

Climate Change And The World: Problem And Solution

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Abstract

Climate is a very essential part of our life and also for the nature. But in present times climate is changing for many reasons. In this article I have focused on the issue of climate change. Climate change is really not a normal international problem—it threatens huge changes in living conditions. In this article I have mentioned that why human beings are responsible for climate change and why international cooperation is essential to protect the environment and to slow down the climate change. I also point out various measures and techniques to save the environment from the impact of climate change and what are the duties of all individuals to protect the environment and to tackle climate change.

Keywords: Climate change, environment, international, anthropogenic, greenhouse gas.

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I. Introduction

The word climate comes from the Greek word **klima**, which means “area”. Climate usually refers to a region's long-term weather patterns. But now climate is not safe. It is changing due to natural and anthropogenic factors. Climate change has become a burning issue of our times. Climate change is a term that refers to major changes in temperature, rainfall, snow or wind patterns lasting for the decades or longer. It is not merely a change in weather conditions in a specific area at a particular time but it is about long term change in the nature of prevailing conditions of temperature, the velocity of wind, humidity or dryness over a vast area. So, any change or alteration in the prevailing or predominant climatic conditions of a particular geographical area over a period of time is described as “climate change.” Intergovernmental Panel on Climate Change (IPCC) definition of climate change includes change due to natural variability alongside human activity. Both human-made and natural factors contribute to climate change. Human causes include burning fossil fuels, cutting down forests, and developing land for farms, cities and roads. These activities release greenhouse gases into the atmosphere. And natural causes include changes in the Earth's orbit, the sun's intensity, the circulation of the ocean and the atmosphere, and volcanic activity. It is the duty of all individuals and states for taking steps to slow down climate change. I hope that the discussion of this article will help the readers to protect our environment and to slow down climate change.

Objectives of the Study

The main objectives of this study are as follows:

- (1) To learn about the meaning and impact of climate change.
- (2) To aware about the man-made causes of climate change.
- (3) To know the measures and techniques to slow down climate change.
- (4) To aware about the role of individuals and states to control climate change.

Research Questions

The research questions in this study are as follows :

- (1) What is climate change ?
- (2) How human beings are responsible for the climate change ?
- (3) How the states try to control climate change ?
- (4) What are the role of individuals to slow down climate change ?
- (5) Which measures can be used to overcome the effects of climate change ?

Hypothesis

The present study has been progressed on the following hypothesis :

- (1) Many individuals are not aware about the issue of climate change.
- (2) All states are not equally aware about this issue.
- (3) Lack of awareness about sustainable development.
- (4) There are some problems for international cooperation on climate change.

Anthropogenic Activities and Climate Change

Today's climate change is primarily due to anthropogenic activities. Different anthropogenic activities lead to emissions of four principal greenhouse gases: carbon dioxide, methane, nitrous oxide and halocarbons (a group of gases containing fluorine, chlorine and bromine). These gases accumulate in the atmosphere and have been increasing with the passage of time. The most significant aspect about the increases in all of these gases is that they have occurred in the industrial era which is not more than 300 years old. That is why this small geological period is named as Anthropocene era. It is noted that the year 2014 was the hottest year in recorded history of climate and July 2015 was the hottest month in past 1627 months since January, 1880.

Human activities and Carbon Dioxide

Carbon dioxide has increased from fossil fuel use in transportation, building heating or cooling and in the manufacture of cement and other goods. Deforestation releases carbon dioxide and reduces its uptake by plants.

Human activities and Methane

Methane has increased as a result of human activities related to agriculture, natural gas distribution and landfills.

Human activities and Nitrous Oxide

Nitrous oxide is emitted by human activities such as fertilizer use and fossil fuel burning.

Human activities and Halocarbons

Halocarbon gas concentrations have increased primarily due to human activities. Principal halocarbons include the chlorofluorocarbons (e.g., CFC-11 and CFC-12), which were used extensively as refrigeration agents and in other industrial processes before their presence in the atmosphere was found to cause stratospheric ozone depletion.

Consequences and Impacts of climate change

Following may be consequences or impacts due to climate change :

- (1) An intensification and expansion of wildfires is likely globally.
- (2) More heavy precipitation events.
- (3) Increases in areas affected by droughts.
- (4) Sea level is expected to continue to rise over the next decades.
- (5) Fewer, shorter, less intense cold spells or cold extremes in winter.
- (6) More frequent, intense and longer lasting heat waves.
- (7) Altered distribution of some infectious disease vectors.
- (8) More severe tropical cyclones, with greater wind speeds.

How should climate change be tackled?

The task of tackling climate change is notoriously difficult; some even fear that it may be impossible. It is instructive, in this respect, to compare efforts to deal with climate change with the response to the problem of ozone depletion. In the case of ozone depletion, there was little scientific disagreement about its cause; there was general agreement that its consequences were negative and a recognition that they affected developed and developing states alike; and, most importantly, there was a straightforward solution available at an acceptable price — banning CFCs and switching to alternatives that could be developed economically. The Montreal Protocol (1987) thus demonstrated how effective international cooperation on environmental matters can be.

International cooperation over climate change

The Rio 'Earth Summit' of 1992 was the first international conference to give significant attention to the issue of climate change. It did so by establishing the FCCC as a 'framework convention', calling for greenhouse gases to be stabilized at safe levels on the basis of equity and in accordance with states' 'common but differentiated responsibilities and respective capabilities'. The major breakthrough achieved in this Summit was the **Agenda 21 : Green Paths to the Future** or the **Rio Declaration of 1992**.

Agenda 21 — It is an action plan to be achieved through sustainable development that would integrate the twin goals of environmental protection as well as economic development. To oversee the proper and serious implementation of agenda 21, the UN Commission on Sustainable Development was mooted to be set up. In this way, the Rio Declaration on Environmental and Development came to consist twenty-seven principles for guiding action on environmental and development mainly to strike a balance between the developed and developing states.

Kyoto Protocol

The most significant international agreement on climate change was the Kyoto Protocol, negotiated in 1997. The significance of the Kyoto Protocol was that it set binding targets for developed states to limit or reduce their greenhouse gas emissions by 2012. The targets were designed to reduce total emissions from the developed world to at least 5.2 percent below their 1990 levels. National target varied, however, with the EU and the USA being set targets for reductions of 8 percent and 7 percent respectively, where other states such as Australia, were allowed to exceed their 1990 level. Under the Protocol, basically, three major mechanisms were agreed upon which allowed for flexible ways of achieving the targets.

First, a compulsive search for alternative power sources is to be undertaken that would be competitive thereby making the use of carbon dioxide dispensable.

Second, Joint Implementation, under which a developed nation can compensate for its own carbon emission by financing projects like very efficient power plants in another developed country thereby reducing the amount of greenhouse gases emitted.

Third, The Clean Development Mechanism under which the developed nations will help developing nations in providing newer funds and transfer of technology to promote clean development.

Paris Pact

The Paris Climate Change Agreement or the Paris Pact was the result of an international meet organized under the auspices of the UNO, participated by 195 nations of the world which approved it in 2015. It is purported to be the world's first extensive treaty to reduce greenhouse gas. The pact becomes operational from 2020. There are basically ten areas of focus as to how to achieve the target of achieving a reasonable reduction in levels of carbon emissions by nations. These are as follows:

- (1) The agreement sets a goal of keeping warming level well below 2 degrees Celsius. For the first time, the nations have agreed to pursue efforts to limit the increase in temperatures to 1.5 degrees Celsius.
- (2) Under the agreement, all countries will have to communicate their climate targets every five years starting from 2020 and are to be submitted in advance to bring it to public knowledge.
- (3) Each target should reflect progress in the direction of achieving the goals which have been declared.
- (4) Beginning in 2018, a mechanism to assess collective progress on global mitigation action by use of best possible scientific methodology is to be put in place.
- (5) Investments in innovation and technology to accelerate cost reductions for renewable energy and low-cost carbon solutions will be explored.
- (6) In order to attract private investments in the clean energy sector and also to measure the seriousness of governments in this regard, a robust transparency system is to be developed.
- (7) A critical component of this Agreement is to put up a transparency framework agreed by all nations so that a level playing field between the developed and developing world can be attained with some degree of flexibility accorded to countries with least capacities.
- (8) The Agreement requires all countries to report on national inventories of emissions by source.
- (9) Countries are required to report on information necessary to track progress made in implementing and achieving the targets and strategies countries have put forward.
- (10) To determine that the reporting is in line with the standards adopted, countries will have to engage in a multilateral technical review process with their peers to share their experiences and lessons learnt.

Problems for international cooperation to solve the issue of climate change

There are some obstacles for international action to tackle climate change. These are as follows :

- (1) Economic obstacles.
- (2) Ideological obstacles.
- (3) Tensions between developed and developing states or countries.
- (4) Conflict between the collective good and national interests.

Measures to overcome the effects of climate change

The task of tackling climate change is very difficult. Some even fear that it is impossible. But we can follow some measures or techniques to overcome the effects of climate change. In climate change discourse, there are two approaches to tackle human induced climate change. These are 'mitigation' and 'adaptation'.

Mitigation

Mitigation means the reduction of atmospheric greenhouse gases. International Panel on Climate Change (IPCC) defines mitigation as "an anthropogenic intervention to reduce the sources of greenhouse gases." Key mitigation techniques and practices are as follows :

- (1) Fuel switching from coal to gas.
- (2) The wider use of nuclear power.
- (3) The greater use of renewable heat and power (hydropower, solar, wind, geothermal and bio-energy).
- (4) Early applications of carbon dioxide capture and storage (e.g. storage of carbon dioxide removed from natural gas).
- (5) More fuel-efficient vehicles, such as hybrid and cleaner diesel vehicles.
- (6) Shifts from road transport to rail, public transport and non-motorized transport (cycling, walking).

Adaptation

It (Adaptation) refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change. IPCC defines adaptation as "the process of adjustment to actual or expected climate and its effects." The key adaptation practices and techniques are :

- (1) The relocation of settlements, specially coastal zones.
- (2) Improved sea walls and storm surge barriers.
- (3) Expanded rainwater harvesting and improved water storage and conservation techniques.
- (4) Adjustment of planting dates and crop varieties.
- (5) Crop relocation and improved land management (e.g. erosion control and soil protection through tree planting).
- (6) Improved climate-sensitive disease surveillance and control.

Role of individuals to slow down climate change and to protect the environment

Though it is not possible to stop climate change. But as an individual we can contribute to reduce greenhouse gas emissions for our environment through following habits.

- (1) Focus on green building architecture.
- (2) Planting more trees.
- (3) Use more fuel-efficient vehicles.
- (4) Buy more efficient household appliances.
- (5) Buying recycled items as far as possible.
- (6) Generate as little trash or waste materials as possible.
- (7) Turn off all lights, fans, televisions, air conditioners, computers and other electrical items when they are not being used.
- (8) Avoid keeping the engine idle for long periods of time.
- (9) Share what one has learnt about the climate change.
- (10) To aware about the main subject matter of the various international conferences which are associated with climate change. And to cooperate with other people and state to control the issue of climate change.

II. Conclusion

From the above discussion it is clear that for the present and future generation it is the responsibility of all individuals, civil societies and states to take initiatives on the issue of climate change and to save the environment. Sustainable development goals are very crucial in this regard. For this reason, international cooperation is also essential. Though it is impossible to stop climate change because climate change is not happened only for the anthropogenic activities, natural factors are also responsible for climate change. But we can slow down the climate change through some measures and to overcome the effects of climate change.

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