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Evolution of India's Policy Approach to Environmental Sustainability: A Qualitative Content Analysis

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Abstract [258 words]

As the world currently moves towards achieving the 2030 Agenda of Sustainable Development, the need for understanding the policy approach towards one of its core domains – environmental sustainability is greater than ever. Carbon emissions driven climate change is at the core of global discourse, and environment is a high priority for real development. India, with its unique landscape and developing economy is extremely vulnerable to the long-term impacts of environmental degradation and has, in the last decade, emerged as a proactive United Nations member pursuing the 2030 Agenda. The Indian policy framework has attempted to address various environmental concerns since independence but the approach has varied throughout the years. This paper uses conventional content analysis to trace that policy approach of India toward environmental sustainability since independence. An in-depth analysis of the Five Year Plans and other major environment related policy documents has been conducted to identify recurring themes. Twenty-three codes related to the environment have been identified and organized thematically with respect to an adapted Environmental and Social Sustainability Framework, of United Nations Environment Programme. Six key sub-themes emerge; which show that there has been a gradual but transformative evolution of India's policy approach over time. It has widened into a multifaceted, cohesive framework systemically integrated into developmental planning, with significant international influence. It is observed that India is trying to move away from a regulation-focused, economy-oriented policy approach to an innovative green economy by 2050. Whether this evolved policy approach sustainable in the long term can be built upon in future research.

Key words: environment, sustainability, SDG, policy, climate change, five year plans, India

1. Introduction

Sustainability is at the forefront of global discourse, as the world moves toward the 2030 Agenda of Sustainable Development. A modern successor of the 8 Millennium Development Goals that were adopted by the United Nations in 2000 – the 17 Sustainable Development Goals (SDGs) and the related 169 targets comprehensively address the three interconnected domains of sustainable development (Brundtland Commission, 1987). Environmental, social and economic sustainability are the cornerstones of the SDG Agenda. The notion of environmental sustainability has already become an established term (Venneman et. al., 2022) with many definitions over the years. It has been defined as retaining and protecting environmental resources and the resilience of ecosystems (Hostovský, 2014), as a conservation concept which is the meeting of services and resources of present and future generations without affecting the health of the ecosystems that provide them (Khan et. al., 2021) and as a pillar addressing biodiversity, efficient land use, water conservation, and air quality protection. (Phipps & Schluttenhofer, 2019) – to mention a few. As climate change and environmental degradation have emerged as one of the most pressing issues facing the world today (Venneman et. al., 2022) - environmental sustainability is now, more than ever, a pressing concern in context of global policy making and is the focus of this study. Across the world, many countries have developed initiatives to address this concern (Horowitz, 2016) and India – a country rich with natural resources, is no exception.

India is extremely vulnerable to long term environmental degradation due to its diverse landscape and growing population. Therefore, the Indian Government has made some attempts to address environmental concerns since the 1970s (Ganguly, 2020), though that approach was underpinned with economic development as the real priority. These attempts reflected intermittently in various government policies such as the Five Year Plans. In addition, specific environment centric policy and legislations have also been created. India's approach to environment is constantly evolving and hinges on a complex legacy of colonial and pre-colonial influences (Agrawal, 1992), as well as international treaties, and the interactions between a centralized state, civil society and common people (Ganguly, 2020).

There is a gap in the research related to the evolution of environmental policy making specifically. Moreover, majority of research related to India's evolution of policy approach has been climate change-specific (eg. Patra, 2016; Saryal, 2018; Fernandes et. al., 2020) and no cohesive study of all facets of environmental sustainability in India's policy processes has been done. This study outlines the policy approach of the Indian Government towards Environmental Sustainability through an in-depth analysis of the plan and policy documents published since independence, particularly the Five Year Plans and the plans published by NITI Aayog thereafter. The Government of India launched the first Five Year Plan in 1951 – a centralized national plan which addressed the developmental priorities and shaped the trajectory of the nation's policy approach till 2017. These plans were only discontinued when the Planning Committee was replaced by the NITI Aayog in 2015 and are an accurate reflection of the policy priorities of the Government of India. Thematic patterns have been identified in alignment with the policy shifts as environmental sustainability has been globally conceptualized.

1.1 Methodology

This is a qualitative paper based on content analysis to identify the underlying themes in India's policy approach toward environmental sustainability. Firstly, Five Year Plans have been selected as the principal policy documents because they comprehensively cover India's policy making from independence till 2017. After the dissolution of the Planning Commission, NITI Aayog released two vision documents, 'Strategy for New India @ 75' (2015) and 'Vikasit Bharat: Unshackling Job Creators, Empowering Growth Driver; Working Paper' (Virmani,2024) which have also been selected for analysis. In addition to this, the policy documents for all National Policies, Acts or Schemes specifically addressing environment-related issues have been analyzed. The analytical framework used in this study has been adapted from the Environmental and Social Sustainability Framework (ESSF), published in 2020 by United Nations Environment Programme (UNEP) with eight Safeguard Standards in alignment with the 2030 Agenda. The framework is structured around both environmental and social dimensions with economic dimensions implicitly considered within. For this paper, the environment

dimension has been considered only (see table 1).

Since this paper specifically focuses on the evolution of India's policy approach to environmental sustainability over the years - the ESSF is referenced to establish a framework relevant to the Indian context which adequately considers the different components of the dimension of environmental sustainability. As shown in Table 1, the adapted framework has three components, out of the original eight. For the Five Year Plans only, all text that falls under the domain of 'environmental sustainability' has been identified. Using conventional content analysis, a list of codes has been determined (Table 2).

Table 1. The Derived Framework on Environmental Sustainability

	Component
I	Bio Diversity, Eco Systems and Sustainable Natural Resource Management
II	Climate Change and Disaster Risks
III	Pollution Prevention and Resource Efficiency

Source: Adapted from UNEP (2020)

Table 2. List of deduced codes.

Codes	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Flood Control, Flood Mitigation, Flood Adaptation, Drought Management, Forest Fire Management, Disaster Management, Climate Change, Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management, Urban Planning, Energy Conservation

The codes have then been organized based on the UNEP framework - under the three components of environmental sustainability. In each Five Year Plan, the code represents an environmental issue with recurring mentions throughout the document. Every Five Year Plan has the codes organized based on the three components, and the evolution of India's environmental policy making has been traced over the years.

2. Results

Table 3 depicts the thematic organization of the list of codes as per the UNEP framework, for each Five Year Plan. The results are then expanded upon under each of the three components of the derived framework, and the evolution of India's policy

analysis has been explained.

Table 3. Thematic organization of the codes as per the UNEP framework.

List of FYPs	Component I	Component II	Component III
First	Soil Conservation, Forest Management	Flood Control	Water Pollution, Land Utilization
Second	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation	Flood Control	Water Pollution, Land Utilization
Third	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation	Flood Control	Water Pollution, Land Utilization
Fourth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation	Flood Control, Flood Adaptation, Drought Management	Water Pollution, Land Utilization
Fifth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation	Flood Control, Flood Adaptation, Drought Management	Water Pollution, Land Utilization
Sixth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management
Seventh	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management
Eighth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation,	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste

	Ecological Balance, Energy Conservation		Management
Ninth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management
Tenth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management, Disaster Management, Climate Change	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management, Urban Planning
Eleventh	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management, Disaster Management, Climate Change	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management, Urban Planning
Twelfth	Soil Conservation, Forest Management, Water Conservation, Mineral Conservation, Conservation of Wildlife, Fisheries Conservation, Ecological Balance, Energy Conservation	Flood Control, Flood Adaptation, Flood Mitigation, Drought Management, Forest Fire Management, Disaster Management, Climate Change	Water Pollution, Air Pollution, Land Pollution, Noise Pollution, Land Utilization, Energy Efficiency, Waste Management, Urban Planning

Component I: Bio Diversity, Eco Systems and Sustainable Natural Resource Management

India, a developing economy with an overall poverty ratio of 38.9% in the year the Brundtland Report was published, had an oversaturated policy agenda where the priorities overlooked environment sustainability as a matter of concern. The initial phase of India's environmental policy approach has been heavily centered around conservation, interlinked with maximizing the resource potential to prop up economic progress. Conservation is only a facet of environmental sustainability, and the one

consistently addressed by the Government of India. Soil and water conservation, along with forest management have been the staple of FYPs since the inception, since these resources are closely interlinked with each other and with agriculture – the sector with the overwhelming majority of workforce. In the early years of India's independence, the major environmental policy focus was on land and water utilization, and resource productivity. Since the primary objective of the Government was to use the natural resources in the most economically beneficial manner possible- only the environmental issues that directly supported the economy were addressed. Thus, mineral and energy conservation have also been focal points for India's policy approach.

The potential solutions to all of these issues are also overlapping – which made it convenient for the Government to address the aforementioned issues in conjunction. In the First FYP, afforestation was recommended by the Government for soil and water conservation, land degradation as well as flood control. Similarly, dry farming and contour bunding were multi- pronged solutions to various environmental issues. It wasn't until the Fourth FYP that wildlife conservation was even identified as a separate issue. In the Fifth FYP, the efforts became more targeted – an area saturation, watershed approach was undertaken for soil conservation and development programmes for special areas like Hill, Desert, and Western Ghats were introduced. However, the primary concern of all environmental efforts still remained an increase in productivity of the resources.

The need for integrated environmental planning was first recognized by the National Committee on Environmental Planning and Coordination in 1972 which further streamlined the policy approach of Indian Government. Environment was a separate chapter in the Sixth FYP, and environmental problems arising as negative effects of development were identified as a real threat for the first time. Decentralization was recommended, and an objective was set to strengthen the capabilities of State Governments and set up Rural Environmental Cells clustered around Regional Environmental Centres. A Department of Environment was created in 1980, which was turned into the Ministry of Environment and Forests in 1985. The Forest Conservation Act (1980) was enacted to regulate deforestation and the National Wildlife Action Plan

(1983) laid the foundation for protected area networks and promoted wildlife conservation. The Seventh FYP increased emphasis on the preservation of the ecological balance as summed up in three phrases, namely, eco-restoration, eco-preservation and eco- development. Watershed development remained a necessary focus as it is an umbrella solution to different environmental issues. An outlay was provided under a separate sub sector 'Environment and Ecology' in the Central plan. National Forest Policy (1988) was also launched during the Seventh FYP period which for the first time focused on environmental sustainability: *'Systematic efforts have been made since the Sixth Plan period to integrate environmental considerations and imperatives in the planning process in all the key socio-economic sectors.'* (Eighth Five Year Plan, 1992)

Following the Rio Earth Summit (1992), the biggest shift in India's environmental policy making took place. It was formulated to serve as a blueprint for sustainable development in India. The Ninth FYP urged for 'a *synergy between environment, health and development needs to be explicitly recognised.'* India, at the time, was already a signatory to the Convention on Biological Diversity, Montreal Protocol and Basel Convention. However, after the Rio Conference – the policy towards environment became guided by the principles of Agenda 21. In accordance with the Convention of Biological Diversity, 1992 – India enacted the Biological Diversity Act (2002) to conserve India's biodiversity and regulate its usage. 'Environmental sustainability' was explicitly mentioned as an objective, and an integration of environment in India's multi-sectoral policy framework was initiated. The Ninth FYP chalked out issue-specific, area-specific and sector-specific programmes to aid the integration, and acknowledged international cooperation as a critical pillar in its pursuit of environmental sustainability. A second National Wildlife Action Plan was launched in 2002, promoting sectoral integration and an eco-system approach.

The Tenth FYP furthered the integration, and is deemed as a 'Water Plan' for its focus on the integrated development of water resources in the country. Sustainability was deemed imperative in the plan. The Indian Government released the National Environmental Policy (NEP 2006), with the objective to mainstream environmental sustainability. NEP recognized that environmental conservation is crucial to

sustainable development, but the objective should be to minimize the costs of achieving such benefits. This explains the integration of the co-benefits approach in the Twelfth FYP years later. The last two FYPs before the Planning Commission was dissolved, exhibited the progress India had made in the systemic integration of environmental sustainability. Climate change had become a recognized threat, and the policy approach was no longer one dimensional – a National Action Plan for Climate Change (NAPCC) was launched in 2008 with eight core missions. 'National Mission for a Green India' focuses on forest and ecosystem restoration, and 'National Water Mission' focuses on water conservation. 'National Mission for Sustaining the Himalayan Ecosystem' is an area specific plan which promotes the protection of the Himalayan ecosystem. National Agroforestry Policy (2014) was also launched to ensure food and ecological security.

India pledged on the SDG Agenda, 2015– and the policy approach of India drastically shifted since the commitment. NITI Aayog was established the same year and became the nodal agency for achieving SDGs. Even though the Five Year Plans are now discontinued, the policy approach of India after 2015 is more collated than ever under the umbrella of the SDG Agenda. The Indian Government continued to promote conservation of the ecosystem and sustainable natural resource management after the onset of the SDG Agenda. The policy approach towards this domain built upon the efforts of previous years, such as the Compensatory Afforestation Fund Act (2016) ensuring the use of the Compensatory Afforestation Fund for forest ecosystem restoration, the Third National Wildlife Action Plan (2017) promoting inclusive conservation, Forest Conservation Rules in 2022 issued under Forest (Conservation) Act (1980) and Biodiversity (Amendment) Act in 2023. "Strategy for New India @ 75" called for joint forest management, water conservation and sustainable agriculture. A new National Forest Policy was also suggested to be implemented. Most of the focus was on the other aspects of environmental sustainability since a solid framework now exists for this domain and over the years, conservation of natural resources and eco-system has devolved into a single facet of India's environmental framework – deeply connected with the rest. It can no longer be addressed as a singular issue.

Component II: Climate Change and Disaster Risks

More than 80 percent of Indian people live in districts that are at risk of climate – induced disasters (World Bank, 2023). However, the earlier policy framework of India addressed the natural disasters in a fractured manner. The first three FYPs only addressed flood control and didn't take any of the other natural disasters into consideration. Afforestation and soil conservation were the preferred flood control measures, and were clubbed together with anti- waterlogging and anti-sea erosion schemes. This downplayed the intensity of floods in India- of the total geographical area of 329 million hectares (mha), more than 40 mha is flood prone (National Disaster Management Authority, GOI).

The trend of employing potential overlapping solutions continued in this domain - soil conservation methods in vulnerable areas such as river valleys, wastelands and hills helped mitigate the disasters but no special attention was provided otherwise. It was not till the Fourth FYP that flood adaptation was also considered alongside control – the plan outlined construction of new embankments; drainage channels; town protection schemes; and raising of villages above flood level. The Drought Prone Area Programme was also introduced, but the focus of planning remained on floods. The efforts of Indian Government did become more refined as an area specific approach and programmes for Hill, Western Ghats and Desert Development were adopted. Although the primary objective of the development programmes was economic progress and self- sustained growth, they addressed region specific disasters such as droughts and landslides, along with floods. Flood control schemes were developed further as flood adaptation, mitigation, forecasting, regulation and zoning programmes were also incorporated into the plans. The watershed management in catchment of flood prone rivers became a centrally sponsored scheme and was expanded into various districts – flood management had gradually evolved into an integrated framework. A national plan for the prevention, detection and suppression of forest fires was launched in the Seventh FYP. In 1986, Indian Government enacted the Environmental (Protection) Act to regulate pollution of the environment, coexisting with the Water (Prevention and Control of Pollution) Act (1974) and Air (Prevention and Control of Pollution) Act (1981). The main objective of the Act was to efficiently

implement the measures of the United Nations Conference on the Human Environment, Stockholm (1972).

The biggest shift in this domain of India's environmental policy approach occurred with the Tenth FYP- where the importance of disaster management, as well as climate change was acknowledged for the first time. India's key vulnerabilities were identified as cyclones, floods, droughts, earthquakes and landslides. Despite the staggering vulnerabilities, India's policy approach towards disaster management had remained skeletal and dispersed: *'Five Year Plan documents have, historically, not included consideration of issues relating to the management and mitigation of natural disasters.'*(Tenth Five Year Plan, 2002). The plan called for disaster preparedness, mitigation and prevention, going beyond the historical focus on relief and rehabilitation post the disaster if sustainable development is to be achieved. The need for streamlining institutional arrangements for disaster response, as well as capacity building for disaster prevention and preparedness was emphasized – on national, state, district and sub-district levels. International support and disaster resilience to be built into all development projects were deemed necessary for a safer nation.

The last two FYPs mainstreamed disaster management into development planning. National Disaster Management Act (2005) is a landmark act which established National Disaster Management Authority (NDMA) and State Disaster Management Authorities (SDMAs). The Act was followed by National Policy on Disaster Management (2009), and was invoked during the Covid-19 pandemic.

As climate change gained foothold as an urgent issue, the UN organized the first Earth Summit in Rio de Janeiro, Brazil, 1992 - and by the end of that year, 158 states signed the United Nations Framework Convention on Climate Change (UNFCCC). Another major milestone in climate change was the adoption of Kyoto Protocol in 1997. Climate change risks were also recognized in Indian policies such as National Environment Policy (2006), National Biodiversity Action Plan (2008) and National Water Policy (2012). Over the Eleventh FYP period– the National Action Plan on Climate Change (2008) (NAPCC) was launched by the Council on Climate Change established by the Prime Minister under his chairmanship. The NAPCC was launched with the objective of

mainstreaming the concept of sustainable development and outlines eight core missions, each addressing a different aspect of climate change. The Indian Government also directed all state governments and union territories to prepare State Action Plans for Climate Change (SAPCC) in 2009. After the launch of NAPCC, climate change became an integral part of India's environmental sustainability framework. The Indian Network for Climate Change Assessment (INCCA) was launched in 2009 - India's first attempt at an independent climate research and assessment network.

When the new Government first came into power in 2014 - it was emphasized that climate change is a high national priority and the National Adaptation Fund for Climate Change was established the same year. National Agroforestry Policy (2014) recognized the role of agroforestry in mitigating climate change impacts through carbon sink creation. Along with committing to the SDG Agenda, which has 'Climate Action' as one of the 17 goals - India also made a commitment to the Paris Agreement (COP21) to reduce carbon emissions. India has been actively addressing the growing obstacle of climate change – both domestically and internationally. Adaptation and mitigation schemes are regularly being implemented under the NAPCC and SAPCCs, and Government programs are actively supporting climate change resilient development over all sectors. India began to actively seek global financial support since the Ninth FYP period and is also the recipient with the highest amount of funding approved from multilateral climate change funds, as of January 2025 (Climate Funds Update). 'Strategy for New India @ 75' referred to climate change as one of the 'key pillars for sustainable environment' and called for strengthening resilience against climate change in all sectors.

Armed with innovative schemes and market based mechanisms, India has been making significant progress towards an integrated process of developmental planning which is inclusive of climate change.

Component III: Pollution Prevention and Resource Efficiency

From the very beginning, India's policy approach has taken pollution prevention into consideration, and promoted resource efficiency to ensure maximum economic gains. Over the years, the approach has become geared towards a long-term sustainable

vision over short- term benefits.

The first five FYPs addressed the issue of water pollution and land utilization – and that has remained a recurring theme in India's environmental policy approach. Since the earlier policies of India were inclined only towards economic progress– land utilization to maximize the productivity has been the cornerstone of the Five Year Plans. All domains of environmental sustainability led to the end goal of productivity maximization. Forest deficiency was tackled with targeted afforestation based on surveys to understand whether the area would be benefited from natural regeneration or plantation. Pasture development, reclamation of ravine lands, social forestry and economic plantations – Indian Government left no stone unturned to maximize the returns from the land available. The plans also recommended treatment of industrial waste before they are discharged into rivers to prevent water pollution. The Environment (Protection) Act (1986), as mentioned, was coexisting with the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974 under which Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) were created, and strict standards and penalties for violation of pollution norms were imposed on industries.

Land degradation remained a high national priority, and special attention was given to energy efficiency for the very first time. Closely linked with energy conservation, the plan outlined energy consumption norms, alternative uses of energy and developed criteria of evaluating new technologies. Organic recycling was recommended on a large scale, along with biogas development. The plan was also the first to address the four types of environmental pollution – water, air, land and noise.

From Seventh FYP onwards, the efforts marginally increased. An energy conservation fund was established and incentive- based schemes were implemented to achieve energy efficiency standards. Pollution control and monitoring was amped up with strict licensing provisions for industries, air quality network, green belt, and schemes like Control of Hazardous Substances, Prevention of Coastal Pollution Programme and Prevention of Pollution of Ganga. In 1994, Environmental Impact Assessment (EIA) Notification was released under the Environment Protection Act – the objective was

accountability from major industries and prevention at the source. The 2006 Amendment attempted to distribute the authority to both Central and State Governments. There was a heavy emphasis on integrated action by the Government in the Eighth FYP: '*In industry, integrated action would be needed for prevention and control of pollution hazards, suitable location of industrial units, recycling of industrial wastes and adoption of energy efficient technology.'* (Eighth Five Year Plan, 1992) The Ganga Action Plan (1985) was to be converted into the proposed National River Action Plan – thus cumulating the water pollution prevention efforts nationwide. Regeneration and restoration of degraded ecosystems was also a point of focus. The Eighth FYP attempted to ensure a shift from the non- renewable resources to renewable ones, with an increasing emphasis on conservation, efficiency and demand management instead of supply sided problems in energy conservation.

By the Ninth FYP, 'environmental sustainability' was at the front and center of policy making due to Rio Conference, 1992. As a consequence, it was ingrained in every sector of planning during that period. The plan had a variety of recommendations with respect of both pollution prevention and resource efficiency - such as recycling of treated waste water for non-domestic uses, alternative modes of transport, installation of co-generation systems, development of environmentally sound industrial – friendly technologies and capacity upgradation. The plan also had a strategy of prevention of pollution at source, as the primary emphasis should be laid on preventive approach of environmental protection instead of curative approach. International cooperation was a recent development, one such example being when industries were granted loan assistance for pollution control under World Bank Assisted Industrial Pollution Prevention Project (Phase 1, 1991 and 2, 1996).

Another significant development bought along by the Ninth FYP was the use of economic instruments in an effort to integrate economic and environmental planning. Incentives to adopt efficiency enhancing and waste minimization were being promoted – such as cess rates on water consumption, duty concessions, accelerated depreciation on pollution abatement equipment and incentive to use treated waste water for non-domestic purposes. During the Ninth FYP, a need was realized to have an Energy Conservation Act. Accordingly, Indian Government enacted the The Energy

Conservation Act, 2001, to promote energy conservation and efficient use of energy in the country, and established the Bureau of Energy Efficiency (BEE) which contributed to the development of energy efficient policies. Tradeable carbon certificates, energy efficiency ratings and Energy Conservation Building Code (ECBC) were introduced under this act. The Tenth FYP called for a coordinated approach to land use policy and development of wastelands and degraded lands, The private sector was also to be involved in the reclamation and restoration process. Simultaneously, efficient water usage and waste management were getting integrated in urban planning. The area-specific development programs launched under the Fifth FYP were also aiding in resource efficiency on a regional level. Pollution was still a concern being addressed consistently through schemes such as Industrial Pollution Abatement Through Preventive Strategies.

A significant characteristic of this later phase of policy making was international cooperation. New schemes were taken up with the financial and technical help from India Canada Environment Facility (ICEF), Global Environment Facility (GEF), Indo-German Technical Cooperation etc. which already had working relationships with India since the Ninth FYP period. After the ratification of Kyoto Protocol in 2005, India became one of the signatories and had the second largest number of registered projects under Clean Development Mechanism (Government of India, 2015). In the last two plans, the need for an environment friendly urban planning with efficient sewage and waste management was emphasized further. The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was such a scheme honed to have a more focused approach so the high levels of water pollution due to poor domestic and industrial waste disposal and inadequate sewage could be resolved. Climate change was a global threat by 2007, and India recognized the urgency and materialized NAPCC to address it with eight missions including National Mission on Enhanced Energy Efficiency to reduce industrial emissions**.** Along with domestic action, India had also committed to ensure that the emissions intensity of its GHG continue to decline. Despite having a share of only 4% in global emissions – one of the objectives of the Eleventh FYP was to reduce the energy intensity per unit of GHG by 20% from the period 2007–08 to 2016–17. Alternative sources of cleaner, renewable energy were also to be developed – hydropower, wind power, solar energy, biofuels from agro-waste and nuclear power. Wind power and

solar power were already being encouraged through generous financial incentives. The integration of economic and environmental planning was furthered in the Twelfth FYP. Coal Cess is an environment tax whose proceeds channel to the National Clean Energy Fund, the Perform Achieve and Trade (PAT) scheme is a certificate based trading scheme promoting energy efficiency and Renewable Energy Certificate (REC) mechanism is a market-based instrument which legally mandate a percentage of energy to be procured by distribution companies from renewable energy sources.

India's global involvement reflected clearly in its evolved policy approach and broadened the horizons of environmental sustainability. The Twelfth Plan stated that the monitorable target in air quality to be achieved in all major cities by 2011-12 should be according to WHO standards. In 2015, India committed to the SDG Agenda, as well as the COP21 Paris Conference. India submitted its first Nationally Determined Contributions (NDCs) the same year, and later updated the NDCs in 2022 in accordance to its commitment in COP26 held in Glasgow – net zero by 2070. To achieve this goal, India has formed a proactive stance on solar power, electric vehicles and minimization of the cost of carbon control during urban planning. 'Strategy for New India @ 75' urged on the need for a five year strategy on energy efficiency and an action plan to improve water use efficiency. Under the chapter of 'Sustainable Development', the document set objectives to reduce air and water pollution. An effective implementation of Solid Waste Management Rules, 2006 was also insisted upon. This was later expanded upon in 'Vikasit Bharat; Working Paper' published in 2024 - a green economy is envisioned till 2050, a Carbon Tax is to be implemented which would replace the excises on polluting substances and a circular economy is promoted.

As discussed in the previous section, the policy approach towards environmental sustainability is now armed with innovative schemes and market based mechanisms such as such as Energy Conservation Building Code (ECBC 2007; 2017, Eco-Niwas Samhita), India Cooling Action Plan (2019), Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME – I, 2015; FAME – II, 2019), Carbon Credit Trading Scheme (2023) and Green Credit Programme (2023) and Assistance in Deploying Energy Efficient Technologies in Industries & Establishments (ADEETIE, 2025). The Energy Conservation (Amendment) Act (2022) also introduced Carbon Credit Trading

Scheme (CCTS) which converts the earlier PAT scheme into a compliance- based carbon market, furthering the efforts of the Twelfth FYP. Table 4 showcases that most of the major market- based instruments or mechanisms address the issues of climate change, energy efficiency or renewable energy.

Table 4. Major market-based instruments and their central focus.

Year	Market Based Instruments / Mechanisms	Focus
2010	Coal Cess	Climate Change
2015	UJALA (LED Distribution)	Energy Efficiency
2015	ZED Certification (Zero Defect Zero Effect)	Energy Efficiency
2015	Perform Achieve and Trade (PAT) scheme	Energy Efficiency
2016	FAME I (Faster Adoption & Manufacturing of EVs)	Climate Change
2018	Renewable Energy Certificates (RECs)	Renewable Energy
2019	CAMPA Fund (Compensatory Afforestation Fund)	Biodiversity
2019	Green Credit Programme	Pollution Control / Biodiversity
2019	Carbon Credit Trading Scheme (CCTS)	Climate Change
2019	Virtual Power Purchase Agreements (VPPAs)	Renewable Energy
2020	FAME II	Climate Change
2022	e-Waste Credit Trading	Circular Economy
2023	PM-KUSUM (Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan)	Renewable Energy

Thus, in the later years with the onset of climate change – India developed a holistic approach to carbon emission driven climate change, according to 'Vikasit Bharat; Working Paper'. Energy efficiency intersected with climate change has been the policy inclination of India in recent years.

3. Discussion

To the best of the knowledge of the author, this paper is the first to do a thorough analysis of the evolution of India's policy approach towards environmental sustainability over the years. A comprehensive content analysis of the Five Year Plans and other major documents helped identify key codes within this gradual evolution that fit into the adapted UNEP framework and have been organized into themes. The analysis shows that there has been a gradual but transformative evolution of India's

policy approach over time. It has widened into a multifaceted, cohesive framework systemically integrated into developmental planning. The focal points of the domestic policy has also shifted in alignment with the world and continue to grow simultaneously. India is trying to move away from a regulation- focused, economy-oriented policy approach to an innovative green economy by 2050. More specifically, India's policy approach to environmental sustainability has shifted from uni-dimensional to multidimensional, from being isolated to being integrated and to being innovative with conspicuous role of changing global environmental and sustainability discourse. The observations are expanded upon as follows.

First, India is hailed as a country rich of natural resources, and thus the policy approach of India has always been aware of environmental concerns. However, in the early years – environmental sustainability was low on the list of national priorities and natural resources were a means to an end for the economic development of the nation. With a 'grow now, clean up later' mentality (Ekins & Zenghelis, 2021) - India short sightedly considered environmental sustainability as a secondary issue when compared to economic progress, agricultural growth, food security and hunger eradication. Major shifts were caused by direct and indirect global influence in 1992, 2007 and 2015 which transformed India's policy approach into a multifaceted, integrated framework. Post 2007, atleast one domain of India's environmental policy processes were triggered by international developments (Fernandes et. al., 2020). An analysis of the Five Year Plans through the lens of the three dimensional environmental sustainability framework has outlined this process. Under each domain, the policy approach appears to be expanding to evolve into a multi-elemental framework.

Second, the policy approach of India addressed the environmental issues in a fragmented manner. This approach began to change when the Government started streamlining the policy approach by rolling out issue specific solutions under broad National Plans and/or Acts. National Disaster Management Act (2005), National Environmental Policy (2006) and National Action Plan for Climate Change (2008) are such examples which provide cohesiveness to the policy approach without undermining the intricacy of environmental sustainability.

Third, the early years treated environmental concerns as an isolated problem instead of acknowledging the interlinkages between environment and every sector in the economy. Only the economic impact of the environment was taken into consideration. However, environment is an omnipresent element within all sectors which should always be taken into consideration during planning. The Indian Government recognized that the two goals of environmental sustainability and developmental planning are not incompatible and can mutually benefit each other (Fernandes et. al., 2019). This change became apparent post 2007 with the launch of NAPCC (Stahlke, 2023), and the 'co-benefits approach' depicted India's pragmatic policy shift on the issue of climate change (Saryal, 2020; Fernandes et. al., 2020). Resource efficiency and climate change are two elements now integrated in sectoral policies, development projects as well as urban and rural planning. The policies which leverage natural synergies between climate action and development priorities to advance both goals simultaneously are considered the most promising (Stahlke, 2023). The 2030 SDG Agenda (2015) has been a huge influence on India in this regard, as it provides a systemic framework for sustainable development that addresses all sectors and their mutual relationships with each other.

Fourth, till the 1970s, Indian environmental legislation was derived from colonial laws (Ganguly, 2020). The 42nd Constitutional Amendment (1976) (Indian National Bar Association, 2013) mandated environmental protection as a duty of the state (Article 48A) and a fundamental duty of the citizens (Article 51A). That was the first instance of the Indian Constitution dealing with environmental concerns, and pollution (Ganguly, 2020). The earlier phase in India's environmental policy approach was comprised of majorly regulatory mechanisms, such as the Polluter Pays Principle (Supreme Court of India, 1996). As India aligned itself with global environmental policy trends more and more over the years, the approach evolved simultaneously and broadened itself to use market- based mechanisms, mostly addressing climate change, renewable energy and energy efficiency (Table 4).

Fifth, the last two Five Year Plans and the documents published after shifted the focus to inclusive economic growth and sustainable development (Ganguly, 2020). Climate change and energy efficiency became the major topics of interest. India has been one of

the top recipients of climate change – related aid from bilateral and multilateral sources (Patra, 2016). Aligned with the global discourse and the 2030 SDG Agenda, it justifies why the majority of market-based mechanisms and international support are channeled toward the latter two components of the framework. This theme materializes as the primary focus of India's environmental policy making moved away from the first component to the latter two.

Sixth, the centre of all the themes - is the growing alignment of India with the international approach on environmental policy making. As environmental issues slowly began to be tackled on a global platform, the pressure kept rising. India was already a signatory for the Convention on Biological Diversity, Montreal Protocol and Basel Convention – but after 1992, the Indian Government announced its decision to shift the environmental policy making in accordance to Agenda 21, Rio Conference (Ninth Five Year Plan, 1996). The NAPCC was launched right before the G8 Meeting at Japan, which alluded to the possibility that one of the objectives of the NAPCC was capturing international attention (Dubash and Joseph, 2015). India's environmental policy making has a reactive approach to international developments which was observed here. Since then, India has signed and made voluntary commitments for numerous conferences – COP21 and COP26 being the most significant; and is now a leading global advocate for developing countries. India has also proactively furthered the cause of the 2030 SDG Agenda and has launched the first SDG India Index and Dashboard in 2018 as an initiative to show commitment to the Agenda. Climate change, sustainable development and energy efficiency are the issues of contemporary global relevance – that explains the outpouring of global financial and technical support India is a recipient of funneled towards these causes. The policy approach has shifted to these causes and actions with regard to them at an international as well as domestic level (Saryal, 2018).

India recognizes its distinct characteristics and has occasionally attempted to customize the policies accordingly. State Action Plans for Climate Change (2009) have been referred to as, "the largest exercise in sub-national climate change planning in the world" (Gogoi, 2017). The policy approach of India often assumes and encourages the support of the common people, and tries to involve every citizen on the grassroots

level in the pursuit of environmental sustainability. India's localisation model for the implementation of the SDG Agenda attempts to focus on State, District and Local level SDG implementations. India also advocated for 'phase down' instead of 'phase out' of coal at COP26 – as it is the second largest coal consumer due to its growing energy demand, mostly dependent on non- renewable sources (Rout, Gochhayat; 2024). This showed that India recognizes the gap between domestic and international environmental policy necessities (Jayaram, 2024). At the same time, India can not follow the 'grow now, clean up later' mentality (Ekins & Zenghelis, 2021) of the developed states for any longer – and has changed its policy approach accordingly (Saryal, 2018). The unique limitations of this nation make environmental sustainability a challenging issue (Rout, Gochhayat; 2024), and raise the question of whether India needs to evolve out of international influence.

4. Conclusion

Understanding the policy approach of India toward environmental sustainability has significant implications on future research as it is now an integral part of developmental planning. This paper shows that the issue of environment sustainability is multidimensional and can't be understood in isolation, without the context of time and the developmental stage of the country. Regular revision is needed for India to have the most efficient policy approach towards environmental sustainability. More needs to be understood about the limitations of the country and if the policy approach would need to evolve away from the current themes. The paper has attempted to close the existing gap in this field yet consistent reviews are required to understand the extent of the sustainability of the present policy approach.

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