

Causes and Effects of Climate Change

The earth's climate nowadays is changing very rapidly and differently. Besides that, the climate changes in our earth are affecting our lives psychologically, physically and emotionally. What is climate change? Climate change is the seasonal changes for a long period of time in the world. These climate patterns play an important role in shaping natural ecosystems, and the human economies and cultures that depend on them. For example, the changes in climate can affect how people, plants and animals live, such as food production and health risks. As the earth's climate is dynamic and always changing through a natural cycle, the world is now worried about the changes that occurring today have been speeding up and seriously affecting human's lives. All across the world, people are taking action to prevent climate change. For example, in 2007, scientists from the International Panel on Climate Change (IPCC) predicted that warming oceans and melting glaciers due to global warming and climate change could cause sea levels to rise 7-23 inches by the year 2100. So, some islands and some small countries will be flooded by the sea water and even disappeared very soon. Because of this, we must take action as soon as possible to try to solve this problem or to prevent the more serious of climate changes occur. I'm interested in this topic because the climate changes in our country or this world are too serious and it's interesting to discuss and try to fix the problem. However, what are the causes and effects of climate changes that affecting our lives and environment?

There are two main causes of climate changes – natural causes and human activities. Natural causes have influenced the earth's climate such as volcanic eruptions, ocean current, the earth's orbital changes and solar variations. The eruptions of volcanoes cause a cooling effect on the earth. When a volcano erupts it throws out large volumes of sulphur dioxide (SO₂), water vapour, dust, and ash into the atmosphere. The volcano eruptions will affect the climatic pattern for years although the eruptions occur in a few days. The sulphur dioxide gas will reach the upper level of the atmosphere. The tiny particles, dusts and ashes will block the incoming sun rays and this will lead to cooling at the atmosphere. This is because the bouncing of sunlight to the space is cooling the atmosphere of the earth.

Furthermore, ocean current is one of the natural cause that affecting climate changes. The ocean is the major component of the climate system. The oceans cover about 71% of the earth and absorb about twice as much of the sun's radiation as the atmosphere or the land surface. Winds push horizontally against the sea surface and drive ocean current patterns. Besides that, the oceans also play an important role of the concentration of carbon dioxide. The changes in ocean circulation will affect the climate through the movement of carbon dioxide into or out of the atmosphere. Moreover, another cause that affects climate changes is the earth's orbital changes. The earth makes one full orbit around the sun every year. If there is no tilt we will not experience seasons. Changes in the tilt of the earth can affect the severity of the seasons. For example, if there is more tilt means we will experience warmer summers and colder winters and if there is less tilt means we will experience cooler summers and milder winters.

Another main cause that leads to climate changes is human activities. From the 19th century, the Industrial Revolution saw the large-scale use of fossil fuels for industrial activities. Therefore, they created many jobs for the people. And many people moved from rural areas to cities. Many vegetation areas were cleared to become houses or factories for industries. Natural resources are being used extensively for construction, industries, transport, and consumption. All this has contributed to the rises of greenhouse gases such as methane and nitrous oxide in the atmosphere. Human is generating industries factories and houses, and running the vehicles that used many fossil fuels such as coal, oil and natural gases. These uses

of fossil fuel will lead to climate changes. Global climate change is caused by the fertiliser that is used for agriculture. The result of microbial action in the soil, these chemicals will release nitrous oxide. Besides that, the emission of methane and carbon dioxide will also affect climate changes. In addition, the increasing of agriculture is also caused by the increasing of human population in the world.

All the causes are giving a great impact for climate changes in our earth. What are the consequences of these causes for the climate changes to our world? We can see that there are three main effects on climate changes in our environment. Firstly, climate change in the world will affect human health. There are so many past researches that showed that climate change will lead to human health and producing diseases. For example, in the research paper by Healey et al., 2010 that I have read said that "the climate change is affecting the health of northern people such as Nunavut, Canada." Besides that, Cecchi et al. (2010) have conducted the research on the effects of climate change on allergic asthma. Moreover, Mickley, 2007 stated that "high levels of surface ozone and particles have been implicated in many diseases involving the cardiac and respiratory systems." These researches showed that the climate changes are seriously affecting the human's health.

Secondly, climate changes will also affect the biodiversity. Biodiversity is very important for the plants and animals to maintain their habitat and ecosystem. The climate changes have impacted the loss of biodiversity. For example, the water sources may change, the food chain may be destroyed and the medicine sources may change. In addition, the marine ecosystem will be affected not only by an increase in sea temperature but also ocean acidification, which increases the vulnerability of fragile ecosystems such as coral reefs.

Furthermore, climate changes also will affect human's mind and behaviour psychologically. Climate changes will affect human's behaviour such as consumption, energy use and population growth. Besides that, climate changes also impact psychosocial and mental health including stress, guilt, anxiety to adapt and cope with the new changing weathers. The climate changes will cause the increase of social disorder such as post traumatic disorder, suicide, stress, abuse, violence and anxiety. Therefore, climate changes will be giving a great impact on the human's psychological lives.

As we can see how the causes and effects of climate changes that occur in our world and this topic was concerned by the worldwide. So, what are the solutions and methods that we can prevent climate changes or solve the problems that we are having now? Actually there are some solutions that our government, community and society can do. Firstly, the government can help the communities and businesses to reduce deforestation, plant new trees in the forest and empty land, earn sustainable livelihoods and adapt to changing climatic conditions. Next, teachers and lecturers in schools and colleges must give the knowledge of how to protect our earth from the very young age of the children and students. One of the reasons that caused the climate changes is the emission of carbon dioxide from the vehicles. Therefore, we can reduce the uses of vehicles and car-pooling in our daily lives. Besides that, at home, we can switch our light bulbs to energy efficient bulbs and turn off the light when we are not using it or after using it.

As a conclusion, we can see there are many effects of climate changes that are seriously affecting our environment, health and biodiversities. If we still have not taken any actions to prevent the climate changes, our mother earth will become sick more seriously. Furthermore, when the deforestation continues to occur, there will be many different consequences to our environment. Climate changes will also lead to psychological problems such as post traumatic disorder, stress, anxiety and violence among the communities. So, to protect our environment and give our next generation to have a better

place to stay, we must always know how to prevent the climate changes such as stop cutting off the trees, save energy, car-pooling, etc. Therefore, let us together to protect and love our beautiful mother earth that given by God and try to keep her healthy as long as we can.