

Is India on the Right Track to Realize Environment Aspects Related Sustainable Development Goals Targets?

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Abstract

The world faces copious environmental problems since time immemorial. These problems have caused harm to people and the planet. Several international, national, regional, and local organisations have taken corrective steps to resolve these problems. In these efforts, the United Nations (UN) has set up Sustainable Development Goals (SDG) for 2030 as a 'blueprint to achieve a better and more sustainable future for all'. This study aims to assess is India on the right track to realize environment-related SDG targets by the year 2030. Of the 17 SDG targets, those which are related to environmental issues were identified and India's achievement for these as of 2019 are compared with UN Human Development Index for 2019; SDG Index and Dashboards Report 2019 by SDSN; Bertelsmann Stiftung, "SDG Index" and SDG India Index and Dashboard 2019-20 report by NITI Aayog, India. Of the SDG, 14 SDG with 49 targets are identified with the environmental aspect and are assessed in this study. The average performance of Goal 13 Climate Action is maximum (94.47) and Goal 5 Gender Equality is minimum (33.19). Seven goals have average performance less than 50, six with 51-75 and four with >75. SDG's major challenges category includes nine goals, significant challenges category, and challenges remain category has four goals each. No SDG is achieved as of 2019. SDG trend for India indicates that Goal 15 Life on Land has a decreasing trend; five goals have stagnating trend and moderately improving trend for four goals. The absolute performance gap has a maximum (28.5%) for Goal 5 Gender Equality and minimum (5.5%) for Goal 12 Responsible Consumption and Production. From the results, it can be derived in India is not on the right track to achieve many of the environment-related SDG targets by the year 2030 in business as usual scenario. To achieve these environment-related SDG targets, prioritization of them has to be carried out. The goals which have an average performance of 51-75 if given priority it can be possible that these targets may be achieved by 2030; furthermore those goals with >75 performance the methodology adopted for them have to be maintained to achieve the target-related with the environment. Special efforts/programme/policies have to be accepted for the goals which have performance <50. India needs to do things differently to achieve the targets of these

SDG. The alternative pathway of development forward needs to be developed to realize these environment-related SDG targets by the target year 2030 to have a sustainable society and sustainable future.

Keywords

Environment sustainability, India, Sustainable development goals

1 Introduction

Human society faces several environmental problems and to overcome these various responses were initiated time-to-time by local, regional, national, and international organisations. These responses at the global level include Agenda 21, Kyoto Protocol, Millennium Development Goals, Paris Agreement, and so on. The Sustainable Development Goals (SDG) designed to be a 'blueprint to achieve a better and more sustainable future for all'. These 17 SDG were set up in 2015 by the United Nations General Assembly and intended to be achieved by 2030. The SDG were developed to succeed the Millennium Development Goals (MDG) which ended in 2015. The SDG builds on the principles agreed upon in resolution A/RE/66/288, entitled 'The Future We Want'. On 25 September 2015, in UN Sustainable Development Summit in New York, the 193 countries of the UN General Assembly adopted the 2030 Development Agenda titled 'Transforming Our World: The 2030 Agenda for Sustainable Development'. There are 169 targets and 232 indicators for the 17 goals. Each target has between 1 and 3 indicators used to measure progress towards reaching the targets.

Attempts have been carried out to assess the existing status of multiple SDG achievement at the country level through data gathering and monitoring and evaluation. Bertelsmann Stiftung and the Sustainable Development Solutions Network created composite SDG Index (Sachs *et al.*, 2018). Countries' past and existing progress towards targets have scored with emphasis upon particular goals, groups of targets or countries (Golding *et al.*, 2017; Lim *et al.*, 2016; WHO, 2017; World Bank, 2017). However, in the literature review, it has been found that no particular study has been carried out concerning SDG environment-related targets assessment for India. Thus, this is the identified gap is the subject domain. Since the implementation of SDG from 2015, and to achieve the targets within 15 years (2030) it may have influenced some policies in India; however, with 10 more years in hand for accomplishment of these goals it is appropriate to assess is India is on the right path? Or, is lag substantially to achieve SDG, which can be carried out by bridging the gap between existing conditions and targets. Or, is close in achieving these goals and need to modify a few

policies to get into the right path. The objectives of this study are to assess environmental issues related to SDG targets existing (2019) achievement levels and identify if India is on the right track to achieve these goals targets by fulfilling the specific indicators as mentioned. An analysis is carried out for 14 SDG for 49 targets which are associated with environmental issues related to sustainable development.

2 Methodology

To carry out this study UN SDG to achieve by 2030 is assessed for the representative different environment-related targets. Out of the 17 SDG, 14 SDG are identified with 49 targets which are associated with environmental issues. The identified targets indicators about India for 2019 are collected from UN Human Development Index (HDI) Report 2019; SDG Index and Dashboards Report of SDSN; Bertelsmann Stiftung SDG Index and SDG India Index & Dashboard 2019 report published by NITI Aayog, India. A comparison is carried out between the target set by UN SDG and the existing level of its achievement. From this assessment of SDG average performance of various goals, the current status of SDG and SDG trend is presented which is carried out Bertelsmann Stiftung.

Using historic data, estimation was administered how briskly a country has been progressing towards an SDG and determine whether—if extrapolated into the longer term—this pace is going to be sufficient to realize the SDG by 2030. To estimate trends at the indicator level, calculated the linear annual growth rates (i.e. annual percentage improvements) needed to realize the target by 2030. Specifically, each indicator trend was re-normalized on a scale from 0-4. Decreasing indicators were assigned a worth between 0-1 where 0 is that the worst rate of decrease in score and 1 corresponds to completely no change within the score over time. Indicator trends that were “stagnating” were assigned a worth among 1-2, where 2 is that the value that corresponds to 50% of the needed rate of growth to satisfy the target by 2030. Indicators that were “moderately improving” were assigned a worth among 2-3 where 3 is that the exact needed rate of growth to realize the target by the year 2030. Those indicators that are “on track” were assigned values among 3-4 where 4 is that the best improvement over the amount. Indicators that were “maintaining SDG achievement” were assigned a score of exactly 3. The individual bands are linear, but the continual 0 to 4 scale is not linear as an entire. The general goal trends were calculated as an arithmetic average of the rescaled values for all trend indicators under the goal. A mean between 0-1 corresponds to a “decreasing” goal trend, 1-2 to

“stagnating”, 2-3 to “moderate improvement”, and 3-4 to “on track or maintaining achievement” (Sachs *et al.*, 2019).

Absolute performance gaps (in %) are used for achieving each of the Goals, to complement the per capita analysis in the SDG Index and Dashboards (Sachs *et al.*, 2019).

3 Results and discussion

The results of the assessment are presented in Table 1. From the table, it can be seen that 14 goals with 49 targets of the SDG are associated with environmental issues. These highlights about 29% of targets are environment-related issues. Specific indicators that provide ideas about the achievement of the target are collected from the UN HDI Report 2019 and SDG Index and Dashboards Report 2019 of SDSN; Bertelsmann Stiftung, "SDG Index". India's environment-related SDG classification in target lag behind and target in lead is presented in Table 2. From the table, it can be seen that environmental issues related to the target lag behind include end of epidemics, reduce deaths and illness from hazardous chemicals, water use efficiency, renewable energy, rationalize inefficient fossil fuel subsidies. In the case of targets in lead includes support to R&D, the supply of qualified teachers, access to modern energy services, legal identity to all.

India's SDG index comparison by Sustainable Development Report and SDG India Index & Dashboard 2019-20 by NITI Aayog, India is presented in Table 3. From the table, it can be seen that SDG Index values reported by these agencies differ significantly. Although both have comparable composite SDG for India 61.07 by Sustainable Development Report and 60 by NITI Aayog. According to the Sustainable Development Report, a minimum (28.67) SDG Index is for Goal 9 (Industry, Innovation, and Infrastructure) and maximum for Goal 13 (Climate Action). In the case of NITI Aayog minimum (35) is for Goal 2 (Zero Hunger) and maximum (88) for Goal 6 Clean Water and Sanitation. The difference between these reported values for SDG Index values was found to be minimum -36.33 for Goal 9 (Industry, Innovation, and Infrastructure) and a maximum 39.46 for Goal 12 (Responsible Consumption and Production). The difference between this reporting may be due to the methodology adopted by these agencies to carry out the assessment.

Absolute performance gaps (in %) for each SDG are presented in Table 4. India alone represents 23.1% of the total achievement gap on SDG 2 (Zero Hunger). If India eradicates undernourishment (currently 14.8% of the Indian population) the world will be 25.2% closer to having achieved the SDG target on undernourishment (Sachs *et al.*, 2019). The maximum absolute performance gap of 28.5% is observed for Goal 5 (Gender Equality) and followed

by Goal 11 (Sustainable Cities and Communities) (26.6%) and minimum absolute performance gap of 5.5% for Goal 12 (Responsible Consumption and Production).

The average performance of SDG for India is depicted in Figure 1. From the figure, it can be seen that Goal 13 Climate Action has a maximum (94.47) average performance and Goal 5 Gender Equality has a minimum (33.19). Out of 17 SDG, seven goals (2, 5, 9, 10, 11, 14 and 15) has average performance less than 50; whereas, six goals (1, 3, 6, 7, 16 and 17) has between 51-75 and SDG 4, 8, 12 and 13 have >75. From the figure, it can be seen that goals with average performance <50 accounts for 41% of the total goals; whereas, 35% contribute for goals with a performance level 50-75, and 23.52% goals are >75%. The overall performance of India is an index score of 61.1, the regional average score is 65.7, and SDG global rank 115 (of 162). From the figure, it can be concluded that if policy choices/modifications are carried out India may achieve these (12, 13, 8, and 4) SDG by the target year 2030. However, significant efforts in the form of programme/policy/measures interventions are required to achieve for SDG 2, 5, and 9. Of these three SDG, Goal 9 (Industry, Innovation, and Infrastructure) plays a critical role in a sustainable environment. Thus, more emphasis should be given on it.

Based on the performance of these SDG as of 2019, they are classified into four categories (Figure 2). From the figure it can be seen that SDG which poses a major challenge in front of India includes nine goals; whereas, significant challenges and challenges remain as four goals each. No SDG is achieved as of 2019. SDG as major challenges contributes about 53% of the total goals, whereas, 23% each for significant challenges and challenges remain category. Zero Hunger, Good Health and Well Being, Gender Equality, Clean Water and Sanitation, Affordable and Clean Energy, Industry, Innovation, and Infrastructure, Reduce Inequalities, Sustainable Cities and Communities and Peace, Justice and Strong Institutions are major SDG challenges in front of India. These goals have 29 targets that are associated with environmental issues. This highlights if India does not give major stress on these goals its environment-related sustainable development goal achievement perhaps may be difficult by the target year 2030.

Figure 3 depicts SDG trends as of 2019 for India. The trend for these SDG is classified into five categories of decreasing, stagnating, moderately impairing, on track, or maintaining SDG achievement and information unavailable. From the figure it can be seen that out of these goals, only three (1, 8 and 13) goals is on track; four (2, 3, 6 and 7) goals are

in moderately improving category; five (5, 9, 11 and 14) goals are stagnating and only one goal (15) is decreasing whereas for four goals information is unavailable.

Life on Land (Goal 15) is showing a decreasing trend. This goal has specific indicators such as forest area, forest area change, mean area that is protected in terrestrial and freshwater sites important to biodiversity, permanent deforestation, Red List Index, and important biodiversity threats. The declining trend for this goal is alarming because life is on the land and if forest and other natural resources are not monitored properly it will result in loss of biodiversity.

If eliminate the goals for which information is unavailable (n=4), then out of 13 SDG, India has five goals in decreasing and stagnating combined category which is about 38% of the goals. If decreasing, stagnating and moderately improving goals are combined (n=10), they contribute about 77% of the SDG (n=13) for which information is available. Thus, from the figure, it can be concluded that India needs to make significant efforts in SDG such as Gender Equality, Industry, Innovation and Infrastructure, Sustainable Cities and Communities; Life below Water; Life on Land and Peace, Justice, and Strong Institutions. However, if critical policy changes are carried out then goals such as Zero Hunger, Good Health and Well Being, Clean Water and Sanitation, and Affordable and Clean Energy can be brought to the category of 'on track or maintaining SDG achievement'. In the case of No Poverty SDG, decent work and economic growth and climate action efforts carried out need to maintain continuously to achieve the targets specified in these goals.

To achieve these environment-related SDG targets, prioritization of them has to be carried out. The goals which have an average performance of 51-75 if given priority it can be possible that these targets may be achieved by 2030; furthermore those goals with >75 performance the methodology adopted for them have to be maintained to achieve the target-related with the environment. Special efforts/programme/policies have to be accepted for the goals which have performance <50. India needs to do things differently to achieve the targets of these SDG.

4 Conclusions

Average performance for Goal 4 Quality Education, Goal 8 Decent Work and Economic Growth, Goal 12 Responsible Consumption and Production and Goal 13 Climate Action is more than 75% which if given more attention and efforts carried out in the right direction India can achieve these SDG by the target year 2030. However, Goal 2 Zero Hunger, needs special attention as average performance is less than 25%. Efforts carried out in the form of

policy interventions and others for Goal 1 No Poverty, Goal 8 Decent Work and Economic Growth and Goal 13 Climate Action needs to be carried out in future as India is on track/maintaining SDG achievement so as by the target year 2030 these goals may be achieved. Major challenges in front of India are Goal 2 Zero Hunger, Goal 3 Good Health and Well Being, Goal 5 Gender Equality, Goal 6 Clean Water and Sanitation, Goal 7 Affordable Clean Energy, Goal 9 Industry, Innovation and Infrastructure, Goal 10 Reduce Inequalities, Goal 11 Sustainable Cities and Communities, and Goal 16 Peace, Justice and Strong Institutions. Some targets of Goal 15 Life on Land are showing a decreasing trend. The absolute performance gap is maximum for Goal 5 Gender Equality; whereas, minimum for Goal 12 Responsible Consumption and Production. Thus, India is not on the right track to achieve many of the environment-related SDG targets by 2030 in business as usual scenario. Prioritising the targets and goals has to be carried out logically. India has to do things differently. Significant efforts—an alternative pathway of development forward—needs to be carried out so as the environment aspect related targets given in UN SDG can be achieved by India and contribute at the global level for achieving a sustainable society and sustainable future.

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Table 1: Environment-related SDG targets status in India

United Nations Sustainable Development Goal	Targets	Indian situation as of 2019 according to United Nations Human Development Index and SDSN; Bertelsmann Stiftung. "SDG Index". SDG Index and Dashboards Report
 <p>End poverty in all its forms everywhere</p>	<p>1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day</p> <p>1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions</p> <p>1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable</p> <p>1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters</p> <p>1.A Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions</p>	<ul style="list-style-type: none"> • Population living below income poverty line, PPP \$1.90 a day (%) 21.2% • Working poor at PPP\$3.10 a day (% of total employment) 46.7% • Population in multidimensional poverty, headcount (%) 27.9% • Population in multidimensional poverty, headcount (thousands) (for the year of survey) 369,546.1 • Population living below income poverty line, national poverty line (%) 21.9% • Mandatory paid maternity leave (days) 182
	<p>2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of</p>	<ul style="list-style-type: none"> • Homeless people due to natural disaster (average annual per million people) 471 • Refugees by country of origin (thousands) 9.6 • Government expenditure on education (% of GDP) 3.8 • Child malnutrition, stunting (moderate or severe) (% under age 5) 37.9

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

adolescent girls, pregnant and lactating women and older persons

2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality

3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births

3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases

• Cereal yield (t/ha) 3.0

• Sustainable Nitrogen Management Index 1.0

• Maternal mortality ratio (deaths per 100,000 live births) 174

• Proportion of births attended by skilled health personnel (%) 81.4%

• Life expectancy at birth (years) 69.4

• Life expectancy at birth, female (years) 70.7

• Life expectancy at birth, male (years) 68.2

• Adult mortality rate, female (per 1,000 people) 136

• Adult mortality rate, male (per 1,000 people) 210

• Mortality rate, infant (per 1,000 live births) 32.0

• Mortality rate, under-five (per 1,000 live births) 39.4

• HIV prevalence, adult (% ages 15-49) 0.2

• Malaria incidence (per 1,000 people at risk) 7.7



Ensure healthy lives and promote well-being for all at all ages

and other communicable diseases

3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being

3.6 By 2020, halve the number of global deaths and injuries from road traffic accidents

3.7 By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

3.B Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all

3.C Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and

- Tuberculosis incidence (per 100,000 people) 204.0
- Age-standardized mortality rates attributed to noncommunicable diseases, female 524.9
- Age-standardized mortality rates attributed to noncommunicable diseases, male 672.5
- Suicide rate, female (per 100,000 people) 14.5
- Suicide rate, male (per 100,000 people) 18.5
- Traffic death rate (per 100,000 population) 21.2

- Adolescent birth rate (births per 1,000 women ages 15-19) 13.2%
- Contraceptive prevalence, any method (% of married or in-union women of reproductive age, 15-49 years) 53.5%
- Mortality rate attributed to household and ambient air pollution (per 100,000 population) 184.0
- Mortality rate attributed to unsafe water, sanitation and hygiene services (per 100,000 population) 18.6
- Infants lacking immunization, DPT (% of one-year-olds) 8
- Infants lacking immunization, measles (% of one-year-olds) 10

- Current health expenditure (% of GDP) 3.7



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

small island developing States

4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university

4.6 By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy

4.C By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation

5.3 Eliminate all harmful practices, such as child, early and forced

- Gross enrolment ratio, pre-primary (% of preschool-age children) 14
- Gross enrolment ratio, primary (% of primary school-age population) 115
- Gross enrolment ratio, secondary (% of secondary school-age population) 75
- Gross enrolment ratio, tertiary (% of tertiary school-age population) 28
- Expected years of schooling (years) 12.3
- Expected years of schooling, female (years) 12.9
- Expected years of schooling, male (years) 11.9
- Literacy rate, adult (% ages 15 and older) 69.3
- Mean years of schooling (years) 6.5
- Mean years of schooling, female (years) 4.7
- Mean years of schooling, male (years) 8.2
- Population with at least some secondary education (% ages 25 and older) 51.6
- Population with at least some secondary education, female (% ages 25 and older) 39.0
- Population with at least some secondary education, male (% ages 25 and older) 63.5
- Primary school teachers trained to teach (%) 70
- Violence against women ever experienced, intimate partner (% of female population ages 15 and older) 28.8%
- Child marriage, women married by age 18 (% of



Achieve gender equality and empower all women and girls

marriage and female genital mutilation

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life

5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

women ages 20–24 years who are married or in union) 27%

- Female share of employment in senior and middle management (%) 13.0%
- Share of seats in parliament (% held by women) 11.7%
- Unmet need for family planning (% of married or in-union women of reproductive age, 15–49 years) 12.9%
- Population using at least basic drinking water services (%) 87.6
- Population using at least basic sanitation services (%) 44.2
- Anthropogenic wastewater that reaches treatment (%) 2.2
- Fresh water withdrawals (% of total renewable water resources) 33.9
- Impounded groundwater depletion (m³/year/capita) 0.2
- Rural population with access to electricity (%) 89.3
- Access to clean fuels & technology for cooking (%) population 41.0



Ensure availability and sustainable management of water and sanitation for all



Ensure access to affordable, reliable, sustainable and modern energy for all



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



Make cities and human settlements

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

• Renewable energy consumption (% of total final energy consumption) 36.0

• Carbon dioxide emissions, per capita (tonnes) 1.6
• Carbon dioxide emissions (kg per 2010 US\$ of GDP) 0.26

• Research and development expenditure (% of GDP) 0.6

• Satisfaction with public transportation (%) 74.4

• Annual mean concentration of particulate matter less than 2.5 micron of diameter (PM2.5) in urban areas ($\mu\text{g}/\text{m}^3$) 90.9

• Improved water source, piped (% urban population with access) 68.7

inclusive, safe,
resilient and
sustainable



Ensure sustainable
consumption and
production patterns

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

12.C Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries

13.2 Integrate climate change measures into national policies, strategies and planning

- Municipal solid waste (kg/day/capita) 0.3
- E-waste generated (kg/capita) 1.5
- Production based SO₂ emissions (kg/capita) 6.2
- Nitrogen production foot print (kg/capita) 12.9
- Fossil fuel energy consumption (% of total energy consumption) 73.6
- People affected by climate-related disasters (per 100,000 population) 2,359.6
- Energy related CO₂ emissions per capita (tCO₂/capita) 1.7
- Imported CO₂ emission, technology-adjusted (tCO₂/capita) 0.1
- CO₂ emission embodied in fossil fuels exports (kg/capita) 2.1



Take urgent action
to combat climate
change and its
impacts



Conserve and sustainably use the oceans, seas and marine resources for sustainable development

14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information

14.A Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

- Fish caught by trawling (%) 10.2
- Percent of fish stock over exploited or collapsed by EEZ (%) 12.4
- Mean area that is protected in marine sites important to biodiversity (%) 29.0
- Ocean Health Index Goal-Clean Waters (0-100) 22.7
- Forest area (% of total land area) 23.8
- Forest area change (%) 10.8
- Mean area that is protected in terrestrial sites important to biodiversity (%) 26.1
- Mean area that is protected in freshwater sites important to biodiversity (%) 15.2
- Permanent deforestation (5 year average annual %) 0.0



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage

forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

16.9 By 2030, provide legal identity for all, including birth registration

• Red List Index (value) 0.678

• Important biodiversity threats (per million population) 0.3

• Homicide rate (per 100,000 people) 3.2

• Prison population (per 100,000 people) 32

• Birth registration (% under age 5) 80

(Authors analysis)

Table 2: SDG environment-related targets position of India

Targets lag behind

- 1.1** By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than \$1.25 a day
- 1.2** By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions
- 1.5** By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters
- 1.A** Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions
- 2.2** By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- 3.1** By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births
- 3.2** By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births
- 3.3** By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases
- 3.4** By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being
- 3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes
- 3.9** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- 3.C** Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States
- 4.2** By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education
- 4.3** By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university
- 4.6** By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy
- 5.2** Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation
- 5.3** Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation
- 5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life
- 5.6** Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences
-

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

7.2 By 2030, increase substantially the share of renewable energy in the global energy mix

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

12.C Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

16.1 Significantly reduce all forms of violence and related death rates everywhere

16.3 Promote the rule of law at the national and international levels and ensure equal access to justice for all

Targets in the lead

1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

3.B Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health

4.C By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States

7.1 By 2030, ensure universal access to affordable, reliable and modern energy services

16.9 By 2030, provide legal identity for all, including birth registration

Table 3: India's SDG index

SDG No.	Sustainable Development Report 2019†	SDG India Index & Dashboard 2019-20 by NITI Aayog§	Difference
1	71.41	50	21.41
2	42.57	35	7.57
3	58.76	61	-2.24
4	80.24	58	22.24
5	33.19	42	-8.81

6	56.58	88	-31.42
7	65.38	70	-4.62
8	83.24	64	19.24
9	28.67	65	-36.33
10	48.96	64	-15.04
11	51.12	53	-1.88
12	94.46	55	39.46
13	94.47	60	34.47
14	51.24	--	--
15	51.06	66	-14.94
16	61.26	72	-10.74
17	65.70	--	--
Composite	61.07	60	1.22
SDG			
Minimum	28.67	35	-36.33
Maximum	94.47	88	39.46

--No data. †Source: Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2019): Sustainable Development Report 2019. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).

§Source: SDG India Index & Dashboard 2019-20. A report published by NITI Aayog. Government of India.

Table 4: Absolute performance gaps for achieving the SDGs, 2019

SDG No.	Absolute performance gaps (%)
1	23.7
2	23.1
3	23.9
4	19.2
5	28.5
6	23.4
7	22.7
8	13.4
9	21.8
10	19.9
11	26.6
12	5.5
13	11.1
14	17.3
15	22.9
16	18.6
17	15.0
Average	19.8
Minimum	5.5
Maximum	28.5

Source: Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2019): Sustainable Development Report 2019. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).

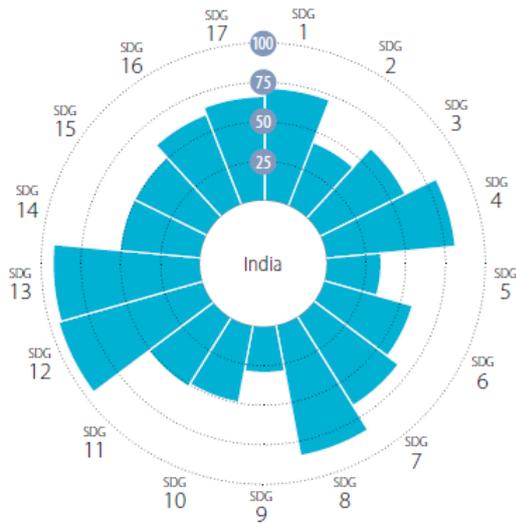


Figure 1: SDG average performance for India (Source: SDSN; Bertelsmann Stiftung. "SDG Index". SDG Index and Dashboards Report)



Figure 2: SDG current assessment for India (Source: SDSN; Bertelsmann Stiftung. "SDG Index". SDG Index and Dashboards Report)

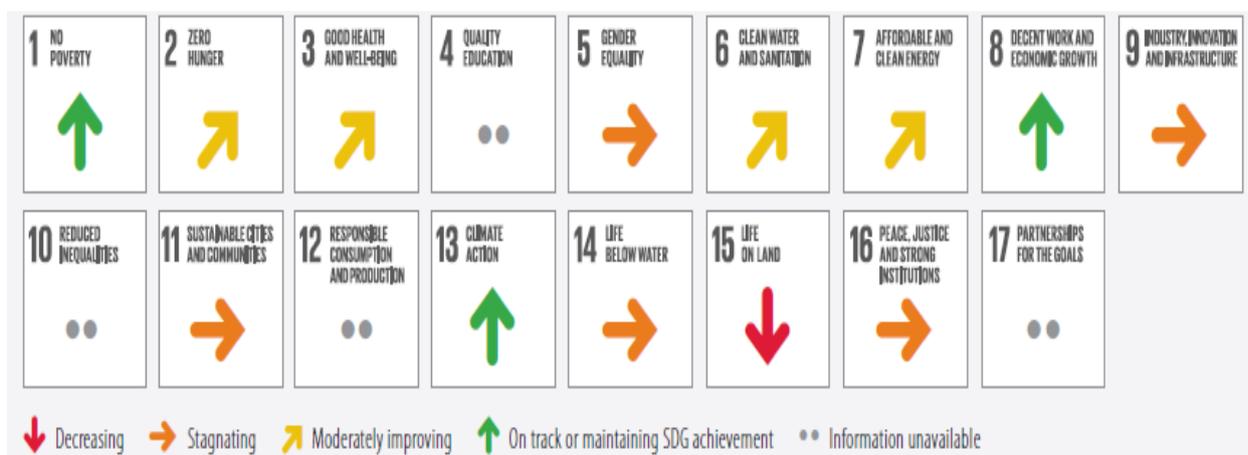


Figure 3: SDG trend for India (Source: SDSN; Bertelsmann Stiftung. "SDG Index". SDG Index and Dashboards Report)