

Global Climate Change Impacts and Sustainable Green Products Consumption

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Abstract

This study is aimed to conceptually how climate change is affecting the sustainability of different fields. Environmental degradation, climate change and the global warming are the issues that will be induced with the concern related to the environment protection among the producers and the consumers as well. Intergovernmental Panel on Climate change (IPCC 2018), the activities of the human beings have caused around 1.0°C of the global warming and continues to rise at the current rate and then it is expected to reach 1.5°C till 2030. India is both a major greenhouse gas emitter and one of the most vulnerable countries in the world to projected climate change. The country is already experiencing changes in climate and the impacts of climate change, including water stress, heat waves and drought, with the severe storms and flooding, and with the associated negative consequences on health and livelihoods. The extensive exploitation of the environment is taking place and that decades and get resulted in pollution, ozone layer depletion, Greenhouse effect, and rise in Global temperature, and widespread climate change and with the help of the melting of glaciers, and rise in the sea level etc. Besides green marketing integrates all the activities that include with the help of the modification of the product for the sake of the environment, and the changes in the process of production, change in the eco-friendly packaging and there is a slight change in the advertising policies that will reflect more in the environment. Specifically with the increase in awareness of the green marketing the responsiveness of the green products is also look cheap. The purchasing behaviour of the consumer is getting influenced by the various factors which includes Environmental concern, Environment protection, Credibility of the green products. Therefore, mitigating the impacts of climate change must be of the utmost importance, the government involvement is for the country's sustainable development through the suitable climate policy.

Key words: Climate change, Global warming, Eco-friendly products, green marketing, Sustainable development, and Climate policy.

Introduction

Global warming is defined as the long-term warming of the planet. While temperatures have risen naturally since the Earth formed some 4.5 billion years ago, the temperature rise in recent decades has been recorded at a much faster rate, affecting all corners of the planet. With a global land and ocean surface temperature anomaly of 0.91 degrees Celsius above the 20th-century average, 2022 was the sixth-warmest year on record. The 10 warmest years of the past century have all occurred since 2010. Climate change due to rising temperature and changing patterns of monsoon rainfall in India could cost the Indian economy **2.8 percent** of its GDP and depress the living standards of nearly half of its population by 2050. The main greenhouse gases that are causing climate change include carbon dioxide and methane. Adopted the global set as the framework for climate change statistics and indicators to be used by countries when preparing their own sets of climate change statistics and indicators according to their individual concerns, priorities and resources, while noting the need for further methodological development for selected indicators, taking into account the 2030 Agenda for Sustainable Development. **Sustainability** is concerned with protecting the planet, climate change halting and promoting social development, without endangering life on Earth or leaving anyone behind. Environmental degradation, climate change and the global warming are the issues that will be induced with the concern related to the environment protection among the producers and the consumers as well. Intergovernmental Panel on Climate Change (IPCC 2018), the activities of the human beings have caused around 1.0°C of the global warming and continues to rise at the current rate and then it is expected to reach 1.5°C till 2030. The World Economic Forum's (WEF) Global Risks Report 2021 placed environmental degradation as the top long-term risk for the second year in a row. The report identifies climate action failure as the most impactful risk and the second most likely long-term risk. The 16th edition of the report titled, 'The Global Risks Report 2021,' analyses the risks from societal fractures and widening inequalities.

In India, a decline in monsoon rainfall since the 1950s have already been observed. The frequency of heavy rainfall events has also increased. An abrupt change in the monsoon could precipitate a major crisis, triggering more frequent droughts as well as greater flooding in large parts of India. Analysing a trend of rising temperature and declining rainfall during 1970-2015, the economic survey 2018/19 observed that during the years when rainfall levels drop 100mm below average, farmer incomes would fall by 15 The survey points out that climate change could reduce annual agricultural incomes in the range of 15 percent to 18 percent on an average and up to 20-25 percent for unirrigated areas. To limit global warming to 1.5°C above pre- industrial levels, emissions must already be decreasing and need to be cut by almost half by 2030, just seven years away. But we are drastically off track from this target. Urgent and transformative going beyond mere plans and promises are crucial. Immediate measures are necessary to avoid catastrophic consequences and secure a sustainable future for generations to come.

Reviews of Literature

Medhavi Sandhani, Anubhab Pattanayak et al (2020), stated climate change has an effect on agricultural yields, average productivity and labour supply, energy supply and demand dynamics, international trade, and overall consequences on the economy. The results of farming operations are significantly influenced by temperature and precipitation.

Husain U, Javed S (2019), assessed developed countries are responsible for around 75 percent of all CO₂ emissions. This finding demonstrates how energy consumption, will cause environmental degradation, has an impact on economic development. The influence of climate change on economic development is

receiving more attention in the modern era as a result of rising greenhouse gas emissions in developing countries, particularly in an economy like India.

Manju Mohan Mukherjee (2017), viewed, Global Warming and Climate Change in India: A Social Work Perspective, Whanake: The Pacific Journal of Community Development, Carbon dioxide concentrations in the atmosphere increased from 320 parts per million in 1950 to 400 parts per million in 2015. It warms the environment by absorbing energy that would otherwise escape into space. The average world temperature has risen by over 0.7 degrees Celsius since 1950

Piyoosh Rautela, and Bhavna Karki, (2015), explained irrefutable scientific proof of global warming, climate change impacts have been blamed for the volatility of the monsoon, which has resulted in periods of severe precipitation and exceptionally protracted dry spells. They are also believed to be present alongside a number of other environmental and social pressures, many of which are acknowledged to be severe. People's livelihoods are seen as being threatened by climate change, especially if they depend on natural resources that are particularly susceptible to changes in climatic circumstances. The sustainability of climate change and related industries is thought to be threatened by the dwindling supply of natural resources and the uncertainty brought on by climatic unpredictability in light of the already dwindling natural resource base.

Susan Ward (2020), explored green marketing is the practice of advertising goods or services based on their favourable effects on the environment. These goods or services could be ecologically friendly either in their production processes or as finished goods. Eco-marketing or environmental marketing is another term for green marketing.

Syafei, (2020), depicted green marketing (GM) is a tactic that may assist marketers in promoting their products and services and achieving their main business objectives. This kind of strategy focuses on the development of observable environmental advantages. Through a principled method that minimizes the detrimental effects on the environment, Green Marketing is a process by which people and communities satisfy their goals and wishes. Internal or external forces may result in an increase in green marketing initiatives. External factors might include reacting to customer demand and increasing environmental contamination.

Tomasin et al., (2013), development of green products aims to lessen the environmental effects of the production, use, and disposal of goods and services; the procedure entails the choice of "environmentally friendly" materials, waste reduction, achieving energy efficiency, and adoption of end-of-life strategies, among other things. In order to build green products, sustainability is a necessary component. Recovery, reuse, recycling, redesign, reduction, and remanufacturing are the six R's that are communicated by sustainability, which refers to the deliberate reduction of environmental effect and increasing use of recycled resources.

Afridi, et al., (2021), lack of environmental awareness has been shown by various studies in the past; customers who are aware of the environmental effects of the items they buy will make the best decisions throughout the purchasing process.

Sanker and Janani (2020), green market tools, environmentally friendly labelling, and packaging must be based on environmentally friendly qualities are just a few examples of the various awareness initiatives that have been examined to motivate consumers toward green marketing. Green marketing techniques are directly tied to product attractiveness, geo-culture, and marketing effectiveness.

Research gap

The study finds out the gap between the global climate change impacts and the sustainable green products consumption. It is also help to find out the solutions for the global climate change impacts and the sustainable consumption of the green products in India, and the study need to provide the proper awareness by the usage of green products. Based on this, the study has to be analysed through the specific objectives.

Objectives of the study

To understand climate change on Global level

To analyse climate change in India

To find out climate change and Green Products

To study climate change with sustainable development

To suggest suitable climate policy adaptation

Methodology

A study was collected from the secondary data, secondary data which includes the articles, journals, magazines, and reports etc. A structured and the circumspect analysis of information is of secondary importance in any of the research. The methodology adopted in the present study Global Climate Change Impacts and Sustainable Green Products consumption. The main purpose of using secondary data has been to provide pertinent context for comprehending the main research findings. The current study was a descriptive research work This technique was applied in this qualitative study to maximise the representation of pertinent information based on prior knowledge.

Major Findings of the Study

Table-1
Details on Climate Change on Global Level

SI no:	Climate Change on Global Level	1978 Change in Global Level	Absolute Change in Global Level	Relative Change in Global Level
1	Drought	63	- 63	- 100%
2	Earthquake	25,162	- 20,841	- 83%
3	Extreme temperature	150	+ 386	+ 257%
4	Extreme weather	3676	- 2,010	- 55%
5	Flood	5,897	- 3,028	- 51%
6	Landslide	86	+ 189	+ 220%
7	Mass movement	50	- 33	- 66%

source: (Global level of climate change (2020))

The table 1, explains the details on climate change on global level, discuss about the absolute change and the relative change. The types of climate change are the drought in the year of 1978 63% of the drought got changed. The earthquake in the year of 1978 will change to 25,162 of the change got increased. Followed by the extreme temperature will be got decreased to 150. When compared to 1978 change the absolute change and the relative change will get increased one. When followed by the extreme weather got decreased in the relative change to 55%. The highest number of 220% of the change in the relative change of global level of climate change. At last, the mass movement of the climate change at global level it got increased to 50%. At last, the mass movement of the climate change at global level it got increased to 50% of the change in the 1978, and got decreased to negative number to -33. And in the relative change in the global climate change to be increased to -66%.

Table-2
Details of Climate Change in India

Sl no	Climate Change in India	Impacts
1	Continental drift	The impacts of climate change due to changes in the landmasses.
2	Volcanism	Volcanic eruption emits gases and dust particles that last for longer period.
3	Changes in earth's orbit	A slight change in the earth's has an impact on a sunlight seasonal variation.
4	Greenhouse gases	Greenhouse gases absorb with the heat radiation from the sun resulting in an increase in the global temperature.
5	Atmospheric aerosols	They can scatter and absorb solar and with infrared radiation.
6	Shift in land—use pattern	Most of the forests and land covers are replaced by the agricultural cropping, grass grazing, and for the industrial usage.

Source:(Climate change in India (2023)

The above table 2, explains about the climate change in India and their impacts continental drift the impacts of the continental drift is the impacts of the climate change due to changes in the landmasses. Which is followed by the volcanism the impacts of the volcanism will be the volcanic eruption emits with the help of the gases and the dust particles that will last for longer period, changes in the earth's orbit are the impacts of the changes in earth's orbit a slight change in the earth has an impact on a sunlight seasonal variation. Greenhouse gases which are followed by the impacts of the greenhouse gases will absorb with the heat radiation which is gone from the sun, and helps in resulting with an increase in the global temperature. Atmospheric aerosols will scatter and absorb solar and with the infrared radiation. Shift in land-use pattern will be impacted by most of the forests and the covers are replaced by the agricultural cropping, which is followed by the grass grazing, and for the purpose of the industrial usage.

TABLE -3
Details of Green Products on Consumption

SL NO:	GREEN PRODUCTS	2020-2021	2021-2023
1	Green house cleaning products	82.98%	82.96%
2	Electric Cars	3,27,976	2,56,980
3	LED Bulbs	109.6	13.81
4	Stainless-Steel Water bottle	171%	8.38%
5	Reusable Grocery Bags	5.2%	3.5%
6	Clothes made from recycled Fabric	28.9	70.8

Source:(Green products in India 2023)

The table 3, explain about the green products consumption in India from the year of 2020-2021 and 2022-2023 the consumption of the green house cleaning products in the year 2020-2021 was 82.98% and in the year of 2022-2023 the consumption was slight decrease to 82.96%. The consumption of the electric cars in the year of 2020-2021 was increased to 3,27,976 and in the year of 2022-2023 the consumption was decreased to 256,980. The consumption of the LED bulbs in the year of 2020-2021 was 109.6% and in the year of 2022-2023 the consumption of the LED bulbs was decreased to 13.81%, and the consumption of the stainless-steel water bottle was decreased to 171%, and in the year of 2022-2023 the consumption of the stainless-steel water bottles was increased to 8.38%, the consumption of the reusable grocery bags from the year 2020-2021 was increased to 5.2%, and in the year of 2022-2023 the consumption was decreased to 3.5%. At last, the consumption of the clothes made from recycled fabric from the year of 2020-2021 was decreased to 28.9% and in the year of 2022-2023 the consumption of the same will be increased to 70.8%

Table – 4
Details of Climate Change with Sustainable Development

SI no:	Climate Change	Sustainable Development
1	Alternative development pathways	Avoided climate change challenges
2	Sectoral environmental policies	With the help of the Ancillary benefits
3	Institutional changes	Directs sectoral costs
4	Technological changes	Spillovers or with trade effects

Source: (climate change and policies in India 2022)

The table 4, explains the climate change with sustainable development is explained with the alternative development pathways which gets affected by the sustainable development by avoiding the climate

change challenges, which is followed by the sectoral environmental policies which is followed by the sustainable development by the benefits of the ancillary costs, institutional changes which the sustainable development with the help of the directs sectoral costs, the climate change on sustainable development is the technological changes which the sustainable development is the spillovers with the help of the trade effects.

TABLE- 5
Details on the Climate Policy Adaptations in India

Sl no:	Adaptations Policy	Impacts
1	Assess impacts, vulnerability, and risks.	Raising awareness and ambition
2	Plan for adaptation.	Providing political space
3	Implement adaptation measures.	Sharing information, knowledge, and guidance.
4	Monitor and evaluate adaptations.	Strengthening technical and institutional capacities.
5	Facilitating the provision of financial and technological support	Engaging a wide range of stakeholders.

Source:(Global centre on adaptation (2023)

The table 5, explains about the climate policy adaptations with the impacts. The assess impacts vulnerability and risks which has the impacts of raising the awareness and the ambition, implement adaptation measures has an impacts of sharing the information, knowledge, and guidance, the third adaptations policy is to monitor and evaluate adaptations by strengthening the technical and the institutional capacities, and the fourth adaptations policies is to facilitate the provision of the financial and the technological support and to get engage with the wide range of stakeholders.

Conclusion

The study was conducted to analyse the Global Climate Change Impacts and Sustainable Green products consumption and the factors affecting their green consumption behaviour. This helps to analyse the climate change on global level, and with the comparison with the climate change in India, and to analyse the climate change with sustainable development, and to improve the adaptations policies for the climate change. It was recognized that the consumer has an optimistic behaviour towards the sustainable green products consumption. Nowadays most of the consumer are willing to purchase the green products due to product quality and with the help of the environment protection.

Recommendations

There is a need for providing more information about the products through the social media and the websites.

Provide information to the people about the contribution of the green products by attaining sustainable future.

There is a proper setup specialized outlets to make easy availability of green products to the consumers.

By taking a resolution by the people that we need to upgrade our house with a green solution.

People need to find out the benefits of the eco-friendly packaging.

To suggest the proper solutions to the most vulnerable countries in the world.

The climate science is clear in the world that will slash with the greenhouse emissions in half by the year of 2030, and it will reach the net zero emissions by the year 2050.

The Paris agreement of the climate change has the aim of limiting the global warming to well below 2°C and ideally to 1.5° C.

The governments act will swiftly made on the Paris climate agreement and they will implement the solutions and there will be a hope of avoiding the worst consequences of climate change.

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