

ASSESSING INDIA'S PROGRESS TOWARDS SDG 13 (CLIMATE ACTION): EVIDENCE FROM THE NATIONAL INDICATOR FRAMEWORK

Manjunatha S P¹, Dr. Manoj Dolli²

¹Research Scholar, Dept. of Studies in Economics, Karnatak University, Dharwad, Karnataka, India

²Professor, Dept. of Studies in Economics, Karnatak University, Dharwad, Karnataka, India.

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ABSTRACT-----

Climate change poses significant challenges to sustainable development, particularly in a rapidly developing country such as India. This study assesses India's progress towards Sustainable Development Goal 13 (SDG 13: Climate Action) using official indicators reported in the Sustainable Development Goals National Indicator Framework (NIF) Progress Report, 2026, published by the Ministry of Statistics and Programme Implementation (MoSPI), Government of India. Using a descriptive and policy-oriented approach, the study examines seven SDG 13 indicators covering disaster resilience, disaster risk reduction, climate policy integration, emission-intensity reduction, industrial environmental compliance, and climate change education. The findings indicate progress in national disaster risk governance, climate policy commitments, emission-intensity reduction, environmental compliance, and climate education. At the same time, local-level implementation and institutional coordination remain areas requiring continued attention. The study recommends strengthening sub-national capacity, policy coordination, climate-resilient investment, and monitoring mechanisms to support India's continued progress towards SDG 13 and the 2030 Sustainable Development Agenda.

KEYWORDS: SDG 13, Climate Action India, National Indicator Framework, Climate Governance, Disaster Risk Reduction, Environmental Sustainability.-----

1. INTRODUCTION

Climate change is a major global challenge with significant implications for environmental sustainability, economic development, and human well-being. Rising temperatures, extreme weather events, biodiversity loss, and greenhouse gas emissions have increased the need for coordinated and sustained climate action. In response, the United Nations adopted the 2030 Agenda for Sustainable Development, with Sustainable Development Goal 13 (SDG 13: Climate Action) focusing on strengthening climate resilience, enhancing adaptive capacity, and integrating climate measures into national policies and planning (United Nations, 2015; IPCC, 2023). India faces considerable climate-related risks because of its large population, rapid urbanisation, dependence on climate-sensitive sectors, and exposure to disasters. At the same time, the country has strengthened its climate policy framework through initiatives such as the National Action Plan on Climate Change (NAPCC), Nationally Determined Contributions (NDCs), Mission LiFE, and renewable energy programmes. These initiatives seek to integrate climate action with economic development and environmental sustainability.

Existing studies have examined different dimensions of climate action, including emissions, renewable energy, climate adaptation, disaster risk reduction, and environmental governance. However, much of the literature focuses on specific sectors or relies on international databases. At the same time, relatively little attention has been paid to a comprehensive assessment based on India's National Indicator Framework (NIF). This limits the evidence available on India's overall progress across the different dimensions of SDG 13.

Against this background, the present study assesses India's progress towards SDG 13 using the seven indicators reported in the Sustainable Development Goals National Indicator Framework Progress Report, 2026, published by the Ministry of Statistics and Programme Implementation (MoSPI), Government of India. The study provides an indicator-wise assessment covering disaster resilience, disaster risk reduction, climate policy integration, emission-

intensity reduction, industrial environmental compliance, and climate change education. By bringing these indicators together within a common analytical framework, the study identifies areas of progress and ongoing implementation challenges. It provides policy recommendations to accelerate India's progress towards SDG 13 by 2030.

2. LITERATURE REVIEW

The global sustainable development agenda increasingly recognises climate action as essential to balancing economic development with environmental sustainability and social well-being. SDG 13 (Climate Action) addresses these challenges by promoting climate resilience, adaptive capacity, and the integration of climate measures into national policies and planning (United Nations, 2015). The IPCC (2023) further emphasises that effective mitigation and adaptation are essential for reducing climate risks and achieving sustainable development.

The Paris Agreement established a global framework for climate action through Nationally Determined Contributions (NDCs) and highlighted the importance of integrating climate mitigation and adaptation into national development strategies (UNFCCC, 2015). In India, climate governance has evolved through initiatives such as the National Action Plan on Climate Change (NAPCC), State Action Plans on Climate Change (SAPCCs), NDCs, and disaster risk reduction programmes. However, institutional capacity, coordination, and implementation remain important challenges in translating climate commitments into outcomes (Dubash et al., 2018).

Previous research has examined climate action through different dimensions, including disaster resilience, climate adaptation, renewable energy, emissions reduction, and environmental governance. Investments in resilient infrastructure, climate-smart development, and sustainable resource management can strengthen adaptive capacity and reduce the economic and social costs of climate risks (Stern, 2007; IPCC, 2023). These studies highlight the importance of linking climate policy with long-term sustainable development.

Despite this growing literature, comprehensive assessments of India's progress across the full set of SDG 13 indicators remain limited. Much of the existing research focuses on individual sectors or relies on international databases, whereas relatively less attention has been given to India's National Indicator Framework (NIF) and its nationally defined SDG indicators. Manjunatha and Dolli (2025) similarly highlight the need for systematic assessment of India's climate policies and programmes using nationally relevant SDG indicators. Therefore, the present study contributes to the literature by providing an indicator-wise assessment of India's seven SDG 13 indicators using the National Indicator Framework Progress Report, 2026. The study brings together evidence on disaster resilience, climate policy integration, emission-intensity reduction, environmental compliance, and climate education to identify areas of progress and continuing policy challenges.

Existing studies largely examine individual dimensions of India's climate action, while systematic assessments covering the full set of SDG 13 indicators under India's National Indicator Framework remain limited. Moreover, differences in indicator definitions, reporting periods, and measurement scales make it difficult to assess India's overall progress using a single conventional measure. The present study addresses this gap by providing an indicator-wise assessment of all seven NIF indicators and identifying areas of progress and continuing implementation challenges.

Objectives of the Study

- Assess India's progress towards SDG 13 using NIF indicators.
- Examine progress in climate resilience and disaster risk reduction.
- Assess progress in climate policy, emission intensity, environmental compliance, and climate education.
- Identify policy gaps and propose measures to accelerate progress toward SDG 13 by 2030.

3. RESEARCH METHODOLOGY

This study adopts a descriptive and policy-oriented research design to assess India's progress towards Sustainable Development Goal 13 (SDG 13: Climate Action). The analysis is based primarily on secondary data from the Sustainable Development Goals National Indicator Framework (NIF) Progress Report, 2026, published by the Ministry of Statistics and Programme Implementation (MoSPI), Government of India. Relevant policy documents and reports from the United Nations (UN), the Intergovernmental Panel on Climate Change (IPCC), the United Nations

Framework Convention on Climate Change (UNFCCC), NITI Aayog, and the Ministry of Environment, Forest and Climate Change (MoEFCC) are used to provide supporting policy and institutional context.

The study examines the seven SDG 13 indicators reported under the NIF, covering disaster-related impacts, national and local disaster risk reduction strategies, nationally determined contributions and long-term climate strategies, emission-intensity reduction, industrial environmental compliance, and climate change education. The analysis applies descriptive statistics, indicator-wise assessment, trend analysis where comparable time-series observations are available, comparative assessment, and policy analysis. Each indicator is interpreted according to its official definition, measurement unit, reporting period, and available observations.

Since the seven indicators differ in measurement scale, reporting frequency, and data availability, they are not treated as a uniform time series and are not aggregated into a single composite SDG 13 score. Quantitative indicators are assessed using their reported values and trends, while qualitative and single-period indicators are examined through status and comparative assessment. The findings are used to identify areas of progress, implementation gaps, and continuing policy challenges, and to formulate evidence-based recommendations for accelerating India's progress towards SDG 13 and the 2030 Sustainable Development Agenda.

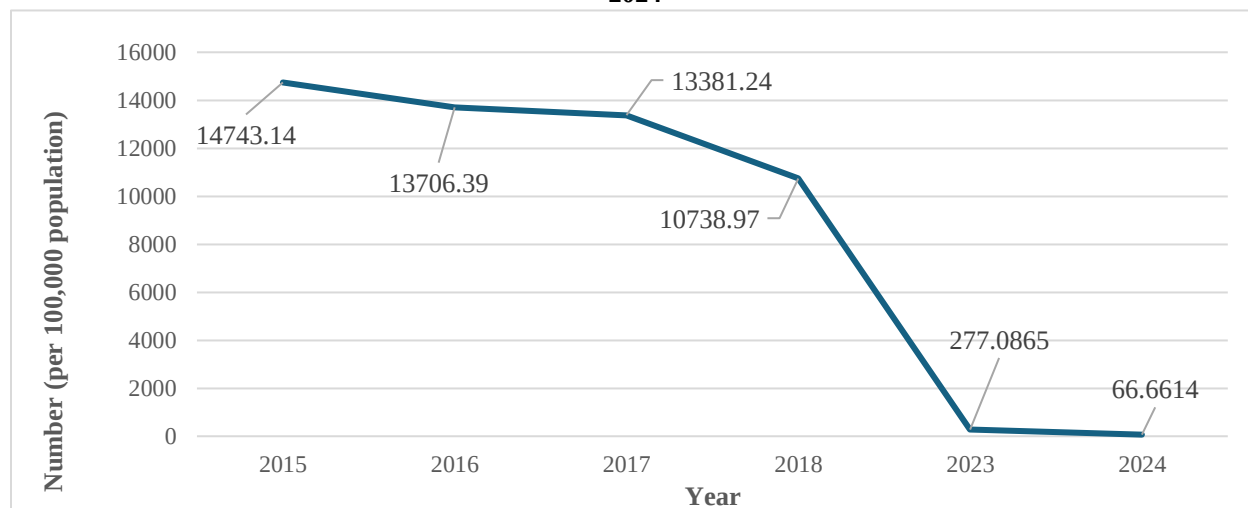
4. RESULTS AND DISCUSSION

The results are presented according to the seven SDG 13 indicators included in the National Indicator Framework. The analysis focuses on disaster resilience, climate policy implementation, environmental compliance, and climate change education, using the available official observations to assess India's progress towards SDG 13.

4.1 Disaster-related Deaths, Missing Persons and Directly Affected Population (Indicator 13.1.1)

Disaster-related deaths, missing persons, and directly affected population are key indicators for assessing progress towards SDG Target 13.1, which aims to strengthen resilience and adaptive capacity to climate-related hazards and natural disasters.

Figure 1. Trend in Disaster-related Deaths, Missing Persons and Directly Affected Population in India, 2015–2024



Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

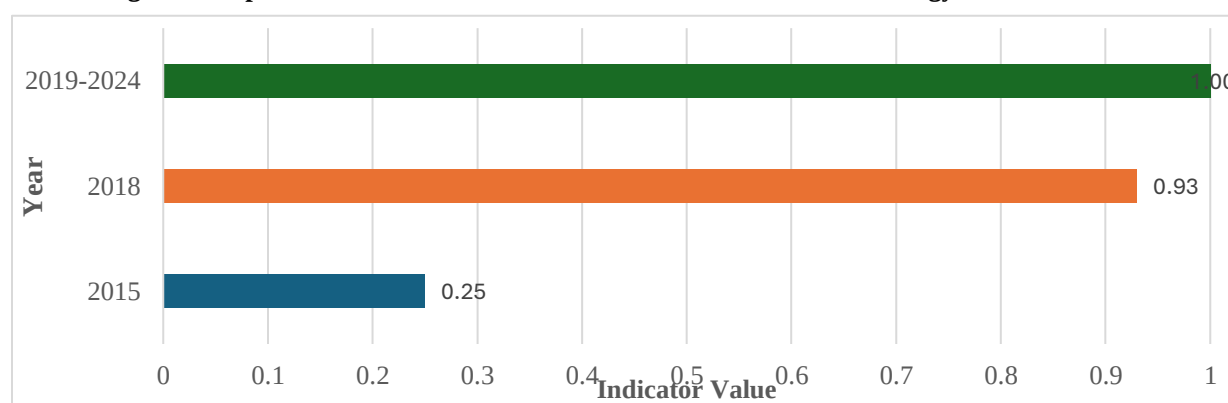
Figure 1 shows a substantial decline in the reported disaster-related deaths, missing persons, and directly affected persons indicator over the available observations, from 14,743.14 in 2015 to 277.09 in 2023 and 66.66 in the 2024 monsoon period. However, the observations should be interpreted with caution because the 2024 value covers the monsoon period and is not directly comparable with the complete annual observations reported for earlier years. The

declining pattern is consistent with the broader emphasis in the climate and disaster-risk literature on strengthening resilience, preparedness, and adaptive capacity (IPCC, 2023; Dubash et al., 2018). Nevertheless, the available data alone do not establish a causal effect of particular disaster-management measures. Continued strengthening of local disaster-risk management, climate-resilient infrastructure, early-warning systems, and community-level preparedness remains important for advancing SDG Target 13.1.

4.2 National Disaster Risk Reduction Strategy (Indicator 13.1.2)

The National Disaster Risk Reduction (DRR) Strategy is an important indicator under SDG Target 13.1, which assesses a country's commitment to strengthening resilience and reducing disaster risks in line with the Sendai Framework for Disaster Risk Reduction (2015–2030).

Figure 2. Implementation of the National Disaster Risk Reduction Strategy in India 2015–24

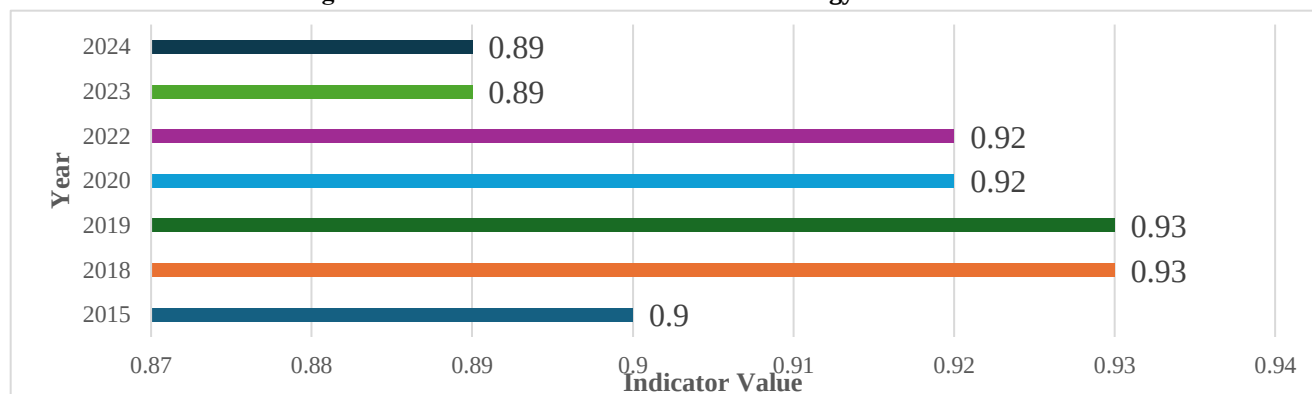


Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

Figure 2 shows substantial progress in the reported implementation status of India's National Disaster Risk Reduction Strategy, with the indicator increasing from 0.25 in 2015 to 0.93 in 2018 and reaching 1.00 during 2019–2024. A value of 1.00 represents full implementation of the national disaster risk reduction strategy in line with the Sendai Framework for Disaster Risk Reduction 2015–2030. The observed progression indicates strengthened national-level disaster risk governance and policy alignment. This is consistent with the emphasis of the Sendai Framework and climate-risk literature on institutional preparedness, coordinated governance, and risk-informed planning (UNDRR, 2015; IPCC, 2023). However, the indicator measures the adoption and implementation status of the national strategy, rather than its direct effectiveness in reducing disaster losses. Therefore, continued monitoring, periodic policy review, and stronger implementation capacity at sub-national levels remain important for sustaining progress towards SDG Target 13.1.

4.3 Local Disaster Risk Reduction Strategy (Indicator 13.1.3)

Local disaster risk reduction strategies are an important component of SDG Target 13.1, as effective implementation at the local level is essential for strengthening resilience to climate-related hazards

Figure 3. Local Disaster Risk Reduction Strategy in India 2015–2024

Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

Figure 3 shows that the implementation of local disaster risk reduction strategies remained at a relatively high level throughout the reported period, increasing from 0.90 in 2015 to 0.93 in 2018–2019 and subsequently declining slightly to 0.89 in 2023–2024. The overall pattern indicates continued implementation of local disaster risk reduction mechanisms, while the modest decline in the latest observations suggests a need for sustained institutional capacity and coordination at the local level. The finding is consistent with the broader emphasis of the Sendai Framework and IPCC on strengthening disaster preparedness, adaptive capacity, and risk reduction across governance levels. However, the indicator alone does not establish the specific factors underlying the recent decline. Continued financial, technical, and institutional support for local authorities, together with community-level preparedness and climate-resilient infrastructure, can help sustain progress towards SDG Target 13.1.

4.4 NDCs and long-term strategies (Indicator 13.2.1)

Table 1. Nationally Determined Contributions and Long-term Climate Strategies in India

Indicator	Assessment
13.2.1 Whether the country has nationally determined contributions and long-term strategies reported to the UNFCCC	Yes

Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

Table 1 shows that India has reported its Nationally Determined Contributions (NDCs) and long-term climate strategies to the UNFCCC, indicating the integration of climate considerations into national policy and planning. This provides an important institutional foundation for advancing SDG Target 13.2 and reflects India's engagement with the international climate-policy framework. However, the indicator is qualitative in nature and measures the existence or reporting of the relevant national frameworks rather than their effectiveness, implementation quality, or resulting climate outcomes. Therefore, the reported status should be interpreted as evidence of policy and institutional commitment, rather than as a direct measure of climate-policy performance. Further assessment of implementation and measurable outcomes would be required to evaluate the effectiveness of these commitments.

4.5 Emission Intensity Reduction (Indicator 13.2.2)

Table 2. Achievement in Emission Intensity Reduction in India

Indicator	Reference Year	Achievement	Unit
13.2.2 pre-2020 action: Reduction in emission intensity of GDP	2005	36	Percent

Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

Indicator 13.2.2 and Table 5 report a 36% reduction in India's emissions intensity of GDP relative to the 2005 reference level. This indicates progress towards India's pre-2020 climate mitigation commitment and reflects a reduction in the emissions intensity associated with economic output. The reported achievement should, however, be interpreted as a specific pre-2020 target outcome rather than a measure of current annual emissions performance, since the NIF classifies this indicator as a biennial measure of pre-2020 action. Accordingly, the 36% value should not be

interpreted as a 36% reduction in total greenhouse-gas emissions. Sustaining and further improving emission-intensity performance will require continued progress in energy efficiency and renewable energy

4.6 Industries Complying with Environmental Standards (Indicator 13.2.3)

Industrial environmental compliance is an important dimension of climate policy implementation under SDG Target 13.2, reflecting the extent to which industries comply with prescribed environmental standards

Figure 4. Industries Complying with Environmental Standards in India 2018–2025

Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

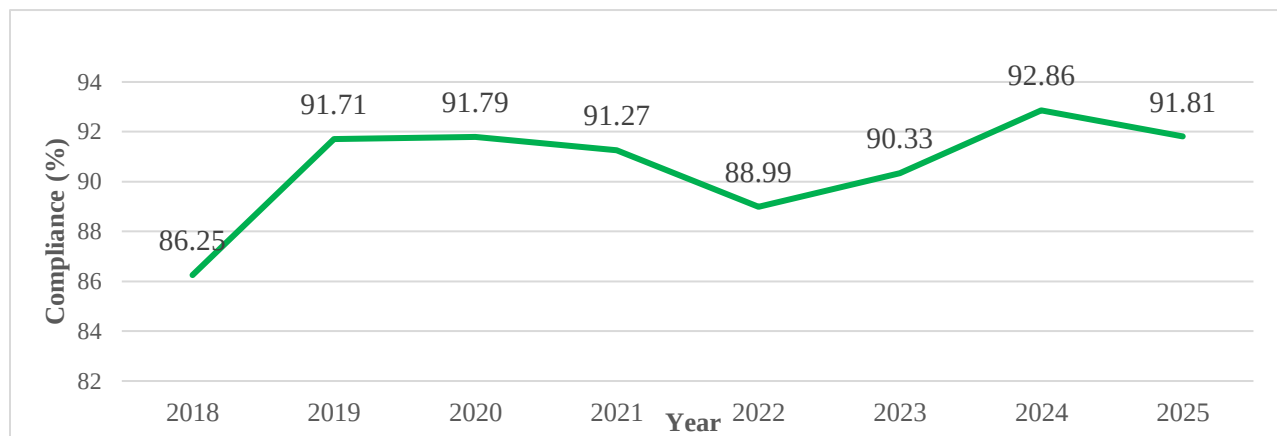
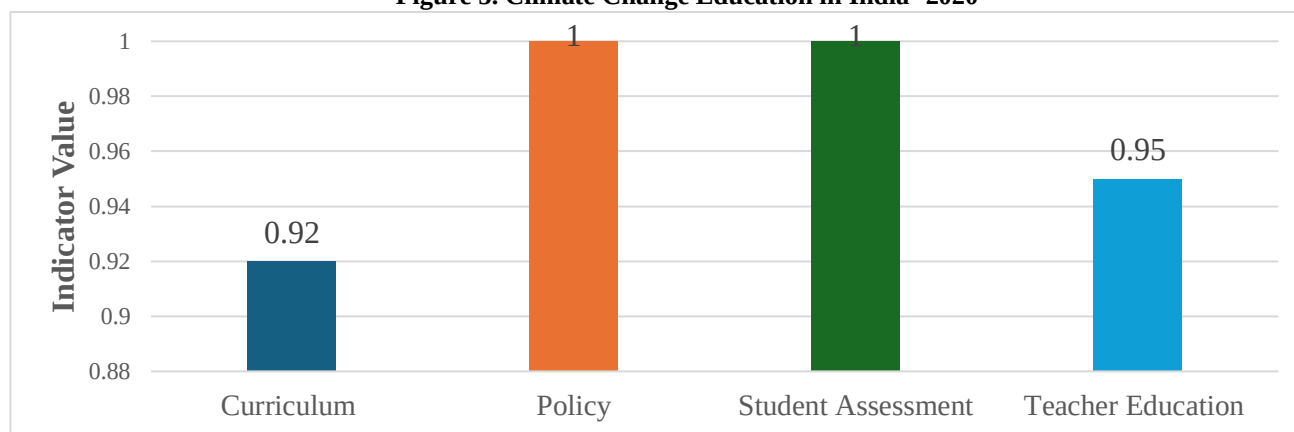


Figure 4 shows that the proportion of industries complying with environmental standards remained high throughout 2018–2025, increasing from 86.25% in 2018 to 91.81% in 2025 and reaching a peak of 92.86% in 2024. Although compliance declined to 88.99% in 2022, it subsequently recovered, indicating generally high compliance with some annual fluctuations. The observed pattern suggests continued adherence to environmental standards, although the available indicator does not by itself establish whether the changes resulted from stronger monitoring, regulatory enforcement, or technological improvements. From a policy perspective, sustaining high compliance requires regular environmental monitoring, effective enforcement, cleaner production practices, and reliable environmental reporting, particularly to ensure that temporary declines do not become persistent. This indicator therefore provides evidence of progress under SDG Target 13.2, while highlighting the need for continued regulatory and institutional support for environmentally sustainable industrial development.

4.7 Climate Change Education (Indicator 13.3.1)

Climate change education is an important component of SDG Target 13.3, which emphasises improving education, awareness, and institutional capacity for climate change mitigation, adaptation, and impact reduction.

Figure 5. Climate Change Education in India -2020



Source: Compiled by the author from the National Indicator Framework (NIF) Progress Report, 2026.

Figure 5 indicates a high level of integration of climate change education across the reported dimensions of India's education system in 2020. The indicator records a value of 1.00 for policy and student assessment, followed by 0.95 for teacher education and 0.92 for curriculum integration. These results indicate relatively strong incorporation of climate-related considerations within the assessed education dimensions, while the comparatively lower curriculum and teacher-education scores suggest scope for further strengthening in these areas. The findings are consistent with the broader emphasis on education, awareness, and capacity-building as important components of long-term climate action. However, as the indicator provides component-wise observations for 2020 rather than a multi-year time series, the results should be interpreted as a snapshot of the reported level of integration rather than evidence of a temporal trend. From a policy perspective, continued curriculum development, teacher training, practical climate-learning activities, and integration of climate-related competencies across educational levels can further support progress towards SDG Target 13.3.

4.8 Overall Assessment and Policy Implications

The indicator-wise assessment indicates that India has made considerable progress across several dimensions of SDG 13, particularly in national disaster risk reduction, climate-policy commitments, emission-intensity reduction, industrial environmental compliance, and climate change education. The National Disaster Risk Reduction Strategy reached a value of 1.00, while local-level implementation remained relatively high despite a modest decline in recent observations. India also reported a 36% reduction in GDP emission intensity relative to the 2005 reference level, and industrial environmental compliance remained above 90% in recent years. Climate change education recorded relatively high values across the assessed dimensions, particularly policy and student assessment. Overall, these findings indicate a strong national policy and institutional foundation for climate action, although differences in implementation across governance levels remain an important area of concern.

Because the seven indicators vary in measurement scale, reporting period, and data availability, the study does not assign a single numerical score to India's overall SDG 13 performance. Instead, overall progress is assessed from the combined status and direction of the individual indicators. From a policy perspective, priority should be given to strengthening local disaster-risk reduction capacity through greater technical, financial, and institutional support; sustaining investment in climate-resilient infrastructure, early-warning systems, and community preparedness; and maintaining progress in reducing emission intensity through energy efficiency, renewable energy, and low-carbon technologies. High industrial compliance should be supported through continued environmental monitoring and enforcement, while climate education can be strengthened through improved curriculum content, teacher training, and practical climate-learning initiatives. Finally, consistent monitoring and reporting of SDG 13 indicators can improve evidence-based policymaking and coordination across national, state, and local levels, thereby supporting continued progress towards SDG 13 by 2030.

5. CONCLUSION

This study assessed India's progress towards SDG 13 (Climate Action) using seven official National Indicator Framework (NIF) indicators. The findings indicate substantial progress in disaster risk governance, climate policy commitments, emission-intensity reduction, industrial environmental compliance, and climate change education. However, the slight decline in local disaster risk reduction performance highlights the need to strengthen sub-national implementation and institutional coordination. Overall, India has established a strong foundation for SDG 13, while continued investment, effective policy implementation, improved monitoring, and stronger local-level capacity are essential to accelerate progress towards the 2030 Sustainable Development Agenda.

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