

GLOBAL AND REGIONAL PERSPECTIVES ON GLOBAL WARMING ISSUE

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Abstract: *Climate change and global warming have been the issues which have grabbed the attention of the entire world during this decade. The debate is on between the developing countries and the developed countries about climate change and its impact on the environment. The developing countries do not want to follow certain guidelines which are to be implemented because they do not want to affect their national growth and productivity. On the contrary, they emphasize that the action are required to be taken by the developing nations that are responsible for the current crises. In other words, the future of the earth remains questionable in the hands of politicians, who should take some decisions for a better tomorrow. In this article, we try to discuss the global and regional perspectives on global warming and measures to control the global warming.*

Key words: Global Warming, Climate Change, Global and Regional Perspectives

Introduction

The presence of greenhouse gases is important in atmosphere. But problem is that their amount in atmosphere is increasing day by day. Scientists conclude that the temperature of the earth is increasing at the rate of 0.2°C per decade. In 20th century earth's average temperature has risen 0.5°C. In our country 700 crore tones carbon dioxide gas emits out in atmosphere every year. In India the emission of CO₂ has not been stopped. In 1990 it was 0.68 gega tonnes which increased up to 1015 gega tones in 2002. Thus the greenhouse gases are increasing fast. By global warming we mean rise in the average temperature due to the concentration of thermal energy in atmosphere. Due to industrialization there has been an increase in the amount of carbon dioxide which has given origin to greenhouse effect. The thermal energy coming out of earth's surface cannot escape from the atmosphere. As a result there is an increase in the temperature of the earth. In addition to carbon dioxide, methane, chloro fluoro carbon and nitrous oxide are also responsible for greenhouse effect.

Due to global warming sea-level rise would immediately threaten that large fraction of the globe living at sea level. Nearly one third of all human beings live within 36 miles of a coastline. Most of the world's great seaport cities would be endangered. Some countries-the Maldivis Island in the Indian Ocean, island in the Pacific oceans would be inundated. Heavily populated coastal areas such as in Bangladesh and Egypt, where large populations occupy low-lying areas, would suffer extreme dislocation. Warmer oceans would spawn stronger hurricanes and typhoons, resulting in coastal flooding, possibly swamping valuable agriculture lands around the world. Food supplies and forests adversely affected. Changes in rainfall patterns would disrupt agriculture. Warmer temperatures would shift grain growing regions pole wards. Human health would be affected. Warming could enlarge tropical climate bringing with it yellow fever, malaria, and other diseases. So global warming may be the greatest challenge facing human kind.

Global and Regional Perspectives

Increased Sea Surface Temp. (SST) by 2°C could increase cyclone intensities by 20 percent, wind gust velocities by 11 percent and wind loadings on structures by 20 percent. An increase of SST by 2° C. could mean an increase in cyclone frequency at the order of 2 o 3 times. A modest sea level rise could have great implications particularly for low lying islands and coastal nations in the form of increased rates of coastal erosion and salt intrusion into ground water systems. These in turn have secondary impacts on agriculture, water resources; commercial and residential property, energy systems, transportation systems and

so on. One meter rise of sea level would require expenditures of between US\$ 10 and US\$100 billion to maintain threatened beaches and coastal areas on the eastern coast of the USA. In Netherlands existing dikes and other protection against storm surges will have to be reinforced at a cost of US\$3 to 8 billion, respectively for a 70 to 200 cm sea level rise. In Bangladesh the combination of sea level rise and a subsidence of the river system could flood the delta region and threaten anywhere between 8 to 24 million people. A rise in sea level of 0.5cm would also severely affect small oceanic Islands, Particularly the low reef islands and atolls of the Caribbean and Pacific Ocean. Many regions, particularly the most overpopulated ones, could suffer from severe drought, famine and shortages of essential raw materials. The net global impact may be drastic lowering of standards of living, physical wellbeing and even substantial loss of life. The rapid change in temp, probably have the more severe impact on forest ecosystems and on irrigated agriculture in the semi- arid areas of the mid-latitudes (e.g. The American Midwest) Which will suffer from higher temperature and increased drought in summer. The sea level has probably already risen 7-17cm during the 20th Century. On the basis of the observed changes it is assumed that the predicted global warming of 1.5°C to 3.1°C would lead to a sea level rise of 20-165cm, the results would be erosion of beaches and coasts and land use changes particularly in coastal and river regions. Wetland loss, increased frequency and severity of flooding, damage to port facilities are some of the important effects. In an extremely pessimistic scenario, a temp, rise of 20 to 40°C due to an increase in atmospheric CO₂ to 600PPM or more would cause the polar ice caps to melt sufficiently to raise the sea level of the major oceans by 5 meter or more.

Due to global warming many species may not successfully adapt to changing habitats or migrate to new ones. Some may become extinct, whereas others may survive only in reduced numbers and range. Effects of global warming on individual species will be greatest on plants, which are directly affected by temperature and rainfall because individual plants like animals cannot move from one place to another as climate and habitats change. According to Margaret Davis of the University of Minnesota the four species of beech, birch, hemlock and sugar maple trees would have to shift approximately 500kms north to remain in a suitable climate and habitat. Davis says beech forests would disappear from the southern United States due to global warming; similarly Davis Predicts sugar maple tree now growing from the great lake region of southern Canada to Tennessee, would migrate north along both sides of Hudson Bay. According to Daniel Botkin of California University shifting forest ranges would also affect animals such as Kirtland's warbler, a critically endangered bird that breeds only on the sandy soils of Michigan's Jack Pine forests. If the pine retreats north into Canada, the warbler will also follow.

According to Dennis Murphy of Stand ford University (USA) if the earth warms by 3°C the Western United States will lose 44 percent of the normal species, 23 percent of the butterfly species and a somewhat smaller percentage of the bird species that reside there. According to Vera Alexander, director of the University of Alaska's Institute for Man rise sciences in Fairbanks notes the direct relationship between Primary nutrients, food production and the viability of many fish and marine mammals in Arctic Waters. According to Alexander if global warming melts the Polar sea ice, the number of microscopic organisms would be reduced, and the marine animals they support would probably suffer as well. Less sea ice would also affect seals which breed on the ice and polar bears which hunt and travel on the ice. According to Daniel Rubenstein a Princeton university biologist, argues that a hotter, drier Africa will force elephants to search further for food. Warmer conditions at high latitudes could lead to reduction in the area extent of boreal forests and to a pole ward shift in their boundaries. High rate of warming of 0.8°C to 1°C per decade will have major impacts on the mid latitude temperature forests in the Northern Hemisphere and a large scale forest dieback between 2000 and 2050 is expected. Changes in climatic conditions would destabilize the unique climate and nutrient cycling systems of tropical forests. Due to global warming the increased severity and frequency of drought such as experienced during 1986-87 and 1987-88 will pose the largest threat to Canadian agriculture. Due to Global warming in the Arctic, the tree line is expected to move slowly north ward at the rate of approximately 100 kms per 1°C of warming. Drier climates in Southern Canada could also affect tree growth and significantly increase the risk of forest.

The most likely impact of any global warming in the near future will be on world rainfall distribution. As rainfall pattern change, climate zones will shift and the Earth's Principal areas of agricultural cultivation and vegetation cover will be displaced. Bryson estimated that 0.1°C rises in global mean temp between 1957 and 1970 due to increased CO₂ should have led to a decrease of 86mm of precipitation annually in the Sahel region of West Africa. According to Glantz and Anselbe if CO₂ accumulated increased the frequency, duration and severity of droughts in the Great Plains of the USA. More rapid depletion of the Groundwater contained in the Ogallala aquifer an underground geological formation of water bearing porous rock would Depletion of these groundwater reserves could have serious consequences for agriculture. According to US National Academy of sciences, a sudden warming of 2° C. with no change in precipitation might -reduce yields by 3 to 17 percent. According to FAO (Food & Agricultural Organization) of the United Nation's all 65 low income food deficit countries are potentially vulnerable to climate instability. Due to global warming slow and widespread melting of the permafrost will create an unstable foundation for roads, buildings, pipelines and other structures. In addition, melting of the Permafrost is likely to release significant amounts of CO₂ and methane to the atmosphere. Due to global warming icebergs could increase as much as 300 percent, posing a major threat to offshore activities in the eastern arctic and Labrador. The global warming would mean less ice cover on navigable waters and this could substantially benefit shipping and the offshore resource industry in arctic and coastal waters.

Measures to control the problem of Global Warming

According to EPA the most effective short term action would be to limit CFCs production, acceleration the replacement of old machinery with new energy efficient technology, reverse the destruction of the forests and encourage tree planting. In sum the purpose of such an analysis should be to determine whether it is worth investing today in a number of important adaptive and preventive measures for controlling a global warming and limiting the impacts of its effects.

Adaptive Measures

- The provision of additional financial assistance to developing countries especially in semi-arid and flood prone regions.
- The allocation of development funds to third world countries in order to expand food production and to develop a sustainable agriculture.
- A greater international effort to halt the trend of accelerating global desertification.
- A commitment of curbing the rapid growth of population.

These adaptive measures would to some extent lesson the more severe impacts of the economic and environmental disruptions accompanying any global greenhouse effect.

Preventive Measures

- Use of non-conventional energy resources.
- To reduce the emissions of gases from other anthropogenic sources.
- Increasing pollution control and developing technological processes to scrub, recover and recycle the carbon and other trace residuals emitted when fossil fuels are burned.
- Halting unnecessary tropical deforestation through alternative development strategies and incentives.
- Increasing the rate of replanting in deforested areas, encouraging afforestation and improving forest management.

Effective implementation of these preventive measures will eventually require their acceptance by developing countries, whose consumption of fossil fuels is continuously increasing. Those countries cannot be expected to invest in such measures without assistance from developed countries either in the form of specific investment flows or making emission reduction technology available. Finally with such a potentially vital future problem, there is a mandatory call for further research.

Conclusion

Global Warming have causes many problem for human but we human who make global warming happens. Many people have died because of disease or disaster. It also affects the

economics of the country. However, we need to be reduce the global warming by using less gasoline, recycle and human should help to reduce global warming instead of making the earth temperature increased. Our generation should start taking care of the earth because in the next generation they will suffer if we do not do reduce global warming. Therefore, global warming is a serious issue now. Climate change due to global warming is occurring and will continue to have consequences long into the future. Therefore, this issue is more about existing responses, research and the future plans and responsibilities each country has in respect of this phenomenon. It is clear that climate change has more impact on developing countries compared to the developed countries. The impact can be seen from the environmental damages due to climate change that is more significant in developing countries than that in developed and development countries. The developing countries have insufficient funding to apply programs and actions dealing with climate change impact in its regions. Developing countries tend to be fragile and vulnerable in term of climate change impacts and related natural disasters such as drought and storms due to their geographical conditions compare to developed countries. The developed countries consume more global energy and contribute more to global emission than developing countries that cause global inequity in energy consumption in the world and the developing countries contribute in reducing the global carbon emission. Finally, the impact of climate change and global warming in developing countries absolutely outweighs that of developed countries and this situation has led to global inequity regarding the urgency to give the same attention in climate change action across the world as emphasized in the Kyoto protocol, Copenhagen, and so on. Therefore, developed countries must support developing countries in all solutions related to climate change impact. For instance, by granting funds, providing technology, and assisting through educational development and research in collaboration with scientists between both countries. In some extents, the developed countries can help the community in developing countries dealing with climate change through environmental education programs not only by granting financial support to build schools but also approaching the developing countries to initiate and make education curriculum for environmental education like climate change awareness. These curricula could be taught from primary schools to senior high schools. The developed countries can award scholarships to the young generation of developing countries to study on climate change science in developed countries.

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