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EFFECTS OF GLOBAL WARMING AND CLIMATIC CHANGE

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Abstract

A comprehensive assessment of the impacts of climate change is a grave threat faced by humankind .Changes in the environment-reportedly largely due to greenhouse gases released into the atmosphere by human activity-threaten to make earth uninhabitable for humans.The unnatural climate change we are expecting is the manifestation of a change in the climate of human kind over the past several centuries. To this end an integrated ecological-economic modeling framework is employed, encompassing climate scenarios, agro-ecological zoning formation,socio-economic drivers,as well as world food trade dynamics.Specially,first,impacts of different scenarios of climate change on bio-physical soil and crop growth determines of yield are evaluated on a 5'X5' latitude global grid; second, the extent of potential agricultural land and related potential crop production is computed. The detailed bio-physical results are then fed into an economic analysis, to assess how climate impacts may interact with alternative development pathways, and key trends expected over this century for food demand and production, and trade, as well as key composite indices such as risk of hunger and malnutrition, are computed. This modeling approach connects the relevant bio-physical and socio-economic variables within a unified and coherent framework to produce a global assessment of food production and security under climate change. The results from the study suggest that critical impact asymmetries due to both climate and socio-economic structures may deepen current production and consumption gaps between developed and developing world; it is suggested that adaptation of agricultural techniques will be central to limit potential damages under climate change.

What is Global Warming?

Global warming is the increase of Earth's average surface temperature due to effect of greenhouse gases, such as carbon dioxide emissions from burning fossil fuels or from deforestation, which trap heat that would otherwise escape from the earth. This is a type of greenhouse effect. Global warming can be defined as an increase in earth's atmospheric, oceanic temperatures and on overall change in earth's atmosphere including a rise in sea levels and variability of snowfalls. Climatic change and associated impacts vary from region to region around the globe .Due to increase in greenhouse effect resulting especially from pollution and other activities such as, greenhouse gas emissions produced by human activities mainly industrial processes and transportation.

Causes of Global Warming:

Global warming is primarily a problem of too much carbon dioxide in the atmosphere which acts as a blanket, trapping heat and warming the planet. As we burn fossil fuels like coal, oil and natural gas for energy or cut down and burn forests to create pastures and plantations, carbon accumulates and overloads our atmosphere. Certain waste management and agricultural practices aggravate the problem by releasing other potent global warming gases, such as methane and nitrous oxide.

Global Warming impacts:

Rising Seas: Inundation of Freshwater marshlands, low lying cities and islands with seawater.Global sea levels rose about 15mm between Nov2014 and Feb2016 as a result of El Nino,well above the post-1993 trend of 3 to 3.5 mm per year.

Change in Rainfall pattern: Droughts and fires in some areas, flooding in other areas.

Increased likelihood of extreme events:2016 is slated to become the hottest year on record with parts of the Arctic now 20 degrees celcius above normal-that's akin to 50 centigrade .

Melting Glaciers: Significant melting of old glaciers is already observed.

Widespread vanishing of animal Populations: Wide spread habitat loss

Spread of disease: Migration of diseasesand spread of epidemics

Bleaching of Coral reefs: Due to warming of seas and acidification due to carbonic acid formation-one third of coral reefs now appear to have been severely damaged by warming seas.

Loss of Plankton due to warming seas: The enormous 900 mile long Aleutian island ecosystems of orcas, sea lions, sea otters, sea urchins, kelp beds and marine economic populations, appears to have collapsed due to loss of plankton. As our climate changes, the risk of injury, illness and death from the resulting heat waves, wildfires, intense storms and floods increases.

The causes of global warming: It took more than 25 years to broadly classify to broadly accept that mankind is causing global warming with the emission of greenhouse gases. the drastic increase in the emission of Carbondioxide with in the last 30 years caused by burning fossilfuels has been identified as the major reason for the change of temperature in the atmosphere. More than 80% of the world –wide energy demand is currently supplied by the fossil fuels coal, oil or gas. It will be impossible to find alternative sources, which could replace fossil fuels in the short or medium term. The energy demand is simply too high.

Effect of Global Warming:

Where do you take evidence that "the temperature rising and falling does drive Carbon dioxide levels "in the atmosphere? Neither vegetation nor oceans "produce carbon dioxide .The ocean water can store some carbon dioxide the warmer the water the lower the amount of carbon dioxide which can be absorbed earlier. This is called a feedback-effect of the warming of the oceans. It should not be mixed up with the cause of warming. Almost 100% of the observed temperature increase over last 50 years has been due to the increase in the atmosphere of greenhouse gas concentrations like water vapor, carbon dioxide, methane and ozone. Greenhouse gases are those gases that contribute to the greenhouse effect.The largest contributing source of greenhouse gas is the burning of fossil fuels leading to the emission of carbon dioxide.

The Greenhouse effect:

When sunlight reaches the earth's surface some is absorbed and warms the earth and most of the rest is radiated back to the atmosphere at a longer wavelength than the sunlight. Some of these longer wave lengths are absorbed by greenhouse gasesin the atmosphere before they are lost to space.The absorption of this long wave radiant energy warms the atmosphere.These greenhouse gases act like a mirror and reflect back to the earth some of the heat energy which would otherwise be lost to space. The reflecting back of heat energy by the atmosphere is called the "greenhouse effect".

Greenhouse gases in the atmosphere act like a mirror and reflect back to the earth a part of the radiation, which would otherwise be lost to space. The higher the concentration of greenhouse gases like carbon dioxide in the atmosphere, the more heat energy is being reflected back to the earth. The emission of carbon dioxide in to the environment mainly from burning fuels like oil, gas; kerosene etc. has been increased dramatically over past 50 years.

Solutions to Global Warming:

There is no single solution to global warming, which is primarily a problem of too much heat-trapping carbon dioxide, methane and nitrous oxide in the atmosphere. The technologies and approaches outlined below are all needed to bring down the emissions of these gases by at least 80 percent by mid-century. To see how they are best deployed in each region of the world.

Greening transportation:

The transportation sector's emissions have increased at a faster rate than any other energy using sector over past decade.A variety of solutions are at hand,including improving efficiency in all modes of transport, switching low-carbon fuels,and reducing vehicle miles traveled through smart growth and more efficient mass transport system.

Revving up renewable:

Renewable energy sources such as solar, wind, geothermal and bioenergy are available around the world. Multiple studies have shown that renewable energy has the technical potential to meet the vast majority of our energy needs. Renewable technologies can be deployed quickly, are increasingly cost-effective, and create jobs while reducing pollution.

Managing forests and Agriculture:

Taken togeather, tropical deforestation and emissions from agriculture represent nearly 30 percent of the world's heat trapping emissions. We can fight global warming by reducing emissions from deforestations and forest degradation and by making our food production practices more sustainable.

Exploring nuclear:

Nuclear power results in few global warming emissions, an increased share of nuclear power in the energy mix could help reduce global warming-but nuclear technology poses serious threats to our security and as the accident at the Fukushima plant in Japan illustrates to our health and the environment as well. The question remains: can the safety, proliferation, waste disposal, and cost barriers of nuclear power be overcome.

Developing and deploying new low –carbon& Zero-carbon technologies:

Research into the development of the next generation of low-carbon technologies will be critical to deep mid-century reductions in global emissions.Current research on battery technology, new materials for solar cells, harnessing energy from novel sources like bacteria and algae, and other innovative areas could provide important breakthroughs.

Ensuring sustainable development:

Various countries of the world most of the least developed vary dramatically in their contributions to the problem of climate change and in their responsibilities and capacities to confront it. A succeful global compact on climate change must include financial assistance from richer countries to poorer countries to help make the transition to low-carbon development pathways and to help adapt to the impacts of climate change.

Conclusion:

Global warming is a big issue for concern which has found its place in big discussion rooms and is an alarm with no snooze button for the human beings which wakes them up from deep slumber where they dreamt for acquiring profits for their means and in a long run forget to look after their guardians our nature,which is the source of everything we live on,from food,water and even the air we take into respire.But we are polluting the same water we will drink,polluting the same air we take into respire and extensive use of strong chemical fertilizer which is running our crops instead of making them healthy. We as human expect a lot from others, but are we giving our nature back the same thing? The answer is yes, but we are giving our nature the return gift for the favors of the nature the return gift for the favor of the nature, protecting us as pollution of water and air, destruction of forests and exploitation in the form of a mining of our mother earth.

In order to make our own world we are destroying worlds of millions who have their home on earth, which includes the animals, birds and insects as well, who have supported and protected every time we were in trouble. Not only this contribution and sacrifice of these animals, trees and the whole ecosystem around us are the elements which have helped us in evolution from a nescient to an effective thinker.Is this that they deserve? Our heart pumps and our mind throttles back saying, of course not at all. We have to nurture the nature, love it and to do that first we will have to understand what constant troubles we the social animals are creating for mother earth, and the trouble which forces us each of us to ponder and analyze before it is too late.

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