



**-EDUCATIONAL NOTE**

**GLOBAL WARMING : ITS CAUSE AND EFFECT IN  
CONTEXT TO INDIA**

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**ABSTRACT**

Global warming refers to the rising average temperature of the earth's atmosphere and oceans, which started to increase in the late 19<sup>th</sup> century and is projected to keep going up. If we go for the scenario of 20<sup>th</sup> century in relation to global warming, since the early period of this century, Earth's average surface temperature has increased by about 1.4 F i.e. 0.8°C. This finding is, with about two thirds of the increase occurring since 1980. Warming of the climate system is unequivocal and scientists are more than ninety percent certain that most of it is caused by increasing concentrations of green house gases produced by human activities such as deforestation and burning fossil fuels. The national science academies have also recognized these findings.

An increase in global temperature will cause sea levels to rise and will change the amount and pattern of precipitation and a probable expansion of subtropical deserts. If global mean temperature increase by 4°C above pre-industrial levels, the limits for adaptation for natural systems will largely be exceeded. Hence the ecosystem services upon which human livelihoods depend would not be preserved.

The effect of global warming in India vary from submergence of low lying islands and coastal lands to the melting of glaciers in the Indian Himalayas, threatening the volumetric flow rate of many of the most important rivers of the India.

Global warming shows some deadliest effects. Polar ice caps melting due to global warming will raise sea levels. Ice caps will throw the global ecosystem out of balance. Temperature rises and changing landscapes will endanger several species of animals. If Ice caps melt, the only reflector is the ocean; darker colours absorb sunlight, further warming the Earth. Anthropogenic global warming has economic consequences. Due to global warming, there is increased probability and intensity of droughts and heat waves. As the temperature of oceans rises, so will the probability of more frequent and stronger hurricanes.

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In future, towns of India like Mumbai, Chennai etc. may be covered with water due to global warming as such towns are situated on the bank of sea. As a consequence of this, the population of the country will decrease.

**Key words:** Global warming, India.

## INTRODUCTION

Global Warming refers to rising average temperature of Earth's atmosphere and Oceans, which started to increase in the late 19<sup>th</sup> century and is projected to keep going up. Since the early 20<sup>th</sup> Century, Earth's average surface temperature has increased by about 0.8°C (1.4°F), with about two thirds of the increase occurring since 1980.

### **Causes of global warming**

Warming of the climate system is unequivocal and scientist are more than 90% certain that most of it is caused by increasing concentrations of greenhouse gases produced by human activities such as deforestation and burning fossil fuels. These findings are recognized by the National Science Academies of all the major industrialized nations.

Climate model projections are summarized in 2007. Fourth Assessment Report by Intergovernmental Panel on climate change indicate that during 21<sup>st</sup> century, the global surface temperature is likely to rise a further 1.1 to 2.9°C (2 to 5.2°F) for their lowest emission scenario and 2.4 to 6.4°C (4.3 to 11.5) for their highest<sup>1</sup>. The ranges of these estimates arise from the use of models with differing sensitivity to greenhouse gas concentrations.

### **Effects of global warming**

An increase in global temperature will cause sea levels to rise and will change the amount and pattern of precipitation and a probable expansion of subtropical deserts. Warming is expected to be strongest in the Arctic and would be associated with continuing retreat of glaciers, permafrost and sea ice. Other likely ice effects of the warming include more frequent occurrence of extreme – weather events including heat waves, droughts and heavy rainfall, species extinction due to shifting temperature regimes and changes in crop yields<sup>2</sup>. Warming and related changes will vary from region to region around the globe, with projections being more robust in some areas than others. If global mean temperature increase to 4°C above pre-industrial levels, the limits human adaptation are likely to be exceeded in many parts of the world, while the limits for adaptation for natural systems would largely be exceeded throughout the world<sup>3</sup>. Hence, the ecosystem services upon which human livelihoods depend would not be preserved.

The effects of global warming on the Indian subcontinent vary from the submergence of low lying islands and coastal lands to the melting the glaciers in the Indian Himalayas, threatening volumetric flow rate of many of the most important rivers of India and South Asia<sup>4</sup>. In India, such effects are projected to impact millions of rivers. As a result of ongoing climate change, the climate of India has become increasingly volatile over the past several decades; this trend is expected to continue.

Five deadliest effects of global warming are as follows:-

### **Polar ice caps melting**

It will raise sea levels. There are 5,773,000 cubic miles of water in ice caps, glaciers and paramount snow. Melting ice caps will throw the global ecosystem out of balance. Due to ice caps melting temperature rises and changing landscapes in the arctic circle will endanger several species of animals. Only the most adaptable will survive.

### **Economic consequences**

Hurricanes cause do billions of dollars in damage, disease cost money to treat and control and conflicts exacerbate all of these.

### **Increased Probability and intensity of droughts and heat waves**

According to the intergovernmental Panel on climate change, global warming will exacerbate the conditions and could lead to conflicts and war.

### **Warmer water and more hurricanes**

As the temperature of oceans rises so will the probability of more frequent and stronger hurricanes.

### **Spread of diseases**

As northern countries warm, diseases carrying insects migrate north, bringing plague and disease with them<sup>5</sup>.

## **CONCLUSION**

In terms of global warming, its cause and effects; we Indians have to take care of our activities which affect environment causing global warming otherwise some Indian cities situated nearby sea specially like Mumbai, Chennai etc are covered with water due to continuous rise in sea level. Global warming can also be controlled through legislation.

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