

Anthropocene: Human Activity Impact on the Climate and Environment

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Abstract: The environment undergoes shifts across various timescales, yet presently, human intervention remains the primary solution provider and is likely to persist in this role for the next few centuries. While it is widely recognised that human-induced, or anthropogenic, climate change contributes to global warming, what is often underestimated are the direct impacts of heavy rainfall, droughts, and storms, incurring significant costs for both society and the environment. The expansion of human populations has led to the conversion of natural ecosystems for agricultural, industrial, and residential purposes, creating a demand for environmental inputs such as fresh water, fiber, and soil fertility. This heightened demand puts increased pressure on the capacity of natural ecosystems. Deforestation, expanding agriculture, illegal fishing and hunting, unplanned tourism, and pesticide pollution have collectively led to the progressive degradation of natural habitats. The consequence is a loss of biodiversity and the removal of forests, disrupting the food and shelter sources for wildlife residing in these ecosystems. Scientific research aims to comprehend the scale of biodiversity, and land use, and contribute to mitigating the impacts of land use changes.

Keywords: Climate change; Human activities; Anthropocene; Deforestation

Introduction

The Concepts of Climate, Environment, Climate and Environmental Changes

The environment is the normal weather pattern of a spot throughout a significant stretch of time, ordinarily about or much more than 30 years. It is an enormous scope, long haul shift in the planet's weather conditions or normal weather pattern.

To find out the climatic state of a spot, there is consistently an orderly perception, recording and handling of the climatic components like temperature, precipitation, air, pressure, dampness, wind, daylight and mists. The environment varies from the climate in that, weather conditions reflect the transient state of the air while the environment is the normal day-by-day climate for a lengthy timeframe (sea administration .noaa.gov>Home>ocean realities). The climatic components

are ordinarily noticed and estimated throughout some undefined time frame by weather conditions instruments. In light of the information gathered, guides and outlines are ready. Through these diagrams and guides, one can undoubtedly notice specific changes that might have happened throughout some stretch of time.

Climate in the perspective of Ajayi (1998) is the complete encompassing of a living being in a given region including the physical and non-actual environmental elements. Kwan et al. (2012) characterised a climate as a bunch of conditions and powers that encompass and have a direct impact on the association/creature.

Through altering the Earth's atmosphere's concentrations of greenhouse gases, aerosols (small particles), and clouds, human activity contributes to global climate change. The most significant and magnificent contribution is caused by burning

fossil fuels, which release carbonic acid gas into the surrounding air. By neutralising incoming radiation and outgoing infrared (thermal) radiation, which are components of Earth's energy balance, greenhouse gases and aerosols have an effect on the climate. The climate system will warm or cool according to the region's dynamic abundance or particle and gas characteristics. Since roughly around 1750, when the economic period began, human activity has had a warming effect on the climate. The impact of human activity on climate in this period is far greater.

Human exercises have profoundly adjusted the world's surface, seas, and air, particularly throughout recent years (Turner, 1990), which helps the ebb and flow age to remember the advance notice by Malthus that excessive populace development would ultimately be restricted by fixed regular assets (Malthus, 1798). Factors other than environmental change are additionally expected to powerfully impact and contrarily sway the viability of safeguarded regions. Developing human populace densities, strengthened land-use, obtrusive species, regularly connected to changes in environment heterogeneity, expanding natural surroundings discontinuity and restricted dispersal limits are undermining biological systems worldwide and safeguarded regions are frequently the main asylum for imperiled species. Without a doubt, the impacts of these elements on safeguarded regions can be additionally enhanced by changing climatic circumstances (Vos et al., 2008; Beaumont et al., 2009).

Non-Disputable Suggestions

- Anthropogenic environmental change, mixed with a wide scope of extra human impacts on the Earth System, compels us to recognise that human exercises are currently a vital piece of the scope of cycles driving natural change.
- This separates the division among people and nature at the practical level which, thus, brings into question the propriety of much past reasoning and composing, about human instinct relations, since the human instinct dualism, as routinely outlined, no longer gives a satisfactory premise to evaluating the utilitarian aspects of human-climate cooperations.
- Recognizing and understanding those viewpoints fundamental for human existence and prosperity, what not the connections whereupon they and the working of the Earth System depend, present phenomenal difficulties for human culture, not least due to the intricacy of natural frameworks (Scheffer, 2009)

as well as the intricacy, size and scope of activities of the human populace. These elements of the Anthropocene make it unthinkable to lay out basic, direct connections between circumstances and end results.

- People have changed the Earth in both positive and pessimistic ways. The critical test for what's to come is to guarantee that the negative changes don't offset the positive ones. Enhancing human impacts inside an ever-(and unavoidably) changing Earth System of tremendous intricacy has many aspects—logical, social, monetary and moral—that associate with and should assist with guiding decision-production towards more feasible and evenhanded decisions. The horrendous side of this human limit has become manifest in two universal conflicts and innumerable different contentions, and it is epitomized in the specialised capacity to wage a worldwide atomic war. A helpful side of this limit could show itself in endeavours at geo-designing or on the other hand Earth the executives, however both pose overwhelming difficulties.

Greenhouse Gases

Exercise by humans releases four primary greenhouse gases that deplete the ozone layer: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and halocarbons (a combination of gases that include fluorine, chlorine, and bromine). Fixations increase over time due to the accumulation of these gases in the climate. These increases are the result of human activity.

The uses of carbon dioxide in non-renewable energy sources such as transportation, building heating and cooling, and concrete and other product production have grown. Deforestation releases carbon dioxide and reduces plant uptake of it. Similarly, carbon dioxide is supplied via regular cycles, such as in the decomposition of plant materials.

The current climate is not experiencing an increase in methane fixations because growth rates have decreased over the past 20 years.

Human activities that release nitrogen oxide include using compost and non-renewable energy sources. Normal cycles in the oceans and soils also release N₂O.

Due to human exercise, halocarbon gas fixations have significantly increased. Similarly, regular cycles are a small source. Head halocarbons include chlorofluorocarbons (such as CFC-11 and CFC-12), which were widely used in refrigeration and other

contemporary cycles prior to the discovery that their presence in the atmosphere caused stratospheric ozone depletion. The excess of chlorofluorocarbon emissions is decreasing due to global regulations designed to protect the ozone layer.

Compound reactions continuously produce and destroy ozone, a material that depletes the ozone layer in the atmosphere. Due to human activity, chemicals such as carbon monoxide, hydrocarbons, and nitrogen oxide have entered the lower atmosphere and artificially increased the amount of ozone present. As previously mentioned, human exercise releases halocarbons that destroy stratospheric ozone and are responsible for the ozone hole above Antarctica.

The most prevalent and substantial airborne ozone-depleting substance is water vapour. Regardless, human activity has very little immediate impact on the amount of climatic water vapour. It follows that people may have a significant impact on water fumes by changing the environment. For example, there is more water vapour in warmer climates. Human activity also affects water vapour through CH₄ emissions, since CH₄ undergoes compound annihilation in the upper atmosphere, producing a small amount of water vapour.

Aerosols are microscopic particles found in the atmosphere that often vary in size, concentration, and composition. Some sprayers are created directly into the air, while others are formed from mixtures that are released. Vapour sprayers contain substances that are released naturally as well as those that are caused by human activity. Sulphur compounds, natural mixes, and dark carbon (ash) are found in the enlarged vapour sprayers of non-renewable energy sources and biomass-consuming systems. Surface mining and other human activities have increased the amount of residue in the environment. Typical vapour sprayers use sulphate and residue sprayers produced by volcanic ejections, ocean salt sprayers, biogenic outflows from the land and sea, and mineral residue released from the surface.

Forced Radiation of Elements Affected by Human Activity

The characteristics are identical to those that were completely restrictive at the start of the modern era (around 1750). Since each gas absorbs active infrared radiation from the atmosphere, the forcing for all ozone-depleting compounds builds—which are the best understood due to human activities—are favourable. Over this time, CO₂ increases have been the ozone-depleting substance that has caused the greatest effect.

Increases in tropospheric ozone have also contributed to warming, whilst decreases in stratospheric ozone have contributed to cooling. Spray particles directly affect radiative driving by reflecting and absorbing solar and infrared radiation from the surrounding environment. Some vapour sprayers have a driving effect, while others have a limiting effect that is negative.

Conclusion

In conclusion, the presence of humans and various other organisms is significantly influenced by environmental and ecological factors. This study has revealed that changes in climate and environmental conditions occur periodically, driven in part by natural forces and partially by human activities. Regardless of the cause, it is widely acknowledged that individuals play crucial roles in shaping the environment to be conducive and habitable. Despite this recognition, there appears to be a lack of awareness regarding the imperative need for ecological consciousness among people. Destructive actions such as deforestation, pollution, desertification, and the emission of greenhouse gases contribute to the degradation of natural habitats. Addressing these issues requires a collective effort to enhance awareness and promote responsible actions, ensuring the preservation of our environment for the well-being of both humanity and the broader ecosystem.

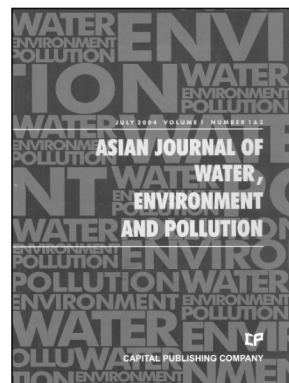
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Aims and Scope

Asia, as a whole region, faces severe stress on water availability, primarily due to high population density. Many regions of the continent face severe problems of water pollution on local as well as regional scale and these have to be tackled with a pan-Asian approach. However, the available literature on the subject is generally based on research done in Europe and North America. Therefore, there is an urgent and strong need for an Asian journal with its focus on the region and wherein the region specific problems are addressed in an intelligent manner. In Asia, besides water, there are several other issues related to environment, such as; global warming and its impact; intense land/use and shifting pattern of agriculture; issues related to fertilizer applications and pesticide residues in soil and water; and solid and liquid waste management particularly in industrial and urban areas.

Asia is also a region with intense mining activities whereby serious environmental problems related to land/use, loss of top soil, water pollution and acid mine drainage are faced by various communities.

Essentially, Asians are confronted with environmental problems on many fronts. Many pressing issues in the region interlink various aspects of environmental problems faced by population in this densely habited region in the world. Pollution is one such serious issue for many countries since there are many transnational water bodies that spread the pollutants across the entire region. Water, environment and pollution together constitute a three axial problem that all concerned people in the region would like to focus on.

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