

## Climate Change And Development

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### Abstract

Climate change is one of the important challenges in the global world. The climate change here denotes the production of food, health, energy supply of the water etc. By explaining the whole thing in climate change, it requires a very well scientific understanding and knowledge and as well as the whole some actions of national and global levels. These theories and papers are here to explain or understand these challenges and circumstances of climate change. Historically the industrialisation or industrial sectors are largely being responsible due to the emissions of greenhouse gases and in this the developing countries are largely seems to be the path of increasing proportions of future emissions. India is facing various problems related to climatic changes. It is related with the different impacts on the water, forests, health, biodiversity, agriculture, coastal, managements, different resources and increase in the temperature. Consequently, the effects of the climate changes abbreviate or summarised a significant population which turns to the impacts for proper growth and human security by studying this aims to get knowledge of how climatic changes affects the long turn developments and biodiversity. The agricultural productivity causes the main reason of climate change in India. Because the major portion of the population depends upon the agriculture whether it is directly or indirectly. Due to the rapid increase in the industrialisation urbanisation and economic developments, climate change would show the extra pressure on the ecological, and social economic systems. This paper explain the various points in the Indian context.

**Key words:** Climate change, human security, greenhouse, biodiversity.

### Introduction

Climate change is the one of the very most significant global environmental challenges. Climate change affects agriculture, water supply, human health, natural ecosystems, biodiversity, coastal management, forests, and more. According to the latest scientific knowledge, the system of the earth's climate has continuously changed on both global and regional scales since the pre-industrial Era. Assemblage of different traced gases such as carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) present in the atmosphere causes mainly due to the synthetic activities like as burning of the fossil fuels tells to be responsible in the earth's climate systems. There is a reason to India having concerned about climate change because as a increased population depends upon the climate sensitive sectors like agriculture, forestry and fishery for there life styles the adverse impact of the climate change in the form like decreasing in rainfall and increasing in the temperature has resulted in the rise of difficulties of livelihood issues in the country.

As after the evidences shows that most of the warming (of 0.1°C per decade). Observed over the last 50 years, is contributable to human activities. The intergovernmental panel tells on climate change projects that the temperature on global mean may increase between 1.4 and 5.8°C by 2100. This unmatched increasement expected having the different impacts on the global water system, ecosystem, sea levels crop production, coastal managements and related works. Particularly in the tropical areas there would be impact, which mainly contains of developing countries, including India.

In 1992 the UN conference on environment and development (UNCED) at Rio de Janeiro led to FCCC ( Framework convention on climate change) which leads the substructure for the ultimate balanced of greenhouse gases present in the atmosphere, getting the common but unique or differentiated responsibilities and specific capabilities and social and economic condition. The larger challenges of the sustainable developments is the issues related to the climate change.



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As conclusion, climate policies can become more effective when frequently submerged within unique strategies designed to make national and regional developments paths more reliable. The impact of climate flexibility and changes, climate policy retaliation and associated socioeconomic and technological developments will harm the ability of countries to achieve the reliable and sustainable developments goals. The chasing of these goals will in return effect the opportunities for and the success of the climate strategies. Particularly, the social, economical and technological attributes of different development paths will hardly effects the emissions the percentage and the vastness of climate changes, climate change collisions, the capability to adapt and the volume to diminish this paper explains the detailed in impacts of climate change on India specifically in agriculture, water, health, forests, sea levels and risk events.

## AIM AND OBJECTIVE

The aim of studying the climate change and development is to know about the causes affects of climatic changes in the global world and to develop the proper sustainable protocols mechanisms and financial arrangements to achieve the goals for having comfortable adaptation.

The objective of the study are :-

1. What is climate change ?
2. Effects and causes of climate change.
3. How resolution strategies for climate change are leading to development ?

## METHODOLOGY

The methodology of this study is framed as a systematic literature and context to explore the effect climate change and solutions to resdue this problem and have it's leading to development. This involves monitoring and exploration of existing research papers, identifying tools and trend challenges. These were the criteria

which in turn lead to formation of appropriate content and material. It was divided into data sources, search strategy and selection strategy.

Data sources included primary sources for study which include previous article and journal articles as well as wikipedia.

Search strategy involved a combination of keywords like climate, development, human etc, and such content was selected which was relevant to our study.

More filters were added on the whole content in order to frame appropriate content out of it, these all strategy lead to form a content compatible with our study.

### 1. What is climate change ?



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Climate change refers to the adverse change in the environment and its impacts on the living organism on the earth. As we all see the climate of earth has become warmer over the last two million years for which, climate change and global warming is responsible. India is facing numerous challenges related to climate change, which is linked to various adverse impacts on water resources, agriculture, forests, and biodiversity. We can also say that industrialization is also a major contributor to climate change.

Northern India has been facing the severe impact of unusually heavy rainfall causing floods, landslides, and many other impacts. This phenomenon is primarily caused by human activities, that release greenhouse gases, such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) into the atmosphere. India is already experiencing warming climate in summers. As we can see that in some regions of India there is not a minimum rainfall and some regions facing heavy rainfall - problems like floods. Some regions receive maximum rainfall and some receive minimum, so these are also some reasons.

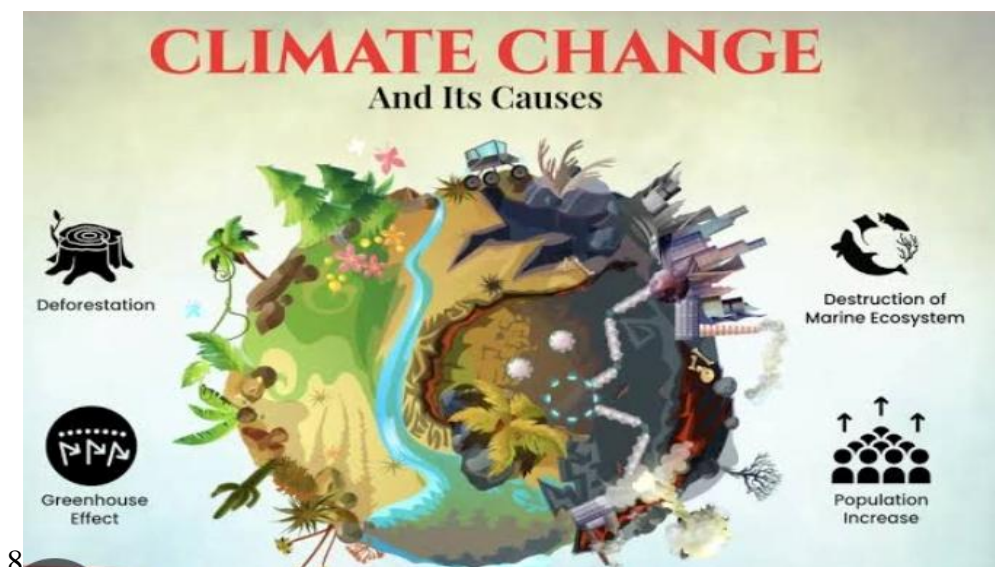
Researchers predict that global warming will impact India's monsoon season through an increase of rainfall of around 5 to 10%. Climate change is a significant reason or we can see that it's a main reason of mismanagement of India's natural resources are also to blame. Extreme climate processes like droughts, heat waves create a variety of negative impact these challenges can arise to an economic challenge also. As per

prediction we can assume that India's GDP could be risky by 2030 due to impacts of climate change. Decline in agricultural productivity is the main impact of climate change on India. We all know that majority of population depends on agriculture directly or indirectly. As per observations it also observed that eruption of volcanoes, and emission of harmful chemical substance from volcanoes also a great reason towards climate change.

In 2019, India has been ranked as the seventh country to be most affected by climate change. India emits 3 giga tonnes of CO<sub>2</sub> (Carbon dioxide) gas of green house gases per year. Climate change has become the most environmental challenges for the today's world. The climate change may affects our environment and human well being in many different ways just like capital, ecosystem, diseases and migration. In the present time, according to different statements, the number of droughts have been increased. Climate change in India deteriorates the crop yield and production. The impacts of the climate change in India is very bad as the people depends upon the natural resources, for their food, shelter and income. In India, more than 56% of the human well beings totally depends upon the agriculture for their survival, while on the other hand, most of the other peoples earn their livings in the coastal areas. The national innovations in climate resilient agriculture (NICRA) Study are here who investigate about the impacts of climate change on Indian Agriculture. The air pollution also deteriorate our climate because the air pollution reflects sunlight and irrigation, which makes cool the air by evaporation. The frequency of the heat waves and power are increasing day by day in India because of climate change. The heat waves in climate also affects the farmer and labour in their productivity. The heat waves are affecting central and northwestern India, the most and the Telangana and eastern coast have been also affected. Due to these all climatic changes, the price level of each and every thing related to human's health and livelihood has been increasing day by day.

Climate change is a major global environmental challenge, impacting agriculture water, health, ecosystems, biodiversity and more. Ecosystem is a functional unit of nature in which livings and non-livings organism interacts in each other as well as their surrounding physical environment.

## 2. Effects and causes of climate change.



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Effects of climate change : Climate change has many effects on our health, environment and economy . The scarcity of water and the rising of the temperatures deteriorate the production of crop yield . The changing of the temperatures make the climate worse day - by - day .

The effects of climate change may increases the loss of species, severe health risks , increasing droughts, warming and rising ocean, severe storms and poverty and displacement.

1. Change in day to day weather : The effects of climate change make more hotter days and lesser cold days . Evaporation and atmospheric moisture may lead in the rise in temperature. The storm causes the caught up of the excess of water vapour . This all causes the snow and rain to become more stronger and this may leads the increase in risk of flooding . As the trends of today's climate change, it seems that humans and their activities are more responsible for it .

2. Sea level : rising sea levels threaten communities. The main causing of sea level to rise is global warming . The rise in sea level may occurs in two different ways . The first one , when the glaciers of sea melts causes high flow of water in sea level. Secondly , the water warms occurs as the volume of water increases .

The area of earth which is known as the cryosphere which is responsible for ice and snow makes differently improper changes to the global climate, since 1981 , the extreme loss of snow occurs on land .

3. Changing ecosystem : causes plants and animals species migrate to other places . The climate change harms our environment and ecosystem in many different ways just like rise in temperatures , rise in sea level, flooding, droughts, and many more . These all effects the things in which human depends upon like water, energy, wildlife, transportation, agriculture, ecosystems and human health also . The ecosystem in climate change has been deteriorated because the timing of seasonal cycles changes as the hot temperatures arrives very fast and the shedding of leaves which occurs in spring become also very late.

4. Change in water quality : The climate change may also affects the water supplies and it's quality. Water and climate change are inseparably linked . The climate change may also affects the global' s water level in complex ways. The unbelievable waterfall marking the ice sheets melts and rising of sea levels, floods and droughts, these all make the water to come down.

5. Climate change related to poverty : The change in climate are affecting people and environment in many ways. The floods and droughts are more responsible in climate change because it make more harder to grow crops and foods . Although , you may see that the price of the crops are at high level and become more limited for people which may lead to higher risk of hunger. In the 21st century it is seen that the undernutrition iss the largest health impact.

Rising temperature -The rising temperature can increase heat waves , which reduces vegetation impact of climate change in land degradation . The main causes of rise in temperature is global warming or greenhouse effect . In the earth's atmosphere, some of the gases acts like glassware in the green house , trapping the sun's heat and cease it from leaking in the space or atmosphere. It also creates --

- Reduced crop yield
- Coastal flooding and erosion
- Reduced food and water supplies
- Uprooted trees and damaged crops

Causes of climate change:

1. Rapid industrialization - This means rapid increase in carbon emissions through the burning of fossil fuels productivity. The increase in industries harm the climates and atmosphere. It makes the air and water polluted .The human activities causes the emissions of greenhouse house gases to the atmosphere.
2. Livestock - This sector can harm water quality through the release of nitrogen phosphorus and other nutrients, pathogens and other substances. The main impact of livestock on climate change is on livestock growth rates , milk and egg production, mortality , reproductive performance, and morbidity.
3. Causes of transport on climate - climate change by emissions of harmful gases arising from different types of automobiles like can bike. The smoke coming from bikes and CNG gases effect climate very adversely. The transport system causes many more changes in the climate. The vehicles used in the environment responsible for the changes in the climate. The gases produced by the vehicles deteriorate our atmosphere, and causes many health risks.
4. Resource extraction - Resource extraction is the processing of natural resources ( biomass, metals and non metals) make up the global greenhouse gas emissions.
5. Pollution - Pollution is on of the major causes of climate change. The recent increase in pollutants cause various types of Pollution that is effecting as well as climate and ecosystem also. The production of electricity and heat by burning fossil fuels may causes a large number of global emissions. The process of manufacturing goods, cutting down trees and forests, using transport systems, producing foods , powering the buildings etc. are the reasons which causes pollution.
6. Deforestation - Results in decreased no of trees leading to accumulation of carbon dioxide (CO<sub>2</sub>) in the atmosphere. Deforestation worsens the climate change, because it makes the air worse . Deforestation also increases the risk of pandemics. Deforestation also responsible for the soil erosion. It effects to the creation of medicines. When the trees are burnt , more carbon dioxide ( CO<sub>2</sub> ) are produced which is harmful for human health .
7. Energy use - More energy consumption also effects climate change because it emits various types of emissions of harmful pollutants.
8. Consumer practices and agricultural practices - Cause the climate change by emission of harmful nitrates that are used in fertilizers in agricultural .
9. Changes in ocean circulation - If proper circulation of water not takes place in ocean , it also effects climate because they absorb 90% of excess heat caused by climate change. The global warming affects the temperature of the ocean which further impacting circulation. The ocean are soaking more and more heat in it which may Results in an increased temperatures of the surface and rising of the sea level.
10. Greenhouse effect : If water scarcity in water - stressed areas increases and leads to an increased risk of agricultural droughts affecting crops, global warming has a significant impact on ecosystems and livelihoods. Climate change causes temperature increases, disrupting the delicate balance of ecosystems. This , in turn, impacts the distribution, behavior and survival of plants and animals. Coastal ecosystems, such as mangroves and salt marshes, are particularly vulnerable to flooding and erosion. species are already vulnerable due to habitat destruction, pollution and overexploitation , climate change pushes them closer to extinction. Changes

in one ecosystem can have ripple effects throughout entire food chains and networks leading to unforeseen consequences. Global warming refers to the long term rise in the average surface temperature of the earth due to the increasing levels of green house gases in the bed atmosphere. "Carbon dioxide (CO<sub>2</sub>) and methan (CH<sub>4</sub>) , such as green house gases, trap heat from the sun and prevent it from escaping into space , causing the planet's temperature to rise."

There are many causes of global warming that effects climate change --

- Increase in ocean temperature
- Melting of glaciers and ice of glaciers.

### 3. How resolution strategies for climate change are leading to development ?

The resolution strategies for climate change are leading to development by that these resolutions are strategies that lead towards development. Firstly we will talk about the resolution, the resolution are -

- we should be eco - friendly towards nature.
- Follow the 3 Rs policy Reduce, Reuse and Recycle.
- Follow the rules made by the government.
- Consume less energy.
- Support renewable fossil fuels, that support resolution nature.

Commitment : The current climate crisis requires people to demand political action from their government.

Participation : Climate change requires individuals to contribute to sustainability in their communities.

Healthy habits : Follow Healthy environmental habits that will help to control the climate change.

Efficiency and innovation -

Climate change needs people to priorities energy saving and the use of renewable energy. So, these are the resolutions for controlling climate change. If everyone Follow the resolutions and the policy's made by the government, regarding this ,it will become a great strategy towards climate change.

Proper using of all natural resources, and using them eco - friendly can lead towards the strategies for climate change and these resolution lead towards the development of the nation. This is a significant resolution that leads to rhe development of the nation and works to mitigate the effects of human - induced climate change. Climate change poses a threat to the stability of life on earth, and this immediate change is putting life at risk . The increase in carbon dioxide (CO<sub>2</sub> ) and other green house gases in the atmosphere is causing this change. Over the next two to three decades, the impacts of climate change, such as heat waves, wildfires , storms and floods are expected to worsen, with increased frequency and severity . This resolution clearly recognizes climate change as a major threat to public health and outlines a Frame work for building climate- resilient health systems.

Climate change is a direct cause of soil degradation, which limits the amounts of carbon the earth is able to contain . Fossil fuels coal , ceil and gas are by for the largest contribute to global climate change. Pollution and environmental issues exacerbate the effects of climate change and make people and nature more vulnerable to it. We need to identify strategies for mitigating and adapting to climate change. At the same time, we need to understand the challenges of reversing global climate change and adapting to it.

- Climate change mitigation involves actions to reduce or prevent green house gas emissions from human activities.
- Mitigation efforts include transitioning to renewable energy sources, enhancing energy efficiency, adopting regenerative agricultural practices and protective and restoring forest and ecosystem.
- Whole society approach and structural Transformations to reduce emissions and limit global warming to 1.5°C above industrial levels.
- Reducing green house gases by shifting away from fossil fuels, improving energy efficiency.

Restoring and conserving critical ecosystem- In addition to forests, ecosystems such as wetlands, grasslands, as well as coastal biomass such as mangrove forests, also contribute significantly to carbon emissions, while supporting biodiversity and enhancing climate and ecosystem. Climate change is a critical issues that requires the participation of every one, whether its an individual, Government, or private sector. Individuals should adopt sustainable habits and advocate for change. Governments should implement policies, provide incentives, and facilitate investment . The private sector, especially high - emission businesses and companies, should take a leading role in improving climate resilience, promoting innovation , and providing financial support. private sector, particularly those businesses and companies responsible for causing high emissions should take a leading role in innovating , funding and driving climate change mitigation solutions.

Resolution strategies -

1. Reducing consumption of fossil fuels .
2. Enhancing energy efficiency
3. Protecting and Restoring forests critical ecosystem.
4. Conserving energy
5. Changing land use
6. Removing carbon dioxide CO<sub>2</sub> from the atmosphere.
7. Adopting regenerative and agricultural practices.

## CONCLUSION

As we know that climate change is affecting our environment very adversely. Global warming is rising steadily. If we can not prevent it as soon as possible, our world will face undesirable consequence human activities is the primary cause of recent climate change. Climate change can impact health, agriculture, forests and fresh water supplies. The main reason of climate change is it's internal and external factors . The climate change has become global concern over the last few decades . Except these this also effect life on earth as well as environment in various ways . Due to these no of species of plants and animals have gone extinct .The climate started changing along time ago due to human activities but we came to know about it in earlier . We started researching of climate change and came to know that the earth temperature is rising due to a phenomenon called the green house effects. This phenomenon may cause many ozone depletion, affects agriculture and several other problems. Although there are countable reasons of climatic changes. There are some natural and man - made reasons which causes climate change.

- Natural cause



- Natural activities such as volcanic eruptions , Solar radiation, and movement of tectonic plates can increase the Earth's temperature, leading to an imbalance in nature.

- Human cause
- Forest cutting
- Factory waste
- Impurities

These are man made causes that affect climate change. These climate changes have a negative impact on the environment. Sea levels are rising. The Melting of glaciers is increasing carbon dioxide (CO<sub>2</sub>) in the environment. The level of ocean is rising , Melting of glaciers increasing CO<sub>2</sub> (Carbon dioxide) in the environment. Wildlife is declining day by day . Trees are decreasing day by day pollution is also increasing environment is becoming very harmful. We all know that humans has caused great damaged to climatic as well as ecosystem. It we do not do anything to save our futures , one day will come like humans will become extinct from the surface of the earth, but instead of neglecting these problem we start acting on them . We have to save our future as well as our climate , ecosystem and nature .

Present day climate change includes both global warming the increase in global average temperature and it's effects on earth's climate the current rising in global temperature is driven by human activities, especially fossil fuels burning fossil fuels use and forests cutting and some agriculture and factory method . The high emissions of green house gases due to the use of fossil fuels, forests cutting and certain agricultural and industrial practices are driving global warming. These gas absorb some of the heat radiated by the Earth after it has been warmed by sun light, leading to a warming of the lower namaste. Carbon dioxide (CO<sub>2</sub>) the primary green house gas responsible for global warming, has increased by about fifty percent. Higher temperature are also causing more intense storms, droughts and other weather extremes. Climate change threaten people with increased flooding, extreme ,heat increased food and water scarcity. Fossil fuels use on be phased out by conservation of energy and switching to energy sources that do not produces significant carbon pollution. While heat waves and wildfires are becoming more common , higher temperatures are also causing more intense storms, droughts and other extreme weather conditions. Climate change poses a threat to people from floods , extreme heat, and shortages of food and water . Climate change can be mitigated by conserving energy and switching to renewable energy sources. Climate change is not curable nor can slow down the effects of the manifestation to the societies , economy , environment and the sustainability of the future planet .

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