

A Short Review: The Study of Effective Measures and Models for the Conservation of Biodiversity

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ABSTRACT

The challenge of climate change as well as the conservation of biodiversity underscores the lack of vision and ethical thinking in the policies of the human being. Climate change is largely caused by the emission of Green House Gases. It is really challenging for human being to witness and confront the upcoming rapid climate changes that will be more acute even the age of dinosaurs. The rise in the sea level, change in cropping patterns, melting of glaciers, increasing number of climate refugee etc are the main results of the climate change. Biodiversity loss has severe consequence for humankind. To insure intra as well as intergenerational equity, it is essential to conserve biodiversity for sustainable development. With the help review approach, the present research work explores some effective measures and models for the conservation of biodiversity. In order to mitigate the influence of climate change and give boost to the conservation of biodiversity, the present short review stresses out some general but useful models and measures such as application of carbon footprint, ecological footprint, carbon neutrality, the new approach of geo-engineering and the technique of creating artificial glaciers.

Key words: climate change, biodiversity, carbon footprint, geo-engineering, ecological footprint.

INTRODUCTION

In the present world where its economy has grown fourteen fold or CO₂ emission has risen thirteen fold, the challenge of climate change as well as the conservation of biodiversity underscores the lack of vision and ethical thinking in the policies of the human being. Climate change is largely caused by the emission of Green House Gases. So it is really challenging for human being to witness and confront the upcoming rapid climate changes that will be more acute even the age of dinosaurs. Due to the excessive proportion of CFCs on the earth, there is the depletion of stratospheric ozone layer. The Swedish Noble Prize winning physicist, Svante Arrhenius's question "*Is the mean temperature of the ground in any way influenced by the presence of heat-absorbing gases in the atmosphere?*" (Daily FT) signifies the prognosticative signs of the climate change. The climate change is one of the newly emerged

hurdles and challenges before the human development. It is defined by UNFCCC in its Article 1 as “*a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.*”(IES).

The issues of climate change, global warming, biodiversity conservation have emerged as so powerful concern at international level that these issues are thoroughly depicted in the World English Literature under the genre of climate and science fiction. Kim Stanley Robinson, one of the most environmentally concerned and political savvy science fiction writers of US, prognosticates and ponders over various ecological concerns in his *Mars trilogy* which spans 200 years of future human life where global warming, climate change, utilization of industrial-strength, geo-engineering techniques to refashion or repair Earth’s ecosystem, ecological apocalypse, scientific-technological salvation, etc are major futuristic thrusts. The rise in the sea level, change in cropping patterns, melting of glaciers, increasing number of climate refugee etc are the main results of the climate change. Wade Matt in Rising sea level settles border dispute comments New Moore, the disputed island between Indian and Bangladesh was submerged due to climate change(wikipedia). Its disappearance has been confirmed by satellite image and sea patrols. India has the challenge of tackling the issue of the dependency of the second largest population on the forests for their livelihood either fully or partially. Another major stumble before our India is to develop the model which promotes biodiversity conservation. It is the need of the hour that the government policies should strengthen the efforts of biodiversity conservation. Conservation International’s remark of India as one of 17 mega-diverse countries has rich 04 biodiversity hotspots. (NCBI) Our country is known as the one of the eight Vavilovian Centers of origin as well as diversity of crop plants. Biodiversity loss has severe consequence for humankind. To insure intra as well as intergenerational equity, it is essential to conserve biodiversity. Biodiversity refers to the comprehensive umbrella term which studies the variety of all forms of life on earth.

Models and Measures

There are some general but useful models and measures which can assist to mitigate the influence of climate change and give boost to the conservation of biodiversity. In the present review study, I’m going to take the short review of various eco-friendly research

works, papers, concepts in connection with the effective application of carbon footprint, ecological footprint, carbon neutrality, the new approach of geo-engineering and the technique of creating artificial glaciers. The present short review discusses in general the various measures and models of biodiversity conservation.

Carbon footprint is the measure of the influence of the human’s activities on the amount of CO₂ produced. The measures of direct and indirect emissions of CO₂ are the two types of carbon emission (wikipedia) It is clear that the current various organizations, events, products or individual activities can cause the emission of greenhouse gas. The carbon footprint calculator helps us to shows how much CO₂ we emit with an activity. There are some simple and eco-friendly steps to reduce the Carbon Footprint such as walking, cycling, car-pooling, public-transport etc. By walking one mile, it is possible to save around 0.45 kg of Carbon emission in the air.. The need of planting native trees, giving priority to the local food as well as the recycling the organic waste are some steps of reducing carbon footprint. We can save 1 kg of carbon for every 20 glass bottles that we recycle are essential steps to reduce the carbon emission or carbon footprint. The initiative taken by Vatican City is really appreciative because it is the only country which has achieved carbon Neutrality till now. So we need to consider the utter need of an individual to reduce and mitigate one’s own carbon footprint is to have adopting plant-based diet. Carbon Footprint is essential for setting a target for reducing carbon emission. It is also important to measure changes in emission time by time and to develop the activities which promote the reduction of carbon.

Ecological Footprint is a method which measures the demand of human being on nature. It helps to record the influence of human activity on Earth’s biodiversity and ecosystem. With the help of Ecological Footprint, it is possible to study and explore the dependency of human economic growth on natural resources. In order to support sustainability of resources and the conservation of biodiversity, the analysis of ecological footprint is widely applied. The need of human being is tracked through an ecological accounting system, as the term Ecological footprint is defined as “*the biologically productive area needed to provide for everything people we: fruits and vegetables, fish, wood, fibers...space for building and roads.*”(Wikipedia) With the help of effective use of ecological footprint, it is possible to reduce the human impacts on the earth ecosystem. Here,

by using the Ecological Footprint Analysis (EFA), it is possible to analyze the consumption and lifestyles of human being by comparing with the availability of the natural resources as well as the potential of nature to provide the consumption, as the proportion was remarked "the average World citizen has an eco-footprint of about 2.7 global average hectares while there are only 2.1 global hectare of bio productive land and water per capita on earth." (Wikipedia). It means the above statement shows the variation and gulf between the global bio-capacity and human consumption which is widened considerably. Here, to conserve the biodiversity as well as bio-productivity, the ecological footprint method plays the role of part and parcel. The Neutral Carbon Journey is a new and useful model of sustainable development of human being. In order to develop the model of carbon neutrality, there is an utter need to balance CO₂ emission in the atmosphere. Here, the present model traces the application of the renewable energy which creates the similar amount of useful energy.

Climate related Geo-engineering and Biodiversity is the newly emerging model from conservation point of view. Some scientists assert that the potential impacts of geo-engineering techniques on biodiversity are the revolutionary ways of sustainable developments and it is the large-scale developed and potential solution which manipulates the Earth's ecosystem. But it is very significant that the geo-engineering solutions need deep investigation into the ways to make the most promising options effective and cost-efficient. With the help of the geo-engineering, it is now possible to get reliable and eco-friendly techniques to remove CO₂ from the atmosphere. It helps to reflect more solar energy back into space, but one should understand that the geo-engineering is still in an embryonic stage of technological development. In order to use geo-engineering effectively, one should be very well acquainted with the innovative and novel techniques of it. Bert Gordijn and Henk ten Have illustrated the term "Geo-engineering" and have discussed two major categories such as:

1. Carbon Dioxide Removal (CDR) : Here, an emphasis is laid on the considerable growth of biological and chemical sinks of atmospheric carbon dioxide
2. Solar Radiation Management: It focuses on the use of technologically to reflect a small proportion of sunlight away from earth to offset warming from GHGs.

Bert Gordijn and Henk ten Have in their research article "Ethics of mitigation, adaptation and geo-engineering" (Springer) underscored the effective manipulation of the Earth's climate through the approach of geo-engineering. There are some newly invented techniques of geo-engineering which show positive as well as negative impacts on biodiversity. Therefore, there is a conflict and contrast among the scientists about the surpassing results of the geo-engineering, because it may open the Pandora's box full with unexpected dilemmas. So, there is an extreme need to take painful investigation to understand the conflict potential of the geo-engineering.

Chewang Norphel, a retired civil engineer from Jammu & Kashmir state is known as the ice man of India, because in order to tackle the water scarcity problem, he applied his engineering techniques of controlling the velocity of water, diversion channel with a mild grade and other approaches to create artificial glaciers to tackle the problem of global warming. It is important to note that his first project cost was Rs. 90,000.(Wikipedia).

CONCLUSION

Overall, the aforesaid approaches of attempting to tackle climate change and the conservation of biodiversity occupy significant role for the prospective safe eco system. All the models discussed currently on hand trigger their own significance which may play the dominant role to prevent the disaster. On the other hand, the targets of Paris Agreement, the World Summit of Sustainable Development 2002, the Kyoto Protocol or the big step on Climate Change of Kigali Agreement on HFC play the role of part and parcel but their promising and effective implementation is the need of the hour. Otherwise, Kim Robinson's futuristic terra-forming of the Mars and colonization of the Mars planet reflected in his Mars Trilogy may play the role of futuristic substitutes for human life. So there is an utter need to ponder over the news from The Guardian that focuses Stephen Hawkins dormant ultimate "This is the most dangerous time for our planet."(The Guardian).

REFERENCES

- McMichael AJ, Woodruff RE and Hales S (2006) Climate Change and Human Health: Present and Future Risks, Lancet Publication.

Robinson, Kim Stanley, *Mars Trilogy*, London: Voyager, 1992, 1993, 1996.

https://www.researchgate.net/publication/302888291_Global_Warming_and_the_Specter_of_Geoengineering_Ecological_Apocalypse_Modernist_Hubris_and_Scientific_Technological_Salvation_in_Kim_Stanley_Robinson's_Global_Warming_Triology Retrieved 04 Jan. 2018.

<http://link.springer.com/content/pdf.10.1007/s11019-011-9374-4.pdf> Retrieved 02 Jan.2018.

<http://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data> Retrieved 01Jan. 2018.

https://en.wikipedia.org/wiki/Ecological_footprint Retrieved 01Jan. 2018.

<https://link.springer.com/article/10.1007/s11019-011-9374-4> Retrieved 02 Jan. 2018.

http://www.arthapedia.in/index.php?title=Climate_Change_and_Climate_Variability Retrieved 02 Jan. 2018.

<https://www.slideshare.net/gauravhtandon1/emerging-trends-in-environmental-management> Retrieved 03 Jan. 2018.

https://en.wikipedia.org/wiki/Chewang_Norphel Retrived 03 Jan. 2018.

<https://www.aol.com/article/news/2016/12/02/stephen-hawking.../21618878/> Retrieved 03 Jan. 2018.

https://en.wikipedia.org/wiki/New_Moor#cite_note-Wade-11 Retrieved 03 Jan. 2018.

<http://www.ft.lk/article/581868/From-rhetoric-to-reality--Hot-air-to-a-hot-climate-> Retrieved 06 Feb. 2018.

http://www.arthapedia.in/index.php?title=Climate_Change_and_Climate_Variability Retrieved 06 Feb., 2018.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4264876/> Retrieved 06 Feb. 2018.

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