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# Socio-Economic Impact of Global Warming

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***Abstract*** – **The research focuses on understanding the impacts of global warming on different aspects of the socio-economic structure. Global warming is a raging problem, and it is caused due to the urbanization and industrial scenarios. The research aims to understand the reasons behind global warming and its impact on different economic segments such as agriculture, energy, and land usage. It has been found in the research that global warming will result in lower availability of freshwater. This results in lower production of crops across the globe along with massive damage to the existing economic framework. It is essential to take precautionary steps at an early level so that further damage can be mitigated..**

***Keywords— Global warming, agriculture, socio economic impact, crop yield, reduced freshwater availability, temperature increase***

## Introduction

Climate change scenarios are closely associated with social economic changes. Both of these factors are associated with each other and the recent changes in the climate and socio-economic structure can give us an idea about the future. Factors such as global warming will result in increasing temperature in different regions of the globe and that can cause substantial damage to the economy. With the changes in habits and economic practices, social changes will also follow. It is important to understand these scenarios and their impact over the long run. It will also depend on the actual temperature increase recorded over the upcoming years. The climate change model predicts that an increase of 1 to 3 degrees can cause damaging impact on the present environmental structure and that will bring economic losses as well (Frieler *et al.* 2017). This will be more observable in the areas having high latitude along with the tropics. With time, global warming will cause more rise in temperature and overall costs will increase. In case of the temperature rising above 4 °C, the costs will be even higher and that can impact the global economy at a massive scale. Therefore, the research aim is to understand the impacts of global warming on the socio-economic structure. The research objectives are termed as

To understand global warming scenarios
To evaluate the socio-economic impacts of global warming
To assess the climate change scenarios and their socio-economic impact

## Literature review

### Climate change scenarios

It is essential to understand the climate change scenarios so that we have a complete understanding of its impacts along with establishing responsive strategies. It is a known fact that global warming is taking place and it already has its impact on society. However, the future is even more concerning as the wide-ranging consequences lie there. As mentioned by Gasparini *et al.* (2017), climate change scenarios also have the potential to directly impact human health as the overall exposure to temperature will increase over time. Climate change is mainly caused by humans and these changes are also backed by a variety of societal factors. Therefore, most of the outcomes are greatly uncertain and can result in a complete reform of the socio-economic structure. It has been observed that there are a number of climate change scenarios that are hard to predict. Therefore, a set of specific goals are needed to establish so that necessary steps can be taken towards fulfilling that goal (Imbach *et al.* 2018). These scenarios can be different in nature. The socio-economic scenarios are related to the development of various social drivers along with the interaction of humans with nature. There are also situations that relate from development segments such as emissions or forced climate changes. Along with that, there are adaptation and mitigation scenarios present as well. The entire process of climate change is not something that is taking place in isolation, it is rather happening right in front of our eyes. Other processes of economic and cultural change are also associated with it.

### Socio economic development and impacts

Socio economic developments can be termed as the outcome of climate change. Factors such as global warming will cause a number of changes in the existing social practices and that will implement changes in the scenario. As per the views of (Penz,

2017), both economic and social drivers can be termed as one of the key elements of climate change. There are various economic activities that will be impacted due to the effects of global warming, such as the rising sea levels and increasing severe weather calamities. The overall process can be described as a cycle. Socio- economic development consists of a number of activities and factors. Some of these factors can be termed as urbanization, different economic activities, social equality, or the fuel consumption patterns (Diffenbaugh and Burke, 2019). These factors also determine the way of living for the society along with energy and land usage. An evaluation of these scenarios will also provide us with an understanding of the possible future scenarios.

**Global warming and related aspects**

Energy and land usage is also associated with these, and it is also one of the main sources of greenhouse gas emissions of pollutants. According to the statement of King *et al.* (2017), there are a number of reasons behind global warming and the greenhouse gas emissions from the land and energy uses is one of them. The greenhouse gases along with the various air pollutants directly interfere with the earth's atmosphere. This also creates a layer of carbon dioxide on the upper atmosphere of earth and that can trap heat, resulting in increasing the overall temperature of the earth's surface (Hamdy *et al.* 2017). Furthermore, emissions are also a major concern here as it enhances the overall concentration of the greenhouse gases. As a result of this, the balance between the incoming and the outgoing heat is being disturbed. This creates an eradicative impact on the entire climate system along with the carbon system and the eradicative transfer models.

## Methods

Selection of proper research methods is essential as it ensures the success of the research. This helps the research to move in the right direction along with helping the researcher to understand the topic in the most viable way possible. There is a number of research instruments associated with the research and a proper methodology helps in identifying the instruments along with making use of them in the research (Snyder, 2019). This is also advantageous as it allows the researcher to make use of all the available sources for the data collection purposes. This portion will mention the different segments of methodology such as the research philosophy, approach, and research design. These factors will help towards understanding the impact of global warming on the socio-economic structure.

Positivism research philosophy will be used in the research. This specific philosophy focuses on factual knowledge and emphasizes on gaining more information through observations. According to the statement of Ryan (2018), the subject preconceptions are essential to be evaluated by the researcher as it allows one to look into the deeper dimensions related to the research topic. This specific research philosophy will help the researcher in making the most out of the observations. As the researcher is not limited by the study, there are no chances of the research being affected by the human provision.

Research design is very important for the success of the research as it acts as the blueprint for conducting the overall research. As mentioned by Dannels (2018), an effective research design reduces the number of biases present in the research; this makes the research effective and more specific. Therefore, the researcher can understand the research in a better way along with the evaluation of the overall subject matter. This research follows a descriptive research design as it will make it easier to gather and assess the data from the existing knowledge in a systematic manner.

An inductive research approach will be used in the research. Alase (2017) mentioned that it will be beneficial to collect factual information based on the research topic. This approach also takes note of the existing theories and makes hypotheses based on that. The research method is secondary research and different articles from research authors will be evaluated. The research uses a secondary data collection method. Proper methods of data collection help the researcher to save time. The data analysis method is done with the help of thematic analysis and the themes are based on the research objectives. This will be helpful in understanding the important research segments from the collected data and coming to a conclusion. All the ethical issues such as honesty and integrity are met with to make the research authentic and viable.

## Discussion

The research on impact of global warming and its farfetched effects on socio economic profiles are discussed here with the help of scenarios. This is mostly because the scenarios can serve multiple roles towards the climate change scenarios such as the emission profiles. As mentioned earlier, both climate change and socio-economic redevelopment are associated with adaptive responses (Darwin, 2017). The overall functionalities of the society are directly associated with the carbon emission that results in global warming. Along with that, there are a number of variables that are also observed in the research. These variables can be termed as the level of development of a country, the overall usage of fossil fuels or the dependency on natural resources (Wójcik-Gront, E., 2018). In most cases, the dependency of natural resources is most prone to damage due to the impacts of global warming.

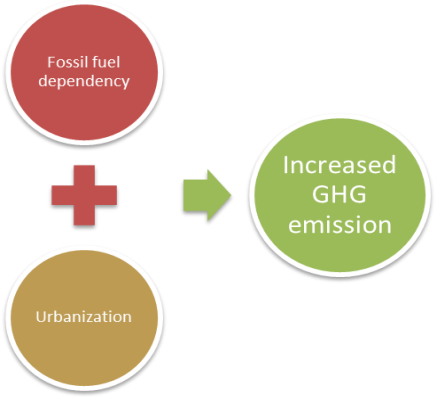


**Figure 1: Emission primary causes**
(Source: Penz, 2017)

Climate change is mostly a forced process and can also be termed as a result of rapid urbanization and industrial development. It has damaging impacts on the overall economies and the evaluation of the data indicates the growing need for sustainable development. As per the views of (Diffenbaugh *et al.* 2017), sustainable development is getting difficult to achieve because of the inadequacy of the existing social structure. With time, the vulnerability of the existing natural systems is increasing, and it is acting as a threat for nature. It can be mentioned that different economic segments will be damaged because of this, especially agriculture, water, and energy etc. On a contradictory note, global warming can enhance the crop yield and agricultural productivity in some regions (Javeed *et al.* 2021). However, in case of continued rise of temperature, crop productivity will decrease.

Research indicates that both the tropical and subtropical regions are at risk because of global warming, as higher dependency on crop production is noticed in these regions. A decline in the overall crop productivity will result in heavy losses for the people involved and it will gradually change the socio-economic structure of the region (Mancebo, 2018). Furthermore, global warming is more likely to increase the chances of flood and drought (Mirza, 2002). Along with the decrease in crop production, it will also reduce the chances of livestock production.

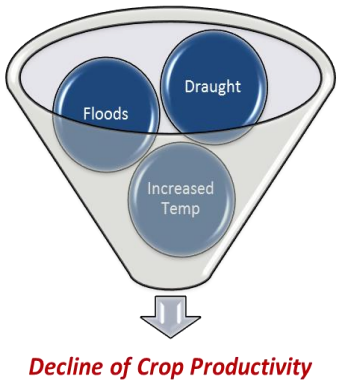


**Figure 2: Catalysts of crop productivity decline**
(Source: Baldos *et al.* 2019 )

The African region is already suffering from low crop yield and that is making it harder for the people to service. Global warming will also impact the water resources and that will result in massive losses for the semi-arid regions. The farmers will be forced to adapt with the changing circumstances, and they have to change the crop planting patterns (Baldos *et al.* 2019). In regions such as Africa and the Middle East, this will result in massive losses for the production along with loss of human lives. The overall amount of freshwater will decrease by a staggering amount and that will result in water shortage for most countries across the globe. The increasing temperature of water will produce more algal blooms, therefore reducing availability of freshwater for drinking or farming purposes. This will severely strain the economic infrastructure of most countries. It is essential that adaptive steps are taken immediately so that these losses can be somehow reduced.

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