result pose perhaps the greatest challenge for human existence, at least in a reasonably comfortable state, on the planet.

The Fifth Commandment is very much connected with the Fourth Commandment because so much of the increased atmospheric carbon dioxide levels are tied with energy and fossil fuel use. Other factors are involved as well. Destruction of forests (see the Sixth Commandment below) removes the carbon dioxide-fixing capacity of trees, and the decay of biomass residues from forests releases additional carbon dioxide to the atmosphere. Methane is also a greenhouse gas. It is released to the atmosphere by flatulent emissions of ruminant animals (cows, sheep, moose), from the digestive tracts of termites attacking wood, and from anoxic bacteria growing in flooded rice paddies. Some synthetic gases, particularly virtually indestructible fluorocarbons, are potent greenhouse gases as well. The achievement of sustainability requires minimization of those practices that result in greenhouse gas emissions, particularly the burning of fossil fuels

Unfortunately, if predictions of greenhouse gas warming of Earth's climate are accurate, some climate change inevitably will occur. Therefore, it will be necessary to adapt to warming and the climate variations that it will cause. Some of the measures that will have to be taken are listed below:

- Relocation of agricultural production from drought-plagued areas to those made more hospitable to crops by global warming (in the Northern Hemisphere agricultural areas are likely to shift northward)
- Massive irrigation projects to compensate for drought
- Development of heat-resistant, drought-tolerant crops
- Relocation of populations from low-lying coastal areas flooded by rising sea levels caused by melted ice and expansion due to warming of ocean water
- Construction of sea walls and other structures to compensate for rising sea levels
- Water desalination plants using sea water and brackish groundwater to make up for reduced precipitation in some areas
- Increased utilization of saline water such as growing algae for biomass energy production in salt water instead of fresh water

This page titled [17.6: The Fifth Commandment](#) is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by [Stanley E. Manahan](#).