Public Lecture
on the occasion of
World Environment Day

Climate Justice in India: Perspective from the Global South

By

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JUNE 05, 2026

ESTD. 1981

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INSTITUTE OF DEVELOPMENT STUDIES, JAIPUR

Institute of Development Studies

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Climate Justice in India: Perspective from the Global South

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Abstract

The phenomenon of climate change is neither sudden nor unexpected; rather, it is the result of long-term historical actions that are now imposing unprecedented catastrophes on socio-ecological systems worldwide. This global problem has emerged from the mistakes humanity has made in the name of development. The pursuit of development has been relentless, particularly in the global North. The impact of climate change is evident everywhere; however, it is disproportionate, with those responsible for the problem suffering less than those who contributed least. All of humanity has the right to develop and meet the expectations of its people within their respective political boundaries. Highly developed regions tend to view luxury as a right, while people in low-income countries and the developing world are seeking basic infrastructure to lead safe, secure lives. This is the paradox at the heart of the current climate change debate. As climate disasters become increasingly severe worldwide, efforts are underway to safeguard the environment and minimise their impact through various mitigation measures. Much has been discussed, and some potential recommendations are being implemented. However, the Global South is still seeking more viable options to mitigate climate change while developing essential infrastructure. To address both needs, there is an urgent requirement for the global North to provide funding and technological support to the global South to meet basic developmental needs without further burdening the environment. This demands an ethical approach and justice for victims of contemporary climate-related problems. Through such actions, the global North can advance climate justice in the global South. This article explores climate justice in India from the perspective of the Global South and highlights its importance in relation to climate finance and technology transfer from the developed world. While global think tanks have made several promises, it is crucial that these promises are realised on the ground to secure human rights and sustain the global environment for future generations.

Keywords: Climate Change – Finance - Justice; Global North-South; COPs; NDC; NAPCC; Sustainable Future

Chairperson of the Institute of Development Studies (IDS), Jaipur, and today's programme, Dr. Arvind Mayaram, Director (I/C) of IDS, Dr. Motilal Mahamallik, Secretary (I/C) of IDS, Dr. Varinder Jain, faculty members of IDS, Dr. Harchand Ram, Dr. Golam Rabbani, and Dr. Premkumar A, staff; invited guests; participants, students, and representatives from the press and media, attending this academic programme at IDS, Jaipur, I warmly welcome you all to this lecture.

My special thanks and gratitude to the Chairperson and Director (I/C) of IDS for inviting me to join this distinguished gathering of scholars and participants at this significant academic event, held in celebration of World Environment Day 2026. IDSJ excels in producing scientific outcomes that enhance our understanding of developmental processes and challenges. The institution conducts rigorous research on issues affecting marginalised groups and less developed regions, and adopts a multidisciplinary approach to address complex societal concerns. IDS provides a scholarly platform for stakeholders to discuss contemporary developmental issues.

I am pleased to mention that the IDS, Jaipur, and the Institute for Social and Economic Change (ISEC), Bengaluru, have established a collaborative partnership. Both institutions have jointly submitted research proposals and are planning academic events that address urgent and contemporary themes. I would like to acknowledge the support of the heads of both organisations, ISEC and IDSJ, in advancing these scientific initiatives.

1. Introduction

There has been sufficient knowledge generation on climate change and its associated aspects that link the environment, development, and livelihood security, as well as the responsibilities to act to mitigate climate-related threats, across the globe. The first global discussion on climate change took place in 1979 in Geneva, marking the first climate conference. Though the discussion would not have been as severe as it is today, it nonetheless provided an opportunity for the international gathering, where scientists, policymakers, and other stakeholders could discuss the impact of human activities on the environment. Within the UNFCCC, 30 Conference of the Parties meetings have been held since 1995, and through

2026, the 31st COP meeting is scheduled to be held in Turkey. However, in addition to the main COP meetings, Bonn organises mid-year sessions that meticulously focus on the issues and challenges of implementing climate policies. Over last three decades, the United Nations Climate Change Conferences (COPs) have evolved into several pathways and doable frameworks for reducing the human impacts on the global environment, which include emissions reductions while adopting legally binding international agreements and also through various climate policies that individual nations have developed to meet their respective targets at national and fulfilling their promised commitments international levels. The major milestones which have culminated into the actions are formulation and adoption of the Kyoto Protocol, the Paris Agreement which has become part of the paradigm shift in climate change debates and actions at the global level, carbon budget estimation, grouping the nations as per their current per capita emissions and historical ledger in emissions pathways, and space in sky as far as individual countries' emissions are concerned. The grouping of countries and developing nations has made global constituencies realise that aiming to make CO_2 emissions as scarce a commodity as the space in the sky is fixed for an individual country to emit annually (WBGU, 2009). The entire perspective provides a theoretical and conceptual background on framing the protocols of the climate finance mechanism, through which the Green Climate Fund and the loss and damage fund are established to meet the development needs of poor and developing countries. The recent COPs (29 and 30) have emphasised the need to take priority actions seriously, with increased accountability and substantial financial commitments that are required to support poor and developing countries. This further culminated in COP30, which has categorically emphasised implementing past pledges and keeping an eye on tracking progress toward achieving climate goals. Now, within the climate change debate and implementation of major actionable points, the contemporary debate on some of the major ethical issues remains unanswered, for example, the vulnerable countries and underprivileged societies would claim aggressively for their right to pollute, or whether rich countries and the most privileged communities would argue in the same manner for their right to luxury, as they have acquired wealth and substantial resources to lead the lifestyle they want. Hence, many contemporary debates are converging, drawing on the history of global environmental changes driven by

anthropogenic activities and resource extraction, raising a series of questions about how to address these issues in a prioritised and justified manner. This further leads to the debate on climate justice, which argues for having a strong human rights-based approach and a doable framework to address the unequal historical responsibilities of CO_2 emissions and provide policy support in addressing the vast impacts of climate change that affect the survival and livelihoods of marginalised, low-income, and vulnerable communities, mainly across the global south. This has a strong scientific basis to argue that low emitters are the ones who suffer the most, as their sustenance and survival are centred on climate-sensitive activities, such as marginal agriculture, animal husbandry, and NTFP collection; hence, their logical demand is for equitable burden-sharing and benefits from climate solutions. This has to come from strong support and policy advocacy that do not compromise the right to develop, on the one hand, and climate change mitigation efforts, on the other, to keep the global temperature rise below 1.5 degrees Celsius.

2. Climate Change: Effects on the economy and society

Climate change has had a serious impact on developing and low-income countries. Recent data show that countries in the Global South are the hardest hit, bearing the brunt of climate change-related losses. The USA, the largest emitter of greenhouse gases from 1990 to 2020, is responsible for more than 10 trillion USD in global harm (Willmoth 2026), which has disproportionately affected the global south. However, the USA's climate change losses were the highest of any country, estimated at more than 16 trillion USD during the same period. In the global north, the countries' financial losses would be much greater than those experienced in the global south because their highly advanced infrastructure has required substantial expenditure. Climate related losses in Asian countries are also rising; for example, China loses around $238 billion annually, followed by India ($87 billion) and Japan ($83 billion), according to the State of the Climate in Asia 2020 (Pandey 2021). The world is facing a catastrophe today due to historical emissions, with 92% released by the global north, 29% by the USA, and 29% by the EU (Vigliotti 2025). When responsibilities are considered from a historical perspective, it is highly pertinent that most of the issues regarding climate change are created by the global north, while the global south bears the costs disproportionately. This phenomenon is called climate injustice and has been discussed

extensively all over during the last couple of years. The irony of the matter is that the historically global north is responsible for the highest cumulative greenhouse gas emissions, while people in the global south face disproportionately higher losses in terms of ecological devastation, forest fires, huge loss of human lives and many other threats which are irreversible and lead to an existential crisis (Bandera, 2024). This climate injustice demands a fair and equitable share in developing the global south, where many of the countries are poor and underdeveloped. The people over their demand to meet their aspirations for basic privileges to lead a respectable life amid contemporary development and global competition for the extraction of resources to sustain the modern developmental pathways of those who have made historical mistakes in polluting the Earth's atmosphere. These nations in the global south require development pathways that are not carbon-intensive yet allow their populations to come out of poverty and at least meet basic human aspirations (Sharma et al., online). The world's most affected nations by climate change, in terms of economic liabilities and human lives, are shown in Figure 1.

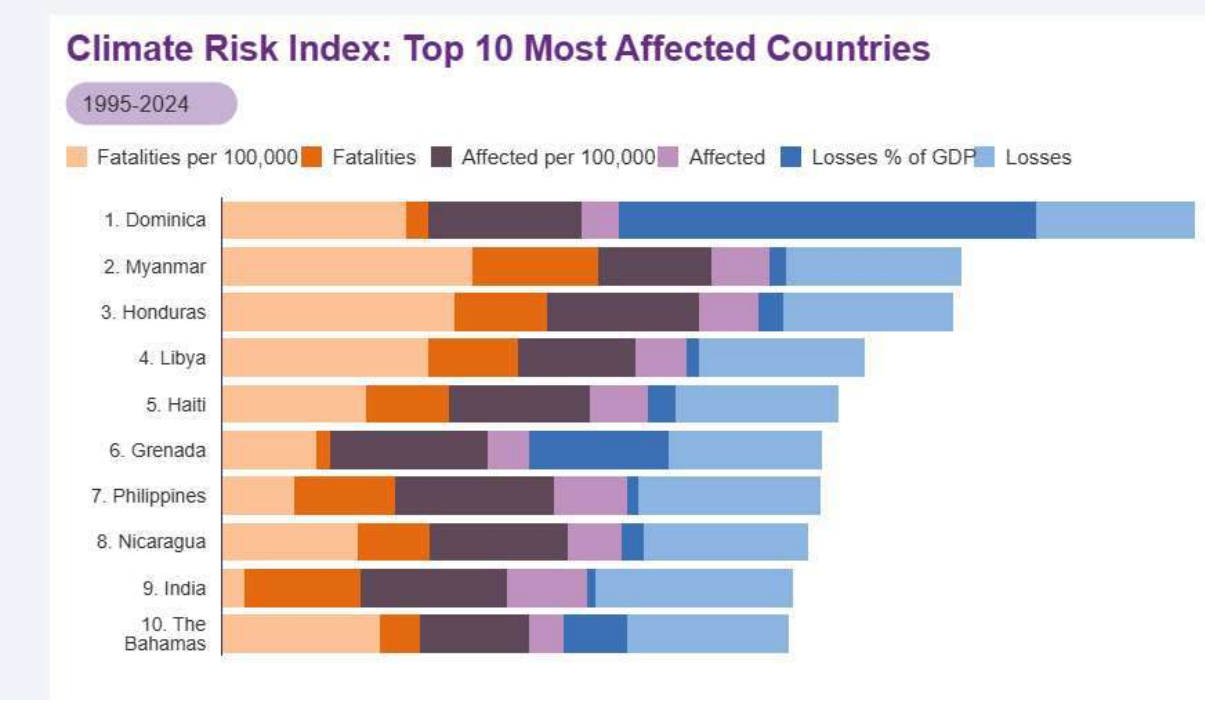

Figure 1: Top 10 most affected countries (Source: CRI, Germanwatch 2025)

Studies showed that Climate Disasters Killed 80,000 and hit 1.3 billion. In India, economic losses totalled USD 170 billion from 1995 to 2024 (Climate Risk Index (CRI) 2026 – Germanwatch). The figures clearly depict that climate injustice occurs when marginalised and developing communities suffer the most from climate change, even though they contribute the least to the crisis. This unequal burden has given rise to the global climate justice movement, which demands equal rights, fair distribution of environmental protection, and accountability for historical emissions (UNDP, GCP, 2023). Climate justice highlights the disproportionate impacts of climate change on vulnerable countries, regions, and communities, as documented scientifically, and prioritises protecting their rights and helping them overcome social, ecological, economic, and developmental vulnerabilities.

3. Who owns the sky?

This is a basic ethical question, and also given some examples above. However, Table 1 below and Figure 2 clearly depict the contrasts between total vs. per capita emissions of the world's top three emitters. With the highest level of pollution at 33%, China is the major emitter, followed by the USA at 13% of global emissions and India at 7%. However, per capita emissions differ from absolute emissions, as individuals in the developing world and low-income groups are not responsible for the high accumulation of GHGs in the atmosphere, due to their poverty and limited aspirations. However, the people of the richest nations possess disproportionately large carbon footprints, making them highly responsible for cumulative emissions in today's atmosphere. While India is the third-largest polluter, it ranks 121st globally, with per capita emissions of less than 1.8T. Whereas the USA and China rank 16th and 27th, respectively. The top three nations with respect to per capita emissions are Palau (63 t/capita), Qatar (45 t/capita) and Kuwait (25 t/capita), which are accountable for 13th, 9th and 5th times the global average per capita CO_2 emission (4.8 t/capita). Even with per capita CO2 emissions globally averaged at 4.8 t/capita, current levels are much higher than those required to keep global warming below 1.5 °C by the end of this century and to align with the Paris Agreement goal. Various studies suggest that per capita emissions should ideally be reduced to approximately 1.1 tonnes per person annually. Now the question is how to bring about this transformation? Will the wealthiest nations compromise on reducing their carbon footprints while following sustainable lifestyles? Will developing and low-

income countries achieve the developmental goals with low-carbon-intensive pathways or through carbon neutrality? Can these contrasting questions find real answers, and will there be practical implementations of the theoretical narratives? For this, the debate shall focus more on climate justice, to find feasible solutions towards equitable opportunities for all those who are still behind mainstream development and struggling to sustain a life with minimal basic requirements, in line with their aspirations.

Table 1: Countries with the highest global emissions and their respective per-capita emissions

Country	**Share of global emissions**	**Per capita**
China	~33%	9.5 t/capita
USA	~13%	16 t/capita
India	~7%	1.8t - 1.96 t/capita (116th /121strank)

Figure 2: Who owns the sky? Whether who emits 0.5t CO_2 or 15t CO_2 per year!

Figure 2 shows the contrast between a person with bare minimal assets (0.5 t/capita label for the poorest) and a person leading a luxury life (15 t/capita). The provocative question *"Who owns the sky?"* is a classic climate justice framing: atmospheric space (the ability to absorb CO_2) is a shared global common, yet it is being disproportionately occupied by wealthy nations and individuals, and in the name of climate finance, there is a huge competition to grab the sky. To understand this ethically, the debate should focus more on climate justice to find feasible solutions that provide equitable opportunities for all those who are still behind mainstream development and are struggling to sustain a life with minimal basic requirements.

4. The 1.5°C Carbon Budget

For the first time ever, the carbon budget approach was proposed by WBGU (WBGU 2009). The carbon budget approach, developed by the German Advisory Council on Global Change (WBGU), provides a metric for climate justice by calculating a fair per-capita allocation of carbon dioxide (CO_2). According to this framework, every person on earth is entitled to emit up to 2.7 tonnes of CO_2 annually (now, with the revised threshold, the limit is further reduced to keep the temperature rise below 1.5 °C). This approach, when applied to major countries, reveals stark disparities. For example, China emits approximately 9.4 t CO_2 per capita, more than three times its fair share; the United States emits around 13 t CO_2, vastly exceeding its allowance; whereas India, at 1.8 t CO_2 per capita, is nearly compliant. This quantitative basis forms the mathematical core of the global climate justice argument, emphasising that an equal per-capita allocation would recognise India as nearly at its fair share, while nations like China and the US have far surpassed theirs (Kaechele et al., 2011).

The data in Figure 3 show that to limit warming to 1.5°C, cumulative CO_2 emissions must remain within ~790–800 Gt. Figure 3 also shows the uncertainty in the temperature. There is little difference between what emerged from IPCC AR5 Working Group I and what researchers estimate at present (Forster et al., 2025) regarding the remaining carbon budget for 1.5 °C. Figure 3 makes it clear that beyond a certain cumulative emissions level, dangerous warming becomes locked in, making the remaining carbon budget a finite, shrinking resource that must be shared fairly. In Earth's atmosphere, around 45 to 53 billion tonnes (45 - 53Gt) of CO_2 are being released by anthropogenic activities, mainly from fossil fuel

emissions and deforestation (PCCF, 2025). Emissions from the aviation industry account for around 2-3% of total human-induced emissions and have been increasing year by year, though emissions from this sector declined sharply during the COVID-19 pandemic. Out of the total budget, which is 790-800$GtCO_2$, 83% is already exhausted. Scientists have estimated that the remaining 130 $GtCO_2$, which is the threshold to keep the temperature below 1.5 °C, would be exhausted in a little more than three years from now (2025-2026) under a business-as-usual scenario for global carbon dioxide (CO2) emissions (Figure 4). Now, the global carbon budget for 1.5 °C is nearly exhausted; hence, a group of scientists warns that we need to overshoot this threshold. Hence, the focus of policymakers and scientists is shifting towards preventing the catastrophe caused by climate change while aligning the budget with a new threshold of 1.6 °C or 1.7 °C (Poynting, 2025).

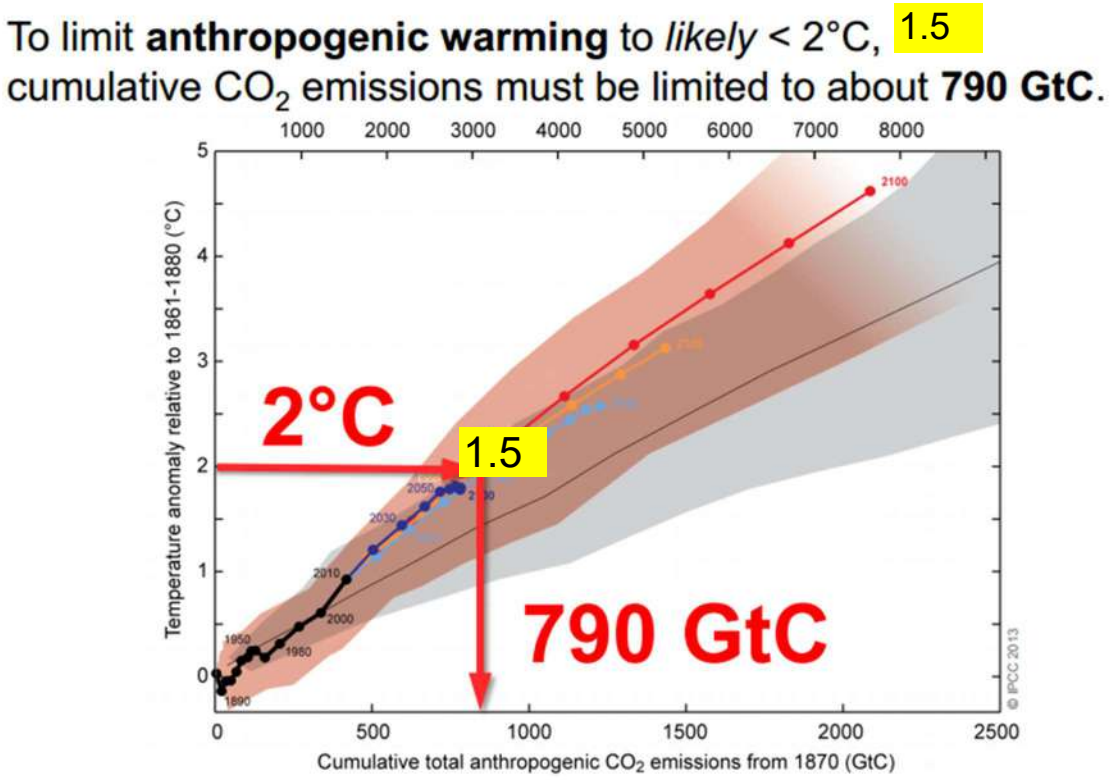

Figure 3: Limiting global warming below 1.5 degrees and anthropogenic emissions (Source IPCC)

This is a key scientific explanation: the remaining atmospheric space is scarce, and how it is allocated is a question of justice. The main discussions have been centred around the carbon-intensive vs. carbon-neutral pathway. This has yet to be defined very carefully and categorically, for the nations have made historical mistakes, and for the nations that are struggling to fulfil the demands of their populations in the contemporary world.

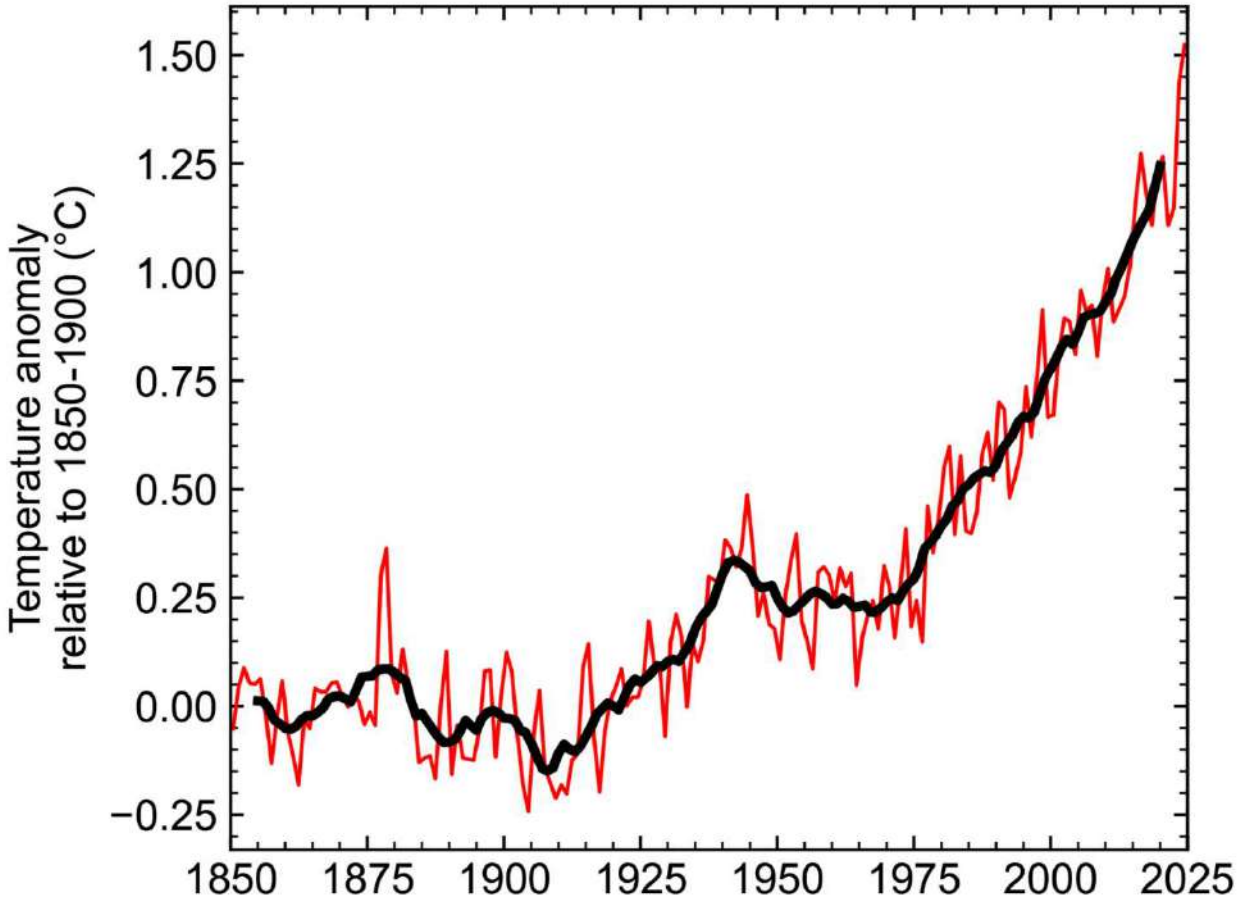

Figure 4: Mean of global surface temperature (thin annual and thick global) (Source: Forster 2025)

Figure 4 shows a change relative to the reference period 1850–1900, indicating a new threshold of 1.6 or 1.7 °C. Reinforcing the points given above, at the present emission rate, the remaining budget will be exhausted soon. It reframes CO_2 emissions as a scarce commodity from an economic concept. Once it is realised that the atmospheric capacity is

finite and shared, the question of who gets to use it (and who has already used it) becomes central to any fair distribution framework and to debates on climate justice.

5. CO_2 Emissions trends by countries

Figure 5 shows CO_2 emission trajectories for the top emitters, namely, the USA, China, Russia, India and Japan, over five decades. China's emissions rose steeply post 2000, and India's are rising, but from a much lower base than those of its neighbour, China. The USA has shown a slight decline, but per capita emissions have not declined drastically. This historical trajectory and the efforts of the top emitters are crucial to the justice argument. A country like India, which has the world's largest population, has not contributed to historical emissions, making it barely responsible for the contemporary challenges humanity faces due to climate change. Most of the accumulated atmospheric CO_2 was emitted before India industrialised significantly.

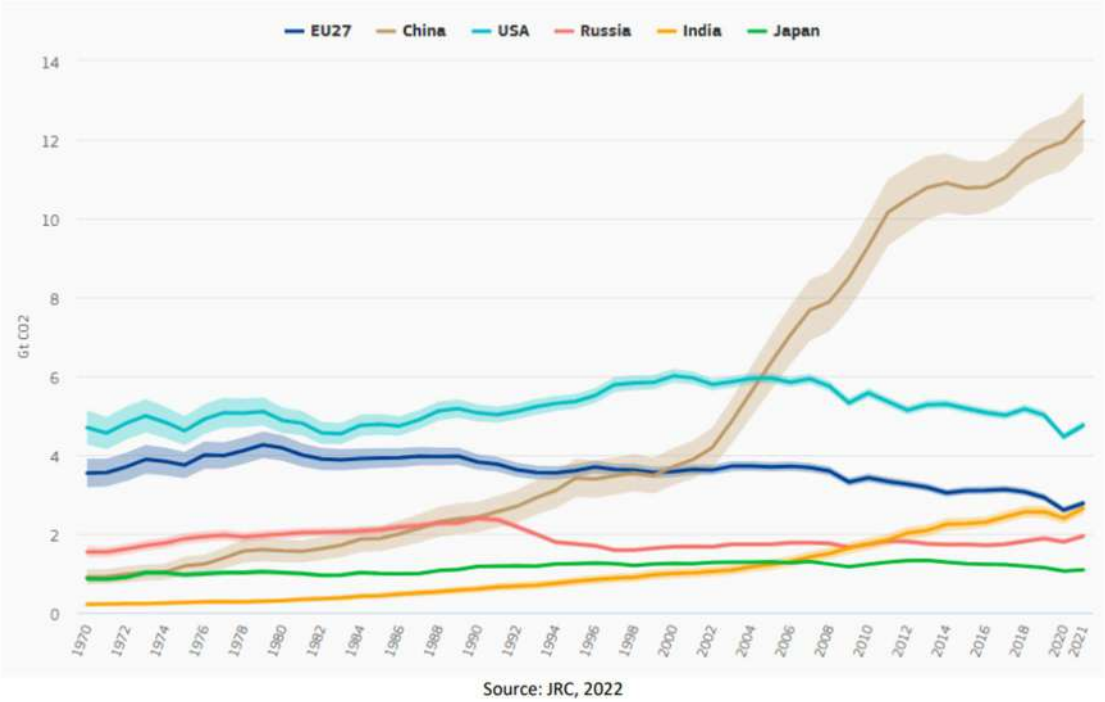

Figure 5: CO_2 Emissions Trends by Country (Crippa, et. al., 2022)

Table 2 shows percentage changes in CO_2 emissions across countries for the periods 2019–2020, 2020–2021, 2021–2022, and the CAGR for 1990–2021 (Crippa et.al., 2022). India's emissions ricocheted sharply post-COVID. This quantifies growth trajectories and helps distinguish between countries on a declining path and those still increasing their emissions, particularly in developing nations, where they are expected to achieve certain basic developmental goals to fulfil the genuine requirements of their populations. This figure shows that, despite the challenges faced by large countries, their emissions are not rising as rapidly as those of the developed world did in the past.

Table 2: CO_2 emissions changes at different points of time and CAGR (1990-2021)

	Share in global	Change 2019-2020	Change 2020-2021	Change 2019-2021	CAGR 1990-2021
China	32.9%	1.5%	4.3%	5.9%	5.4%
United States	12.6%	-10.9%	6.5%	-5.2%	-0.2%
EU27	7.3%	-10.8%	6.5%	-5.0%	-1.0%
India	7.0%	-6.5%	10.5%	3.3%	4.9%
Russia	5.1%	-4.5%	8.1%	3.2%	-0.7%
Japan	2.9%	-7.6%	2.8%	-5.0%	-0.2%
Iran	1.9%	3.1%	2.9%	6.1%	4.1%
South Korea	1.7%	-6.9%	3.5%	-3.6%	2.7%
Indonesia	1.6%	-8.7%	1.9%	-6.9%	4.3%
Saudi Arabia	1.5%	-0.4%	2.0%	1.6%	4.0%
Canada	1.5%	-9.9%	2.8%	-7.4%	0.8%
Brazil	1.3%	-7.7%	11.0%	2.4%	2.5%
South Africa	1.2%	-9.1%	1.8%	-7.4%	1.1%
Turkey	1.2%	-0.1%	8.0%	7.9%	3.6%
Mexico	1.1%	-16.7%	4.3%	-13.1%	1.2%
Australia	1.0%	-7.4%	-2.4%	-9.6%	0.9%
Global		-5.3%	5.3%	-0.4%	1.7%
International aviation	1.0%	-45.3%	15.4%	-36.8%	1.3%
International shipping	1.8%	-2.6%	4.9%	2.2%	2.1%

Source: JRC 2022

Figure 6: India's role and CO_2 Emissions by Sector in India (Crippa et.al., 2022)

India's sectoral emissions over time are dominated by power generation (electricity), which is the largest and fastest-growing sector, followed by industrial combustion, transport, and buildings/other sectors. Figure 6 shows growth projections for three time periods: 2005-2010, 2010-2015, and 2015-2020. India's emissions are rising primarily due to electricity demand and industrial growth. These sectors are important to the country, as they are tied to its economic development. It is important to note that the emissions rise from India is largely driven by poverty alleviation, for example, electrification, industry, not luxury consumption. Hence, the global south needs substantial support from the global north to cope with climate uncertainties, on the one hand, and to keep developmental projects sustainable in order to meet the developmental aspirations of the nation's people.

6. Climate justice

Photo-Plate 1 presents an example illustrating climate justice, showing how an ecosystem's structure has been shaped before and after the climate-driven disaster in Dharali village, Uttarakhand (2025). While climate change has played a significant role in landscape transformation, unregulated human interventions have further aggravated the loss. These unregulated activities stem from various factors, including limited alternative avenues for income generation, policy failures, and governance issues at the block, district, or state levels.

From a scientific perspective, climate justice can be analysed across three primary dimensions.

1. Resource consumption inequality: Scientific assessments demonstrate that resource consumption, including energy, land, and water, varies significantly between populations and regions. Disparities in per capita resource use contribute to uneven environmental pressures and ecological footprints. The examples above show that in the global north, per capita emissions are severalfold higher than in the global south.

2. Emissions contribution inequality: Empirical data show that greenhouse gas emissions are not distributed equally. High-income countries and affluent social classes contribute disproportionately to cumulative emissions, while low-income populations contribute minimally. This inequity is evident in the global north and the global south, within nations and regions, and across various strata. Keeping this in view, Nautiyal et al. (2025a) conducted a detailed study, presenting a sector-wise analysis of Household Carbon Footprint (HCF) across India within the contemporary debates on climate change. This study was supported by international and national organisations (GIZ and MoEF&CC) and is notable for its broad scope, covering urban, peri-urban, and rural regions, and analysing key sectors such as energy, food, waste, and travel across different income groups. The geographic diversity of the research is highlighted by its inclusion of multiple states and 11 ecological zones, with empirical data supporting the representativeness of the sampled locations. This methodological rigour ensures that the findings reflect the country's environmental and socio-economic diversity. The influence of affluence on household emissions is depicted in Figure 7, across seven income brackets. The data reveal a steep increase in carbon footprint with rising income, particularly among the top 2% of Indian households (those earning over Rs 24 lakh/year). These households exhibit disproportionately high emissions, indicating that carbon inequality closely mirrors income inequality. This correlation underscores the need for targeted policy interventions addressing high emitters within the country. However, high emitters with incomes exceeding Rs. 2.5 million per year is far fewer than those reported in China, the USA, and other top-polluting countries worldwide.

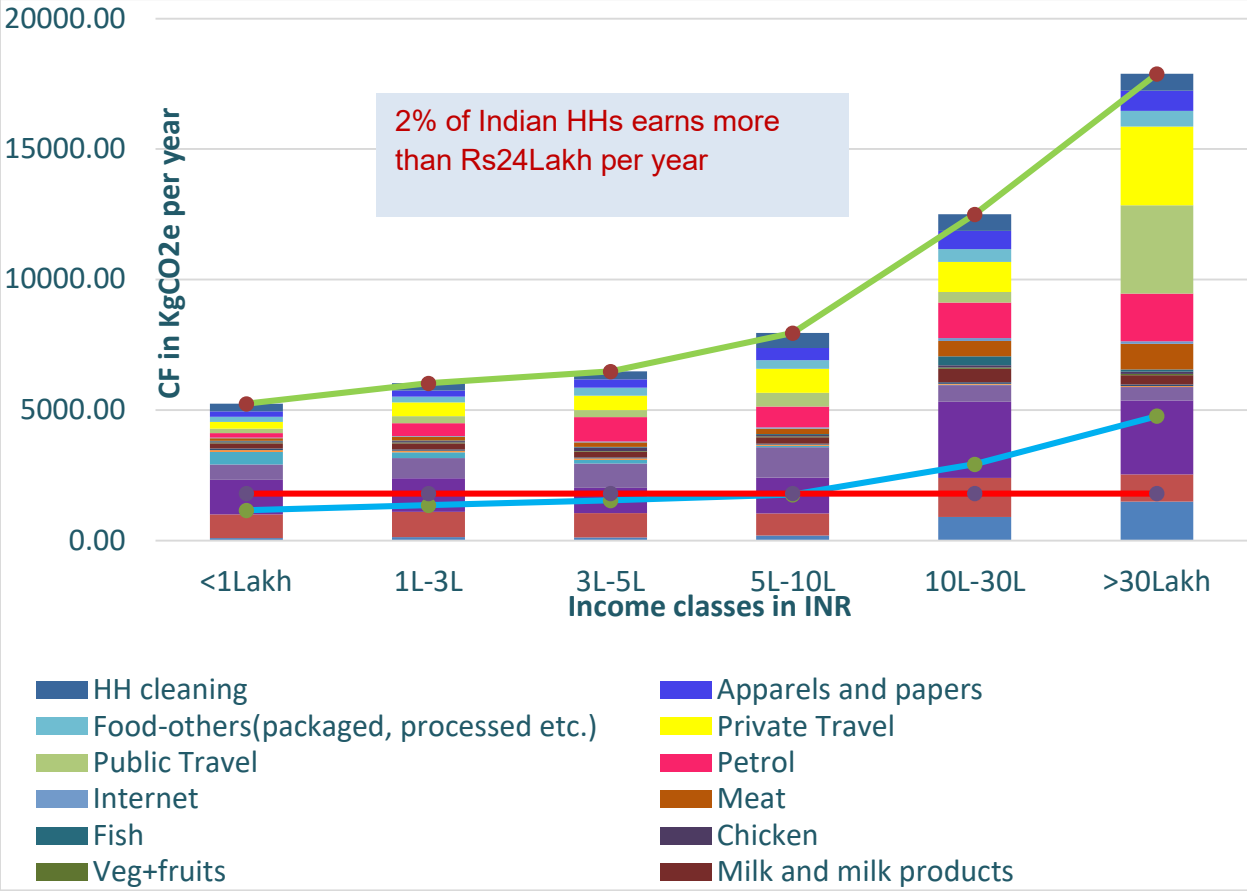

Figure 7: Influence of affluence in India and income-wise disproportionate emissions (Nautiyal et.al., 2025a)

3. Climate vulnerability inequality: Scientific studies indicate that vulnerability to climate impacts is unevenly distributed. Geographic factors (e.g., locations in mountainous, coastal, or arid regions) and socio-economic dependence on climate-sensitive livelihoods (e.g., agriculture, fishing) amplify risks for certain populations, especially those with limited adaptive capacity. These regions require development to reduce their vulnerability, improve access to modern facilities and health services, provide better schooling for their children, and ensure livelihood security. However, many factors hinder the people's right to develop demand in ecologically fragile and sensitive environments. The central scientific insight is that climate change fundamentally decouples those responsible for emissions from those who bear the consequences. Research shows that climate impacts are geographically concentrated in vulnerable regions, including mountains, coasts, and arid zones (Nautiyal et.

al., 2025a; Nautiyal et. al., 2025b; Negi et. al., 2025). Economic analyses reveal that damages are income-amplified, and poorer populations lose a greater proportion of their assets. Furthermore, the externalisation of climate costs means that individuals in vulnerable areas (e.g., communities along the Indian coast and in the Himalayan regions) disproportionately bear the impacts of emissions from industrialised nations (Biswas and Nautiyal, 2023).

Photo-Plate 1: The impact of climate change, coupled with human-induced factors, aggravates the intensity Dharali (Uttarakhand), 2025, before and after disaster)

The framework in Figure 8 illustrates that climate change is a systemic stressor that simultaneously erodes five distinct yet interconnected systems: natural, physical, financial, social, and human. Each form of capital represents a foundational asset for societal well-being, and its degradation is both a cause and consequence of climate injustice. The scientific literature increasingly supports the view that these capital losses are not isolated events but part of a complex feedback loop (Nautiyal et. al., 2025a).

Natural capital: The stocks of natural resources and environmental services, such as water springs, glaciers, fertile soils, forests, and ecosystem functions, are foundational for

ecological stability. Climate change accelerates glacial melt, disrupts hydrological cycles, and degrades soil and forest health, resulting in the loss of ecosystem services that sustain both social and ecological systems, including all life forms. Sensitive ecosystems are highly diverse, and uncertainty in climate change threatens their functioning, thereby jeopardising their overall health.

Physical capital: Infrastructure, including housing, roads, and irrigation systems, provides the tangible means for human activity and resilience. Increasing frequency and intensity of climate-induced disasters (floods, landslides, storms) damage or destroy physical assets, undermining development gains and increasing vulnerability to future shocks. The marginalised section of society and ecologically sensitive regions are greatly affected by climate uncertainty. This aspect needs scientific support to develop resilience and coping with climate change (Biswas and Nautiyal, 2023).

Financial capital: People in the global south mostly depend on climate-sensitive sectors to sustain their livelihoods. These sectors, such as agriculture, forest resource collection, animal husbandry, and fishing, are sources of economic assets and are being eroded by climate change; for example, crop failures are becoming more frequent, leading to loss of income, rising debts, and reduced access to insurance and credit. Animal husbandry receives a setback due to a lack of grazing grounds, fodder availability, etc., and forest productivity is hampered due to degradation, forest fires, change in vegetation dynamics, etc., and similarly, the aquatic ecosystems bear huge costs of climate change, thus directly impacting the communities that depend on fishing on the coast and other aquatic ecosystems. This financial precarity limits adaptive capacity and perpetuates cycles of poverty, particularly among marginalised groups.

Social capital: The networks of relationships and institutional trust that bind communities are strained by climate impacts. Distress migration fragments families and communities, while weakened institutions struggle to coordinate adaptive responses, diminishing collective resilience (Negi et al., 2025).

Human capital: The health, knowledge, and skills of individuals suffer as heat stress and air pollution increase, leading to adverse health outcomes and reduced labour productivity. Additionally, displacement and environmental change accelerate the loss of traditional

ecological knowledge, which is crucial for adaptation and survival (Negi et al., 2025). Climate injustice leads to cascading, interconnected losses across all capital assets. Scientifically, this is not merely an economic issue but a systems-level phenomenon: the degradation of one type of capital triggers negative feedback loops that accelerate losses in other forms of capital. For example, the loss of natural capital (e.g., water sources) undermines physical infrastructure (e.g., irrigation), reduces financial stability (e.g., through crop failure), erodes social cohesion (e.g., through migration), and diminishes human well-being (e.g., through health impacts). This framework is especially salient for communities in ecologically sensitive regions like the Himalayas, whose livelihoods and existing societal knowledge are closely tied to intact, functioning ecosystems.

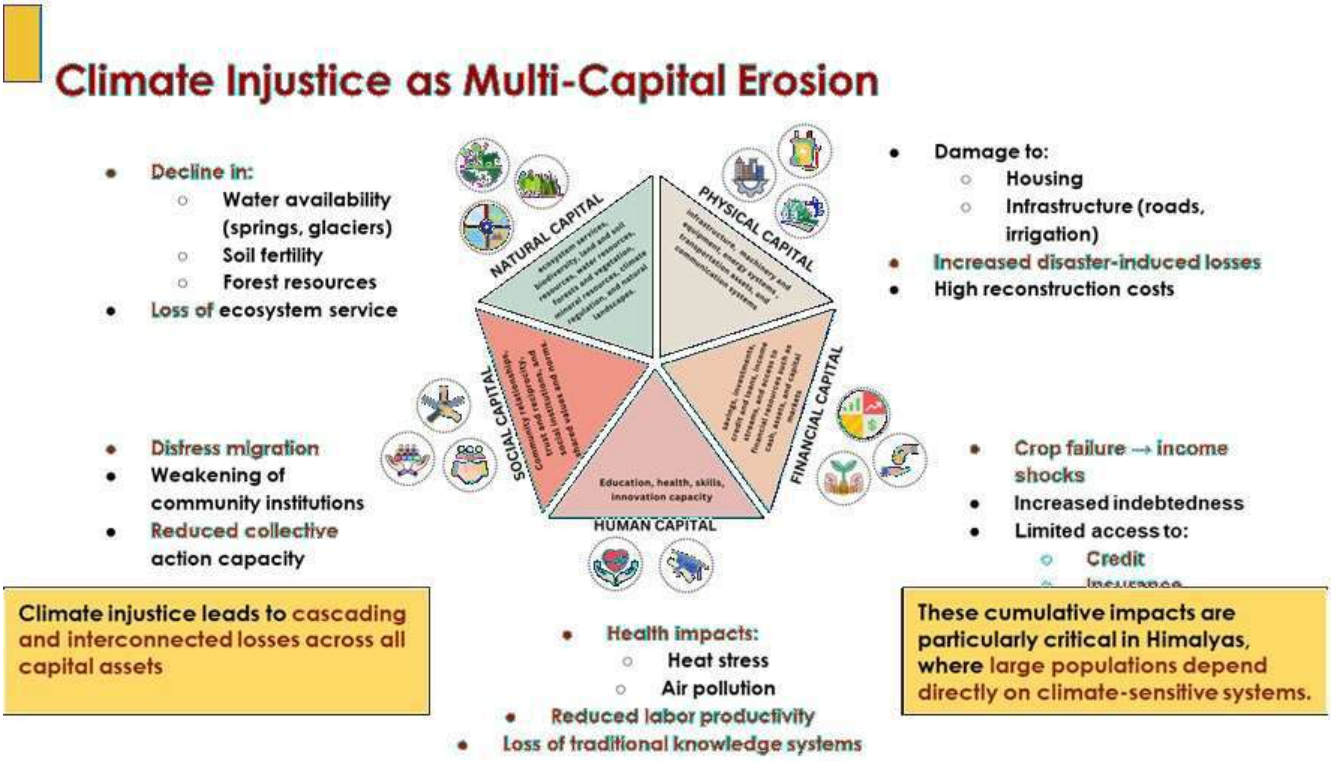

Figure 8: Climate injustice as multi capital erosion

7. Climate justice: India's stance and the vulnerability of its ecosystems and landscape

Table 3 shows India's position and emphasises that of one of its vulnerable regions compared with developed nations (the global north) across various dimensions. Within India, the

ecologically sensitive regions are showing the lowest level of contribution to global climate change, for example, per capita emissions, historical contributions, in contrast to showing high vulnerability, low adaptive capacity, with minimal emitter to bear the extreme burdens (Photo-plate 2).

Table 3: India's positions from the climate change perspective as compared to developed nations and the position of its highly ecologically sensitive ecosystems

Dimension	**Global/Developed**	**India**	**Himalayan Region**
Per Capita Emissions	10–15 t	~2 t	<1 t
Historical Contribution	~70% cumulative	~4%	~0%
Climate Vulnerability	Low–Moderate	High	Very High
Adaptive Capacity	High	Uneven	Low
Climate Justice Position	High emitter, low burden	Low emitter, high burden	Minimal emitter, extreme burden

India has high biodiversity in its natural and socio-ecological systems. Still, the majority of the population depends on climate-sensitive activities and climate change poses (i) negative externality as emissions impose unpriced costs, (ii) inequality as country like India adaptation is not the solution which would enable people to overcome from climate related disasters and risks because the adaptive capacity is income dependent and pose high economic costs, and (ii) public goods failure, climate change is a public goods as each country's emission contribute to increase in overall concentration in the earth atmosphere. Thus, efforts to address the cumulative impact on global environmental stability are a global public good, and abatement imposes higher costs than benefits on the respective country; hence, they are underinvested in.

Kedranath Disaster,2013

Photo-plate 2: Kedarnath disaster – Landscape before and after in 2013

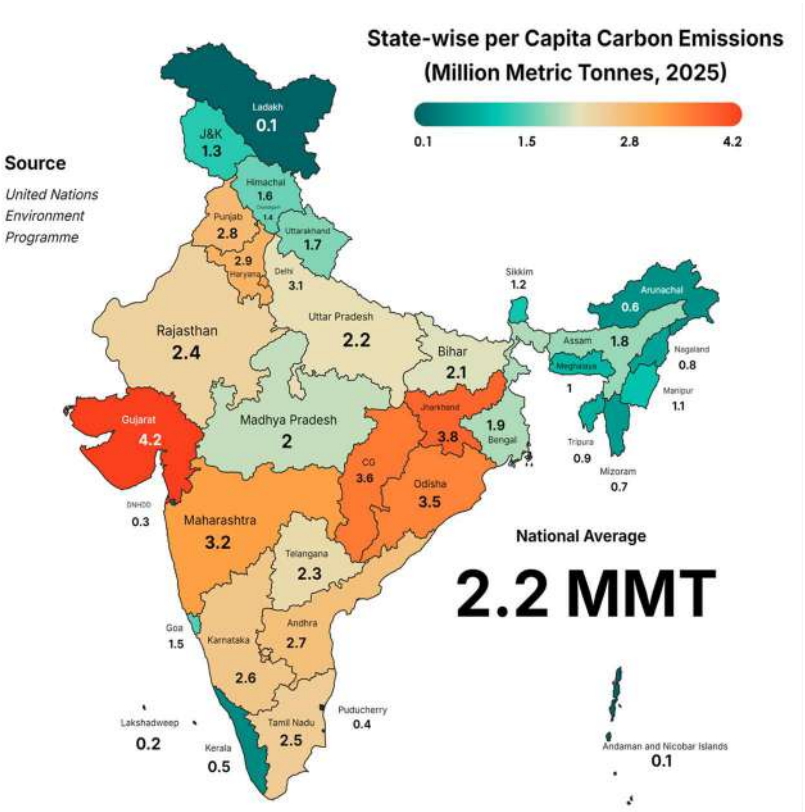

Figure 9: State-wise per capita carbon emissions (Source: UNEP, 2026)

Figure 9 shows internal inequality in India with respect to CO_2 emissions. The map highlights significant internal inequality in India, particularly in carbon emissions and energy consumption (UNEP, 2026). This shows that carbon emissions are concentrated among high-income generating areas, while climate vulnerability is concentrated among low-income populations, a fundamental mismatch between responsibility and risk within a country. In light of this disparity, India has made efforts to mitigate climate change at the national level.

7.1. What actions is India taking?

India's climate goals are specified in its Nationally Determined Contributions (NDC) under the Paris Agreement. The country has to achieve net-zero by 2070, with a 45% reduction in the emissions intensity of GDP by 2030. However, India has already achieved a 25-33% reduction in emissions intensity. India has officially achieved its COP26 goal of sourcing 50% of its installed electricity capacity from non-fossil fuels, reaching this milestone five years ahead of its 2030 target (Ministry of Power, GoI). The country will generate 500 GW from non-fossil energy sources by 2030, of which 83% already been achieved. In addition, an additional carbon sink equivalent to 2.5–3 Gt CO_2e will be generated by 2030, of which approximately 1.97 Gt has been achieved to date. India's eight national missions under the National Action Plan on Climate Change (NAPCC) on Solar, Energy Efficiency, Water, Agriculture, Himalayan Ecosystem, Green India, Sustainable Habitat, and Strategic Knowledge are in progress. Progress is monitored, and milestones are achieved. The renewable energy targets are particularly notable given that India started from a very low base.

India has made significant efforts in climate change mitigation, reducing its emissions intensity, increasing carbon sinks, and contributing to a sustainable development pathway, despite having no role in the historical accumulation of greenhouse gases in Earth's atmosphere. However, India expects the global north to support its efforts to achieve climate stability.

7.2. What is the required funding amount under climate justice for India?

Figure 10 provides a detailed breakdown of India's climate finance gap, highlighting the significant shortfall in funding required to achieve its climate goals. India requires an

estimated USD 2.5 trillion in climate finance to successfully meet its Nationally Determined Contribution (NDC) targets under the Paris Agreement by 2030. This translates into an annual financing requirement of USD 170-200 billion over the next decade. Currently, India can mobilise only about USD 40-50 billion per year for climate action, which falls significantly short of the required amount. As a result, there exists a substantial annual funding gap of USD 120-150 billion that must be bridged to stay on track with climate commitments. Furthermore, less than 25% of available climate finance is allocated to adaptation efforts, and even less reaches vulnerable mountain and rural communities. This imbalance reflects a broader global challenge, while mitigation projects such as renewable energy and electric vehicles are more likely to attract private investment due to their revenue-generating potential. Adaptation initiatives, such as flood protection and drought-resistant crops, typically do not offer direct financial returns. This market failure underscores the crucial role of public finance and international financial transfers in supporting adaptation and ensuring that funds reach the most at-risk populations (**Figure 10).**

The Core Question is Who causes? (high emitters) Who suffers? (vulnerable populations) VS Who governs adaptation and response? This is the political economy of climate justice in its simplest form. The people making decisions about climate response are often neither the biggest emitters nor the most vulnerable; they are governments and institutions that sit between these groups (a) high emitters and (b) vulnerable.

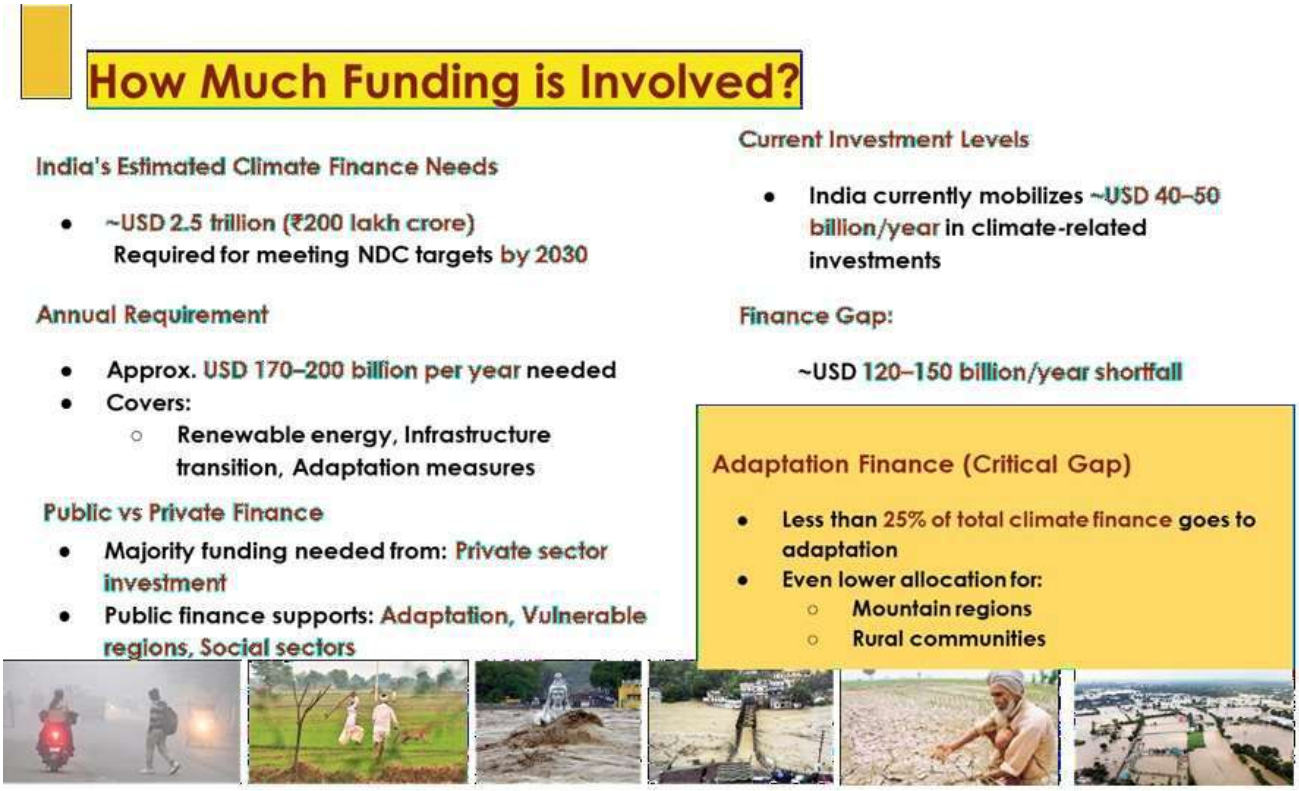

Figure 10: India's requirement for effective climate action under climate justice

What are the gaps in achieving the targets despite the fact that India's financial requirements are barely met for its efforts for mitigation and adaptation?

India has two major shortcomings in its approach to climate adaptation. First, it points out significant governance gaps, noting that adaptation planning is often centralised and led by state or national agencies, with minimal involvement from local communities, indigenous knowledge systems, and Panchayati institutions. Second, the access inequality emphasises that vulnerable populations face limited access to climate finance, weak institutional support, and poor inclusion in decision-making processes. Figure 11 illustrates that the region's most at-risk areas, such as the northeast, Himalayas, and coastal areas, are also those with the least institutional capacity, leading to the conclusion that those most affected by climate change often have the least control over adaptation decisions and resources.

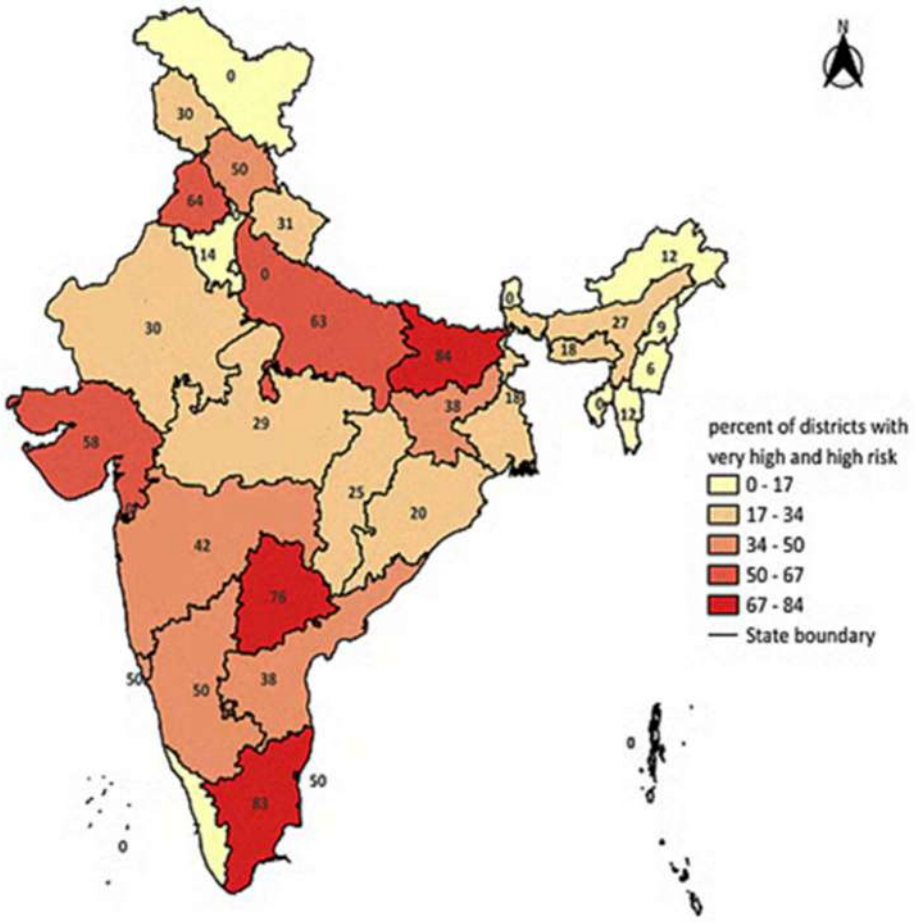

Figure 11: India's map highlights the districts falling under various categories of climate extremes (Source: UNICEF and published by Jain (2026)

8. Conclusion

Historical emissions from the global north and the recent rise in emissions pose a severe threat to the structure and functioning of Earth's environment. The phenomenon of climate change and the damage already done are both irreversible. The impacts pose unprecedented threats to the economy, ecology, society, and biophysical infrastructure of the natural and built environments. Climate change does not differentiate between the developed and developing worlds as it affects the entire planet. However, the cascading impacts are unequal, as developing and poor economies suffer disproportionately. Efforts by global constituencies aim to mitigate and minimise the impact of climate change, prompting each country to consider its own actions and commitments to reduce the rate of global environmental

change. Keeping the seriousness of the environmental issues in mind, the promises made by developed countries in 2009 to mobilise USD 100 billion per year for developing countries towards climate change adaptation and emissions reduction. It was the first time in 2022 that this target was met, with USD 115.9 billion in climate finance provided to developing countries (UN Climate Action). The delays and failure to meet commitments by the global north have posed many other challenges in the global south. Again, the amount of climate finance transferred to the developing world falls short of their needs (UN Climate Action), as the required amount is manyfold higher than the amount provided. When the funds were first provided in 2022, there was a disparity in their distribution among low-income countries, Africa, and middle-income countries. A smaller amount was allocated to low-income countries, while most of the funds, in the form of loans, were allocated to middle-income countries. At COP 29 in 2025, the global constituencies agreed to set a new target of USD 300 billion per year by 2035, which was three times the amount promised in 2009, as per the New Collective Quantified Goal on Climate Finance (UN Global Climate Action). The funding was further expanded, with an agreement to secure efforts from all entities (public and private) to provide USD 1.3 trillion per year to developing countries by 2035. This is further recalculated, and currently, the requirement to provide USD 2.3 trillion and 2.5 trillion to developing countries in the global south is felt, keeping in mind emerging markets, the flow of the economy, and other global market competition. Now the main question remains unresolved, in the name of climate justice. Where are the promises made fulfilled? Are the funds that vary from time to time sufficient to meet the needs of developing countries in the global south? How much funding is released in the name of climate action/ climate finance? In addition to the pertinent questions mentioned above, the main issues to understand the real demands of developing countries are as follows, with India as an example.

India's climate finance gap is insufficient to achieve its climate goals. The country's estimate is USD 2.4 trillion in climate finance to meet its NDC targets under the Paris Agreement by 2030. Therefore, an annual USD 170-200 billion over the next decades is the ground reality for realising the aim under climate action (adaptation, mitigation, and carbon intensity reduction). However, India is mobilising only USD 40-50 billion per year for climate action,

which is significantly less than required to meet the goals. This summarises that the goals can be met, provided the commitments made by the global north for climate action are matched by the global south with adequate financial and technological support. If not, the world's constituents will keep changing the new guardrail for global temperature rise at the cost of catastrophe and severe devastation due to rapid climate change.

"Inspired by Nature. For Climate. For Our Future", the theme of World Environment Day 2026, articulates an important reality of contemporary environmental change in two ways: (a) the global North, which is responsible for climate change, and (b) the global South, which suffers its most severe consequences. This article argues that targeted climate funding, technology transfer, and a more nuanced understanding of historical responsibility can make these efforts both scientifically adequate and ethically fulfilling.

"प्रकृति से प्रेरित। जलवायु के लिए। हमारे भविष्य के लिए" - विश्व पर्यावरण दिवस 2026 का विषय (Theme), समसामयिक पर्यावरणीय परिवर्तन की एक महत्वपूर्ण वास्तविकता को दो तरीकों से व्यक्त करता है: (क) वैश्विक उत्तर, जो जलवायु परिवर्तन के लिए जिम्मेदार है, और (ख) वैश्विक दक्षिण, जो इसके सबसे गंभीर परिणामों से पीड़ित है। यह लेख तर्क देता है कि लक्षित जलवायु निधि, प्रौद्योगिकी हस्तांतरण और ऐतिहासिक जिम्मेदारी की अधिक विवेकपूर्ण समझ, इन प्रयासों को वैज्ञानिक रूप से पर्याप्त और नैतिक रूप से सार्थक बना सकती है।

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