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A Study on the Impact of Climate Change on Humans

Dr. R. A. N. Fernando

Senior Lecturer, Department of Philosophy and Psychology,
University of Sri Jayewardenepura, Sri Lanka

K.V. P. M. Karunaratne

Research Assistant, Department of Philosophy and Psychology,
University of Sri Jayewardenepura, Sri Lanka

Abstract:

Climate change is a frequently discussed problem around the world. Environmentalists and philosophers have been trying to bring a solution to this. But climate change is dominating over the human life day by day. Climate change is caused by nature and human activities. Especially the greenhouse gas emission and other nature-related activities are generating a negative impact on humans. Therefore, this research attempted to identify the impact of climate change upon the humans and the possible solutions and actions that humans can be taken upon the climate crisis. This is analytical research; the relevant data collected from different books, e-book, and journals. Climate change causes changes in geophysical stability of the world, changes in biodiversity, and ultimately it causes social, psychological, and economic changes and impairments in human societies. Proper behavior controlling methods such as policy implementation and legislation can be effective ways and means of trivializing the effects of climate change.

Keywords: Eco-anxiety, environmental pollution, global warming, greenhouse gas

1. Introduction

Climate change has been defined as the average weather of a region over a certain period. This is measured as the temperature, wind, heat, cold, rainfall, or as the end of seasons. All these are coming under climate change. According to scientists, climate change is depending upon the ocean currents, winds, forests, mountain ranges, bacteria, planetary orbital motions. During the past few decades, scientists and environmentalists were discussing how harmful climate change might be to the world since the researches depicted clearly that climate is changing on earth. The earth has faced years of ice ages and heated by natural circumstances. That means, there have been sudden warming up and cooling occurred during certain periods. The environmental climate records depict the global temperature have been increased by 0.76 °C since 1900. This has an impact on the ecosystems and the biospheres around the world. According to the environmentalists, the greenhouse gas emission has been contributed in this global environmental crisis since 1950.¹ The impact of climate change varies from region to region over different timescales. For instance, countries situated in higher latitudes may experience more rapid warming than the countries situated in lower latitudes. Some countries may experience a greater reduction in precipitation than other latitudes. Some countries may face more intense tropical storms. Therefore the climate change can impact the earth in diverse ways such as polar impacts, water impacts, land carbon sinking, agriculture, and food supply impacts, etc.² Scientists agree that the impact of climate change as a whole might be negative to all, and also developing countries might be impacted rather than the industrialized developed countries. The impact of climate change can be discussed under three different categories as geophysical, biophysical, and socioeconomic impacts.

It can say that global warming has already changed the earth's climate with many geophysical, biophysical, and human impacts. And climate change is still processing and people will have to face more advanced consequences in the future, which would impact on earth's climate and other organisms, plants, etc.³

The main objective of this research is to identify the impacts of climate change on humans. The impacts on the human social, economic, and psychological aspects, geophysical impacts, and changes in the biosphere are to be understood within this research. Also, it was expected to recognize the causes of climate change and to suggest possible policy and behavioral implications on this matter.

2. Methodology

The methodology, which was used here, is the analytic method. The secondary data collection was used. The books, publications, and e-book materials were taken in the conceptual identification and to get an idea of the current situation in environmental crisis, climate change, policy implication, and the impact on the humans of climate change.

¹Lerner, Brenda Wilmoth., (2008), *Climate Change in Context*, Gale Cengage Learning, p. 96

²Lerner, Brenda Wilmoth., (2008), *Climate Change in Context*, Gale Cengage Learning, p.97

³ Ibid, p.99

3. Results and Discussion

Climate change is happening both due to natural causes and man-made causes. The Solar variation that is the changes in sunlight can bring changes in the climate. According to the geophysicist Milutin Malinkovitch there are three variations in the earth's position relative to the sun. This can impact on climate change. The plate tectonics that are the movements of the continents and the processes, which are caused, also can have a long-term impact on climate change. Human causes also impact on climate change. Greenhouse gases, which release carbon to the atmosphere affects climate change. Changes in land usage, for an instance the urban areas are much hotter than the country sides. The air pollution also influences on climate change. On the other hand, climate change has impacted humans during periods.

Climate is critical to the world, as we know it. The landscape, and the plants and animals in it, are all determined to a large extent by climate acting over long intervals of time. Over geological time, the climate has helped to shape mountains, build up the soil, determine the nature of the rivers, and build flood plains and deltas. At least until the advent of irrigation and industrialization, climate determined food supplies and where human beings could live.⁴

The geophysical impacts of climate change, several things can happen. For instance, there might be changes in ice sheets and glaciers; also, the reflectivity of earth can be changed. Then the sea level would rise. Changes can occur in the currents and chemistry of the ocean acidification. Climate change has a significant impact on the global water cycle, which means it can change the quantity, intensity of the water. This might lead to a higher frequency and intensity of droughts and floods. Also, the intensity of storms and wind speech would be increased as well. Climate change and the other potential geophysical changes would impact human beings directly. And this would impact on the earth's carbon cycle as well. These climate changes would lead to global warming.

As the biophysical impacts that can happen due to climate change, there are the impacts that are directly happening on living organisms. If the temperature increased by 20C in the environment, many species might face either extinction or significantly reduced habitat ranges. If the ocean temperature increased there might be major marine impacts, which means it can affect the coral reefs and the marine productivity of the ocean due to the acidification. Increased warming and extreme weather conditions might impact on the coastal zone, towards the migratory birds, fisheries, low lying wetlands, and delta ecosystems. This would impact on the terrestrial plants and forest systems as well. Human and socioeconomic impacts mean the impact that climate change has on humans. This climate change has direct impacts on the livelihood of humans. Extreme weather conditions can impact on the aggregate food production of people. This might affect the global food supply. Climate change can also impact on the health of people. This might lead to the changes in incidence and distribution of vector-borne diseases.

3.1. Impact of Climate Change on the Geophysical World

The ultimate and most dramatic impacts of climate change are the melting cryosphere, increasing water levels of the sea, and the rise of extreme weather events. The cryosphere melting is the warming of the poles. cryosphere melting impacts on the water-ice transition. Which means it leads to the rise of water levels of the sea. Climate change also influences the water cycle and water resources. The water cycle is becoming extreme day by day. For instance, wet regions are becoming wetter, as dry regions become drier. The climate change also impacts on the oceans. Sea levels rise due to two reasons; the melting ice and thermal expansion. The melting of ice is adding more water to the oceans. The volume of the water is changed through thermal expansion. The weather has been increased during the past few decades. The heatwaves, droughts, floods, hurricanes have been increased in number, and also has done serious and major destructions to the world.⁵

These issues that were discussed here are the effects of climate change. And they are certainly influencing the geophysical stability of the earth. Due to these circumstances, humans have been experiencing the hottest, driest, wettest, and stormiest weather changes.

3.2. Impact of Climate Change on the Biosphere

The environmentalists and the scientists engaged in climate change say that it influences the living systems of the world. This impact cannot be limited only to one continent or region but involves every living organism on earth. Many species are adapted to live in particularly very special environmental conditions. For example, the Polar bears are living in ice and cold conditions. But when the environmental stability is changing two alternatives happen; that is if possible, the organism has to change or it will die without their habitat and adopted weather conditions. This may lead to the extinction of beings. The higher rates of temperature also have impacted on the freshwater organisms and the marine organisms. It threatens their existence and their breeding. Especially regarding coral reefs provides a home to most marine plants and animal species. The changes in climate can also damage the coral reefs and the living organisms that have made it their habitat. Scientists explain that about one-third of the world's forests have been affected by climate change.⁶

3.3. Impact of Climate Change on Human Civilization & Socioeconomic Stability

The extreme changes in climate can affect humans negatively. There can be physical health impacts and psychological impacts. The increment of the temperature triggers the heat-related deaths. If the climate changes impact on agriculture and production, the malnutrition and diarrhea infections will be frequent. Warmer temperatures can produce

⁴ Pittock, Barrie A. (2006), *Climate Change; Turning Up the Heat*, Earthscan Publications, p. 01

⁵ Desonie, Dana. (2007), *Climate; Causes and Effects of Climate Change*, Chelsa House, p.75

⁶ Desonie, Dana. (2007), *Climate; Causes and Effects of Climate Change*, Chelsa House, p.91

diseases and will spread rather quickly. Heavy rainfalls also can increase waterborne diseases.⁷ Eco-anxiety is a term, which arose with the changing patterns of the environment. According to the Diagnostic and Statistical Manual of mental Disorders explains this eco-anxiety or climate-anxiety as a chronic fear of environmental doom, when serious climate changes occur, people fear about the future states of the environment. They become tense, with their losses due to extreme weather conditions. Their feelings at the end involve ecological grief or climate grief. Therefore, climate changes have a physical and psychological impact on the human beings. The damages of human production, agriculture, human capital, etc., happen due to the weather changes that will impact on their socioeconomic stability as well.

As mentioned in the above paragraphs, climate change has been influencing human society, geophysical stability, and the biosphere of the earth. Environmentalists come up with the term 'adaptation' when talking about climate change because it can be an effective way of dealing with climate change.⁸ But it cannot stop the damages that are happening to the earth. And about 90% of the causes of climate change are man-made. Therefore, the consequences also have to be borne. Environmental Philosophy discusses giving moral significance in dealing with nature to humans. But to control over 90% of the human involvement over climate change, there should be policy implementations and behavioral changes as well.

Mitigation, or greenhouse gas emissions reductions, can be achieved in several general ways: through increased energy efficiency, fuel substitution, use of non-fossil carbon fuels (including nuclear power and renewables), carbon sequestration (or removal from the climate system), and infrastructure and lifestyle changes.⁹

The above quotation explains how behavioral changes should be done relevant to human activities. These controls cover the behaviors and human activities can also be regulated and managed through strong policy procedures. Climate change can be happened due to the amount of Carbon Dioxide that is been released to the atmospheric surface, or it can be the amount of Methane, or it can be the amount of Nitrous Oxide that has been released. A proper method of controlling these gas emissions would be an effective way of handling climate change. The enactments of population growth, environmental pollution, wildlife preservation, or wilderness preservation policy can be concerned more efficient in providing solutions for climate change.

4. Conclusion

Climate change is the change that occurred in the weather conditions during a certain period. Climate changes happen due to both natural and man-made causes. And it impacts the biodiversity, geophysical status of earth, and also the social economic and psychological aspects of the humans as well. It changes the global temperature, water cycle, glacier and ice melting, thermal expansion, species extinction, negative impacts on agriculture and production process, health problems, and mental health issues as well. About 90% of climate change involves human activities. The behavioral controlling and management of human activities upon nature, greenhouse emission controlling can be taken as possible solutions for climate change. Legislations on population growth, environmental pollution, biodiversity protection, and forestry protection can also be efficient in this problem.

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⁷ Ibid, p. 121-135

⁸Pittock, Barrie A., (2006), *Climate Change: Turning Up the Heat*, Earthscan Publications Ltd, p. 133

⁹Pittock, Barrie A., (2006), *Climate Change: Turning Up the Heat*, Earthscan Publications Ltd, p.168