



Implementing Sustainable Development Goals in India: Progress So Far

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

As the world inches towards 2030, there is barely a precious decade left towards achieving the United Nations Sustainable Development Goals. Given the socio-economic fragility of the economies proven during the ongoing COVID-19 pandemic, it becomes imperative to strive maximum in order to achieve a harmony between economic, environmental and social progress in these economies. With 17.7% of share in the total world population, India has a very high degree of responsibility towards achievement of world SDGs. The spill over score for India is 98.8 which implies that India is in a strong position to create very positive spillover effects to other countries. With a federal structure comprising of 28 states and 8 UTs, the progress made by the Indian economy will depend on the progress made by these states and UTs. In this context the current article is an attempt to understand the extent of progress made in India towards achieving the various sustainable development goals. The analysis of the progress made on the various SDG goals is done at two levels: Global Level and State level. At a global level, a comparison is done on the progress of SDGs made in India with other developed and developing economies respectively. To do the comparison the economies have been ranked on the basis of their progress in SDG goal achievement based on UN reports and their per capita incomes. This comparison is done to understand whether wealthier nations are faring better in the achievement of SDGs. An important finding from this table is that the countries with highest per capita income do not necessarily have the highest rankings. This finding could have very meaningful implications on

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policy making and resource mobilization for the various goals in under developed and developing economies, including India. Further the analysis progress on various SDGs is done at a state level for India. This analysis is done to understand which states are doing good in terms of goal achievement and which states are lagging behind. The state level analysis can also point out to the best practices that are in practice and which can be adapted by other lagging states. The analysis is done based on the Global Sustainable Development Report as well as the Sustainable Development Report prepared by NITI Ayog, Government of India. As the Central government as well as the State governments along with various stakeholders make efforts towards achieving these goals, a macro level analysis of the progress made on these goals can help in course correction at the correct time and thus optimize precious time and resources.

Keywords: Sustainable development goals; growth; development; India; economy.

1. INTRODUCTION

As the world moves towards the end of the year 2020, nearly a decade remains for the completion of the SDGs by 2030. Given the global pandemic caused by novel corona virus-2019, the world is facing immense challenges in maintaining the resource commitment towards the achievement of the SDGs. With 17.7 % of share in the total world population, India has a very high degree of responsibility towards achievement of world SDGs. The spill over score for India is 98.8 which implies that India is in a strong position to create very positive spillover effects to other countries [1].

2. METHODOLOGY

With a federal structure comprising of 28 states and 8 UTs, the progress made by the Indian economy will depend on the progress made by these states and UTs. The NITI Ayog which is a nodal agency to coordinate the efforts of the SDGs for India has been publishing yearly SDG index reports detailing the progress made by the different states in the various indicators towards achievement of the 17 SDGs. (A detailed discussion on the methodology and the results at a micro level can be found at niti.gov.in)

2.1 Review of Literature

A research note on SDGs and achievements in India prepared by Govt. of India [2] has discussed about the progress of the various goals in India and the early lessons to be drawn from them. In another study on SDGs and challenges for India, M. Prabhakar Christopher David [3] has made an attempt to understand the challenges encountered by India in achieving the SDGs and the ways of overcoming them. Bhanja R and Roychowdhury K, [4] discuss the present status of India's primary target of SDGs with the

help of a composite index. Using a cluster analysis region specific and issue specific problems of sustainable development in India were analyzed. A study by Technology and Action for Rural Advancement [15] has discussed in detail about the financial requirements and gaps in achieving the SDGs in India. An in-depth study was made Tiwari6G et al, [3] on the challenges of localizing SDGs in small cities. In light of the above mentioned studies, an attempt has been made in this article to study the overall SDGs using the United Nation and Niti Ayog Data for various states in India.

2.2 India and SDGs: An International Perspective

Table 1 shows the rankings of select countries in terms of their progress made towards achieving their SDGs. To get a proper relative perspective a comparison here is made of the progress made by India in comparison to other developed and developing economies. The various countries have been ranked on the basis of the overall score in the progress made towards achieving all the 17 SDGs. The per capita income of these economies at purchasing power parity has also been added for a holistic comparison of the SDG progress made. The ideal score for the SDGs is 100. The data is sourced from the SDG global report 2020.

As per the data in Table 1, the Scandinavian countries led by Sweden, Denmark and Finland lead the table with an index score of approximately 84. India with an index score of 61.92 is ranked 117 out of 193 member countries. An important finding from this table is that the countries with highest per capita income do not necessarily have the highest rankings. For instance, Switzerland and the United States of America, two of the richest countries in terms of per capita income are ranked much below. This

implies that monetary resources are not the most important variable leading to achievement or progress towards SDGs.

In comparison to the developing economies also, India ranks much below. Countries like Brazil, China which are more or less similar to India also

have a better ranking. Small countries like Malta, Croatia and Serbia have shown a good progress level in the SDGs. Thus, it shows that progress towards achieving the SDGs depend more on the commitment and resource utilisation and management (Table 2).

Table 1. Developed Economies Vs India

Developed Economies	GDP per capita (ppp) (\$)	Index score	Rank
Sweden	55814.5	84.72	1
Denmark	59830.2	84.56	2
Finland	51323.8	83.77	3
France	49435.2	81.13	4
Germany	66831.9	80.77	5
Norway	66831.9	80.76	6
Austria	59110.6	80.70	7
Netherlands	59686.8	80.37	9
United Kingdom	48709.7	79.79	13
Switzerland	70989.3	79.35	15
NewZealand	43952.5	79.20	16
Japan	43235.7	79.17	17
Canada	51341.7	78.19	21
Spain	42214.1	78.11	22
United States	65280.7	76.43	31
India	7034.2	61.92	117

Source: Author's calculations based on World Development Indicators database [7], World Bank for PCI and SDG report 2020 for rank and index scores

Table 2. Developing Economies Vs India

Developing Economies	GDP per capita (ppp) (\$)	Index score	Rank
Croatia	29973.4	84.72	1
Malta	45651.6	84.56	2
Serbia	18989.0	83.77	3
Costa Rica	20434.4	81.13	4
Thailand	19228.3	80.77	5
Moldova	13574.1	80.76	6
Ecuador	NA	80.70	7
Ukraine	13341.2	80.37	9
China	16784.7	79.79	13
Vietnam	8374.4	79.35	15
Bosnia Herzegovina	15791.7	79.20	16
Argentina	22947.1	79.17	17
Kyrgyz Republic	5470.8	78.19	21
Brazil	15258.9	78.11	22
Azerbaijan	15000.8	76.43	31
India	7034.2	61.92	117

Source: Author's calculations based on World Development Indicators data base [7], World Bank for PCI and SDG Report 2020 for rank and index scores

Table 3. Performance Track of SDGs for India

Goal No.	Goals Description	Current Status	Future Trend
01	No poverty	Facing Significant challenges	On track of maintaining SDG achievement.
02	Zero hunger	Facing Major challenges	Score though moderately improving, is insufficient to attain goal
03	Good health	Facing Major challenges	Score though moderately improving, is insufficient to attain goal
05	Gender equality	Facing Major challenges	Score is stagnating or increasing at less than 50% of required rate
06	Clean water and sanitation	Facing Major challenges	On track of maintaining SDG achievement
07	Clean energy	Facing Major challenges	Score though moderately improving is insufficient to attain goal
08	Economic growth	Facing Challenges	On track of maintaining SDG achievement
09	Industry innovation & infrastructure	Facing Major challenges	Score though moderately improving is insufficient to attain goal
10	Reduced inequalities	Facing Major challenges	Trend information unavailable
11	Sustainable cities	Facing Major challenges	Score stagnating or increasing at less than 50% of required rate
13	Climate action	SDG achieved	On track or maintaining SDG achievement
14	Life below water	Significant challenges remain	Score stagnating or increasing at less than 50% of required rate
15	Life on land	Facing Significant challenges	Score decreasing
16	Peace justice & strong institutions	Facing Major challenges	Score stagnating or increasing at less than 50% of required rate
17	Global partnership	Facing Major challenges	Score stagnating or increasing at less than 50% of required rate

Source: SDG report 2020

Table 4. Trend Performance of Select Indicators under SDG 2030 in India

Indicators	2011	2013	2015	2016	2017	2018	2019	2020
Poverty head count ratio at \$1.90 per day	14.95	10.65	7.41	-	4.64	-	-	2.30
Poverty head count ratio at \$3.20 per day	52.53	45.88	39.96	-	33.23	-	-	24.61
Prevalence of undernourishment (%)	17.50	16.90	15.50	-	14.50	-	-	-
Life expectancy at birth years	66.87	67.77	68.37	-	68.97	-	69.50	69.73
Literacy rate%	69.30	-	71.96	-	-	74.37	-	74.04
Ratio of female-to-male labor force participation rate	30.39	29.11	29.65	29.96	30.25	30.03	29.80	-
Population using at least basic sanitation services (%)	44.03	49.17	54.35	56.94	59.54	-	-	-
Population with access to electricity (%)	67.60	80.88	88	89.65	92.62	-	-	-
Population with access to clean fuels and technology for cooking (%)	35.42	37.81	39.88	41.04	-	-	-	-
Unemployment rate % of total labor	5.64	5.67	5.57	5.51	5.42	5.33	5.36	-

Indicators	2011	2013	2015	2016	2017	2018	2019	2020
force								
Population using the internet %	10.07	15.10	17	22.00	34.45	-	-	-
Expenditure on research and development % of GDP	0.83	-	0.62	-	-	-	-	-
Reduce inequality within and among countries.	43.22	-	-	-	-	-	-	-
Satisfaction with public transport (%)	67.68	70.31	68.38	73.54	74.44	71.94	-	-
Access to improved water source, piped % of urban population	69.93	69.24	68.56	68.22	67.87	-	-	-
Electronic waste kg/capita	-	-	-	1.5	-	-	-	-
Energy-related CO ₂ emissions CO ₂ /capita	1.39	1.50	1.67	1.72	1.76	-	-	-
Mean area that is protected in marine sites important to biodiversity (%)	37.72	37.72	37.72	37.72	37.72	-	-	-
Permanent deforestation % of forest area, 5-year average	-	-	-	-	-	0.04	-	-
Mean area that is protected in terrestrial sites important to biodiversity (%)	22.37	25.58	25.65	25.66	25.66	25.66	-	-
Property Rights	-	-	-	-	-	-	4.41	-
Corruption Perception Index	-	36.00	38.00	40.00	40.00	41.00	41.00	-
Other countries: Government revenue excluding grants % of GDP	11.50	12.61	12.42	13.23	12.86	-	-	-

Source: SDG report 2020 and [8] for life expectancy and literacy rate

Table 5. Assessment of Macro Economic Variables for Achieving SDGs 2030

Good progress	Moderate progress	Minimal progress	No progress
poverty	Life expectancy	Female education	Clean water access in urban areas
General nutrition	Control of infectious diseases	Fresh water stress	Air pollution
Cereal yield	Literacy and education	Treatment of waste water	species extinction
Land cultivation efficiency	Female labour force participation	Scientific and technical research	Media freedom
General health	Women representation in govt.bodies	Research and development	
Maternal mortality	Basic sanitation	Income inequalities	
Basic drinking water	Clean cooking fuel	Child labour	
Access to electricity	Municipal solid waste	Govt exp on health and education	
Access to financial inclusion	Sustainable fishing		
Gdp growth rate	Ocean health		
Unemployment rate	Marine biodiversity		
Internet access	Land biodiversity		
Public transport	corruption		
Electronic waste			
Energy related emissions			
deforestation			

Source: Author's calculations based on [9,10]

Table 6. Absolute SDG performance gaps in 2020 (%)

SDG goals	Performance Gaps (%)
1	21.8
2	23.8
3	24.5
4	17.3
5	29.2
6	23.1
7	19.7
8	14.0
9	21.5
10	17.6
11	27.2
12	8.8
13	5.2
14	16.6
15	22.0
16	18.7
17	20.8
Spill Overs	2.5

Source: SDG report 2020

Table 3 shows that for majority of the goals there a large number of challenges present for making progress towards the 2030 target achievement. A trend analysis of select indicators of these goals is done in the table below to give a more accurate picture of the progress made and the existing challenges. A detailed analysis of these obstacles and challenges would explain the roadblocks and the strategies needed to overcome these challenges.

Table 4 shows the trend behavior of select important indicators from the period of 2011 onwards. On the basis of the trends seen a general reading can be made as to the various degrees of progress made in the achievement of

various goals which is summarized in the table below, 4.5 and 4.6.

Table 6 shows an estimate of performance gaps for each goal for India in 2020. Higher the performance gap farther is the country in achieving the target value of that goal by 2030. An important observation from table 6 is that the spill over value of India is positive, it implies that the actions taken by India would have positive carry-on effects on the other economies. For instance, in goal no. 5 the gap towards the desired outcome is 29%. Thus, if India tries to bridge the gap in gender equality by even 25%, it

would bring the world target that much closer to the desired levels.

2.3 State Level Analysis of SDG Performance in India

The Table 7 shows the ranking of the different states and UTs based on the progress made by them towards achieving the various SDGs. Based on the various indicators and the parameters it shows that in 12 out of 17 goals the progress made is above average. In case of poverty, food security and nutrition and gender equality, the progress is less than average.

Table 8 lists the states as leading and lagging based on their index values achieved which has been calculated on the progress made for achieving overall 17 SDGs. State level per capita domestic product figures have also been added for a comparison. The all India PCI in 2018-19 was Rs. 126406. It can be seen that the states which are leading in terms of their performance are not the states with the highest level of PCI. States like Delhi, Haryana, Punjab and Gujarat which are rich states are lagging states. This implies that it is not only the resource availability but also the intent and the ability to utilise the resources that go a long way towards the goal achievement.

Table 7. State Level Index Scores on SDG 2030

Goal No.	Goal Description	India score/100*	Progress made
01	No poverty	50	average
02	Zero hunger	35	Less than average
03	Good health	61	More than average
04	Quality education	58	More than average
05	Gender equality	42	Less than average
06	Clean water and sanitation	88	More than average
07	Clean energy	70	More than average
08	Economic growth	64	More than average
09	Industry innovation & infrastructure	65	More than average
10	Reduced inequalities	64	More than average
11	Sustainable cities	53	More than average
12	Responsible consumption & production	55	More than average
13	Climate action	60	More than average
14	Life below water	na	Na
15	Life on land	66	More than average
16	Peace justice strong institutions	72	More than average
17	Global partnership	na	Na

*50 is average, >50 is more than average, < 50 is less than average

Source: author's calculations based on SDG India index report 2019-20 [11]

Table 8. State Wise Performers

Leading states*	Per capita income	Lagging states*	Per capita income
Andhra Pradesh	164025	Arunachal Pradesh	*127748
Goa	467998	Assam	*74204
Himachal Pradesh	179188	Bihar	43822
Karnataka	210887	Chattisgarh	96887
Kerala	*184000	Gujarat	*174652
Sikkim	357643	Haryana	226644
Tamilnadu	193750	Jharkhand	76019
Telangana	205696	Madhyapradesh	90998
Chandigarh	*297313	Maharashtra	*176102
Puducherry	220461	Manipur	*65411
		Meghalaya	*81098
		Mizoram	*141210
		Nagaland	*102581
		Odisha	93352
		Punjab	154598
		Rajasthan	109105
		Tripura	*105044
		Uttar Pradesh	61351
		Uttarakhand	198738
		West Bengal	109491
		Andaman and Nicobar Islands	*159664
		D&N haveli	na
		Daman & Diu	na
		Delhi	365529
		J&K	na
		Lakshadweep	na

*Index values 65-99: leading Index values 50-64: lagging

PCI is the net state domestic product values measured at current prices (2018-2019)

*PCI measured at 2017-2018 values

Source: Author's calculations based on SDG India Index report 2019-20 and RBI data base for PCI [12]

Table 9. State Wise summary of SDG goals not achieved

States	SDG Goals Under Achieved (Goal No.)
Andhra Pradesh	2,5,11
Arunachal Pradesh	1,5,9,10,11,13
Assam	1,2,3,4,5,9,11,13
Bihar	1,2,3,4,5,9,12,13
Chhattisgarh	1,2,5,9,11,13
Goa	5,9,10,13
Gujarat	1,2,4,5,12
Haryana	1,2,5,11,12,13,15
Himachal Pradesh	2
Jharkhand	1,2,4,5,12,13
Karnataka	1,2,5,9,11
Kerala	Nil
Madhya Pradesh	1,2,5,9,13
Maharashtra	1,2,5,11
Manipur	1,5,8,9,11,13
Meghalaya	1,5,9,11,13
Mizoram	5,8,9,11,13
Nagaland	3,4,5,8,9,11
Odisha	1,2,4,5,12
Punjab	1,5,12
Rajasthan	2,5,9,12
Sikkim	5,9,13
Tamil Nadu	2,5,13
Telangana	2,5,
Tripura	2,5,9,10,11,13
Uttar Pradesh	1,2,3,4,5,10,13
Uttarakhand	2,5,
West Bengal	2,5,11,13
A and N Islands	1,2,9,11
Chandigarh	1,5,10
D and N Haveli	1,2,5,11,13
Daman & Diu	2,4,5,12,13
Delhi	5,12,13
Jammu & Kashmir	8,9,10,11
Lakshadweep	5,7,8,9
Puducherry	5,12,13,15

Source: Author's calculations based on SDG India Index report 2019-20

*A detailed description of the respective goals can be found from SDG Report 2020

Table 9 shows a summary of the different goals for various states where the performance is far from below. These are the areas where the state governments needs to address their policy directives in a focused and sustained manner.

Based on the above analysis following are some of the findings:

3. FINDINGS

On the basis of the above analysis, the progress made on SDGs in India can be classified in three categories:

1. Category A: Goals requiring maximum effort
Zero poverty, Zero Hunger, Gender equality,

Industry Innovation, Sustainable cities, Climate Action.

2. Category B: Goals requiring moderate effort
Good Health, Education, Inclusive Economic growth, Reduced Inequalities and Sustainable production and Consumption
3. Category C: Goals requiring Minimum effort
Clean water and sanitation, Affordable clean energy, Life on Land, Peace and Justice.

4. CONCLUSION

The above analysis is done based on the Global Sustainable Development Report as well as the Sustainable Development Report prepared by NITI Ayog, Government of India. As the Central government as well as the State governments

along with various stakeholders make efforts towards achieving these goals, a macro level analysis of the progress made on these goals can help in course correction at the correct time and thus optimize precious time and resources. Policies made at the central and state level need to be made after studying the ground realities. At the same time best practices from the model performing states can be analysed and shared and adapted for better results in the achievement of the various sustainable development goals. All over the world, local leaders are working together to drive measurable, reportable, and verifiable progress within sustainable development and India is a signatory towards Voluntary Progress Review for the UN SDGs 2030. In this context it becomes imperative to measure, monitor and work towards the achievement of the goals by 2030. Since there are seventeen goals, and India is a big heterogeneous country with great diversity in social, political and economic aspects, mapping the SDGs at a state level will help in achieving optimal results.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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