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PROGRESS AND INTER-STATE DISPARITIES IN THE SUSTAINABLE DEVELOPMENT GOALS IN INDIA: A DESCRIPTIVE ANALYSIS

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ABSTRACT **DOI No: 10.36713/epra32137** **Article DOI: https://doi.org/10.36713/epra32137**

India's composite score on the NITI Aayog SDG India Index rose from 57 in 2018 to 71 in 2023–24. This paper examines whether this national progress has been uniform across goals and states. It has two objectives: to examine the trends in India's overall and goal-wise SDG performance, and to analyse the extent and pattern of inter-state and inter-zonal disparities in SDG attainment. Covering 28 states, the study is based on secondary data from the four rounds of the SDG India Index and the SDG–National Indicator Framework Progress Report 2025. Simple descriptive tools are used: mean, median, range, standard deviation, coefficient of variation, percentage change, compound annual growth rate, gap analysis, frequency classification, ranks and Spearman's rank correlation. India's score grew at 4.5% a year, but progress was concentrated in access-oriented goals such as clean energy, sanitation and sustainable cities, while gender equality, zero hunger, quality education and industry and innovation remain below the Front Runner level. All 28 states improved, and Front Runner states increased from 3 to 24. The coefficient of variation of state scores fell from 11.8% to 8.2%, indicating narrower disparities in attainment. However, states closed a similar share of their distance to the 2030 target, so the relative gap of the lagging eastern and north-eastern states persists. The paper suggests needs-based allocation of resources and an outcome-oriented focus on the lagging goals and regions.

KEYWORDS: *Sustainable Development Goals, SDG India Index, Regional Disparities, Coefficient of Variation, Indian States*

1. INTRODUCTION

The 2030 Agenda for Sustainable Development, adopted by 193 member states of the United Nations in 2015, set out 17 Sustainable Development Goals (SDGs) and 169 targets under the principle of "leaving no one behind" (United Nations, 2015). The Agenda marks a shift from a growth-centric view of development towards a multidimensional conception that integrates the economic, social and environmental pillars of sustainability. As India is the most populous nation, its performance is decisive for the global outcome. In the Sustainable Development Report 2025, India ranked 99th among 167 countries, entering the top 100 for the first time (Sachs et al., 2025).

India has built an elaborate institutional framework for monitoring the SDGs. The Ministry of Statistics and Programme Implementation (MoSPI) maintains a National Indicator Framework (NIF) of 284 indicators (MoSPI, 2025). NITI Aayog publishes the SDG India Index, which scores states on a scale of 0 to 100 and serves as an instrument of competitive and cooperative federalism. Its fourth round (2023–24) covers 16 goals and 113 indicators (NITI Aayog, 2024).

The sub-national dimension is crucial in India's federal structure, because health, water, agriculture and public order fall in the State List and education in the Concurrent List of the Seventh Schedule. The national aggregate is therefore the outcome of widely differing state performances. A rising national average may conceal persistent regional imbalances; for instance, Bihar's score in 2023–24 (57) is still below Kerala's score in 2018 (69). With barely four years left before 2030, an assessment of the pattern of progress across goals and states is both timely and policy-relevant.

2. REVIEW OF LITERATURE

The use of composite indices to measure SDG progress was popularised by the global SDG Index and Dashboards, whose methodology Schmidt-Traub et al. (2017) set out: indicators are normalised against targets and then averaged. NITI Aayog follows the same distance-to-target approach. Such indices are transparent, but their results depend on the choice of indicators, targets and weights (OECD/JRC, 2008), and simple averaging allows strong performance on one goal to offset weak performance on another (Biggeri et al., 2019).

For India, Kumar and Anand (2023) estimate the distance from the 2030 targets on the NIF indicators and find that zero hunger

(SDG 2) and gender equality (SDG 5) are the most challenging goals, followed by education, inequality and institutions. Pradhan et al. (2017) show that the goals are interlinked, with synergies outnumbering trade-offs, which implies that lagging goals can hold back overall progress.

Regional imbalance is a long-standing theme in Indian development economics. Studies of state income report widening disparities after the economic reforms of 1991 (Bhattacharya and Sakthivel, 2004; Ghosh, 2008; Cherodian and Thirlwall, 2015). Social outcomes, however, need not follow income: public provision of health and education explains much of the variation in human development (Anand and Ravallion, 1993; Drèze and Sen, 2013). Sen (1981) and Kakwani (1993) argue that progress on bounded social indicators should be judged by the reduction in the shortfall from the maximum, and not only by the absolute gain.

Studies on the SDG India Index are few and largely confined to a single round or to national aggregates (Singh and Sahu, 2022; Singh, 2025). A systematic comparison of all four rounds at the state level, measuring the change in disparities with standard descriptive tools and distinguishing between attainment and the remaining gap to the target, is lacking. The present study attempts to fill this gap.

3. OBJECTIVES

The study has two objectives:

1. To examine the trends in India's overall and goal-wise performance on the Sustainable Development Goals between 2018 and 2023–24.
2. To analyse the extent and pattern of inter-state and inter-zonal disparities in SDG attainment and their change over time.

4. METHODOLOGY

Nature and sources of data. The study is descriptive and analytical and is based entirely on secondary data. State composite scores for 2018, 2019–20 and 2020–21 are taken from the Reserve Bank of India's *Handbook of Statistics on Indian States* (RBI, 2023), and those for 2023–24, together with India's goal-wise scores, from the SDG India Index 2023–24 (NITI Aayog, 2024). National indicator values are taken from the SDG–NIF Progress Report 2025 (MoSPI, 2025).

The SDG India Index. Each indicator is rescaled to a score of 0 to 100 relative to a national 2030 target; goal scores are averages of indicator scores, and the composite score is the average of goal scores (SDG 14, which applies only to the nine coastal states, is excluded from the composite). A score of 100 means the 2030 target is achieved. States are classified as Aspirant (0–49), Performer (50–64), Front Runner (65–99) and Achiever (100). Coverage has widened from 13 goals and 62 indicators in 2018 to 16 goals and 113 indicators in 2023–24.

Scope. The study covers the 28 states. Union Territories are excluded owing to changes in their composition during the period. For zonal analysis, states are grouped into six zones following the zonal councils: Northern, Central, Eastern, Western, Southern and North-Eastern.

Tools of analysis. For Objective 1, absolute change, percentage change and the compound annual growth rate (CAGR) are used. For Objective 2, the mean, median, range, ratio of maximum to minimum, standard deviation and coefficient of variation (CV) are used to measure disparity, along with frequency classification, ranks, Spearman's rank correlation and gap analysis. The key formulae are:

CV = (Standard deviation / Mean) × 100; CAGR = $[(X_{2023} / X_{2018})^{(1/5)} - 1] \times 100$.

The gap of a state from the 2030 target is $G = 100 - X$, and the share of the 2018 gap closed by 2023–24 is $(G_{2018} - G_{2023}) / G_{2018} \times 100$.

5. RESULTS AND DISCUSSION

5.1 Objective 1: Trends in National and Goal-wise Performance

India's composite score rose steadily from 57 in 2018 to 60 in 2019–20, 66 in 2020–21 and 71 in 2023–24 — an absolute gain of 14 points, a percentage increase of 24.6% and a CAGR of 4.5%. India moved from the Performer to the Front Runner category in 2020–21, and its gap to the 2030 target narrowed from 43 to 29 points.

Progress was uneven across goals (Table 1). The largest gains were in affordable and clean energy (SDG 7, +45 points), sustainable cities (SDG 11, +44), clean water and sanitation (SDG 6, +26) and good health (SDG 3, +25), all closely linked to large-scale public provision of infrastructure and basic services. In contrast, four goals remain below the Front Runner threshold of 65: gender equality (SDG 5, 49, the only Aspirant goal), zero hunger (SDG 2, 52), quality education (SDG 4, 61) and industry, innovation and infrastructure (SDG 9, 61). Life on land (SDG 15) and reduced inequalities (SDG 10) recorded lower scores than in 2018, partly owing to changes in indicators. The CV of goal scores fell from 26.1% (13 goals in 2018) to 18.1% (15 goals in 2023–24), showing that the gap between strong and weak goals has narrowed but not closed.

Table 1: Goal-wise SDG Scores of India

Goal	First round	2023–24	Change (points)	Change (%)
SDG 1 No poverty	54	72	+18	+33.3
SDG 2 Zero hunger	48	52	+4	+8.3
SDG 3 Good health and well-being	52	77	+25	+48.1
SDG 4 Quality education	58	61	+3	+5.2
SDG 5 Gender equality	36	49	+13	+36.1
SDG 6 Clean water and sanitation	63	89	+26	+41.3
SDG 7 Affordable and clean energy	51	96	+45	+88.2
SDG 8 Decent work and economic growth	65	68	+3	+4.6
SDG 9 Industry, innovation and infrastructure	44	61	+17	+38.6
SDG 10 Reduced inequalities	71	65	−6	−8.5
SDG 11 Sustainable cities and communities	39	83	+44	+112.8
SDG 12 Responsible consumption and production*	55	78	+23	+41.8
SDG 13 Climate action*	60	67	+7	+11.7
SDG 15 Life on land	90	75	−15	−16.7
SDG 16 Peace, justice and strong institutions	71	74	+3	+4.2
Composite score	57	71	+14	+24.6

Note: SDG 12 and SDG 13 (marked with an asterisk) were first scored in 2019–20, which is taken as their first round; all other goals start in 2018. SDG 14 (scored only for the nine coastal states and excluded from the composite score) and SDG 17 (not scored) are not shown. *Source:* NITI Aayog (2024).

The NIF data confirm this pattern (Table 2). Poverty, mortality and access to drinking water improved substantially, but child anaemia and informality increased and the share of women in managerial positions fell.

Table 2: Selected National SDG Indicators

Indicator	Baseline (year)	Latest (year)
Multidimensional poverty headcount (%)	24.85 (2015–16)	14.96 (2019–21)
Maternal mortality ratio (per lakh live births)	130 (2014–16)	93 (2019–21)
Under-five mortality rate (per 1,000 live births)	43 (2015)	31 (2021)
Rural households with piped water in premises (%)	21.33 (2019–20)	80.22 (2024–25)
Anaemia among children aged 6–59 months (%)	58.5 (2015–16)	67.1 (2019–21)
Stunting among children under five (%)	38.4 (2015–16)	35.5 (2019–21)
Women in managerial positions (%)	18.7 (2019–20)	12.0 (2023–24)
Informal workers in non-agriculture (%)	68.2 (2017–18)	73.2 (2023–24)

Source: MoSPI (2025).

5.2 Objective 2: Inter-State and Inter-Zonal Disparities

Classification of states. All 28 states improved their scores. Front Runner states increased from 3 in 2018 (Kerala, Himachal Pradesh, Tamil Nadu) to 24 in 2023–24, and the three Aspirant states of 2018 (Uttar Pradesh, Bihar, Assam) all moved up (Table 3). In 2023–24, Kerala and Uttarakhand lead with 79, while Bihar (57), Jharkhand (62), Meghalaya and Nagaland (63) are at the bottom (Figure 1).

Table 3: Distribution of States by Performance Category

Category	2018	2019–20	2020–21	2023–24
Front Runner (65–99)	3	8	15	24
Performer (50–64)	22	20	13	4
Aspirant (0–49)	3	0	0	0

Source: Computed from RBI (2023) and NITI Aayog (2024).

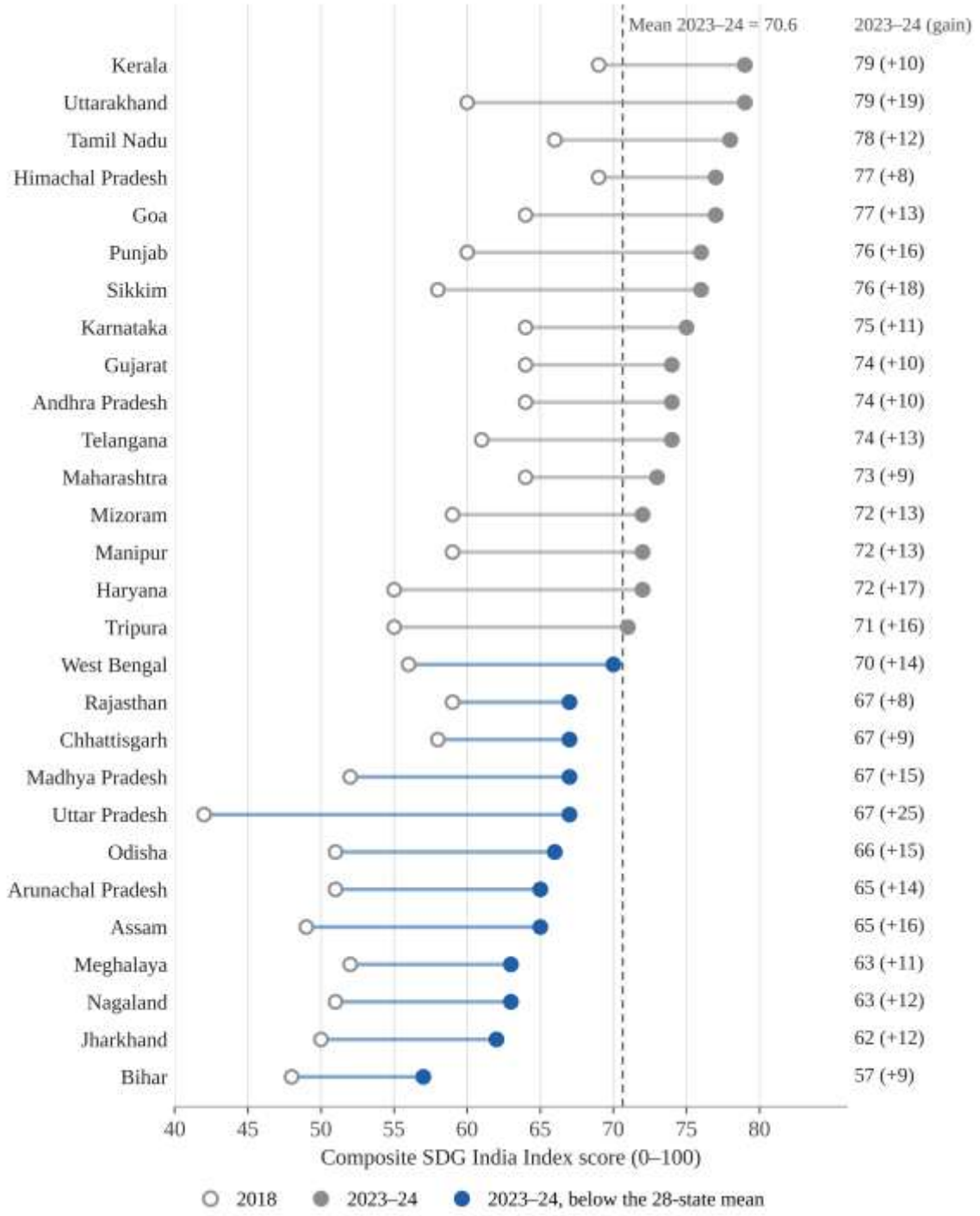


Figure 1: Composite SDG India Index Scores of States, 2018 and 2023–24 (absolute gain in brackets). *Source:* RBI (2023); NITI Aayog (2024).

Measures of disparity. The mean score rose from 57.5 to 70.6, and inter-state disparity in attainment declined (Table 4). The CV fell from 11.8% to 8.2%, the range from 27 to 22 points and the ratio of the highest to the lowest score from 1.64 to 1.39. Disparity fell sharply up to 2019–20, rose slightly in 2020–21 when the Index was expanded to 115 indicators, and declined again by 2023–24.

Table 4: Measures of Central Tendency and Dispersion of State Scores

Measure	2018	2019–20	2020–21	2023–24
Mean	57.50	60.25	65.50	70.64
Median	58.5	59.0	66.0	72.0
Range (minimum–maximum)	27 (42–69)	20 (50–70)	23 (52–75)	22 (57–79)
Ratio of maximum to minimum	1.64	1.40	1.44	1.39
Standard deviation	6.78	5.51	6.23	5.81
Coefficient of variation (%)	11.79	9.14	9.51	8.23
Mean gap to target	42.50	39.75	34.50	29.36
Coefficient of variation of gap (%)	15.95	13.86	18.05	19.80

Source: Computed by the author.

Growth and gap analysis. On average, states gained 13.1 points (a CAGR of 4.3%). Lagging states gained more: the bottom third of states (by 2018 score) gained 14.6 points against 10.7 points for the top third. Uttar Pradesh (+25), Uttarakhand (+19) and Sikkim (+18) gained the most, and Himachal Pradesh and Rajasthan (+8) the least. However, when progress is measured as the share of the 2018 gap closed, the picture changes. States closed 31.0% of their gap on average, and the share was almost the same for the bottom, middle and top thirds (29–34%). Consequently, the CV of the remaining gap rose from 16.0% to 19.8%, and Bihar's gap (43 points) is now more than twice that of Kerala or Uttarakhand (21 points). Thus, while disparities in attainment have narrowed, the lagging states are not catching up in proportion to their deficit.

Zonal pattern. All six zones improved (Table 5). The Southern and Western zones lead and show very low internal disparity, with a CV of about 3% among their states in 2023–24. The Central zone gained the most (17.0 points), largely owing to Uttar Pradesh and Uttarakhand. The Eastern zone remains the most backward: its 2023–24 average (63.8) is still below the Southern zone's 2018 average (64.8), and it closed the smallest share of its gap.

Table 5: Zone-wise Mean Composite Scores

Zone (states)	2018	2023–24	Gain (points)	Gap closed (%)
Southern (5)	64.80	76.00	11.20	31.84
Western (3)	64.00	74.67	10.67	29.63
Northern (4)	60.75	73.00	12.25	30.77
Central (4)	53.00	70.00	17.00	35.82
North-Eastern (8)	54.25	68.38	14.12	31.15
Eastern (4)	51.25	63.75	12.50	25.93

Note: Northern — Haryana, Himachal Pradesh, Punjab, Rajasthan; Central — Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Uttarakhand; Eastern — Bihar, Jharkhand, Odisha, West Bengal; Western — Goa, Gujarat, Maharashtra; Southern — Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Telangana; North-Eastern — Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura. Zone values are simple averages of state values. *Source:* Computed by the author.

Changes in rank. The relative hierarchy of states remained largely stable, with a Spearman's rank correlation of 0.87 between 2018 and 2023–24. Eight states moved up, fourteen moved down and six retained their positions. Uttar Pradesh rose ten places (28th to joint 18th) on the largest gain of 25 points, while Uttarakhand (joint 10th to joint 1st) and Sikkim (joint 15th to joint 6th) rose nine places each. Downward movement, however, reflects a relative rather than an absolute decline: every state improved its score, but those gaining less than the average of 13.1 points were overtaken. Maharashtra fell the most (joint 4th to 12th, +9 points), followed by Rajasthan (joint 12th to joint 18th, +8), Andhra Pradesh and Gujarat (joint 4th to joint 9th) and Meghalaya (joint 20th to joint 25th). As ranks are ordinal and scores span only 22 points, small score differences can cause large rank shifts. Tied states share the same rank.

6. SUGGESTIONS

1. **Needs-based allocation of resources.** Uniform national schemes have lifted all states but have not reduced their relative deficits. Central transfers and centrally sponsored schemes should be weighted towards states with the largest SDG gaps, with lower matching shares for these states.
2. **Shift from access to outcomes.** With electricity, sanitation and drinking water nearing saturation, attention should shift to the lagging goals: nutrition and anaemia control through ICDS and PM-POSHAN (SDG 2), foundational learning (SDG 4), women's employment and leadership (SDG 5), and manufacturing and innovation capacity (SDG 9).
3. **Special focus on lagging regions.** The eastern and north-eastern states require targeted interventions through the Aspirational Districts and Aspirational Blocks programmes, together with investment in administrative and delivery capacity.
4. **Peer learning among states.** Practices of consistent performers such as Kerala, Himachal Pradesh and Tamil Nadu, and of fast improvers such as Uttarakhand, Uttar Pradesh and Sikkim, should be documented and shared.
5. **Stable measurement.** NITI Aayog may publish scores on a fixed set of indicators alongside the headline Index, so that real progress can be separated from changes in methodology.

7. CONCLUSION

India made substantial progress towards the SDGs between 2018 and 2023–24. With respect to the first objective, the national composite score rose from 57 to 71, growing at 4.5% a year, but the gains were concentrated in access-oriented goals, while gender equality, zero hunger, quality education and industry and innovation remain weak. With respect to the second objective, every state improved and the number of Front Runner states rose from 3 to 24. Disparities in attainment narrowed, as the coefficient of variation fell from 11.8% to 8.2% and lagging states gained more points. However, all groups of states closed a similar share of their distance to the 2030 target, so the relative deficit of the lagging eastern and north-eastern states persists. Balanced achievement of the 2030 Agenda therefore calls for needs-based, outcome-oriented and regionally targeted policy.

The study has certain limitations. The coverage of the Index changed across rounds, so part of the change in scores reflects revisions in methodology. The study uses only descriptive tools, and the composite score does not reveal intra-state inequalities.

8. AREAS FOR FURTHER RESEARCH

Future studies may analyse goal-wise performance of individual states, district-level SDG indices, and the relationship between state finances and SDG outcomes.

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