

# CLIMATE CHANGE: FORCES, IMPACTS AND GLOBAL COMMUNITY RESPONSE FOR COPING WITH

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## **Abstract**

*Technological progress and economic development have improved our standards of living styles; however, accelerated and unplanned growth has caused considerable damage to our natural and environmental resources. The effect of the environment at the global level contributed to global climate change and global warming (the two terms are interchangeable) referred to an increase in average global temperatures. The present paper is an attempt to examine climate change: forces, impacts and global community response based on the following objectives are To study the close links between environment and development. To document the important forces that triggers of climate change. To examine the impact of climate change on our planet in general and people. To study the response of the global community for coping with climate change. To know the possible inevitable and unpalatable inferences from the analysis if we fail to address the global warming/climate change issues. The present study is based on secondary data. The data have been drawn from books, Intergovernmental Panel on Climate Change Reports, magazines, journals, articles, newspapers relate to the subject. Descriptive analysis technique has been used for the purpose of the study.*

**Key words:** Climate change, Global Community.

## **Introduction**

Technological progress and economic development have improved our standards of living styles; however, accelerated and unplanned growth has caused considerable damage to our natural and environmental resources. The effect of the environment at the global level contributed to global climate change and global warming (the two terms are interchangeable) referred to an increase in average global temperatures. There is compelling evidence to show that many weather –related disasters are not chance occurrences but are a result of human activities that have altered our atmosphere. Extreme weather and related disasters are becoming more common. The increased temperature extremes are not just chance occurrences but partly due to global warming. According to Friedman (2009), it is no longer climate warming, but climate weirding. As scientist Kevin Trenberth remarked, “all weather events are affected by climate change because the environment in which they occur is warmer and moisture than it used to be. The Intergovernmental Panel on Climate Change (IPCC) concluded that it is now more certain than ever before that human caused climate change is real, and greenhouse gas emissions are causing changes to the planet that could possibly trigger dangerous consequences by the turn of the century. The panel further added that the “warming of the climate system is unequivocal, and since the 1950’s many of the observed changes are unprecedented over the decades to millennia”. Still this scenario can be turned around: by creating political and economic conditions collectively across the world that foster the needed technologies. Meanwhile, the climate clock is ticking.

## **Objectives**

The present paper is an attempt to examine climate change: forces, impacts and global community response based on the following objectives are To study the close links between

environment and development. To document the important forces that triggers of climate change. To examine the impact of climate change on our planet in general and people. To study the response of the global community for coping with climate change. To know the possible inevitable and unpalatable inferences from the analysis if we fail to address the global warming/climate change issues.

## **Methodology**

The present study is based on secondary data. The data have been drawn from books, Intergovernmental Panel on Climate Change Reports, magazines, journals, articles, newspapers relate to the subject. Descriptive analysis technique has been used for the purpose of the study.

## **Results and discussion**

### **LINK BETWEEN ENVIRONMENT AND DEVELOPMENT**

During the last few decades, many economists have drawn attention to the close links between environment and development. The mad rush for economic growth has over the years, has led to environmental degradation on a large-scale accompanied by massive resource depletion. Limits to growth by D.H. Meadows, D.L. Meadows and R. Randers (1972) draw attention to the fact that there are number of non-renewable resources whose present levels of consumption are such that the known reserves will be exhausted in not so distant future. Many later studies have also highlighted the danger of environmental degradation. This requires that if an environmental resource is damaged or depleted in one area, a resource of equal or greater value should be regenerated elsewhere. Thus, the focus has now shifted to 'environmental protection and sustainable development'.

In this context, the economists now emphasize the concept of sustainable development. Brundtland Report on "Our Common Future" (1987) defines sustainable development is one which seek to meet the needs and aspiration of the present without compromising the ability of future generations to meet their own needs. This report articulates that: Environment is where we live and development is what we all do in attempting to improve our lot within that abode. They are inseparable. Environment does not exist as a sphere separate from human actions, ambitions and needs. Sustainable development can be achieved only if the environment is conserved and improved. Therefore, Sustainable development implies include three pillars namely economic development, social development and environmental protection. A grand compromise on the conflicting views of broad "warring" groups is needed through global collective negotiations. The Human Development Report (1996) pleads for widening the horizon still further-from sustainable economic development to sustainable human development. The latter would imply that future generation should be afforded at least the same capacity for human well-being as the present generation. Thus, sustainable economic development and sustainable human development, the most important concepts of twentieth century, has become a global goal and a movement, and it is now central to the missions of countless international organizations, national institutions, corporate enterprises, sustainable cities and locals.

### **Forces That Triggers Of Climate Change**

There is enough evidence available to draw inference that many weather –related disasters are not chance occurrences but are a result of human activities that have altered our atmosphere led to climate change/global warming. Among others, global warming and population growth are the two major forces influencing our planet. In this section, the drivers

and triggers of climate change are examined. Broadly, there are two sets of drivers (Bisaliah, S, 2012): First, variations in sunlight intensity, orbital variations (mutual interaction of the earth, Moon and other planets), volcanos, interactions between Oceans and atmosphere and between ice caps and atmosphere, fall in genetic diversity, and greenhouse gas effect are some of the triggers of climate change.

The second set of drivers and triggers of climate change are human induced activities. To put them in a synoptic manner: Increase in the levels of concentration of a number of greenhouse and ozone depleting gases including carbon dioxide, Sulphur dioxide, nitrous oxides, methane which is 23 times more potent than carbon dioxide (USA Today article) as result of human activities.

Burning of fossil fuels, many industrial process such as cement, liquid natural gas production, coal and mining produce or emit variety of greenhouse gases. Gas production by livestock, animal husbandry, use of land for foresting and agriculture, irrigation (changing humidity and temperature), burning of E-waste form set of human induced climate change.

All of us in our daily life contribute out a bit to the change in climate: A use of gadget, a computer, a toaster, a micro oven and so on either due to increase in purchasing power or change in life style of the people need energy, land, water and other natural resources. The use of these would emit lots of climate changing greenhouse gasses. Similarly increase in the number of cars, buses, tractors etc., the principal mode of transporting people and goods are mostly run on petrol and diesel. As number of vehicles increase, so does nitrous oxide levels.

Transition to mechanization of agriculture (under which energy intensive inputs like fertilizer, manures, pesticides, equipments and so on will have to come from industrial sector), causing chemicalization of agriculture, depletion and degradation of natural resources, and thereby causing environmental problems. Further, Corporate profit motive sharpened by economic globalization has also led to degradation and depletion of natural resource base of developing countries.

Extensive use or extraction of non- renewable resources like minerals, fossil fuel in the name of raising growth rate of Gross Domestic Product and per capita income have all increased the demand for more energy.

At present, the world population is about 7 billion and it is projected to be about 9 billion by mid-21<sup>st</sup> century. This increase in population undoubtedly lead to much strain on resources, especially when coupled with the impact of climate change. Thus, population growth is one of the major forces for placing the stress on the resources of our planet.

### **The impact of climate change**

In this section, an attempt is made to examine the impacts of climate change. In nutshell, the world is in a state of carbon lock-in as a result of which life has become both economically and ecologically unsustainable, because we are trapped in a “ Hot, Flat (Not geographically) and Crowded” World (Friedman, 2009). The convergence of global warming, global flattening and global crowding has led to far reaching impact on this planet and its inhabitants (Bisaliah, S, 2015). To elaborate some of the major impacts:

IPCC (2002;2007) has suggested various indicators of climate change. For example, sea level is rising at a rate of 3.16 mm per year, land ice is melting at 100 billion tons per year, arctic ice glaciers is decreasing at 11.5 percent per decade, global surface temperature increase of 0.42 to 0.8°C per century and an increase in sea temperature anomaly are some of the indicators of global climate change. These fluctuations in weather pattern can lead to occurrence of hydro-meteorological extreme events floods and drought all over the world.

Yet another impact of climate change will be increased disease vectors and their intensity. Study by the World Health Organization, 2009, estimated that the effect of climate change on human health contributed for 3% diarrhea, 3% of malaria and 3.8% of dengue fever deaths worldwide in 2004. Total attributable mortality was about 0.2% of deaths in during the same year.

Climate change may lead to irreversible effects on air, ocean, glaciers, land, coast lines and species. With extinct of plants and animals at an alarming rate, there will be further biodiversity loss, threatening the basis of life on this planet. Due to warm climate, some species will have to face extinction due to their inability to adapt to the adverse climate.

The climate change may affect the water resources and agriculture which are the two most important fields in the context to food security for the ever growing populated countries like India, China, Pakistan and many other Asian countries. The change in in the rainfall intensity and amount, spatial and temporal distribution of rainfall, runoff, crop water requirements etc., Climate variability is the major factor influencing agricultural productivity and sustainability in Tropics (Virmani, 1994).

Ironically, it is the poor and marginalized whose contribution to climate change is limited, but climate change has varied and destructive impact on the livelihoods, health and well-being of millions of the poorest people of across the world. Hence, while change affects everyone it is the world's poor who are on the front line.

Climate change does not affect women and men in the same way and it has and will have a gender differential impact. Women are hard hit by the social impacts of climate change. This is due to reports from many disaster affected parts of India revealed that due to cyclones, women had to work harder than usual, example; to gather fuelwood for cooking (GokhaleVasudha, 2008).

Global mean sea level has risen by 0.19 meters from 1901 to 2010 and will continue to rise during the twenty-first century(IPCC, 2013). Low-lying countries like Bangladesh and Maldives may be wiped off the global map due to more cyclones with further global warming. "Our Drowning Neighbour" may turn out to be a devastating scene to imagine.

Finally, national security problems due to climate change cannot be ruled out due to competition between countries for resources.

## **Global Community Response**

It is recalled from the earlier sections: All the scientific evidences are enough to draw inferences that the global warming is due to the influence of human activities. The world is in a state of carbon lock-in as result of which life both economically and ecologically has become unsustainable, because we are trapped in a "Hot, Flat and Crowded" World. Further, it is also examined that that the two forces namely physical and human activities that triggers of climate change and has impacted the ecology and human beings significantly. Given this devastating impact of climate warming, in the present section an attempt is made to examine crucial role that the global community should play to address this global crisis.

To quote Mahatma Gandhi, "Nature has provided sufficient resources to satisfy the human needs but nottheir greed". However, the mad rush for economic growth has over the years, has led to environmental degradation on a large scale accompanied by massive resource depletion. In this context, the economists now emphasize the concept of sustainable development. It implies to seek to meet the needs and aspiration of the present without compromising the ability of future generations to meet their own needs. While the Human

Development Report (1996) pleads for widening the horizon still further from sustainable development to sustainable human development.

Although, fossil fuels, the major sources of energy have proven to be highly effective drivers of economic progress, but at the same time causing damage to the environment and to the human health. These are said to be fuels from “hell”. Renewable energy sources such as biomass, wind, solar, hydropower, solar power, geothermal etc., are considered as energies for a clean and sustainable future. But, what the world need is cleaner technologies, renewable energy technologies, and energy conservation technologies are identified as most effect potential solution to current environmental issues. Renewable energies need further technological progress which lead to decreasing costs, however, the costs of integration in a existing system are not quantified yet (IPCC, 2011).

Policy innovation may be pushed in different direction by providing tax concession, scrapping any kind of subsidy on relatively dirty technologies and incentives should be given for invention of use of clean technologies. Further, imposing quota for fossil fuel production and consumption may be considered. James Hansen, a former NASA scientist and a climate change expert asserted that only an across the board tax on CO<sub>2</sub> emissions, something not part of the Paris Agreement, would force CO<sub>2</sub> emissions down fast enough to avoid the worst effects of global warming.

It is well known truth that the countries of the world have enormously benefitted out of the resources of this planet and also contributed significantly for its resource depletion and deterioration. The responsibility of protecting the earth's atmosphere should be equally shared by all. However, the Global leaders have to demonstrate global statesmanship and lead from the front to address the deep rooted climate change issue. The contribution of different countries to cumulative Global CO<sub>2</sub> reveals that the USA, China, Russia and EU 28 accounts 21.2, 10.7, 7.4, and 18.4 percent respectively, while India's share is only 2.8 percent (Economic Survey, 2014-15). Therefore, developed countries should come forward voluntarily to assist developing counties through transfer of clean technologies, financial help, and so on in addressing climate change issue

It is time to act by all and blame games, emotional debates, and political stance should be set aside. Civil Society, Non-governmental organization, Multi-National Companies can play pragmatic role in exploiting the natural resource base judiciously and promote environment friendly products. Further, environmental awareness among the students through their various academic activities could of much use. There is al so a need for starting social movements to promote the practice of sustainable development concept so that we can maintain a habitable planet rich with flora, fauna, human communities which can live in harmony (Bisaliah, S, (2015).

## Conclusion

Climate change, a change that is attributed directly or indirectly to human activities that alter the composition of global atmosphere, The rise in temperature may cause several irreversible changes and major effects predicted are sea level rise, change in rainfall patterns, flood and droughts, and so on all over the world. These impacts may trigger several other environmental and socio-economic concerns such as food and water insecurity, extinct of plants and animals, health problems to the millions of people. Now the question that arise before us is: what we all have to do to address this climate change issue? Should we blame each other and wait for someone else will come and save planet? Meanwhile, the climate clock is ticking. To quote Mahatma Gandhi, “Nature has provided everyone all the resources sufficient enough to satisfy all their needs but not greed”. This

implies that we have not inherited the natural resources from our fore fathers, but, we have borrowed from our children. Therefore, we will have to handover our future generations a clean environment. To keep up this promise, it is time for creating political and economic conditions collectively across the world that foster the needed technology and act in the framework of sustainable development.

Man is the most superior of all living creatures. But the superiority brings up on him a responsibility to be considerate to the demand of other living beings. Man will have to recognize that happens will not come by ever consuming but by enjoying the chirping of birds and flowering of trees. Only when we begin to see happiness like the honeybee we shall have peace on the earth. The bee surely collects the honey from the flowers but it also transports pollen from one flower to another and helps them grow. It increases and does not impair the ability of the flower to produce seed. In nutshell, "Mother Nature is just chemistry, biology and physics. Everything she does is the sum of those three things. You cannot negotiate with her, cannot spin her and cannot evade her rules. All you can do is "fit in as species. And when a species does not learn to fit in with nature, it gets kicked out", Bisalialah, (2015)

## References

**Friedman, T.L.**, 2009., Hot, Flat and Crowded World, Penguin Book London

**Meadows, D.H, et al**, Economics of Development and Planning, Himalaya Publishing House, 2014. pp, 407-418

**Bisalialah, S.**, 2012., Socio-Economic Matrix of Urban India: Problems and Search Areas. Keynote address delivered at the International Conference on Urbanization and Economic

**Intergovernmental Panel on Climate Change**, (2002), Technical Paper V. Climate Change, Cambridge University Press, Cambridge, UK

**Intergovernmental Panel on Climate Change**, (2007) Working Paper 1. To the Fourth Assessment Report of the IPCC, Cambridge University, UK.

**Virmani, S.M.**, 1994., Climate Resources characterization in stress tropical environment: Constraints and Opportunities for Sustainable Agriculture. In Stresses Eco-system and Sustainable Agriculture, (Eds Virmani, S.M, Katyal, J.C, Eswaran, E and Aboll, P, pp 149-160.