

How is your “sector” affecting climate change? Describe why and how this is happening.

#1: Consumer waste being poured into landfills affects the environment.

- Logically, if a country has a great economy, then the population probably generates a lot of waste.
- Garbage that ends up in landfills would decay and create methane gas.
 - Food waste creates 4.4 gigatons of greenhouse gases per year.
- Countries with stronger economy may have better technology. This leads to the infamous e-waste.
 - Every year, the US makes 4.6 million tons of e-waste.
 - The e-waste is shipped to countries such as China (we saw this in the news report in class), where they would salvage the valuable materials from it. However, there is some material that cannot be recycled, and end up in landfills or becomes incinerated.
 - Toxic fumes from the e-waste are released into the atmosphere, leading to climate change. Other toxic materials may seep into the ground and affect vegetation.

#2: Countries that have stronger economies may have developed technology that lead to climate change such as vehicles and factories.

- Usually, countries have stronger economies because of their dependence on fossil fuels.
- Factories create emissions that include CO₂, methane and nitrous oxide.
- Cars output a lot of CO₂ and other greenhouse gases.

How is your “sector” being affected by climate change?

#1: Climate change affects productivity of a country both positively and negatively.

- Great volumes of greenhouse gases in a country will influence poor health. This will make workers less productive.
- The extreme natural disasters that follow climate change would lower the quality of living and working of an individual in a country.
- Agricultural patterns (particularly fish, whose migration patterns will be disrupted by climate change) will be altered.
- The disruption of productivity from climate change is more extreme in some places than others.
 - Northern countries may benefit from climate change since it would boost agricultural and human productivity. Some studies suggest that if global warming continues, then Northern countries such as Canada could become a global superpower due to their economic growth in agriculture and significantly lower temperatures after global warming. However, this is not a justified reason to support climate change.
 - Near the equator, countries get absolutely devastated as climate change happens. The temperature would reach extreme levels in tropical countries, disrupting the quality of life of citizens, and thus, decreasing overall productivity of the country.

- Since most countries near the equator are less wealthy countries, this would only make the situation worse for them. This creates a large wealth gap between countries; The rich get richer and the poor get poorer.
- According to the National Bureau of Economic Research, a day above 30°C causes a person to lose \$20 in income.

#2: Climate change causes damage to a country's property.

- Climate change “amplifies” the intensity and frequency of natural disasters (it is important to note that without climate change, these natural disasters would still happen. It is just that with the presence of climate change, they are more frequent and cause more destruction). Wildfires, hurricanes, and floods from rising sea level are just some examples of the violent outcomes of climate change.
- These disasters cause infrastructure damage. Repairs are costly. They also lower the quality of life.
 - Hurricane Harvey cost \$180 billion.
 - The six-year drought in California cost almost \$3 billion and caused 21000 people to be unemployed.
 - The 2013 tornado in Oklahoma City cost \$2 billion.
 - The 2010 Haiti earthquake cost \$8.5 billion.
 - Hurricane Katrina caused the GDP of the US to fall down 1.3%.
 - Apart from affecting humans, global warming also caused multiple coral reefs around the world to be bleached due to the intense heat.

#3: The effects of climate change cost billions of dollars to cope with.

- To prevent flooding from affecting an area, the elevation needs to be raised and pumps need to be installed to redirect the water. While this saves countless dollars that could have been lost to the damage, it is still costly to set up all this equipment.
- To prevent further damage, countries may need to upgrade their buildings to become more natural disaster resistant.
- To convert to renewable energy sources and stop relying on fossil fuels is not a cheap task. Multiple renewable power plants would need to be created, and they don't nearly generate as much energy as fossil fuels do.
- Canada's CO2 emission rate is growing. In order to stop it, the GDP range would need to be raised to \$17 billion.

What actions are being taken to combat the effects of climate change and what is not being done?

#1: Countries have plans for discouraging industries from using fossil fuels.

- Carbon is being taxed in 60 countries.
- Since livestock such as cattle has a large carbon footprint, countries such as Germany and China are putting a tax on the production of beef.
- The Kyoto Protocol is an agreement signed by countries who want to reduce greenhouse gases. It has 192 joined countries (Canada used to be one of them, but

unfortunately withdrew from the agreement in 2012. Fortunately it has its own plans to reduce its carbon footprint).

- A carbon tax is paid by distributors of fossil fuels. The distributors then put the taxes on their products. Each distributor must report their fossil fuel usage.
- A cap and trade method sets a limit on how much fossil fuels an industry can use. If they don't use a lot, then they can then sell the portion of the cap that they did not use to other companies.
- In 2015, Trudeau said that he would like to collaborate with the provinces of Canada to make a country-wide CO2 pricing plan.

#2: Researchers are willing to educate the public about climate change.

- A study was made that explained the economical damage done by climate change. This was presented in a UN conference on climate change, in the hopes that the evidence of the negative economic impacts may persuade world leaders to take action against climate change.

#3: Countries and companies are investing in more efficient energy.

- China is the biggest investor in electric cars.
- The IEA is urging nations to build 32 nuclear power each year and cut the amount of greenhouse gas emissions by 2050. These plans would cost over \$45 trillion, which is very very far fetched. However, it is a plan to keep in mind, or at least try to achieve.