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# Response to Climate Change

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SAUMYA PRATIBHA TIRKEY<sup>1</sup>

## ABSTRACT

*Climate change is an irrevocable process that has already touched every corner of the planet and will continue to reshape the lives of human beings for centuries to come. The planet has warmed since the pre-industrial period and has pushed the Earth towards irreversible change. Greater rates and magnitude of climate change, as observed in the past few decades, increase the likelihood of exceeding the temperature from the 1.5-degree limit or even crossing 2 degrees Celsius above pre-industrial level with severely damaging consequences. Climate change is not just an environmental problem but a social issue, bringing deep impacts on the life of human beings. Years of consecutive climate-related disasters have brought widespread misery and huge economic loss to people across the globe. Climate change is human-induced caused by emissions of greenhouse gases such as carbon dioxide that prevents heat trapped to dissipate into space. This article, therefore, tries to highlight various adaptation methods and strategies to adverse impacts of climate change.*

## I. INTRODUCTION

The Earth's climate has always shown fluctuations. But since the beginning of industrialisation, the composition of the atmosphere has changed due to the emission of greenhouse gases by human-induced activities. This increased effect of greenhouse gases has led to global warming. This noticeable change in the climate has had a significant impact on human lives and the natural environment. **Mitigation** and **Adaptation** are the two main responses to climate change. **Mitigation** involves reducing the flow of greenhouse gases in the atmosphere or strengthening the sinks (such as the ocean, soil or forests) that store and gather these harmful

greenhouse gases. The aim of mitigation is to reduce human interference with climate change and stabilise the greenhouse gas levels within a significant time frame. **Adaptation** denotes adjusting to the fluctuating climate; its goal is to reduce our risk from the harmful effects of climate change. The need for Adaptation varies from place to place depending on the reactivity and vulnerability to climate change of that particular region.

It is an unfortunate reality that this change in climate is the result of human activities like burning fossil fuels such as coal and gas to provide electricity, heating and transport, but this releases carbon dioxide, methane and other gases

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<sup>1</sup> Author is a student at faculty of law ICFAI university Jharkhand, India.

into the atmosphere. They hang in the air like an invisible blanket, trapping the heat from the sun and stopping it from returning to space, warming up the Earth's surface temperature. From shifting weather pattern that threatens food production to rising sea levels that increase the risk of flooding, the impacts of climate change are global in nature, unprecedented on the scale and unpredictable. Industrialisation in developed countries is majorly responsible for the increased amount of greenhouse gases causing climate change. Thus, it becomes important for the developed countries to take more ambitious and challenging action now to cut down the emission of greenhouse gases.

To avoid the worst climate change impacts, greenhouse gas emission needs to drop by half by 2030 and reach 'net zero' by mid of this century. Realising the urgency of climate change, a growing number of national governments, local governments and social leaders are making commitments to reach net-zero emission within their jurisdiction. Net-zero emission refers to achieving an overall balance between greenhouse gas emissions produced, and greenhouse gas emissions are taken out of the atmosphere. It is the state where countries' emission is compensated by absorption and removal of greenhouse gas. Transforming nature puts human well-being at risk but transforming human relationships with nature is a key to a sustainable future.

## **II. INDIA'S RESPONSE TO CLIMATE CHANGE**

India is one of such countries which is facing the extremes of climate change. The Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report "Climate Change 2021: The Physical Science Basis" warned that the Indian Ocean is warming at a higher rate than other oceans and that India will witness increased heat waves, heavy rainfall and flooding, which will be the irreversible effects of climate change.

There is an urgent need for us to adapt to the national initiatives undertaken by the government to India to combat climate change. Some of such government programmes for climate change adaptation are **Watershed Development Programme** which aims to restore the ecological balance by using, conserving and developing degraded natural resources such as soil, natural vegetation and water. **National Action Plan on Climate Change (NAPCC)** was adopted on June 30, 2008, to mitigate and adapt to the adverse impacts of climate change. This NAPCC mission is based on the awareness that climate change actions are not exclusive rather inter-related. There are 8 national missions forming the core of this plan which includes National Solar Mission, Enhancing Energy Efficiency, creating a Sustainable Urban Habitat, Conserving Water, Sustaining the Fragile Himalayan Ecosystem, National Mission for a Green India, National Mission for Sustainable Agriculture and Creating a Strategic Knowledge for Climate Change.

**Department of Agriculture, Cooperation and Farmers Welfare** has implemented a **Crop Diversification programme** to diversify the variety of crops so that farmers are not dependent on a single crop for their income. Methods such as crop rotation, mixed cropping, and double cropping reduce the vulnerability of crop yield. India also launched the awareness campaign “India Plastic Challenge – Hackathon 2021” to develop innovative alternatives to Single-Use Plastics. This campaign tries to ensure that the country becomes free of single-use plastic by 2022.

India announced its **Intended Nationally Determined Commitments** and pledged to cut emission intensify of its GDP by 33-35 per cent by 2030 and increase the share of non-fossil fuels-based electricity to 40 per cent by 2030. Placing Climate Change at the centre of its environmental policies, India, under the **Paris Agreement**, committed to becoming the net-zero emitter of carbon by 2070, achieving 500-gigawatt non-fossil energy capacity by 2030.

### III. IMPACTS OF CLIMATE CHANGE IN INDIA

According to a recent report by the **council for environment, energy and water (CEEW)**, three out of four districts in India are hotspots for cyclones, floods, droughts, and their associated activities. India is the seventh most vulnerable country with respect to climate extremes as per the **global climate risk index 2020**. Weather condition that was unusual is now becoming prominent. India is becoming a hotspot region for flash droughts and floods; both of these can have

severe impacts on the lives of people and various sectors of the country such as agriculture, tourism, healthcare, education etc. Furthermore, the **Intergovernmental Panel on Climate Change (IPCC)** states that every degree rise in temperature will lead to a three per cent increase in precipitation, causing more cyclones and floods.

Extreme weather conditions will have a direct impact on the agriculture sector of India as the increase or decrease in the overall amount of rainfall and by shifts in the timing of precipitation. Industries that are in the coastal areas such as the salt manufacturing industry, fisheries, tourism, ports, coastal refineries will be severely affected. Coastal states of the country such as **Odisha, West Bengal, Tamil Nādu, Karnataka, Goa, Maharashtra, Gujarat** and **Kerala** face a high risk of cyclones and floods due to climate change. Recently these areas were affected by severe cyclones such as **Yaas, Taukte** and **Amphan**. An increase in greenhouse gases means more ice melting, higher sea levels, more heatwaves, greater impact on food security, health, the environment. and other extreme weather activities. It is now time to rethink our current development strategies and adopt nature-based sustainable solutions so that both human beings and our planet can survive together.

### IV. LEGAL ENVIRONMENTAL FRAMEWORK

The Indian constitution is one of the few in the world that contains specific provisions on the environment. The purpose of these provisions is to protect and improve the environment.

According to the Indian Constitution, **Article 51A(g)** of Fundamental Duties establishes that “it shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.” **Article 21** says that “no person shall be deprived of his life or personal liberty except according to the procedure established by law.” In *Subhash Kumar v. the State of Haryana*, the Supreme court observed several liberties that are implied by Article 21, including the right to a healthy environment. As per **Article 48A**, it is the duty of the state to protect and improve the environment and safeguard the forests and wildlife of the country.

India is one of the most vulnerable countries to climate change. Since India is now the third-largest emitter of greenhouse gases in the world after China and the United States, it becomes important for us to adhere to our nation’s environmental legal framework. Strictly adhering to the laws and policies will enable us to attain sustainable development. Each state is now in the process of adopting a state action plan on climate change with recommendations on how mitigation and Adaptation can be included in development policy.

## **V. WAY FORWARD**

The Earth does not belong to man. Rather, man belongs to Earth. The Earth is what we all have in common, without which no living organism can survive. It is an urgent need that all nations put equal efforts towards reducing emissions. If we don’t stop now, we will lose our future. Due to excessive fossil fuel burning and massive

changes in land cover, such as deforestation to make space for urbanisation, the release of greenhouse gases such as carbon dioxide and methane takes place in the environment. By trapping the heat in the atmosphere, greenhouse gases give rise to global temperature. Climate Change manifests itself in a variety of detrimental ways. The occurrence of these extreme conditions disrupts the ecosystem balance and have negative impacts on a living organism.

As the world has warmed, this warming has triggered many changes to Earth’s climate. Human-induced climate change has already increased the number and strength of some of these extreme events. Therefore, all the nations must combine emission reductions with climate change adaption to save, protect and improve the environment. We could reduce the risk of climate change by adopting natural-based solutions such as tree plantations for restoring and modifying our ecosystem. Spreading awareness and knowledge about mitigation and reduction of disasters have become crucial in the present time. Safeguarding biodiversity through the sustainable management of forest ecosystems is a strategic way of building climate resilience.

It is crucial for us to maintain environmental sustainability by consuming our natural resources such as land, water, fuel at a sustainable rate. We need to stick to alternate energy other than fossil fuels, such as tidal energy, solar energy, biomass energy etc., as these renewable energy generation sources emit little or no greenhouse gases into the air. This

means a smaller carbon footprint and, overall, a positive impact on the natural environment.

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