



Article : GLOBAL WARMING AND SUSTAINABLE ECONOMIC DEVELOPMENT : ISSUES AND CHALLENGES

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Introduction:

The environment as per Encyclopedia Britannica is the complex of physical, chemical and biotic factors that act upon an organism or an ecological community and ultimately determine its form and survival. Thus, the environment is the system in which human beings live and they have to adjust to their natural environment. More over, besides domestic environment there are global factors affecting life and Economic Development. The issues of sustainable development have become relevant today not only developing countries but also in developed countries where the imbalance in natural environment is consciously felt due to extra emission of CO₂ and CO₃ has impact on climate. The climate change is causing un-predictable changes in weather conditions. Some of such events have devastating impact on human habitat. This is experienced by frequency of cyclone, flooding and natural calamities on different parts of the world.

According to the Report the World Commission on Environment and Development 1987, “sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” It is a process of economic activities which leaves the environmental quality level intact with the policy directives corresponding to this notion being the maximization of net benefits of economic development for the present and future generations subject to maintaining the services and quality of natural resources overtime. Thus, sustainable development has both socio and economic content. It takes into account use of natural resources and socio-economic growth. It is linked with the shape and reshape of natural environment. It takes into account economic agenda for inclusive growth, basic social infrastructure and nature’s equilibrium. Nature’s equilibrium is linked with atmosphere, sun, earth, water and vegetation. These are also resources which sustain habitat. Over use of one or improper use of

another affects balance and creates disequilibrium. It leads to natural calamities which is now called as “Global Warming.”

The earth has warmed by 0.78 degree Celsius since 1860 and the warming trend continues. It is largely due to man made causes and partly due to natural causes. The human causes are related to Green House Gases (GHGs) notably carbon dioxide emitted by power stations burning coal and automobiles run on petroleum and diesel and nitrogen oxides vehicular exhausts, paddy cultivation and cattle are also responsible for another GHG i.e., Methane. On the other hand destruction of forests has its own effect. Many natural causes are there. ex: decaying carbonaceous matter which releases from marshy lands, water vapour from the seas.

During 1980's global warming came to engage the serious attention of scientists. Because it was feared that this warming would have a disastrous impact on global climate, human and animal life. At the 2001 annual meeting, the New England Governors and Premiers actually did make big news when they agreed to science based targets for reducing global warming pollution-1990 levels by 2010, 10 percent below 1990 levels by 2020 and 75 to 85 percent below in the long-term. Though the agreement was voluntary, It was first in the United States and it sent a strong signal that climate protection was about to become mainstream. Despite some initial steps by the states, the agreement has not led to watershed changes in policy across New England. The governors have moved ploddingly to design and implement climate protection plans and have stalled on many of the key policies that will significantly reduce global warming pollution, while also lowering energy costs and benefiting the regional economy. The bottom line is that they are not on track to hit the agreed- upon targets. The California Governor has recognized that by taking the lead on global warming, California can reap enormous economic benefits, potentially saving \$2,500 a year for every house hold in the state. Venture capital investors took note of his progressive climate policy and directed more than \$ 1 billion to the California clean technology sector. Of the 2006 investment pie for clean tech firms, that represented about 7 percent increase in California's overall share.

The United Nations Framework Convention on Climate Change was adopted at Rio de Janeiro in June 1992. The convention called upon the developed countries to limit their emissions of GHG's to below their 1990 levels by the end of 1990-1999. Developing countries were put under no such obligation though they were asked to take steps to promote the objective of the convention. The principle recognizes that the developing countries are not responsible for the build up of GHG's in the atmosphere and would indeed to emit more quantities with their economic development. India was a party to the convention. The Kyoto Protocol of December 1997 laid down quantitative targets for each of the developed countries to be achieved by the period 2008-2012. The overall target of the protocol was to achieve a reduction of 5 percent in the GHG levels by this period. In December 2008 in Bali, Indonesia a meeting was held about GHG emission reduction. Developed and developing countries together adopted 'Bali Action Plan' with targets and achievements. Developing countries were asked to prepare action plans for emission reduction. The plan provided for financial technical assistance. Recently from 7th to 8th December 2009 at Copenhagen in Denmark a political agreement was reached between the United States and the newly emerging major economies of Brazil, South Africa, India and China. The agreement is known as 'Copenhagen Accord.' It recognizes the sanctity of keeping global temperature rise do not more than 2 degrees Celsius. Representatives from 193 countries were present at the meeting including scientists and experts. European Community has decided to give assistance about \$10.6 Billion to reduce GHG levels. The Accord was taken note of by other countries too and is expected to form the basis of further negotiations in the near future.

Adverse consequences of global warming show up in the decrease in forest biomass, decrease in agricultural production, damages caused by coastal inundation resulting from risen sea levels. Forest and agricultural produce are likely to fall further as global mean temperature increases. The genesis lies in the advent of an explosive rise in energy demand. These will be rise in consumption of fossil fuels. One related hazard to climate change is the degradation in the stratosphere. It refers to the destruction of the ozone layer.—which is known to be a shield against harmful cosmic radiation—resulting presumably from emissions of chemical agents. It leads to ozone depletion.

HEALTH EFFECTS OF CLIMATE CHANGE AND OZONE DEPLETION:

	Potential Direct Effects	Potential Indirect Effects
<p>Ozone depletion: UV radiation</p>	<p>Skin cancer, cataracts (may be depression of immune system)</p>	<p>Impairment of photosynthesis leading to compromised food production (may exacerbate problems of groups with already compromised immune system)</p>
<p>Climate change: Thermal stress</p>	<p>Death, illness, injury.</p> <p><u>Habitat alteration:</u></p> <p>Infectious diseases, epidemics.</p> <p><u>Food production:</u></p> <p>Malnutrition water quantity and quality: diarrhoeal diseases.</p> <p><u>Aggravation air pollution:</u></p> <p>Aggravation of existing illnesses.</p>	
<p>Storms</p>	<p>Drowning and injury</p>	<p>Loss of housing;</p> <p>Mental/physical stress of displaced persons.</p>
<p>Floods</p>	<p>Same as storms</p>	<p>Same as storms;</p> <p>Desertification, droughts; malnutrition</p>

		stress
Brush/forest fires	Injury and death	Same as storms but to a lesser extent. Rise in sea level: Susceptibility to storms, water pollution, salt water intrusion; Vector-borne diseases; malnutrition, social/demographic dislocation; Loss of infrastructure; Mental/ physical stress of displaced persons

Source: World Development Report 1992.

On the other hand, as a result of environmental damages including the shrinking of forest cover, biological diversity habitats are increasingly being destroyed, endangering and often annihilating species of life. It is well known that to maintain the physical, social and economic life of human kind, it is extremely necessary to retain the ecological resources. ex: all firms if life flora and fauna. At the global level, accumulated depletion over time, through partially open access regimes in different regions has resulted in this threat to biodiversity, deforestation, pollution, climate change, ocean-warming, desertification, loss of wet lands to human settlement. Over hunting, over grazing, over harvesting, over population have been causes of major global concern because of their threat to the total web of life.

An analysis of the economics of climate change led by Sir Nicholas Stern, the former Chief Economist of the World Bank, known as “stern review” the mounting scientific evidence that climate change is happening and that human activity is one

of the key drivers, together with a string of natural disasters consistent with scenarios for climate change, have met with unprecedented attention by the media, by industry, the public and political decision makers at the highest levels. The intergovernmental panel on climate change is a unique international co-operation of over 2000 scientists world wide who periodically review scientific evidence co-ordinate by the world meteorological organization and the United Nations Environment Programmed. The IPCC's Fourth Assessment Report is published during 2007. It reveals that global temperature has risen by 0.74 degree Celsius. The trend is accelerating and has affected all continents and most oceans. Currently, CO₂ accounts for almost 60-percent of the total effect, Methane for 20 percent, nitrous oxide for 6 percent and a number of other gases for the balance. Three-quarters of CO₂ emissions originate from use of fossil energy like coal, petroleum and natural gas and the balance from land use changes, in particular tropical deforestation. Methane and nitrous oxide are released primarily by agriculture and to a lesser extent in mining, industry and traffic.

On the basis of my study, I have arrived at some conclusions:

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- Ø Environment degradation will affect human capital and physical capita to a great extent.
- Ø Global warming, if it continues, it leads to unprecedented natural calamities.
- Ø Eco-friendly production activities are the need of the hour.
- Ø Industrialised countries have been responsible for the bulk of emissions, but industrialising countries are becoming major emitters.
- Ø Making economic growth and development compatible with stabilizing the climate calls for 'Low carbon economies'.
- Ø New technologies will be needed including carbon capture and storage.

Ø Global warming has its own impact on GDP.

Ø It is the need of the hour to have 'Decent Work Agenda' to arrest the effects of global warming.

Ø Emission control can be effected through regulation involving fixing limits and imposing penalties.

Ø Agriculture, because of its proximate relationship with climate is seen to be in the fore front. Agriculture, as a viable alternative solution for tackling global warming requires to be studied in relation to other sectors of the economy.

In this global village, with global warming towards sustainable development, I have given the following suggestions:

Ø The Government should start 'Ecology clubs' through out the country to create awareness about global warming and ecological imbalance.

Ø Stringent legislations and implementation in a proper way is the need of the hour

Ø Green India mission and vision is the need of the hour.

Ø Central government should give special incentives to the states to focus on the eco-systems.

Ø Supply of cooking gas is important to decrease the dependence on forests for fire wood.

Ø Carbon tax on emissions of carbon dioxide above permissible limits can be introduced.

Ø Technology should be developed for capturing carbon dioxide emitted by power stations and storing it in underground vaults.

Ø To meet the challenge of climate change 'adaptation' action is a preventive measure.

Ø In the field of adaptation measures, co-operation for the people is equally important.

Ø It is the need of the hour to develop leadership at all levels with clear vision to create awareness in the community. In this regard it is necessary to involve youth by assigning them responsibilities.

Ø It is the need of the hour to depend upon new renewable energy sources like wind energy, solar energy etc. to a great extent.

Ø Non governmental organizations should take part actively to create awareness and to educate the people about global warming and environmental degradation.

CONCLUSION

Thus global warming and economic development are related. Global warming leads to environmental degradation. It will affect human life and economic activities. "Improving access to reliable, affordable, environmentally friendly energy services is a major challenge." The development of renewable continues to be human, ecological and strategic necessity and should have priority in public research projects. In this regard several dimensions of the political economic view of environmental and economic management of the economy should be addressed by all societies, locally, nationally and globally. It is the need of the hour to fight global warming along with commitment to sustainable development.

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