India's Climate Policy: Past, Present and Future Strategies

NIRUPAMA A K
University of Kerala

India is a country which is severely hit by climate change. Frequent natural disasters, rising temperatures, changing rainfall patterns etc. are not new to the country anymore. Research finds that climate change has already begun in South Asian countries including India. The social, political, economic, and environmental conditions of the country determine its response to the challenges posed by climate change. India had made several policy suggestions and targets at various international climate negotiations in the past. But to what extent India has been able to stay committed to such targets needs to be examined. Considering the current scenarios, to what level India has contributed to mitigate and adapt to climate change issues is a question to ponder. India in its earlier days grouped with developing countries to combat 'carbon colonialism' by the developed countries. Later, India began to shift its climate policy due to several reasons. This paper tries to explain the evolution of India's climate policy-its past, present, and future strategies. The paper looks into various elements and contexts that contributed to the shifts in India's climate policies. The challenges and anomalies in the policies are also discussed here.

***Keywords**:* India, climate policy, climate negotiations, climate change impacts, foreign policy, development

The United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as a "change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, 1992). Since the industrial revolution, humans have expelled tremendous amounts of carbon dioxide into the atmosphere, triggering unnatural warming of the earth. NASA and Copernicus Climate Change Service estimate that 2019 is the second warmest year on record (World Meteorological Organization, 2020). Even though the impacts of climate change are felt across the world, the intensity varies according to the social, economic and environmental conditions of a country/region. Developing countries like India are more likely to face the impact severely. The Himalayan glaciers which hold the water reserves that flow into rivers such as Ganga, Indus, Brahmaputra, and Meghna are critical to millions of people in India, Pakistan, Nepal, Bangladesh and Bhutan. Agriculture in countries like India will be severely affected due to the changing weather patterns, which in turn can lead to food insecurity. Climate change can exacerbate the already existing inequality in Indian society.

Climate change is a global phenomenon with local consequences. The challenges posed by climate change are highly complex, interconnected and demanding. It is viewed as the foremost problem of the 21st century. South Asia being home to millions of the world's poorest and hungriest people, is the worst affected. This global crisis has contributed to more risk factors than ever which involves frequent natural disasters, displacement of people, inequalities, health risks, rising sea levels, food insecurity, change in rainfall patterns and so on. It is a challenge to the developmental aspirations of a hugely populated country like India. According to the recent United Nations projections India is set to surpass China as the world's most populous country by 2027 (UN News, 2019). Furthermore, India's urban population, which is expected to grow from 377 million in 2011 to 745 million in 2041, is already putting a strain on services and infrastructure in already burdened Indian cities (Malhotra, 2015). The impacts of climate change have already begun to have significant costs on the weather conditions, lives of people, agriculture, the economy and infrastructure. Climate change has had extreme impacts in India where intense floods destroyed 774 villages, affected over 5.4 million people, causing US$3 billion in damages (Majaw, 2020).

Evolution of India's Climate Policy

India's Climate Policy in the Pre-Kyoto Protocol Era

International climate policy negotiations have been taking place in the context of the United Nations Framework Convention on Climate Change (UNFCC) since the 1990s, with almost every country in the world participating. However, climate negotiators have shown that reaching an agreement among countries is always difficult. There are a number of explanations for this. To begin with, countries vary in terms of their social, fiscal, and environmental background. Their financial ability to respond to climate change impacts or act on mitigation varies, and so does their sense of climate change accountability. The lack of scientific understanding about global warming has long hindered climate negotiations. As a consequence, rather than being motivated by straightforward objectives, identifying climate goals has long been a point of contention in negotiation forums.

The United Nations Conference on the Human Environment (also known as the Stockholm Conference) was an international conference convened under the auspices of the United Nations in Stockholm, Sweden from June 5 to 16, 1972. It was the UN's first major conference on international environmental issues and represented a turning point in the history of international environmental policy. It raised environmental concerns to the level of international policy, resulting in greater global environmental cooperation over time. The speech of then-Indian Prime Minister Indira Gandhi at the conference initiated an intellectual tradition in Indian climate policy that pits socioeconomic development against environmental conservation and blames the developing countries of the North for global environmental problems. She drew attention to the link between environment and development, highlighting that "the environment cannot be improved in conditions of poverty" (Bidwai, 2012). The Conference led to the establishment of the UN Environment Programme (UNEP), which in 1982 convened in Nairobi a 'UNEP Session of a Special Character: Ten Years after Stockholm'. It recognized that most global environmental challenges remained inadequately addressed and environmental threats had grown.

The ideological roots of India's climate policy were further laid down in the run-up to the 1992 Rio Earth Summit in an influential report by the Centre for Science and Environment (CSE) called "Global Warming in an Unequal World", which accused developed countries of "carbon colonialism" (Agarwal & Narain,1991). According to the report, developed countries hold the majority of the blame for climate change due to their past pollution, and the criterion for sharing responsibility for climate change should be per capita emissions distribution. The differences in capabilities to address climate change owing to the differences in material wealth between developed and developing countries were also noted in the UNFCCC in 1992, through the phrase Respective Capabilities (RC) in Article 3 (UNFCCC, 1992). However, if the issue of emissions is seen as a concern of current and future GHG flows, India is the third-largest contributor of carbon dioxide emissions (Timperley, 2019). This duality in India's position- being simultaneously a large emitter currently but not bearing great historical responsibility for climate change means that India occupies a unique role in global climate politics (Dubash, 2016).

India's climate negotiators quickly adopted the historical responsibility of the North and per capita rights to the global carbon budget as the bedrock of India's position in the first climate change negotiations (Dubash, 2013). In the early years of Indian climate policy, beginning with the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, India identified with the Group of 77 (G77), a group of developing countries that urged developed countries to act on climate change while arguing that developing countries should only take voluntary commitments in exchange for financial and technological transfers from developed countries (Dasgupta, 2012).

India's Climate Policy in the Post- Kyoto Protocol Era

Following on from Rio, India continued to play an active role in global climate negotiations and its efforts were seen as crucial to securing the Berlin mandate in 1995 which would guide two years of negotiating processes for the legal instrument focused on mitigation actions by developed countries. The negotiations eventually resulted in the Kyoto Protocol in 1997, which required Annex I parties of the UNFCCC, i.e. developed countries, to commit themselves to "quantified emission limitation and reduction objectives" while developing nations such as India were exempted from legally binding commitments (UNFCCC 1997). The Kyoto Protocol stressed the importance of the firewall distinction between developed and emerging countries when it comes to the burden of obligation for climate action for India and the other G77 countries. India was able to effectively defend its socioeconomic developmental space while still pressing developed countries to shoulder greater obligations (Sengupta & Hurrell, 2012). This intellectual tradition, that prioritised economic development to eradicate poverty as most important for India and resisted the call to arms for climate action, all while calling upon principles of equity to push for stronger action by Annex I countries, has remained steady over the years and is the principal reason why India has acquired a reputation of being a difficult partner in climate negotiations (Vihma, 2011).

During the first commitment period of the Kyoto Protocol, strong economic growth in the developing countries like China, India, Brazil and South Africa (together referred to as BASIC) had led to an increasing expectation on these countries to take the lead in influencing the outcomes of global governance (Hallding, 2013). These countries began to be termed 'emerging economies' and distinguished as different from the G77 bloc on the basis of their economic power and carbon footprint. Developed countries also began initiating dialogues with the emerging economies outside the UNFCCC process such as the G8+5 Dialogue on Climate and Energy in 2008 and the US-led Major Economies Forum on Energy and Climate in 2009. It was argued that Kyoto exemptions for developing countries should not apply to advanced developing countries such as India (Antholis, Stern & William, 2008). Given the pressure to take on climate commitments as a result of their economic development, the BASIC countries began to pursue negotiating strategies independent of the G77 and more closely coordinate their climate policies with each other (Vihma, 2011). In the lead-up to the COP 15 summit at Copenhagen in 2009, there were notable shifts in India's climate policy along with other emerging powers (Aaron, 2012). At COP 13 in Bali in 2007, India surprisingly accepted that developing countries should participate in the global mitigation effort, at least on a voluntary basis in line with their capabilities (Michaelowa, 2012). India's National Action Plan on Climate Change (NAPCC) was also launched in 2008 on a domestic level. At COP 17 in Durban in 2011, India's delegation was headed by Jayanthi Natarajan, the country's new environment minister, who tried to undo the country's climate policy changes by reverting to traditional arguments (Michaelowa, 2012) (Leiserowitz,Thaker & Anthony, 2014).

Countries agreed to terminate the Bali Action Plan and replace it with a new process known as the Durban Platform for Enhanced Action in Durban, further weakening the increasingly disintegrating North-South climate action firewall. Unlike the Copenhagen Accord and the Cancun Agreements, which reemphasized the relevance of equity and Common But Differentiated Responsibilities (CBDR), the Durban Platform called for talks for a new global deal accessible to all to be decided upon by 2015, signaling a dramatic change in global climate politics (Sengupta & Hurrell, 2012). As an advisor to the US Chief Negotiator remarked, "There is no mention of historic responsibility or per capita emissions. There is no mention of economic development as the priority for developing countries. There is no mention of a difference between developed and developing country action." (Broder, 2012). Therefore, despite Natarajan attempts, the process to invert the top down differentiated regime that started in Copenhagen had gained irreversible momentum. The Durban negotiation track, which started in 2011, signalled a decisive move towards a bottom-up architecture for climate governance, in which all countries must make climate change

commitments that would be peer-reviewed. The concept of Nationally Determined Commitments was first proposed at COP 19 in Warsaw in 2013, which subsequently led to the final version of Intended Nationally Determined Contributions (INDCs) being ratified by countries in 2014 at COP 20 in Lima. All countries were asked to send INDCs detailing their proposals for climate change up to 2030 prior to COP 21 in Paris.

India committed to installing clean energy capacity equivalent to 40% of total installed electrical capacity by 2030, pledged to reduce the carbon intensity of its economy by 33-35 per cent by 2030 compared to 2005 levels, and announced a target to install carbon sinks worth an additional 2.5 to 3 billion tonnes of carbon dioxide equivalent by 2030 in its NDC submitted in October 2015 (Government of India 2015). India surprisingly accepted the 1.5-degree target for climate policy at the Paris talks, despite the fact that it could be used to shut the gates on carbon emissions from late industrialising countries like India in the absence of more strict emission reductions from developed countries (Dubash, 2016). Despite concerns that it would insist on developed countries first fulfilling their pre-2020 commitments under the Kyoto Protocol's second phase, India soon ratified the Paris Agreement to help put it into effect.

India's transition from calling for rigid separation between developed and developing countries in the 1990s to heading talks toward a loosely divided regime raises concerns about what caused the shift. In order to address this question, India's climate policy stance should be viewed through the lens of India's foreign policy in the past. The prioritisation of non-alignment in India's relations with major powers, emphasis on self-reliance in national security through pursuit of nuclear weapons, and blocking of any moves towards internationally supervised climate mitigation can therefore all be imputed to the omnipresent strategic culture that set out to protect sovereignty and independence while criticising inequity in global regimes.

Following on from the liberalisation of India's economy in 1991 after a balance of payments crisis and the end of the Cold War, Indian foreign policy began to slowly break loose from the ideological shackles of non-alignment and uncompromising strategic autonomy and Prime Minister P.V. Narasimha Rao sought to chart a new course for Indian foreign policy (Pardesi & Sumit, 2009). India's foreign policy has shifted away from the strict Nehruvian non-alignment toward pragmatism. Indian climate policy quickly mirrored the transition toward more rational calculations of gains and trade-offs. In 2002, India reversed its long-held scepticism of the Kyoto Protocol's Clean Development Mechanism (CDM), and Indian entrepreneurs started to use the mechanism to obtain financing for projects in the country. In the late 1990s and early 2000s, India and other developing economies such as South Africa, Brazil, Russia, and China experienced strong economic development. In a 2001 Goldman Sachs report, the word 'BRICs' was coined to refer to these countries and their increasing political and economic clout (Neill, 2001).

Pre-Copenhagen, India's flexibility and compromises are more easily explained and compatible with its other international actions. To start with, the BRICS countries' rapid economic growth between 2002 and 2007, as well as China and India's subsequent strong performance both during and after the crisis, strengthened their claims as international heavyweights (Kahler, 2012). Global governance began to be characterised by a shift from unipolar US hegemony to one of 'emancipatory multipolarity', wherein the world's most populous countries now had a position at the head table of global affairs (Murphy, 2013). With the clamour for greater power in global governance came the burden of responsibility for emerging powers such as India to contribute to solving global challenges (Rastogi, 2011). In the aftermath of the financial crisis for instance, India's contribution to stabilising the global economy was seen as critical. Then Prime Minister Manmohan Singh also alluded to the importance of taking on responsibilities a few months before Copenhagen, stating that India "should play a role in the international arena in a manner that makes a positive

contribution in finding solutions to major global challenges, whether in the field of trade or climate change" (Anon, 2009).

At Copenhagen, India's flexibility ensured that the perception of India as a responsible partner was successful. Though emerging economies, especially China, bore a large share of the responsibility for the lack of an agreement, India was regarded more favorably in some quarters due to the flexibility it displayed in its negotiating strategy (Michaelowa, 2012). In some quarters it was even praised as a 'deal maker' for its efforts towards the Copenhagen Accord and help in finding middle ground between China and the United States (Rastogi, 2011). Most pertinently, India's diplomatic interests were served well by the perception that it was 'part of the solution' at Copenhagen (Mukherjee & Malone, 2011). Another factor was India's blossoming strategic relationship with the United States, which put pressure on India's climate change negotiation position at the time. Despite being a nuclear arms state that had not ratified the Non-Proliferation Treaty (NPT), India had successfully secured a Nuclear Suppliers Group (NSG) waiver to participate in global nuclear trade in 2008, with good support from the US following the Indo-US civilian nuclear deal in 2005. As a result, some observers see India's compromises in the run-up to the Copenhagen summit as a sign of the country's growing bilateral relations with the United States (Raghunandan, 2012) (Dubash, 2013).

India's position in the global climate negotiations has gone through many vacillations and contradictory shifts. These negotiations confront India with a huge challenge: reconciling the objectives of "development" and poverty reduction with the global responsibility and an obligation to its own citizens to contribute to the fight against climate change. In the early years, India tried to rise to the challenge somewhat reluctantly. India asserted that all human beings must have equal access to global environmental resources or "climate space". India pledged that its per capita emissions would never exceed those in the north, and it refused to accept legally binding quantitative emissions reduction commitments. In response to international pressure, India developed the National Action Plan on Climate Change (NAPCC) in mid-2008. India incorporated aspects of pragmatism and versatility into its positions between mid-2009 and mid-2011. At Copenhagen, India abandoned its proposal for an enforceable 40-45 per cent reduction in emissions from Annex I countries by 2020 in favour of a deal that included no mandatory cuts and only voluntary national commitments. At Cancun, India took the same stance (Bidwai, 2012).

India's climate policy and its stance in the UNFCCC negotiations have evolved through a complex and often messy interaction between external pressure to take climate actions, India's foreign policy orientation, its environmental practices and a variety of domestic factors. In light of its economic and political weight, India has been under increasing pressure from major powers as well as several small developing countries to take the lead in combating climate change. However, domestic considerations, such as the critical consideration of sustaining rapid GDP growth, favour a cautious approach, with a focus on expanding India's share of global climate space. On its way to being a great power, India aspires to play a larger strategic, political, economic, and cultural role in international affairs. India wants certain autonomy in certain sectors, such as nuclear weapons, trade, financial policy, and climate-related issues. Invoking India's southern identity, the "right to development," and unity with the G-77 community is often advantageous. This is particularly true of climate agreements that have a North-South axis of obligation distinction. Despite their rhetoric of South-South solidarity in comparison to the North, some Indian policymakers are pleased with the US's weak or negative stance on climate problems and see Washington as a possible partner in diluting bold global strategies for mitigation and adaptation. This was clear at the climate conference in Copenhagen.

Global criticism has served as a big motivating factor for India to take a more "positive" and definitely more open approach to climate change. The establishment of the Prime Minister's

Council on Climate Change (PMCCC) in 2007 and the multi-ministerial extension of India's negotiating team in 2008-10 were responses to show that India will take a serious interest in climate issues and manage them at a high political level. The NAPCC was announced on June 30, 2008, just a week before the G-8 summit in Japan, and this was no coincidence. Just before the United Nations General Assembly's special conference on climate change and the G-20 Pittsburgh summit in September 2009, then-Environmental and Forest Minister Jairam Ramesh announced what many saw as a significant shift in policy by announcing that India would take a series of unilateral conservation and energy efficiency improvements. This was immediately followed by India's declaration that it would reduce its economy's emissions intensity by 20-25 per cent by 2020. India's Greenhouse Gas Emissions Inventory for 2007 was published in May 2010, with the aim of encouraging informed decision-making and ensuring accountability. Before then, the only available emissions estimate was for the year 1994. India has made a slow and subtle transition. India's negotiating posture moved from rigidity and overemphasis on the North's climate obligations, to a willingness to strike a compromise or bargain. This became apparent in Copenhagen in December 2009.

Domestic factors have a role in the evolution of India's climate policy and negotiations. India's environmental policies are mirrored in its environmental activities. It supports the extraction of natural resources, high material output and consumption, and minimal control. India's environmental practices have significantly contributed to the depletion of water, trees, and habitats in the country. India cannot afford to follow its environmental policies while still leading a global effort to tackle climate change and foster sustainable growth. Other domestic factors including combative climate nationalism which opposes commitment from India's part also leads to a weak climate deal (Bidwai, 2012). Short-term national interests favouring a low-ambition deal eventually won over commitment to the CBDR. This describes the shift in India's negotiating position on climate change prior to the 2009 Copenhagen summit, as well as after and after the summit. India was seen as a hard-line G-77 member and a possible deal maker prior to the summit because it insisted, like other developing countries, that it would resist all climate commitments unless the developed countries met their side of the bargain. However, India, as a part of the new BASIC, struck an agreement with the US at the Copenhagen summit.

India's climate policy has always been preserved with a small group of privileged individuals. The climate policy is shaped mostly by the Ministry of Environment and Forest (MoEF). Things changed decisively in 2007 when the Prime Minister's Office (PMO) took charge of the climate negotiations process. Manmohan Singh created a broad -based team and set up the PMCCC. Despite its size, the negotiation team is mostly made up of serving and retired officials, scientists, and administrators who work in government-run labs and research organizations. In comparison to countries of comparable scale, India's UNFCCC negotiation team is very weak. India, for example, sent only 77 delegates to Copenhagen, compared to more than 300 for China and Indonesia, respectively. In reality, India's small negotiation team has been a regular target of critique in discussions of the country's involvement in global climate governance (Bidwai, 2012). The PMCCC was created in 2007 in an ad hoc fashion without wide consultation or discussion of its purpose, functions and composition.

The council only met for the first time in mid-2008, when a draft of the National Action Plan was submitted to it. Its proponents made a number of amendment proposals. Some of these suggestions were included in the updated draft. The draft was not debated in depth when the council convened again on June 30, 2008. The NAPCC had been 'approved' at the conference, it was announced. The plan was made public immediately. Surprisingly, for such a big country like India, 25 of the PMCCC's 26 members come from only one city, Delhi or its suburbs. There are only a few women on it, and only one delegate from a non-governmental organization. The NAPCC was not the product of an in-depth debate in which all members of the PMCCC took part. The National Solar Mission document, for example, was not drafted by the Ministry of New and Renewable Energy. It came as a result of a process started by the

PMO with some support from outside sources. Since India's climate policy and negotiation strategy are developed in a closed setting, away from public scrutiny and participation, and in a privileged environment, they are based on assumptions that are not endorsed or confirmed by climate science, and are untested by social experience or empirical reality, let alone ethical considerations. A mechanism like this is vulnerable to narrow influences and processes. This detachment from reality has a variety of negative implications. There is a need to revisit the NAPCC where relevant changes should be made where climate justice and people's participation would have a role (Naik, 2019).

According to scientists, the world has already warmed by 1.1 degrees since the Paris Climate Agreement, and global carbon emissions must be reduced by 45 per cent by 2030 in order to meet the objectives (Pielke, 2019). The Intergovernmental Panel on Climate Change (IPCC) has issued a study warning that the rise in temperature may have already harmed some of the earth's climate systems. Lockdowns to combat the COVID-19 pandemic in 2020 reduced worldwide CO2 emissions by 2.6 billion tonnes, about 7% lower than that in 2019. According to the researchers, 2020 was only a "pause button" that could not realistically be extended, as long as the world relied heavily on fossil fuels, and lockdowns were "neither a sustainable nor desirable solution" to the climate catastrophe. With a fast-growing population and an economy primarily reliant on coal and oil, the country's emissions will continue to rise unless action is taken to reduce them. India has resisted setting total reduction targets in the past, arguing that developed countries should shoulder a considerably larger part of the cost because they have contributed significantly more to global warming over time. But it is high time that India strives toward achieving its emission targets by focusing on its domestic conditions, rather than being over-concerned about historical emissions.

Important Elements and Strategies in India's Climate Policy

Different strands or strategic lines of thoughts dominate the Indian climate policy debate, as can be seen in numerous statements and speeches by government officials, media reports, and discussions at seminars and meetings. These strands are always shifting (Bidwai, 2012). The global warming crisis is considered as the product of developed countries' unsustainable use of energy and other resources, and that it has a greater impact on people in the Global South than in the North. The two key questions are the north's duty to dramatically reduce its GHG emissions in order to open up "carbon space" for the South's development, and the North's obligation to fund the South's efforts to respond to climate change and assist it in moving to a less emissions-intensive growth path. India is a developing country, poverty ridden and hence opines not to be asked to undertake quantitative legally binding obligations. The dominant strand is that the climate crisis is the North's problem and they have created it, aggravated it and that they must resolve it. India has only a peripheral role in the stabilisation process according to this line of thought.

Many of the dynamic mechanisms that have influenced India's climate policy and UNFCCC negotiating position are rooted in India's dualistic development model's anomalies and contradictions. India aspires to join an elite community of powerful, domineering nations, and its climate-related policies are completely consistent with this goal and allow it to be achieved. The biggest irony here is that Indian policymakers tend to speak with those who have been deliberately removed from inclusive and participatory decision-making, despite the fact that climate change directly affects them. India's climate policy is hugely affected by its equity deficit. The approach is also not motivated by environmental issues. Rather, India's experience with global climate talks, a forum driven by power ties between states, governments, companies, and other interest groups, has had a significant impact. Realpolitik-based negotiating between various players and agents reflects these relationships. Equity issues enter this discourse only marginally.

Anomalies in India's Climate Policy

As mentioned earlier, India's climate policy evolved through various twists and turns and in an ad hoc response to domestic factors and international pressures. They did not flow from a consistent broad horizon vision or a coherent framework based on doctrines and principles. It evolved with various inconsistencies, anomalies and contradictions. Six of these anomalies are important (Bidwai, 2012). First anomaly is that Indian policy makers deny that the country's present economic growth pattern is emissions-intensive. The connection between increasing elite consumption and rising emissions can only be broken if India's development paradigm is fundamentally restructured along inclusive, balanced, and sustainable lines that prioritize citizens. India will be unable to foster environmental sustainability, climate responsibility, or equitable progress as long as its existing economic growth trajectory persists. The second anomaly lies in the contrast between India's ardent advocacy of balance of climate-related parameters between nations and the reality of huge inter-regional disparities within India. The regional imbalances in India, as well as differences in various indices such as income, agricultural productivity, and industrial productivity between states, sub-regions, and districts, are well known. The difference between bustling metropolises and barren villages is stark. The greater inequalities in GHG emissions between states and regions are less well known. The third anomaly in the Indian stand is the premise that governments are generally and intrinsically representative of their citizens and accountable to them. The global climate justice agenda prioritizes accountability and democratization of governance. However, the majority of southern countries' governance structures are not participatory or accessible to the poor. The majority of these individuals have little rights or entitlements. India's stance on climate talks, as well as its overall climate strategy, has progressed without transparency or consultation with independent experts or civil society, let alone current and future climate change victims.

The global economy is built on a complex web of interconnected relationships and transactions that span national borders. Production is increasingly internationalised. Crude oil and natural gas, two of the most important sources of primary energy, are produced, traded, shipped, refined, re-transported, and eventually consumed in numerous ways across countries divided by thousands of miles. Joint or collaborative action across national borders is needed for a successful climate adaptation strategy. It is difficult to strike a balance between historical and current emissions unless they are connected by some higher or greater principle or negotiated independently on separate tracks. Equitable burden-sharing would eventually and rapidly shift the attention away from the North-South divide and towards the distance between the wealthier groups who spread across nations on the one side, and the millions of people who lack development on the other.

India's Future Climate Strategies

India is still heavily reliant on fossil fuels such as oil and coal, and its economic priorities are primarily focused on domestic issues. As the economy continues to grow, the country's energy demand is predicted to rise over the next decade. The sixth report published by Intergovernmental Panel on Climate Change (IPCC) Working Group II, has clear takeaways for countries like India. It points out the need to redesign our cities, energy systems and water resources to be consistent with climate-resilient development pathways. The report predicted that these changes would have to be undertaken in the face of a barrage of catastrophic events like floods, cyclones, and heatwaves, as well as slow-moving crises like declining agricultural production, mental health, and water supply. India has adopted strategies which include, (i) increasing non-fossil energy capacity, where wind and solar are top priorities in achieving this goal. (ii) ensure at least 40 per cent of its installed electricity generation through non-fossil fuel resources by 2030, (iii) reduce its emissions intensity to 35 per cent from 2005 levels by 2020.

In recent years, India has seen an increase in the number of policy instruments to combat climate change. Since the release of the National Action Plan on Climate Change (NAPCC) in

2008, its eight subsidiary missions have been approved, and its implementation has started. Several states have also embarked on formulating SAPCC(State Action Plan on Climate Change). Apart from the NAPCC and the SAPCC, the Ministry of Environment, Forest and Climate Change (MoEFCC) is a nodal ministry formulating and implementing India's climate policies. Though India has institutional mechanisms, there is a lack of proper coordination between them in making decisions. The NAPCC has several flaws. Most of them do not contain clear targets, strategies, action plans, timetables, or budgets. The plans and the missions must be redrafted based on a clear vision and a passionate commitment to a radical social and ecological transformation through an open and democratic debate to generate effective action plans to combat climate change. Since climate change is a long-term issue, there is a strong need for systemic stability. Both upstream functions like policy formulation and knowledge formation and downstream functions like coordination and implementation require solid institutional structures. Local self-governance-based adaptation should also be developed in-order to cope with the impacts of climate change since it can be the most efficient way to bring people closer, especially the rural community where adaptive capacity and formal education is often limited. To achieve India's ambitious climate goals, a proper mix of top-down and bottom-up approaches is necessary for meaningful outcomes.

Conclusion

India is severely hit by the consequences of climate change due to various factors discussed above. It is one of the most populated countries in the world and its economy is highly dependent on climate sensitive sectors like agriculture . Climate change affects not only the lives of people, leads to loss of biodiversity and natural resources, but also intensifies the challenges to development in countries like India. India's climate policy has gone through various shifts and contradictions over the years as discussed above. The main challenge that confronts India is balancing development and poverty reduction on one side and the obligation to fight against climate change on the other. India should focus on sustainable development in order to contribute to the mitigation efforts and also to prevent itself from a serious energy crisis. India's climate policy needs to be more inclusive and participatory rather than being isolated to certain privileged groups. There is a need to educate and engage local people, political leaders and business people, about the serious consequences of climate change. India should strive towards developing more carbon-neutral villages and incorporate the rights and entitlements of indigenous people in its policy. The policies need to be more ethical, just, and modified to meet contemporary challenges rather than being unequal, and status-quoist in nature. It should focus on the inequalities within India rather than being over concerned about the North-South divide regarding the emissions responsibility. India's climate policymaking should include more NGOs, women and local participants so as to evolve a more real and empirical system of knowledge to tackle the challenges that come in the way due to climate change. To achieve the climate targets, India needs to strengthen its institutional mechanisms at the national, regional, and local levels. Also, proper coordination between these institutions must be ensured so that there is democratization in formulating and implementing climate policies.

References

Atteridge, A., Shrivastava, M. K., Pahuja, N., & Upadhyay, H. (2012). Climate policy in India: What Shapes International, national and state policy? *AMBIO*, *41*(S1), 68–77. https://doi.org/10.1007/s13280-011-0242-5

Agarwal A, Narain S. (1991). Global Warming in an Unequal World: A Case of Environmental Colonialism. *Observer Research Foundation*.

Anon. (2009). *India will try to resolve neighbours' issues*. Rediff India News. https://www.rediff.com/news/report/pm-india-will-try-to-resolve-neighbours-issues/20090825.htm

Bidwai, P. (2012). *The Politics of Climate Change and the Global Crisis* . New Delhi: Orient Blackswan Private Limited.

Broder, J. M. (2012). *Signs of New Life as U.N. Searches for a Climate Accord*. The New York Times.

Dubash, N. K. (2016). Safeguarding development and limiting vulnerability: India's stakes in the Paris Agreement. *WIREs Climate Change*, *8*(2). https://doi.org/10.1002/wcc.444

Dubash, N. K. (2012). *A handbook of climate change and India: Development, politics, and governance*. Earthscan.

Ensor, J., & Berger, R. (2009). Prelims - understanding climate change adaptation. *Understanding Climate Change Adaptation*, i-ix. https://doi.org/10.3362/9781780440415.000

Fox, J. (2020, May 4). *Climate change: Impacts of the Industrial Revolution*. https://www.landmarkacademyhub.co.uk/climate-change-impacts-of-the-industrial-revolution/

Ganguly, S., & Pardesi, M. S. (2009). Explaining Sixty Years of India's foreign policy. *India Review*. *8*(1), 4–19. https://doi.org/10.1080/14736480802665162

Gray, K., & Murphy, C. N. (2013). Introduction: Rising Powers and the Future of Global Governance. *Third World Quarterly*, *34*(2), 183–193. https://doi.org/10.1080/01436597.2013.775778

Hallding, K., Jürisoo, M., Carson, M., & Atteridge, A. (2013). Rising powers: The evolving role of basic countries. *Climate Policy*, *13*(5), 608–631. https://doi.org/10.1080/14693062.2013.822654

Hurrell, A. & Sengupta, S. (2012). Emerging powers, North-South relations, and global climate politics. *International Affairs, 88*(3), 463-484.

Kahler, M. (2012). Rising powers and global governance: Negotiating change in a resilient status quo. *International Affairs*, *89*(3), 711–729. https://doi.org/10.1111/1468-2346.12041

Khadka, N. S. (2021, September 20). *Climate change: The world awaits India's net-zero emission deadline*. BBC News. https://www.bbc.com/news/world-asia-india-58594216

Malhotra, A. (2015). *Climate Change and India*. Jodhpur: Ministry of External Affairs, Government of India.

Majaw, B. (2020). *Climate change in South Asia politics, policies, and the SAARC*. Routledge.

Michaelowa, K., & Michaelowa, A. (2012). India as an emerging power in international climate negotiations. *Climate Policy*, *12*(5), 575–590. https://doi.org/10.1080/14693062.2012.691226

Mukherjee, R., & Malone, D. M. (2011). From high ground to the high table: The evolution of Indian multilateralism. *Global Governance: A Review of Multilateralism and International Organizations*, *17*(3), 311–329. https://doi.org/10.1163/19426720-01703004

O'Neil, J. (2001). *Building Better Global Economic BRICs - Goldman Sachs*. Goldman Sachs. Retrieved April 30, 2022, from https://www.goldmansachs.com/insights/archive/archive-pdfs/build-better-brics.pdf

Naik, P. K. (2019). *India's domestic climate policy is fragmented and lacks clarity*. Economic and Political Weekly. (2019, February 27). https://www.epw.in/engage/article/indias-domestic-climate-policy-fragmented-lacks-clarity.

Pielke, R. (2019, October 28). *The world is not going to halve carbon emissions by 2030, so now what?* Forbes. https://www.forbes.com/sites/rogerpielke/2019/10/27/the-world-is-not-going-to-reduce-carbon-dioxide-emissions-by-50-by-2030-now-what/?sh=71aeeaaa3794

Raghunandan, D. (2012). India's official position: A critical view based on science. *Handbook of Climate Change and India*, 194–203. https://doi.org/10.4324/9780203153284-24

Rastogi, N. P. (2011). Winds of change: India's emerging climate strategy. *The International Spectator*, *46*(2), 127–141. https://doi.org/10.1080/03932729.2011.576179

Reid, H. (2014). *Climate Change and Human Development*. London: Zed Books.

Stern, T., & Antholis, W. (2008). A changing climate: The road ahead for the united states. *The Washington Quarterly*, *31*(1), 175–188. https://doi.org/10.1162/wash.2007.31.1.175.

Thaker, J., & Leiserowitz, A. (2014). Shifting discourses of climate change in India. *Climatic Change*, *123*(2), 107–119. https://doi.org/10.1007/s10584-014-1059-6.

Timperley, J. (2019, April 26). *The Carbon Brief Profile: India*. Carbon Brief. https://www.carbonbrief.org/the-carbon-brief-profile-india

Vihma, A. (2011). India and the global climate governance: Between principles and pragmatism. *The Journal of Environment & Development*, *20*(1), 69–94. https://doi.org/10.1177/1070496510394325