

Periodic Research

Global climate change: an international perspective

Abstract

There are differences in the perception and evaluation of climate change and the acceptance of protection measures in different countries. These differences are due to their socio-economic and other conditions. Such differences are important in order to understand the difficulties in the international negotiation processes. From this study, it also became apparent that how climate change could influence and solely responsible for the future extinction of different biological species. Warning of nature such as Global warming, Green house effect, Climate change, Acid rain, Ozone depletion, deforestation, etc. are dealing with different nations but due to so many factors very little output are coming into limelight. Thus, images of nature might be a general cultural background variable for many related problems. Starting from 1985 to 1992 a number of international conferences are being organized globally but the outputs are not satisfied from the available datas. Developed countries are using genetic engineering method for heavy food grain production which is not directly related with climate change but poor countries are using traditional methods of using fertilizers, insecticides, pesticides and CFCs which is more vulnerable for climate change.

Keyword: Global warming, Climate change, Green house effect

D.K. Joshi

Post Doctoral Scholar,
Gayatrinagar, New Bus,
Stand, Junagarh, Kalahandi,
Odisha

Sasmita Mund

Lecture in Geography,
Chamelidevi Women's
College, Junagarh,
Kalahandi

Introduction

The recent interest in global warming and sustainable development of the world's resources for "Our common future" has filled the airwaves throughout. Humanity is talking about these issues everywhere. Everybody starting from ecologists to politicians are discussing on the matter of global climate change. A large number of international conferences are arranging every week somewhere in the world. The most important global environmental topics are human population growth, bio-diversity conservation, climate change, deforestation, waste management, land degradation, genetic engineering, atomic waste management, etc. The important point is that man is as closely related to nature as he is a part of it. So he is affected and in turn effects the other constituents which are as much a part of nature as man himself.

Climate has from the very beginning regulated man in practically every aspect of life all round the world. Initially impact on climate began by burning and felling forest and tilling the earth. Until the industrial revolution man had little effect on the climate except on a very local scale. Extensive climate change has been taking place from the middle of the present century. Now, the fact is that environmental challenges are said to be a concurrent international dispute!

Conventions:

Several conferences in the recent years have taken place in the international level. Here a brief reference is given for better understanding.

1. For protection of global atmosphere at Vienna (March 22, 1985).
2. Role of green house gases Villach (October 9-15, 1985 & Nov 9-13, 1987).
3. Depletion of Ozone layer at Montreal (September 16, 1987)
4. Changing atmosphere at Toronto (June 27-30, 1988).
5. Protection of global climate at UNO (December 1989).
6. Saving the ozone layer at London (March 5-7, 1989)
7. For protection of global atmosphere at Helsinki (March 11, 1989)
8. Meeting on montreal protocol at Hague (May 1-5, 1989)
9. Summit of industrial countries at Paris (July 14, 1989)
10. Global warming at Noordwijk (November 6-7, 1989)
11. Global change at Washington (April 16-18, 1990)
12. Common future at Norway (May 14-16, 1990)

Periodic Research

13. London summit at London (June 1990)
14. Agreement on Antarctica at Madrid (October 5, 1991)
15. Earth summit at Rio de Janeiro (June 3-14, 1992)

Scorecard of the historic meet:

During the Earth Summit, success in a limited form was seen in the different treaties signed by the attending nations. Two key treaties were signed by over 150 countries—the treaty on biodiversity and climate change. Nawaaz Sharrif told in G-77 nations conference that the world will never be the same again after the conference. But later on there were serious examples of non-cooperation and lack of unanimity. The summit did not take up many relevant issues including toxic wastes, nuclear energy, over population, etc. There was another major stumbling block, the question of funding. There was also a lack of consensus, as to when the funding will be organized.

- a. The concentration of carbon-dioxide into the atmosphere has increased by 25 per cent since the industrial revolution.
- b. The concentration of Methane has more than doubled during the last three centuries. It is increasing at a rate of one per cent per year and is responsible for about 20 per cent of the current increases in the green house effect.
- c. The concentration of nitrous oxide has increased by 5-10 per cent since pre-industrial times.
- d. CFCs were introduced into the atmosphere for the first time during the century; the most common species are CFC-11 and CFC-12.
- e. The chemistry of the atmosphere is changing due to emission of carbon monoxide, nitrogen dioxides, and volatile organic compounds.

Activities of International Organisations:

The need for extensive research is understood by all the scientific community for the method of curbing the accelerated climate change. Many government and non-governmental organizations have been set up and have made efforts in this regard. The UNEP, UNDP, EEC, ESF, FAO, WMO, IOC, SCOR, WWW, WCP, WCIP, PAGES, IGOSS, HDGG, GEMS, GCTE, EPOCH, etc. are some of the organizations doing activities on climate change and fight against disaster for saving global environment.

Issues involved:

The Earth's atmosphere is being changed at an unprecedented rate by pollutants resulting from human activities. These changes are already having harmful consequences over many parts of the globe. The composition of the earth's atmosphere is changing. Detailed background atmospheric concentration measurement combined with analyses of ancient air trapped in Antarctica and Greenland ice, now give a compelling picture, and also of major changes that have occurred in pre-industrial times.

Magnitude of the change:

The first analysis of the effect of increasing carbon-dioxide concentration on global warming was conducted by the Swedish Chemist, Svante Arrhenius in 1896. He was identified the harmful

effect of carbon-dioxide. He estimated that if the atmospheric concentration of carbon-dioxide doubled, the surface of the planet would warm by about five degree celcius. After Arrhenius many studies were done in order to understand the reasons for the changing global climate and its future repercussions. Several organizations like NAS(1979), IASA(1981,1983), etc. also done tremendous work on global climate change and its consequences.

The green house effect:

The green house effect is a natural phenomenon that plays a central role in determining the earth's climate. The increase of the different green house gases have been documented by the United State Environmental Protection Agency, Office of Policy, Planning and Evaluation in 1989.

Ozone depletion:

The detection of the ozone hole in the 1980s is considered one of the most important scientific discoveries of the past fifty years. Since then, it has been recognized as having a significant impact on the global atmospheric system, and in particular on Antarctic climate. It has recently been discovered that the Antarctic Polar Vortex, which forms during the polar winter as a result of ozone depletion, has played a major role in maintaining the stability of the East Antarctic Ice sheet over the last 50 years. Work is currently being undertaken to investigate the likely evolution of the Antarctic ozone hole in the future, in particular how a reduction in size might impact on Antarctic climate. It is possible that as the Antarctic Polar Vortex weakens the continent will no longer be shielded from the warming that has been occurring over the rest of the globe. As a result of this it is predicted that stratospheric temperatures could rise by up to 9° Celsius and that sea ice could decline by up to a third, if the size of the ozone hole is reduced to pre-1980 levels, as it is predicted to do by the end of the twenty-first century.

Acid rain:

The phenomenon of acid rain was identified in Manchester in 1852 and described thoroughly in 1872; modern scientific research has been going on only since the mid 1950s. Acid precipitation is a mixture of sulphuric acid, nitric acid and hydrochloric acid in rain water and snow. It is usually defined as having a ph of less than 5.6. The primary reason for concern is that acid deposition acidifies streams and taken on coarse sandy soils low in lime. Acid deposition can also mobilize heavy metals from pipes into supplies of potable water. It also penetrates deep into lungs and can cause lung diseases and increase mortality rates.

Deforestation:

Forests play a critical role in the terrestrial carbon cycle. Each year at least 11.3 million hectares of forest are cleared in the tropics. The causes of deforestation are well known. They include population pressure for agricultural land, the demand for industrial timber production and export, inappropriate government policies regarding land tenure, economic incentives, and other population issues. Population growth appears to be the critical factor affecting

deforestation. The majority of the population practices agriculture which directly and indirectly related to deforestation.

Global warming and Agriculture:

Agriculture contributes to the emission of green house gases through three primary means- use of fertilizers, pesticides and enteric fermentation in domestic animals. It has been found out the emission from all three categories of agricultural practices are expected to increase over 1985 levels: Global methane emissions from rice and enteric fermentation increase about 35 per cent and 65 per cent respectively by 2020-2025, and nitrous oxide emission from fertilizer use are projected to increase by 133 per cent by 2025. By 2100, emissions from rice, enteric fermentation, and nitrogenous fertilizer increases by approximately 40 per cent, 125 per cent and 175 per cent respectively.

The global climate change and biological diversity:

Previous natural climate changes have cause large scale geographical shifts, changes in species composition and extinction among biological communities. But due to greenhouse effect many more biological species would be threatened. For example, it is known that one race of the dwarf birch (*Betula nana*) can only grow where the temperature never exceeds 22 degree celcius, then a hypotheses could be made , that it would disappear from those areas where global warming causes temperatures to exceed 22 degree celcius.

Observations have led to believe that plants and animals are very sensitive to climate. It is also known from the fossil records that some species have become completely extinct because they were unable to find suitable habitat when climate change made their old homes unlivable.

If rapid action is not taken now by the countries of the world, these problems will become progressively more serious, more difficult to reverse and more costly to address.

Developing countries and climate change:

a) Implications for risk management:

Many observers believe that the implications of global warming are go grave that in some fashion, restrictions on green house gases emissions should be considered along with the other numerous and already burdensome restrictions on development, eg. Lack of capital, skilled personnel, and lack of infrastructure.

The best way to protect the poorest groups is to bring them as soon as possible to a minimum level of development at which they can be expected to adequately handle environmental stress. The extra green house emission necessary to accomplish this task are miniscule in the global green house gas picture and thus will not be critical in determining climate change.

b) Environmental stress across the development spectrum:

Climate change is an economic threat in developed areas but, in addition, a threat to life itself in poor areas. This argues that the best approach for

a developing country planner worried about climate change may be to accelerate those aspects of development that will assist their poorest and most vulnerable populations in attaining the levels of health, flexibility, education, and resilience that will allow them to cope with environmental stress of all sorts, including climate change. This may offer a much more effective least-risk development projects on the basis of green house gas emissions.

Conclusion:

It is evident that global climate change is a complex issue and it effects greatly to the delicate balance of the nature and eco-system as a hole. So, to create a healthy atmosphere every nation should try their best to serve the humanity by making drastic efforts. Humans are changing earth and atmosphere condition just to fulfil their greed. Anthropogenic climate change has scientific basis as datas are coming regularly studying different geographic regions. There is scientific consensus that we are already seeing human impacts on our climate. There are many uncertainties for global and local outcomes of climate change. What we are doing now will affect climate for our Grandchildren.

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Periodic Research

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