Research Paper Geography

Probable Effects of Climate Change on Humanity

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ABSTRACT

Climate Change may increase stress from already existing factors like rising tropospheric oxidant levels, stratospheric ozone depletion, the flux of heavy metals in soils and natural waters. Current international policies and protocols, such as those for sulfur and nitrogen emission reductions would need reassessment. Also, risk assessments for a range of chemicals used in agriculture and silviculture must be re-evaluated. Generally, if the cycling of substances that act on the health of populations, and on the vitality of ecological systems, is not directly sensitive to climate change, these substances may nevertheless be climate change sensitive if they are closely linked to organic compounds in soils and waters. This is because the turnover of organic compounds is directly sensitive to change in meteorological factors. Effects of global warming on the flux, behavior, fate, and effects of toxic metals and other substances in the environment might be of special concern in Eastern and Central Europe, and other regions with "hot-spot" areas, in particular if climate change manifests itself regionally as shifts in the frequency, intensity', and duration of weather anomalies. Climate change, coupled with interaction will cost us dear.

KEYWORDS

INTRODUCTION

Globalization the environmental policy agenda must not divert attention from concerns about unresolved, regional environmental problems. Global warming, albeit with unclear manifestations in regional and local climates, is likely to aggravate impacts from already existing environmental stress including acidification rising troposphenc oxidant levels, stratospheric ozone depletion, the flux of heavy metals in soils and waters. Among die first scientists to analyze these potential problems in some depth was Oppenheimer in the late 1980s. In terms of noticeable awareness raising and policy-making, the issue area was first addressed by the German Parliament in 1989. Impact categories aggravates climate change. A wide range of climate-forcing substances CO-carbon monoxide, NOx—nitrogen oxides, CO_2—carbon dioxide, CFCs—chlorofluotocarbons (freons), N_2O—nitrous oxide, halons—CFC-like substances containing bromine instead of chlorine, CO- and CH3CC13 - various chlorine-containing substances, CH4—methane, and several more are involved in these interactions, directly or indirectly. Among a multitude of complex linkage contributes to a lower temperature in die stratosphere, the ozone content of which then becomes more prone to destruction by chlorine; because lower stratospheric temperatures provide for an increasing occurrence of polar stratospheric cloud-particles, the surfaces of which interact with the ozone-depletion process. This increases the amount of ultraviolet radiation reaching the earth's ground, in turn leading to increased potential for build-up of photochemical oxidants that can affect forest growth. Reduced forest growth, in turn, implies a diminished capacity for vegetational uptake of carbon dioxide, which is a greenhouse gas. The greenhouse effect can then increase, leading to further cooling of the stratosphere, and thus to increasing UV-light penetration generating further increases of oxidants that affect forest growth, etc. hence this is an example of the potential for a vicious cycle between climate change, ground near pollution, and natural resources deterioration.

Climate Change is a Physical Process, which depends of humans on the availability and quality of natural resources e.g. air, land, water, biota, and materials. Coastal areas and communities will be amongst the highest at risk because of their proximity to the sea.

The direct impacts of climate change will depend largely on the density of human populations and characteristics of settlements on the coastal strip (Lemmen et al. 2008). Average population density along the coastline is relatively low, but high densities occur in coastal cities like Boston, Mumbai, Melbourne, Sydney, Los Angles, Cape Town, San Francisco and Portland. The Gulf of Maine has a wide range of human settlements and development over its coastline and population density is expected to increase, particularly in areas close to the larger coastal cities over the next 30 years (Pesch and Wells 2004).

The potential impacts of climate change on humanity relate to human well-being, disruption of infrastructure and networks, access to goods and services, and adaptive capacity of communities to deal with the issue. All the potential impacts cannot be classified as negative as there are positive aspects that have been cited below.

It is difficult to measure many of the impacts, although some impacts can be evaluated in financial terms.

"Climate science is still evolving. It is difficult to directly attribute *one* freak weather event to climate change. However, a series of unprecedented freak events, which we have witnessed in the recent past, is certainly due to climate change and global warming," says Singh.

A direct impact of unpredictable monsoon and extreme weather events - and one that hits particularly hard - is the toll it takes on agriculture. WGH paints a dark picture for Indian agriculture, predicting losses of over $7 billion (around Rs 42,749 crore) in 2030. It foresees a 2-14 percent reduction in the yield of monsoon sorghum grain by 2020, with worsening yields by 2050 and 2080 and warns that the Indo-Gangetic Plains are under threat of a significant reduction in wheat yields

Effects

- Increased injuries and deaths due to flooding, high winds, and storms.
- Reduced access to health care due to disruption of services.
- Increased heat-- related mortality and morbidity particularly the elderly
- It effect adversely on female fertility.
- Increase in infectious diseases due to flooding and increase in damp conditions.
- Exposure to chemicals from damage and overflow from

pipelines and other storage utilities.
- Increase in disease vectors resulting from temperature and precipitation shifts.
- Anxiety, stress and other mental health problems due to heat, flooding and storm events, as well as possible evacuation or migration.
- Increased risk of social unrest, crime and violence.
- Increased risk of exposure to fires, chemical spillages, electricity.
- Loss of land along the coastline and riparian areas for multiplicity of purposes (e.g., housing, agriculture, recreation). One study estimates that one meter rise in sea level will displace about 7.1 million people in India as the villagers of Nargol village in South Gujarat, 180 kms. of Mumbai, dipped into sea. The Arbian sea spreads vast rapidly into coastal areas.
- Increased costs of land preparation to prevent flooding along coastline and riparian areas.
- Threat of access to potable water due to saline intrusion of freshwater aquifers.
- Threat of access to potable water due to contamination of water supplies and disruption of treatment works and supply infrastructure.
- Risk of sewer overflows.
- Loss of riparian and coastal land area suitable for agriculture.
- Reduced availability and increased cost of agricultural (animal, dairy and vegetable) products due to wet weather and flooding.
- Reduced availability of fish/shellfish due to water quality.
- Damage and loss of buildings and property during floods and storms.
- Increased cost of housing in coastal areas.
- Employment and business opportunities in sustainable construction and design.
- Disruption to electricity supplies during weather events.
- Outages of production lines for manufacturing.
- Disruption of transport and communication networks.
- Increased costs for establishing and maintaining business facilities and operations in sensitive areas.
- Increased costs of insurance.
- Opportunities for new technology and business.
- As the world's oceans rise, low-lying coastal areas will disappear. Flooding of coastal areas will become more common and more severe as storm surges have easier access to these lower-lying areas. The occurrence of extreme high water events related to storm surges, high tides, surface waves, and flooding rivers will also increase.
- There is a scientific consensus that climate change is occurring, and that human activities are the primary driver. Evidence of climate change includes the instrumental temperature record, rising sea levels, and decreased snow cover in the Northern Hemisphere, lost of bio-diversity, generating new illness, land and soil degradation, agricultural seasons changes, rain cycle disrupted, increased intensity of cyclones, coastal areas merging into sea /oceans, rise in sea level etc. increase in mortality and morbidity. Beside, some positive effects like coconut production may increase and some marine fisheries likely to have higher catch compared to others.
- A glacier is a mass of ice consisting of compacted and re-crystallized ice on land that flows down under its own weight due to gravity. Glaciers are lying largely or wholly on land and showing evidence of past or present movement. Snowfields that persist through the summer melt season are not glaciers because they lack motion. Presently, glaciers cover nearly 15 million km2 or about 10 % of land surface and contain 2.15 % of all water on Earth.
- Biodiversity, in simple terms, is a measure of the health of ecosystems. More technically, biodiversity can be defined as degree of variations of life forms within a species, ecosystem, biome and the entire Earth.
- Climate change is a major problem caused by the increase of human activities leading to several direct and indirect impacts on health. The weather has a direct impact on our health. If the overall climate becomes warmer, there will be an increase in health problems.
- Soil degradation is the decline in soil quality caused by its improper use, usually for agricultural, postural, industrial or urban purposes. Soil degradation is a serious global environmental problem and may be exacerbated by climate change. It encompasses physical, chemical and biological deterioration.
- The impact of climate change on agriculture could result in problems with food security and may threaten the livelihood activities upon which much of the population depends. Climate change can affect crop yields (both positively and negatively), as well as the types of crops that can be grown in certain areas, by impacting agricultural inputs such as water for irrigation, amounts of solar radiation that affect plant growth, as well as the prevalence of pests.

Conclusion

The climate change brings no good news except growth in coconut production. Due to climate changes many diseases take birth as foci malaria in Uttaranchal and Jammu Kishmir and its intensity in north eastern states, foci of chikungunya and Kala Azar in India, skin diseases and asthmatic problems etc. However, a series of unprecedented freaks events, which we have witnessed in the past, is certainly due to climate change and global warming as UN's Nation Inter-Governmental Panel Working Group paints a dark picture on agriculture, forecasts reduction in the yield of monsoon sorghum grain by 2020 and wheat yield reduction in Indo-Gangetic plains significantly by 2050. Similarly Indian agricultural research Institute also warns that a 1^0c temperature increase may reduce yield of wheat, soyabean, mustard, potato and groundnut by 2020. This beg a serious question that will India meet the increasing demand for food for its increasing population?

To check the changing climate the developed and under development nations must reduce the emission of carbon. The power resources like fuel and coal emit carbon, mainly. Indian Government on its part 4200 mg watt solar energy production work is in progress and requires 175 gg watt renewable energy due to commitment at UN climate change meet. In the coming next UN meeting on climate change named as CAAP–21 to be held on Nov. 30, 2015 at Paris, the main agenda will be how to reduce carbon emission in environment to reduce the effects of climate change.

Recent studies of scholars express that Global warming and climate change not only increasing the temperature of lakes, seas/oceans but it can change the size of our planet, the earth. During the five year study of researchers compared the glaciers of Petagonia and Antarctica peninsular and found that Glaciers of Petagonia melted more rapidly than Antarctica because of rise in temperature.

Asst. Professor in University of British Columbia and Chief writer Mishel Coppus said, "We have found that glacier of Petagonia has melted 100 to 1000 times rapidly than Antarctica. Consequently, due to this melting there will be complicated effect on the climate of polar areas which will affect the size of the Earth.

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