

SDG India Framework:

Evaluating India's Progress Towards the Sustainable Development Goals



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Introduction

In 2015, the United Nations General Assembly launched a global initiative to end poverty, protect the environment, and bring peace and prosperity to everyone by 2030. This initiative introduced 17 Sustainable Development Goals (SDGs) that cover a wide array of social, economic, and environmental targets. Achieving these goals requires collective efforts from countries around the world.

India, with its large population and diverse challenges, plays a crucial role in this global mission. To effectively contribute, it's essential to monitor and evaluate the country's progress towards these goals systematically. This report focuses on understanding the developmental hurdles and successes of India in achieving the SDGs, leveraging national datasets to gain insights into the country's progress.

Problem Statement

India, as a rapidly growing and diverse country, faces unique challenges in achieving the United Nations Sustainable Development Goals (SDGs) by 2030. While some states and union territories have made significant progress, others lag behind, particularly in areas such as health, gender equality, and access to clean energy. The disparities between urban and rural regions further exacerbate these challenges. Additionally, the lack of a comprehensive, systematic approach to evaluating progress across the SDGs makes it difficult to identify and address gaps effectively.

This project aims to develop a framework that systematically tracks India's progress towards the SDGs using national public datasets. The framework highlights regional disparities and provides data-driven insights to guide policy-makers in prioritizing areas requiring focused intervention. It will help identify successful models while also pinpointing regions that need urgent attention to ensure equitable progress for all.

Details and Rationale about the Datasets Used

For my analysis, I have carefully chosen national public datasets that are recognized for their authority and comprehensiveness. The datasets were selected based on their direct relevance to the SDGs and their ability to provide measurable indicators for the specific goals I am focusing on.

Details and Relevance:

- **National Family Health Survey (NFHS):** A vital source of health and nutrition data, the NFHS is crucial for analyzing progress towards SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), and SDG 2 (Zero Hunger). It provides granular data on health outcomes, gender disparities, and nutritional status across different demographic segments.
- **Reserve Bank of India's Reports (RBI):** These reports offer valuable economic data that contribute to understanding poverty reduction efforts (SDG 1), economic growth (SDG 8), and the broader financial context affecting other goals.

- **Census of India:** Comprehensive demographic and housing data from the Census inform our assessment of SDG 6 (Clean Water and Sanitation), SDG 11 (Sustainable Cities and Communities), and SDG 7 (Affordable and Clean Energy), offering insights into infrastructure, urban development, and access to essential services.
- **Periodic Labour Force Survey (PLFS):** The PLFS provides data on employment trends, labor force participation, and unemployment rates, directly supporting analyses related to SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities) through its lens on employment equity and economic participation.
- **Forest Survey of India (FSI):** Essential for evaluating progress towards SDG 15 (Life on Land), the FSI offers data on forest cover, biodiversity, and the status of conservation efforts, reflecting India's commitment to sustaining terrestrial ecosystems.

Limitations:

A significant limitation in my dataset selection was the inability to find datasets directly relevant to SDG 13 (Climate Action) and SDG 14 (Life Below Water).

Methodology

My approach simplifies the assessment of Sustainable Development Goals (SDGs) by choosing one target and its corresponding one key indicator for each of the 17 goals. I assess each state's progress by measuring how far they are from achieving the sustainable development targets.

Target selection:

In selecting targets for my analysis, I adhered closely to the SDG Global Indicator Framework whenever possible. However, for certain goals, the availability of data necessitated slight adjustments to these targets. I made sure these adjustments kept the original goals' main purpose intact. This method allowed me to maintain the accuracy of our analysis, even when working with limited data.

Indicator selection for SDG reporting:

I've ensured that:

- The indicators accurately track a core outcome related to the main objective of each goal.
- The indicators are supported by reliable, up-to-date data from reputable sources, making our analysis solid.
- The indicators can be easily understood.



India: SDG Indicator Framework

SDG	Target	Indicator
1. No Poverty	By 2030, eliminate poverty in all its dimensions for men, women, and children of all ages, according to national definitions	Proportion of Population BPL
2. Zero Hunger	By 2030, end all forms of malnutrition, meet the 2025 international targets for reducing child stunting and wasting under age 5, and support the nutritional health of adolescents, pregnant and nursing women, and the elderly.	Prevalence of anaemia in women aged 15 to 49 years, by pregnancy status (percentage)
3. Good Health and Well-being	By 2030, eliminate preventable deaths of newborns and children under 5, targeting neonatal mortality at most 12 per 1,000 live births and under-5 mortality at most 25 per 1,000 live births.	Neonatal mortality rate
4. Quality Education	By 2030, ensure all women have access to at least 10 years of free, equitable, and quality education, leading to relevant and effective learning outcomes.	Women with 10 or more years of education in (%)
5. Gender Equality	Eliminate all forms of violence against all women and girls in the public and private spheres	Percentage of women aged 18-49 years who have experienced spousal violence
6. Clean Water and Sanitation	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	Proportion of population using safely managed drinking water services
7. Affordable and Clean Energy	By 2030, ensure universal access to affordable, reliable and modern energy services	Proportion of the population with access to solar energy and electricity
8. Decent Work and Economic Growth	By 2030, achieve full, productive employment and decent work for all, including youth and persons with disabilities, with equal pay for equal work	Unemployment rate, by sex, age, and persons with disabilities
9. Industry, Innovation and Infrastructure	Significantly increase the proportion of households living in permanent (pucca) houses to enhance sustainable urban infrastructure.	Proportion of households living in pucca(permanent) houses
10. Reduced Inequalities	Achieve and sustain equal labor force participation rates for women and men to reduce income inequalities	Proportion of female to male labour force participation rate (LFPR)
11. Sustainable Cities and Communities	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Proportion of urban population living in slums, informal settlements or inadequate housing
12. Responsible Consumption and Production	Significantly increase the proportion of households using clean and sustainable energy sources such as LPG and biogas	Proportion of Households with LPG & Biogas
15. Life on Land	By 2020, ensure the sustainable conservation, restoration, and use of key ecosystems like forests, wetlands, mountains, and drylands, according to international agreements	Forest area as a proportion of total land area
16. Peace, Justice and Strong Institutions	By 2030, provide legal identity for all, including birth registration	Proportion of children under 5 years of age whose births have been registered with a civil authority, by age

Data Processing:

For processing the data, I followed a careful approach to ensure the information was accurately prepared for my analysis.

- Initially, the datasets I downloaded contained a wide range of variables. I carefully selected the variables that aligned with my indicators, focusing on the most relevant data for our study.
- I eliminated any data that didn't contribute to my objectives.
- While assembling the data, I encountered instances where information for certain States or Union Territories was missing for some indicators. I chose not to assign any weight to these missing or null values to maintain the integrity of my findings and ensure that my analysis reflects only the data available without making assumptions to fill these gaps.
- In instances where dataset values for some states were negative, indicating underperformance on certain indicators, I assigned a value of zero to penalize these states.

Computing the Index Scores:

Deciding the Upper Bound

- Utilized absolute quantitative thresholds where available.
- In the absence of explicit targets, upper bounds were determined based on universal access or the elimination of deprivation.
- For science-based targets requiring achievement, the upper bound was set at 100.
- The average of the top 5 performing states was used where performance metrics were applicable.

Deciding the Lower Bound

The lower bound was calculated to exclude outliers, using the 2.5th percentile of the distribution.

Normalization

Indicators were normalized from their raw form to a score ranging from 0 to 100, where 0 represents the lowest performer, and 100 signifies that the target has been met.

Formula:

$$\text{Normalized Score} = \left(\frac{\text{Individual Score} - \text{Lower Bound}}{\text{Upper Bound} - \text{Lower Bound}} \right) \times 100$$

Scores below 0 were adjusted to 0, and scores above 100 were capped at 100. This approach facilitated the calculation of the Goal Score.

Weighting

All indicators within each goal and all 15 goals are given equal weights.

Composite SDG India Index Score:

The composite SDG India Index score was determined by averaging all Goal Scores.

Classification of States:

- **Achiever:** SDG India Index score is equal to 100.
- **Front Runner:** SDG India Index score is less than 100 but greater than or equal to 69.
- **Performer:** SDG India Index score is less than 69 but greater than or equal to 50.
- **Aspirant:** SDG India Index score is less than 50.

Note: The datasets do not include Telangana and Ladakh, as they were formed after the dataset was compiled.



PERFORMANCE OF STATE/UT ON EACH SDGS

State	SDG1	SDG2	SDG3	SDG4	SDG5	SDG6	SDG7	SDG8	SDG9	SDG10	SDG11	SDG12	SDG15	SDG16	Composite SDG
ANDAMAN & NICOBAR ISLANDS		23	70	38	60	68	81	46	88	49		43	99	90	63
ANDHRA PRADESH	80	23	47	21	31	48	90	76	66	50		35	19	71	50
ARUNACHAL PRADESH	48	85	84	21	43	24	57	66	33	26		27	96	54	51
ASSAM	64	21	40	8	39	7	15	76	64	18		17	41	86	38
BIHAR	40	0	3	7	8	0	0	73	20	0		6	5	8	13
CHANDIGARH	11	7		47	78	94	98	58	94	23		71	21	91	58
CHATTISGARH	73	27	10	18	53	10	67	85	0	65		9	48	87	42
DADRA & NAGAR HAVELI	77	6	43	16	61	24	93	75	90	29		38	43	93	53
DAMAN & DIU	76	6	43	16	61	53	99	75	96	29		53	43	93	57
GOA	83	53	91	63	81	82	96	38	90	29		72	72	100	73
GUJARAT	75	1	42	14	68	38	87	87	85	32		37	5	91	51
HARYANA	16	16	42	34	58	55	87	63	61	13		43	0	82	44
HIMACHAL PRADESH	1	51	46	55	81	83	96	80	90	72		37	31	92	63
JAMMU & KASHMIR	0	46	78	36	78	33	81	65	58	51		30	45	82	53
JHARKHAND	71	15	22	13	27	7	26	82	12	48		9	33	0	28
KARNATAKA	82	42	60	35	0	40	87	84	69	36		31	21	91	52
KERALA	88	77	97	70	77	21	93	40	90	36		35	65	96	68
LAKSHADWEEP	84	0	37	58	97	7	100	21	85	13		14	100	100	55
MADHYA PRADESH	74	25	20	8	35	14	55	89	25	41		16	27	78	39
MAHARASHTRA	79	42	58	35	42	55	78	78	79	38		42	16	86	56
MANIPUR	53	74	56	32	9	23	60	67	73	20		26	90	53	49
MEGHALAYA	62	44	48	15	63	26	47	90	72	63		9	92	33	51
MIZORAM	58	70	73	35	75	38	80	79	75	52		51	100	98	68
NAGALAND	50	99	77	27	85	3	75	0	70	58		18	89	0	50
NCT OF DELHI	21	51	55	47	48	75	99	63	96	4		90	12	79	57
ODISHA	72	3	26	12	30	8	22	69	15	31		7	38	65	31
PUDUCHERRY	96	50	100	55	30	91	97	60	66	27		70	9	97	65
PUNJAB	4	27	42	43	73	39	95	63	69	17		55	0	91	48
RAJASTHAN	25	41	47	13	44	30	55	72	62	44		21	2	68	40
SIKKIM	46	54	92	33	72	27	90	93	90	69		40	55	87	65
TAMIL NADU	91	36	69	43	12	55	91	69	63	47		47	21	94	57
TRIPURA	59	4	38	0	52	18	59	81	82	27		15	89	77	46
UTTAR PRADESH	38	42	0	21	20	18	14	75	50	16		17	3	23	26
UTTARAKHAND	14	40	10	35	65	53	84	59	89	33		43	53	70	50
WEST BENGAL	69	2	61	12	38	19	39	79	49	23		16	19	93	40

 Achiever

 Performer

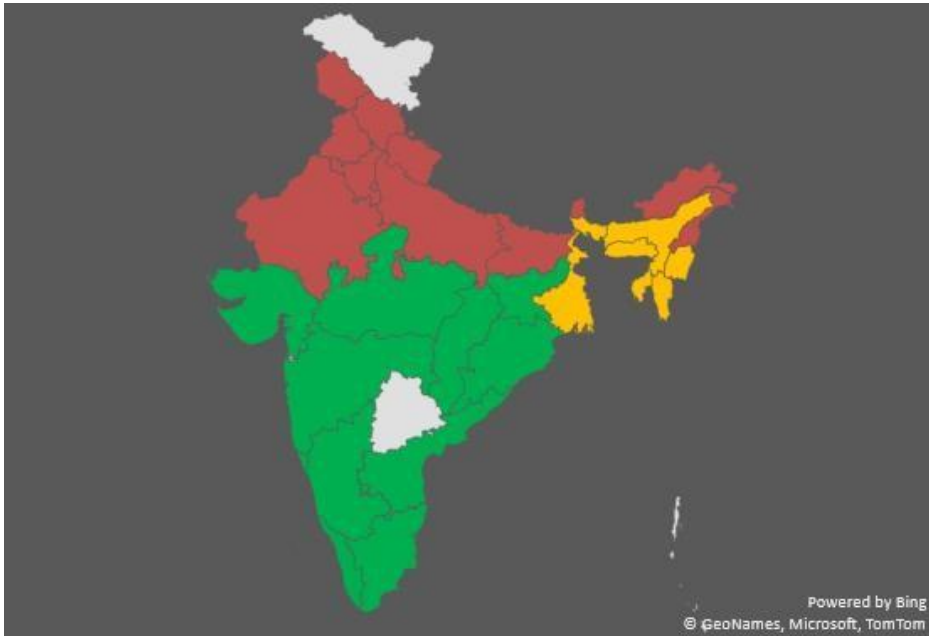
 Front Runner

 Aspirant

Note: All the maps are colour-coded as described above.

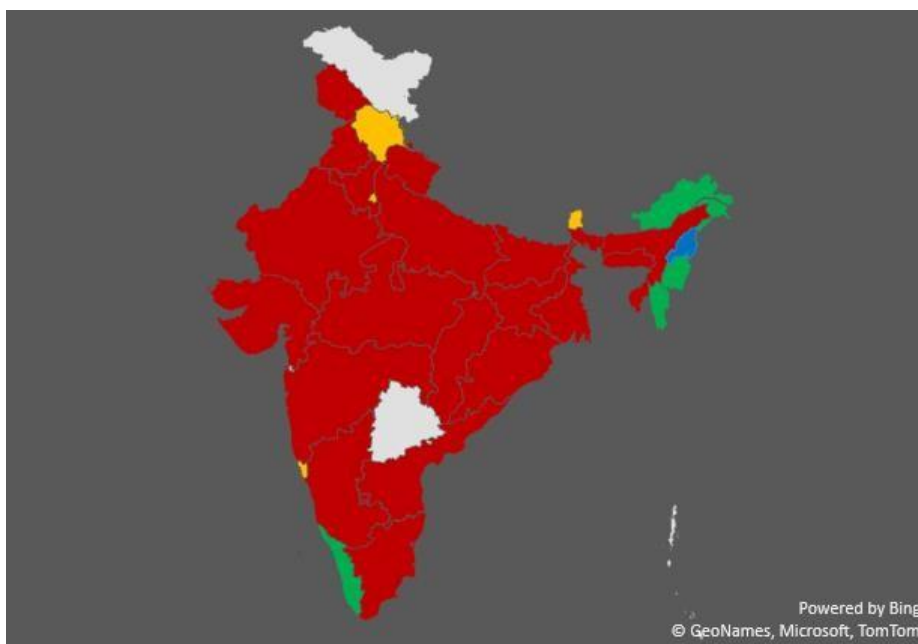
SDG 1: No Poverty

Indicator: Proportion of Population BPL



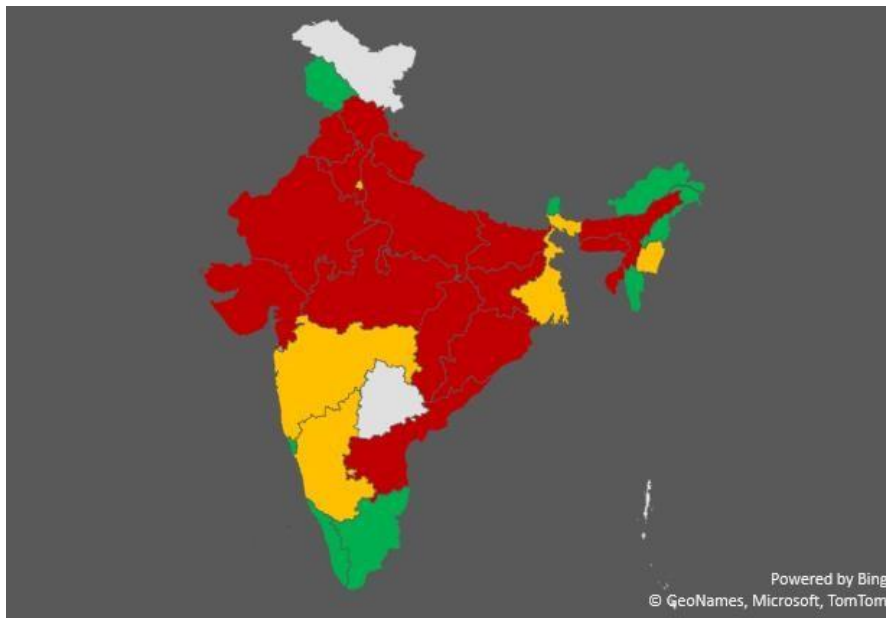
SDG 2: Zero Hunger

Indicator: Prevalence of anaemia in women aged 15-49 (%)



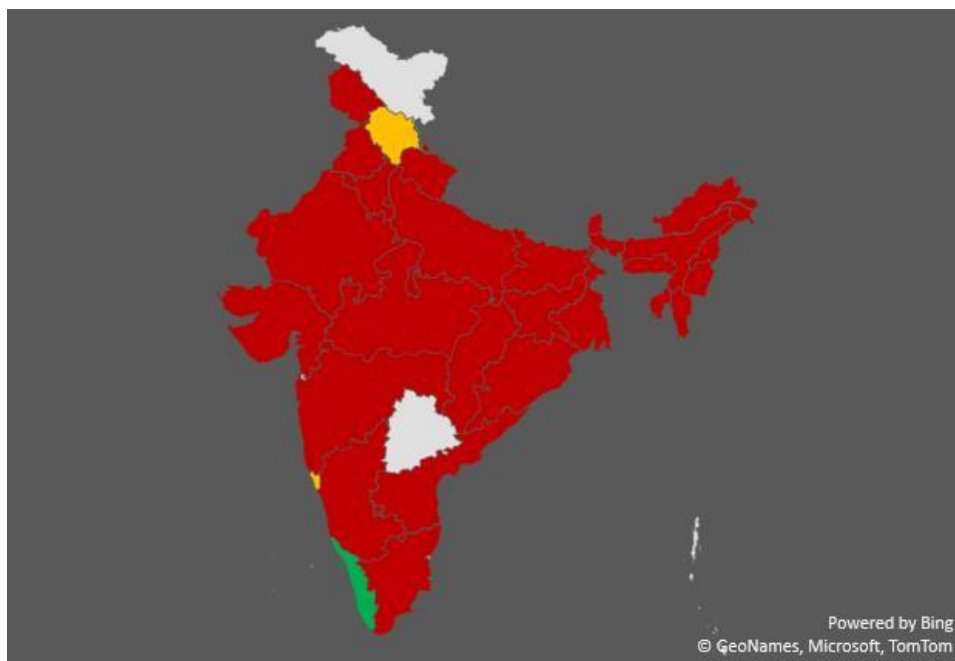
SDG 3: Good Health and Well-being

Indicator: Neonatal Mortality Rate



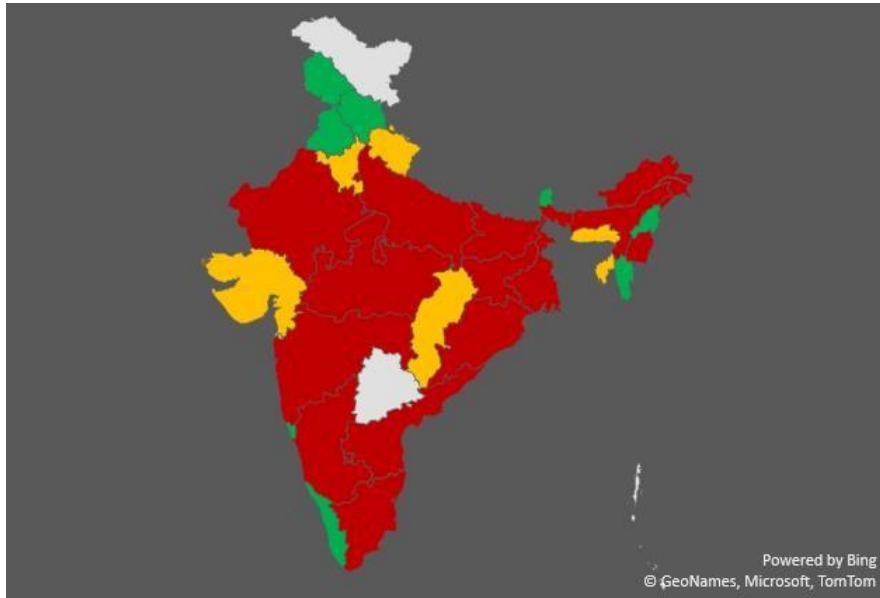
SDG 4: Quality Education

Indicator: Women with 10 or more years of education(%)



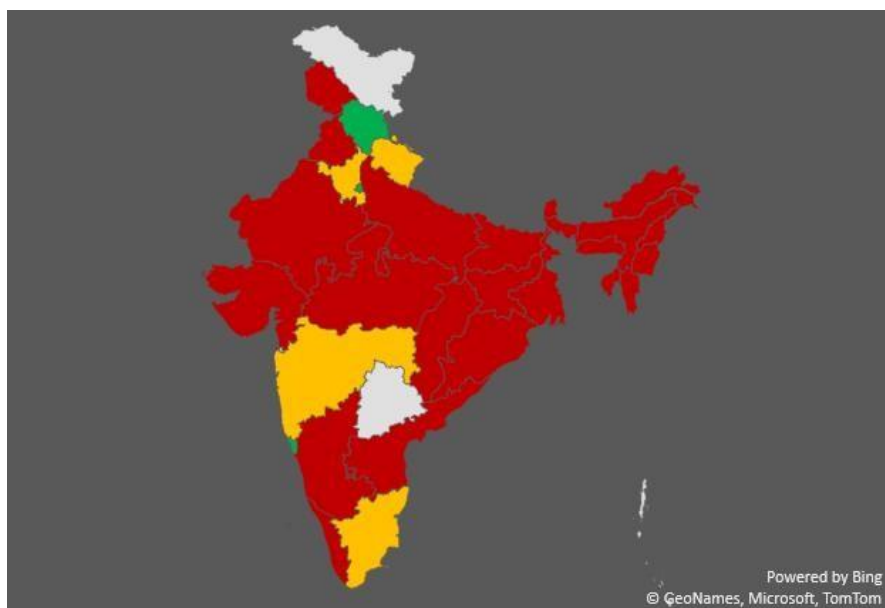
SDG 5: Gender Equality

Indicator: Percentage of women aged 18-49 years who have experienced spousal violence



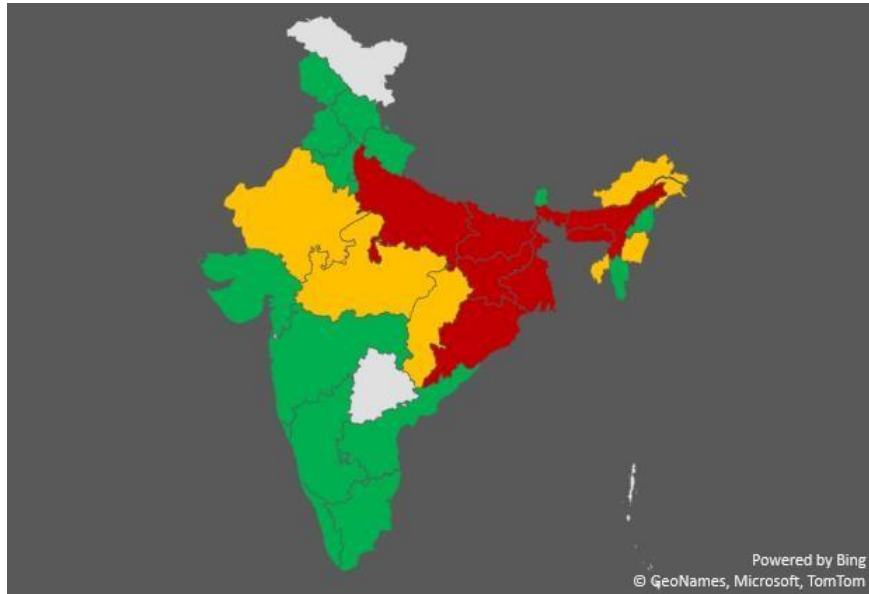
SDG 6: Clean Water and Sanitation

Indicator: Proportion of Population using safely managed drinking water services



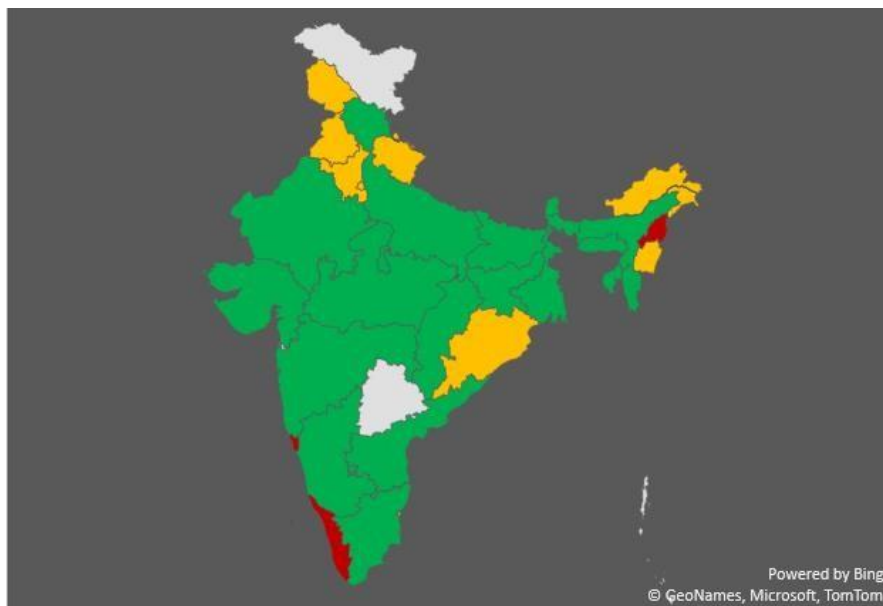
SDG 7: Affordable and Clean Energy

Indicator: Proportion of Population with access to solar energy and electricity



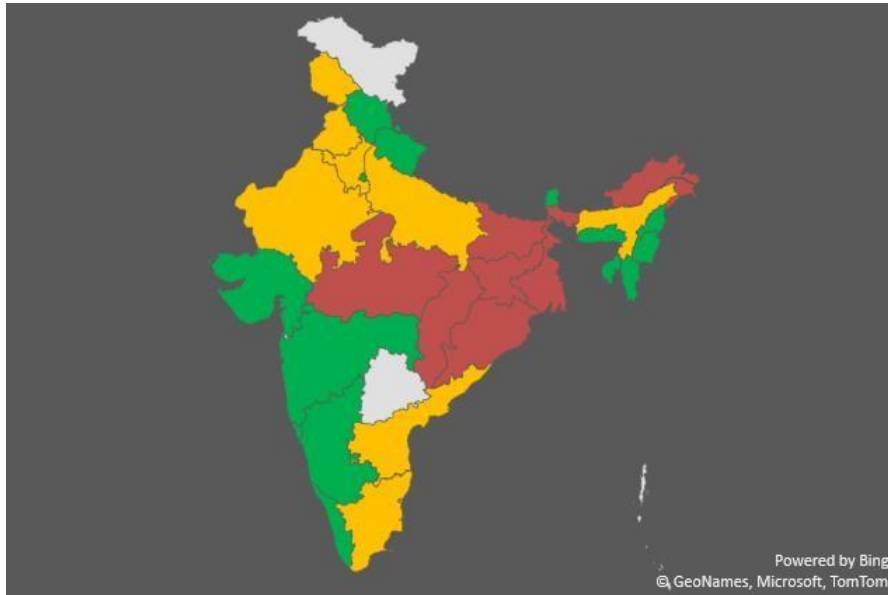
SDG 8: Decent Work and Economic Growth

Indicator: Unemployment rate by sex, age, and person with disabilities



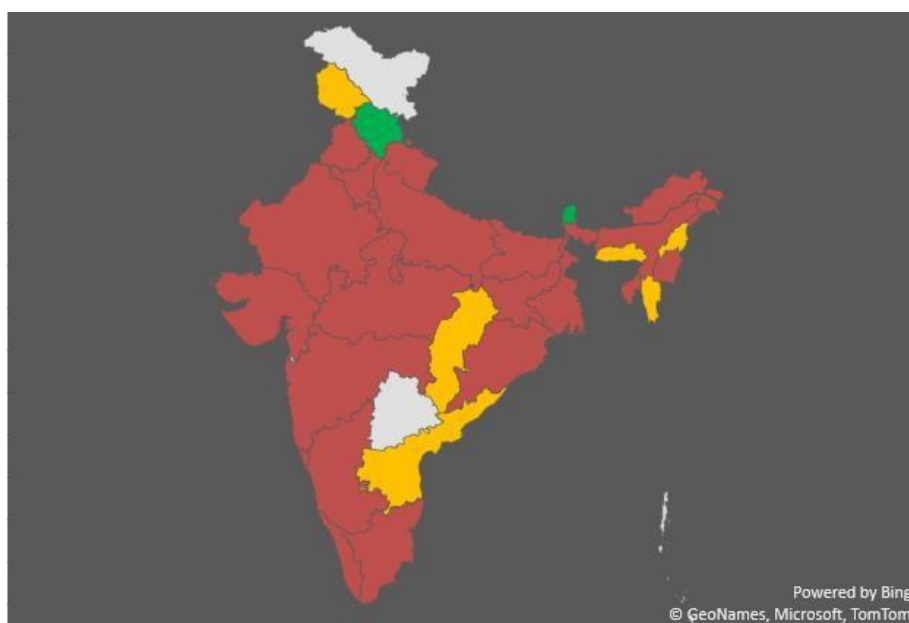
SDG 9: Industry, Innovation and Infrastructure

Indicator: Proportion of households living in pucca(permanent) houses



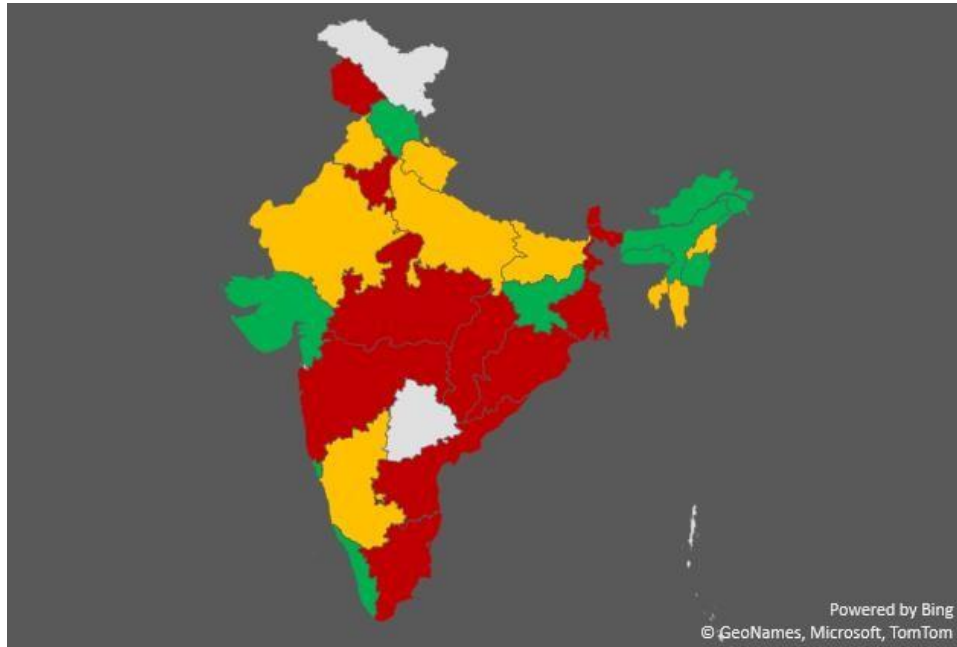
SDG 10: Reduced Inequalities

Indicator: Proportion of female to male labour force participation rate (LFPR)



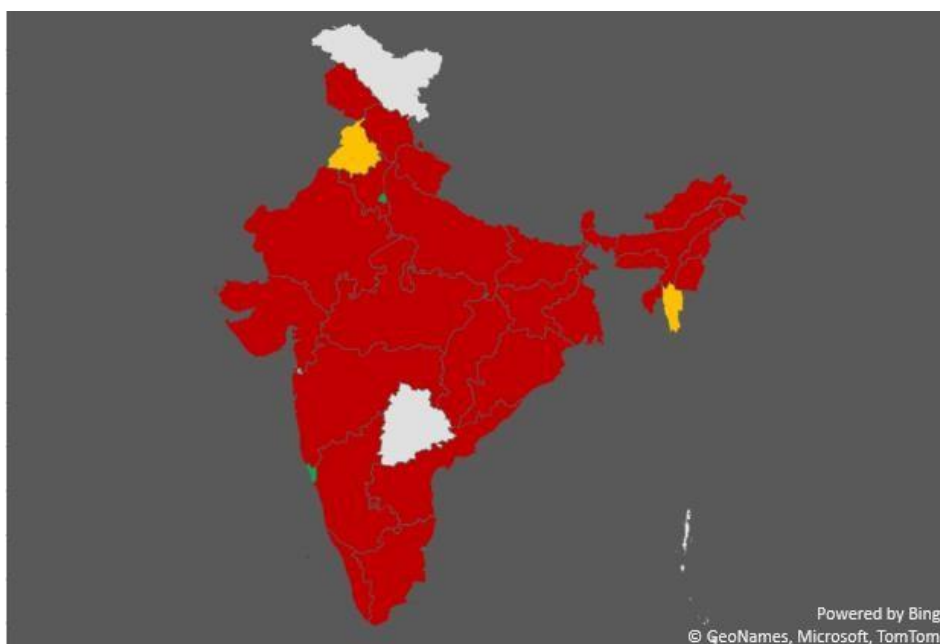
SDG 11: Sustainable Cities and Communities

Indicator: Proportion of urban population living in slums, informal settlements or inadequate housing



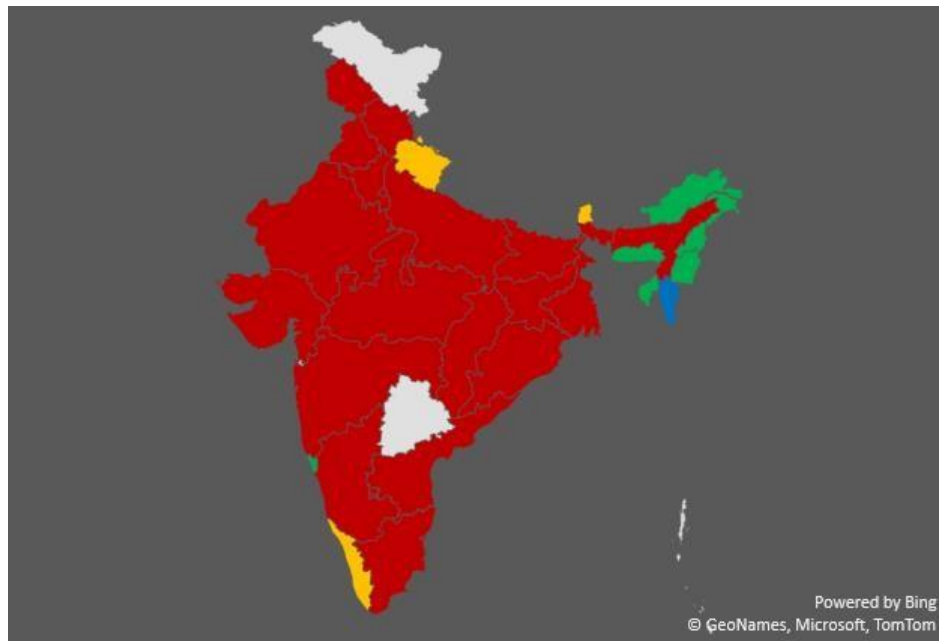
SDG 12: Responsible Consumption and Production

Indicator: Proportion of households with LPG and Biogas



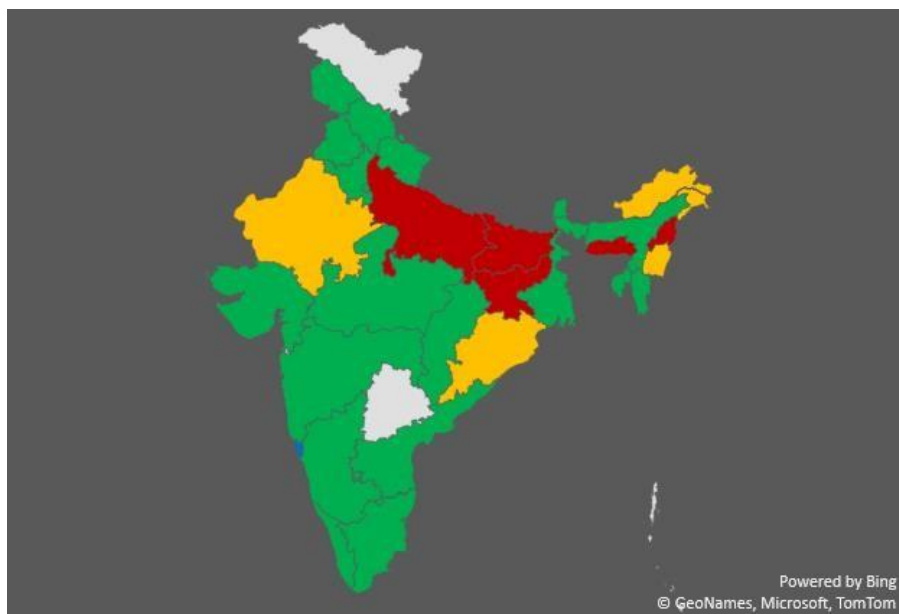
SDG 15: Life on Land

Indicator: Forest area as a proportion of total land area

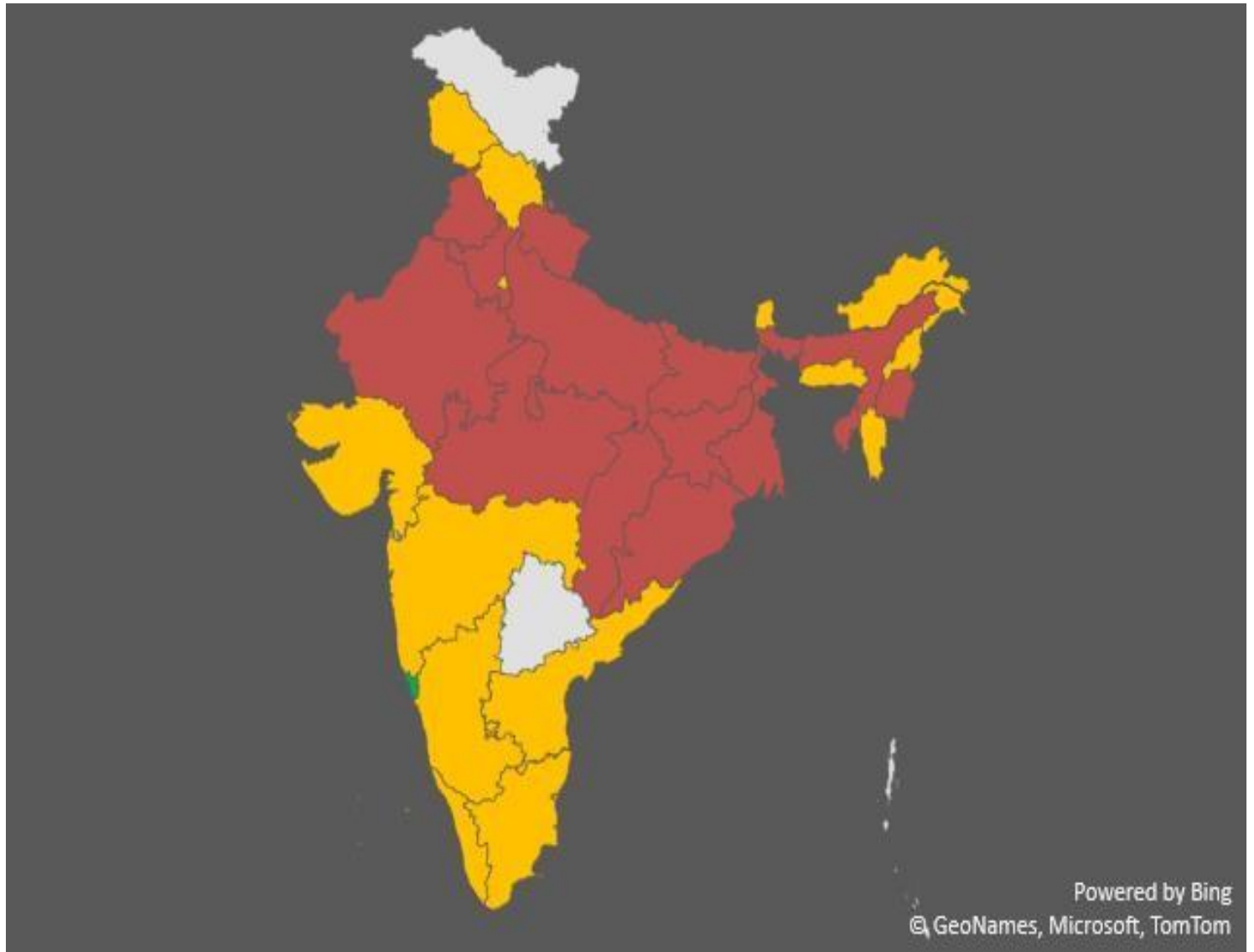


SDG 16: Peace, Justice and Strong Institutions

Indicator: Proportion of children under 5 years of age whose births have been registered with a civil authority



Performance of States and UTs on SDG India Index



Key Findings:

- There's a big difference in how well states and territories in India are doing in meeting sustainable development goals. Some places, like Goa, Kerala, Sikkim, and Puducherry, are doing well with scores over 65. This means they're closer to achieving their goals. On the other hand, Bihar, Uttar Pradesh, and Jharkhand have scores below 30, showing they have a long way to go. This shows us that India is moving at different speeds towards these goals, and some areas need more help than others.
- Cities generally score higher than rural areas, which tells us that urban places might have better access to the things that help achieve these goals. But, there are exceptions.
 - For example, Goa's urban area leads with a score of 75, while its rural area also performs well but slightly lower at 72.
 - There are some unique cases where rural areas score close to or sometimes better than urban areas. For instance, Himachal Pradesh's rural score (64) is quite close to its urban score (68), showing that development efforts in rural areas can make a significant difference.
- Bihar stands out for its low scores in both urban (32) and rural (13) settings, indicating that it faces significant challenges across the board. This suggests a need for focused efforts to uplift these areas.
- Urban regions in Goa (75), Kerala (71), and Tamil Nadu (65) showcase high levels of development, potentially serving as models for integrating sustainable practices and policies in other urban centers.

Through this report, I attempt to provide a resource for understanding where different areas in India stand in terms of Sustainable Development Goals. It's significant because it helps policy-makers, organizations, and everyone else see clearly which parts of the country need more help and support.

It shows where we need to focus our efforts, especially in places that aren't doing as well, to ensure everyone moves forward together. This report calls for everyone to work together, governments, businesses, community groups, and regular folks, to ensure we all contribute to a better, more sustainable future. It's all about making sure we understand the challenges and join hands in solving them, aiming to leave no one behind as we work towards our common goals.

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- <https://fsi.nic.in/forest-report-2021-details>
- https://dge.gov.in/dge/sites/default/files/2022-11/EMPLOYMENT_INDICATORS_IN_INDIA_0.pdf