840Sustainable Development in India: Goals, Achievements & Challenges

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Abstract:
The idea of sustainable development would gain real momentum only if we are able to conserve resources and use them in a manner that they are sufficiently available for the coming generations as well . India's effort for sustainable development can be traced back to ancient times. In the 2022 Global Index of SDGs, India had ranked 121 out of the 163 countries. It had ranked 117 in 2020 and 120 in 2021. The trends indicate that the country is off-track, with eight years left to meet the global goals on sustainable development. This paper aims to focus on SDGs' Major Achievements in India. It also investigates the challenges associated with sustainable development goals SDGs with special reference to India. The Later part of the paper confers the sustainable development approaches and possible solutions to overcome these challenges. Various policies and programs, institutional arrangements, technological Solutions, frameworks and measurement systems for a better present and future, have also been discussed. There is a need for coordination between government agencies, NGOs and the public, for the proper management of environment quality and to achieve sustainable development goals in India.

Keywords: Sustainable development, Environment, Achievements, challenges, sustainability.

Introduction

There is a close relationship between economic development and environment of any economy .It is next to impossible to develop any country by neglecting its environmental problems .They have become serious in many parts of the country, and hence cannot be ignored. India's effort for sustainable development can be traced back since ancient period. The idea of environmental conservation gains real momentum if we are able to conserve resources and use them in a manner that they are sufficiently available for the coming generation as well or in other words sustainable development is needed. The United Nations defines sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

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In 2015, the UN General Assembly (UNGA) adopted the 2030 Agenda for Sustainable Development. 193 nations, including India, are committed to the 17 Sustainable Development Goals (SDGs). SDGs aimed to build a more prosperous, more equal, and more secure world by the year 2030 have been developed.

There is a significant departure from the Previous dialogues on sustainability to the new, which includes a "harmonising" of three elements: economic growth, social inclusion and environmental protection.

The Sustainable Development Goals

The Sustainable Development Goals (SDGs) which came into effect on 1 January, 2016 is an improvement on the Millennium Development Goals (MDGs) . In India, as far as mdgs are concerned, considerable progress has been made in the field of basic universal education, gender equality in education, and global economic growth. However there was slow progress in the improvement of health indicators related to mortality, morbidity, and various environmental factors contributing to poor health conditions. With SDGs in place the Indian government is now trying to integrate the efforts taken towards achieving mdgs with SDGs. SDGs are wider in scope.

The 17 SDGs are as follows:

Fig 1

Sr.No.	**Sustainable Development Goals**
Goal 1	No poverty

Goal 2	zero hunger
Goal 3	Good health and well-being
Goal 4	inclusive and equitable quality education
Goal 5	gender equality and empower all women and girls
Goal 6	availability of clean water and sanitation for all
Goal 7	affordable, reliable, sustainable and modern energy for all
Goal 8	inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9	Industry , innovation , resilient infrastructure, inclusive and sustainable industrialization
Goal 10	Reduce inequality within and among countries
Goal 11	Make inclusive, safe, resilient and sustainable cities and human settlements
Goal 12	sustainable consumption and production patterns
Goal 13	combat climate change and its impacts*
Goal 14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15	promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 16	Build effective, accountable and inclusive institutions, Promote peaceful and inclusive societies for sustainable development and justice for all
Goal 17	Strengthen the means of global partnership for sustainable development

Sustainable Development Goals

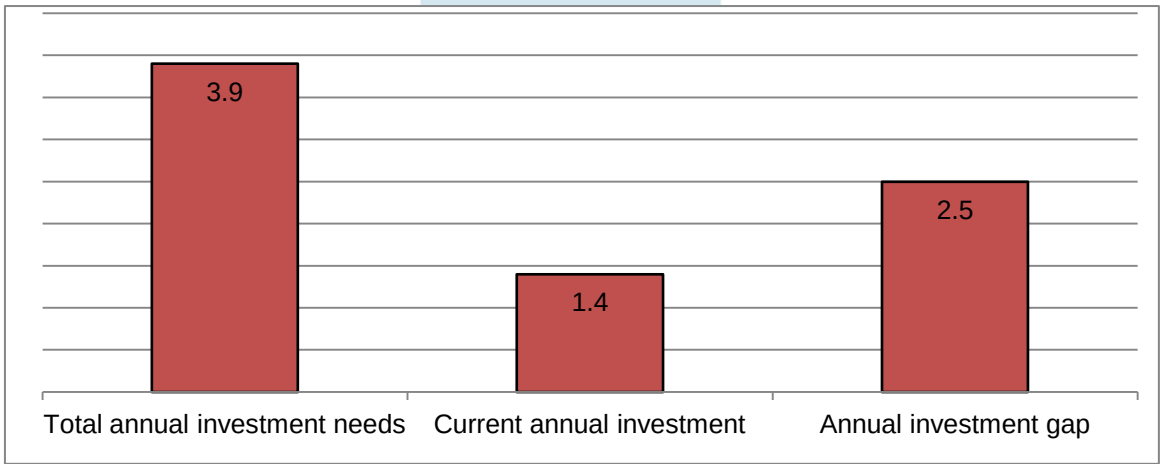
Source: www.un.org/sustainabledevelopment/sustainable-development-goals/Sustainable Development Goals have been built on the universal principle of 'leave no one behind', As far as India is concerned, the national development goals of India, converge well with the SDGs and India is expected to play a leading role in determining the success of the SDGs, globally.

What are the broad challenges:

1. What to prioritize: There is a dilemma between, development and economic growth? Or, reduction of Co2 emissions and sustainable development too. India's immediate priority is to provide livelihoods and employment to its population besides creating sustainable economic opportunities. India has to provide houses to millions, ensure food & nutritional security, and make health services accessible & affordable. For the sustainable inclusive growth, jobs have to be created. To push the economic growth further, India, plans to set up smart cities, construction of roads, railways, and other large infrastructure projects. Under 'Make in India's, it lays emphasis on manufacturing sector which will help create jobs. But, all these actions put together will increase India's cumulative as well as per capita Co2 emission rate which will potentially weaken India's global position on responses to climate change.

Although, prioritizing certain SDGs help with other SDGs as well- for example, decreasing poverty also have a positive impact on the good health and well-being of citizens- certain SDGs could be conflicted by their nature. The most potential trade-off exists between the second goal, which is ending world hunger, and the 15th goal, which calls for sustainable management of forest land and other terrestrial resources.

1. **Defining Indicators:** One of the major challenges for India is setting suitable and relevant indicators to effectively monitor the progress of SDGs and to measure outcomes. This was seen in the case of MDGs. Quality education has not successfully been defined. . India's myopic definition of "safe" drinking water has been misconstrued with the availability of hand pumps and tube wells and the official data suggested that 86% of Indians had access to safe drinking water and therefore were "on track" for the MDG goal on drinking water . But the number of waterborne diseases and deaths due to diarrhea are quite high in India.
2. **Financing SDGs**: In India, A new study estimates that implementing sdgs in India by 2030 would cost around US$14.4 billion.However India has only 5% of the required funding to implement SDGs. Given the recent cut in social sector schemes by the central government, there is likely to be a significant funding gap. According to the United Nations MDG 2014 report, despite high economic growth, India has the highest number of people (around one-third of the world's 1.2 billion extreme poor) living below international poverty line. At today's level of investment – public and private in SDG related sectors in developing countries, an average annual funding gap remains $2.5 trillion over 2015-2030. This gap can be bridged only through increased private sector investments, especially in infrastructure, food security and climate change mitigation sectors.Fig 2 Gap in funding sdgs in developing countries (in trillion $)



Source: unctad.org/en/pages/pressrelease.aspx?Originalversionid=194

3. **Monitoring and Ownership**: A third significant challenge is associated with implementing SDGs would be with respect to ownership. However, NITI Aayog is expected to perform lead role in monitoring the progress of SDGs, its members have expressed reservations on being able to take on this mammoth task. Moreover, if states are expected to play a pivotal role (giving the devolution post 14th Finance Commissionbut), but it will also require ownership not just nationally, but also at the state and local level.if we want to involve state govt. for this.

4. **Measuring Progress**: Last but most important is the question of how to measure the progress or achievement of SDGs By The Indian government it has been admitted that , the non-availability of data (particularly in respect to sub-national levels), periodicity issues and incomplete coverage of administrative data, have made accurate measuring progress of even MDGs virtually impossible.

5. **Data Deprivation**: For estimation, big data is useful only if it is collected intelligently and can be interpreted meaningfully. It is not possible to act effectively against poverty if we don't have data for number of people remains impoverished or data for groups that are most vulnerable to economic adversity. Further it cannot be determined how much progress been made over time, or which policies worked behind it. This is largest task for Sustainable Development Goals. It can be proved by the statement of World Bank's Innovation Labs, Aleem Walji, in 2015 that observation and monitoring by the World Bank among 155 countries, half of the countries lacked recent poverty estimates.

Suggetions to overcome challenges:

The challenges discussed above can be overcome by developing an exclusive model for implementing, monitoring, measuring and reporting SDG related course of action. Though India has well established organizations such as the CSO to provide statistical data many times they are general and do not match specific requirements. Even in case of MDGs, India was not able to measure its achievement accurately because of lack of data. Therefore developing suitable indicators to assess the progress of SDGs and also simultaneously developing a system that can support this exercise by supplying the required data is of paramount importance. A separate index for measuring the progress or achievement of SDGs can be developed by taking the Ibrahim Index of African Governance (IIAG) as a base.

1. Ibrahim Index of African Governance (IIAG)

The Ibrahim Index of African Governance (IIAG) measures the quality of governance in every African country on an annual basis. The IIAG was launched in 2007 and has evolved to be the most comprehensive assessment on African governance. As governance is not measurable directly, IIAG has developed the most suitable set of proxy indicators for the purpose by making use of a variety of data sources and indicators. IIAG does not collect primary data, but rather collates data provided by respected external sources. The IIAG data set is updated every year when practical improvements are identified and the results are made available from 2000. Whenever new historical data are made available, or the structure of the IIAG is strengthened, the entire data set is updated back to 2000. The latest 2016 IIAG consists of 95 indicators from 34 data providers.

2. Financing SDGs. The challenge of financing SDGs can be resolved to some extent by strengthening the existing academic infrastructure in the nation. India is a regional hub for higher education and the home town of several renowned institutions such as IIT and IIM. These institutions have well developed infrastructure for research. These resources can be pooled and effectively utilised in designing, developing and measuring indicators meant for sustainable development. In developing countries like India, there was some hesitation in reducing carbon emissions for two reasons, first their per capita emissions were lower, and second, it would mean compromising with the development of the nation. Therefore a ***carbon trading system*** was evolved among the countries of the world where firms were permitted to emit carbon within the prescribed limit and was assigned carbon credits for this purpose, if any firm wants to exceed the limit it can buy the unused credit from another firm. In this way the buying firm is penalized for exceeding its carbon quota and the selling firm is rewarded for reducing its emissions. Governments can consider the ***idea of penalizing firms*** with higher carbon footprints by making them finance the sustainable goal programmes in the developing and least developed countries.

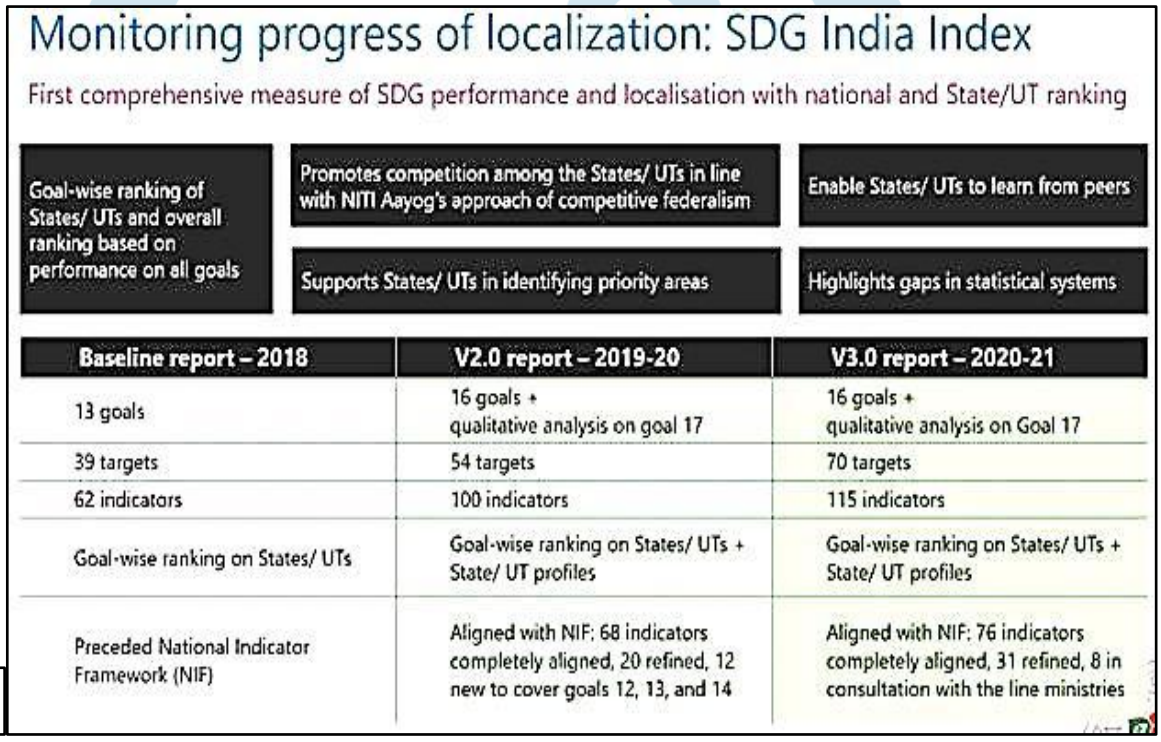
3. The responsibility of implementing SDGs

With NITI Ayog expressing its doubt as to how far it would succeed in this laborious task it is high time the Indian Government decentralises this task and while doing so it must be borne in mind that SDGs aim at conserving and passing on the natural resources to the next generation. This cannot be done without involvement of the society. But a society so knowledgeable to use its natural resources in a perfectly ecologically sound manner is nearly impossibility. Changing social, political, cultural, technological and ecological conditions will exert new pressures on the natural resource base and the possibility of its misuse or overuse always remains. Therefore a political order in which decision making will be done by those who would suffer the consequences of those decisions would be ideal. A new system that would ensure participation from groups that are directly connected to the problem needs to be evolved.

Major Achievements

NITI Aayog, the Government of India's premier think tank, has been entrusted with the task of coordinating the SDGs. States have also been advised to undertake a similar mapping of their schemes, including centrally sponsored schemes. In addition, the Ministry of Statistics and Programme Implementation (mospi) is engaged in the process of developing national indicators for the SDGs Many of the Government's flagship programmes such as Swachh Bharat, Make in India, Skill India, and Digital India are at the core of the SDGs. State and local governments play a pivotal role in many of these programmes. State governments are paying keen attention to visioning, planning, budgeting, and developing implementation and monitoring systems for the sdgs.

NITI Aayog, the Government of India's premier think tank, has the twin mandate to oversee the adoption and monitoring of the sdgs in the country, and also promote competitive and cooperative federalism among States and utsNITI Aayog, has been released SDG India index, with the task of coordinating the SDGs. The third edition of the SDG India Index was released by NITI Aayog in 2021. It has been developed in collaboration with the United Nations in India, tracks progress of all States and ut's on 115 indicators that are aligned to mospi's National Indicator Framework (NIF). Since it has been started in 2018, now in its third year, the index has become the primary tool for monitoring progress made by States and Union Territories towards achieving the sdgs and has simultaneously fostered competition among the States and Union Territories. "From covering 13 Goals with 62 indicators in its first edition in 2018, the third edition covers 16 Goals on 115 quantitative indicators, with a qualitative assessment on Goal 17, thereby reflecting our continuous efforts towards refining this important tool," said Ms. Sanyukta Samaddar, Adviser (sdgs), NITI Aayog.



Monitoring progress of localization: SDG India Index

First comprehensive measure of SDG performance and localisation with national and State/UT ranking

- Goal-wise ranking of States/ UTs and overall ranking based on performance on all goals
- Promotes competition among the States/ UTs in line with NITI Aayog's approach of competitive federalism
- Enable States/ UTs to learn from peers
- Supports States/ UTs in identifying priority areas
- Highlights gaps in statistical systems

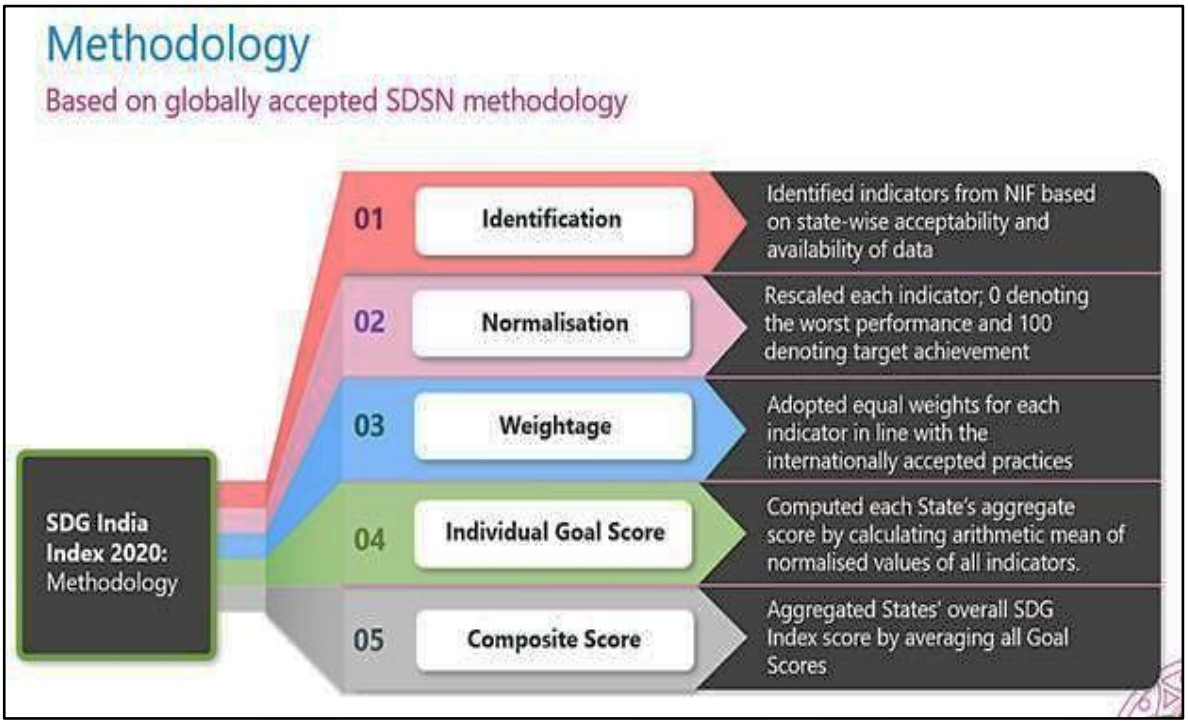
Baseline report – 2018	V2.0 report – 2019-20	V3.0 report – 2020-21
13 goals	16 goals + qualitative analysis on goal 17	16 goals + qualitative analysis on Goal 17
39 targets	54 targets	70 targets
62 indicators	100 indicators	115 indicators
Goal-wise ranking on States/ UTs	Goal-wise ranking on States/ UTs + State/ UT profiles	Goal-wise ranking on States/ UTs + State/ UT profiles
Preceded National Indicator Framework (NIF)	Aligned with NIF: 68 indicators completely aligned, 20 refined, 12 new to cover goals 12, 13, and 14	Aligned with NIF: 76 indicators completely aligned, 31 refined, 8 in consultation with the line ministries

The SDG India Index computes goal-wise scores on the 16 SDGs for each State and Union Territory. Overall State and UT scores are generated from goal-wise scores to measure aggregate performance of the sub-national unit based on its performance across the 16 SDGs. These scores range between 0–100, and if a State/UT achieves a score of 100, it signifies it has achieved the 2030 targets. The higher the score of a State/UT, the greater the distance to target achieved.

States and Union Territories are classified as below based on their SDG India Index score:

Aspirant: 0–49

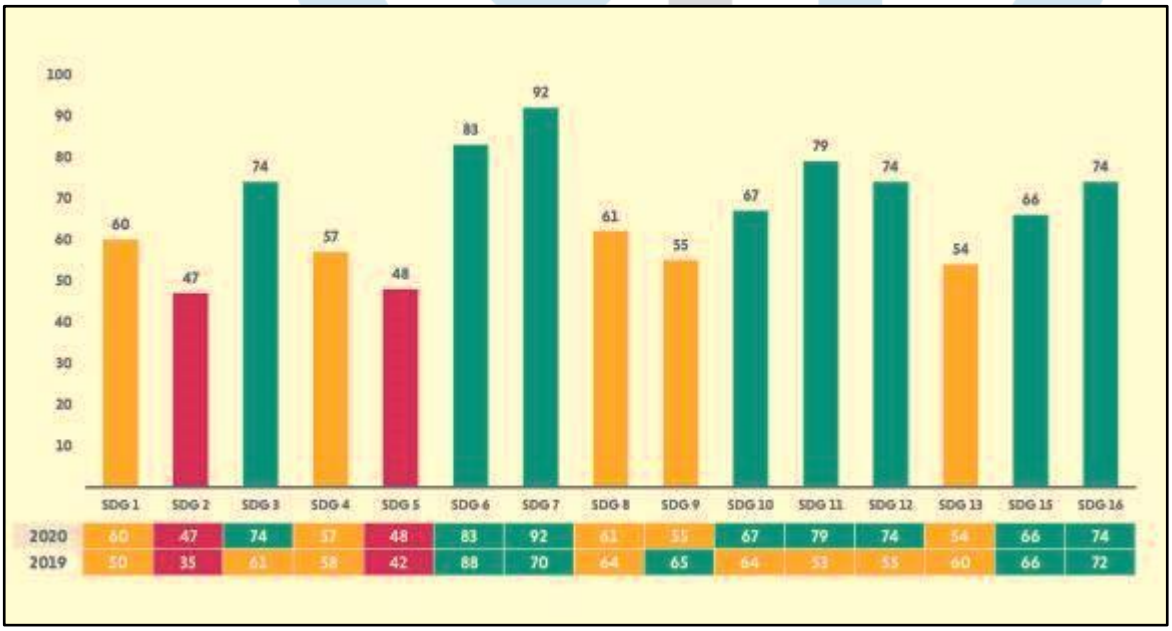
- Performer: 50–64
- Front-Runner: 65–99
- Achiever: 100



Overall Results and Findings

The country's overall SDG score improved by 6 points—from 60 in 2019 to 66 in 2020–21. This positive stride towards achieving the targets is largely driven by exemplary country-wide performance in Goal 6 (Clean Water and Sanitation) and Goal 7(Affordable and Clean Energy), where the composite Goal scores are 83 and 92, respectively.

Goal-wise India results, 2019–20 and 2020–21:



The top-five and bottom-five States in SDG India Index 2020–21:

Top-5 States	75	Kerala
	74	Himachal Pradesh, Tamil Nadu
	72	Andhra Pradesh, Goa, Karnataka, Uttarakhand
	71	Sikkim
	70	Maharashtra
Bottom-5 States	61	Chhattisgarh, Nagaland, Odisha
	60	Arunachal Pradesh, Meghalaya, Rajasthan, Uttar Pradesh
	57	Assam
	56	Jharkhand
	52	Bihar

Mizoram, Haryana, and Uttarakhand are the top gainers in 2020–21in terms of improvement in score from 2019, with an increase of 12, 10 and 8 points, respectively.

Top Fast-Moving States (Score-Wise):

State	2019-20 Score	2020-21 Score	Change in Score
Mizoram	56	68	12
Haryana	57	67	10
Uttarakhand	64	72	8

While in 2019, ten States/ut's belonged to the category of Front-Runners (score in the range 65–99,) twelve more States/ut's find themselves in this category in 2020–21. Delhi, Lakshadweep, Andaman and Nicobar Islands, Jammu and Kashmir and Ladakh, Uttarakhand, Gujarat, Maharashtra, Mizoram, Punjab, Haryana, Tripura, graduated to the category of Front-Runners (scores between 65 and 99,).

OVERALL	Aspirant (0-49)	Nil
	Performer (50-64)	Manipur, Madhya Pradesh, West Bengal, Chhattisgarh, Nagaland, Odisha, Arunachal Pradesh, Meghalaya, Rajasthan, Uttar Pradesh, Assam, Jharkhand, Bihar Dadra and Nagar Haveli and Daman and Diu
	Front Runner (65-99)	Kerala, Himachal Pradesh, Tamil Nadu, Andhra Pradesh, Goa, Karnataka, Uttarakhand, Sikkim, Maharashtra, Gujarat, Telangana, Mizoram, Punjab, Haryana, Tripura Chandigarh, Delhi, Lakshadweep, Puducherry, Andaman and Nicobar Islands, Jammu and Kashmir, Ladakh
	Achiever (100)	Nil

Measures Taken by Indian Government for implementing SDGs

1. Ratifying Paris Agreement

The 21st Conference of Parties (COP 21) under the U**nited Nations Framework Convention on Climate Change (UNFCCC)** successfully concluded in Paris after intense negotiations by the Parties followed by the adoption of the Paris Agreement on post-2020 actions on climate change. This universal agreement will succeed the **Kyoto Protocol**. Unlike the Kyoto Protocol, it provides a framework for all countries to take action against climate change. Placing emphasis on concepts like climate justice and sustainable lifestyles, the Paris Agreement for the first time brings together all nations for a common cause under the UNFCCC. One of the main focuses of the agreement is *to hold the increase in the global average temperature to well below 2°C above pre- industrial level and on driving efforts to limit it even further to 1.5°*.The Paris agreement requires each member country to prepare, communicate and maintain successive nationally determined contributions (NDCs) that it intends to achieve.

India‘s Nationally Determined Contribution (NDC) targets are to lower the emissions intensity of GDP by 33%–35% by 2030 below 2005 levels, to increase the share of non-fossil based power generation capacity to 40 % of installed electric power capacity by 2030, and to create an additional (cumulative) carbon sink of 2.5–3 billion tons of CO2 equivalent through additional forest

and tree cover by 2030

2. The Clean Development Mechanism projects in India

As on 4 January 2016, 1593 out of a total of 7685 projects registered by the **Clean Development Mechanism (**CDM) executive board are from India, which so far is ***the second highest in the world with China*** taking the lead with 3764 projects registered. Indian projects have been issued 191 million Certified Emission Reductions (CERs), 13.27% of the total number of CERs issued. These projects are in the sectors of energy efficiency, fuel switching, industrial processes, and municipal solid waste, renewable energy and forestry which spread across the country.

3. State Action Plans on Climate Change:

The State Action Plans on Climate Change (SAPCC) aim to create institutional capacities and implement sectoral activities to address climate change. These plans are focused on adaptation with mitigation as co-benefit in sectors such as water, agriculture, tourism, forestry, transport, habitat and energy. So far, 28 states and 5 union territories (ut's) have submitted their SAPCC to the MOEF&CC. Out of these, the SAPCC of 32 states and ut's have been endorsed by the National Steering Committee on Climate Change (NSCCC) at the MOEF&CC.

4. Coal Cess and the National Clean Energy Fund

India is one of the few countries around the world to have a **carbon tax** in the form of a cess on coal. Not only has India imposed such a cess but it has also been progressively increasing it. The coal cess which was fixed at R50.00 per tonne of coal since 22 June 2010 and increased to R100.00 per tonne of coal in Budget 2014-15, was further doubled to R 200.00 per tonne in the 2015-16 Budget. Although, in July 2017, it was abolished with the introduction of GST and a new cess on coal production, at Rs. 400 per tone, called the **GST Compensation cess**, is being levied. **The National Clean Energy Fund (NCEF**) which is supported by the cess on coal was created for the purposes of financing and promoting clean energy initiatives, funding research in the area of clean energy and for any other related activities. Till date 56 projects have been recommended by the inter-ministerial group (IMG) with total viability gap funding (VGF) of R34,784.09 core spread over several years. For 2015-16, R4700 crore has been allocated in the Budget for NCEF projects. VGF is also being provided for Namami gange.

5. National Adaptation Fund for Climate Change

A National Adaptation Fund for Climate Change (NAFCC) has been established with a budget provision of I350 crore for the year 2015-2016 and 2016-2017. It is meant to assist in meeting the cost of national- and state-level adaptation measures in areas that are particularly vulnerable to the adverse effects of climate change. The overall aim of the fund is to support concrete adaptation activities that reduce the adverse effects of climate change facing communities, sectors and states but are not covered under the ongoing schemes of state and central governments. The adaptation projects contribute towards reducing the risk of vulnerability at community and sector level. Till date, the NSCCC has approved six detailed project reports (DPR), amounting to a total cost of I117.98 crore, submitted by Punjab, Odisha, Himachal Pradesh, Manipur, Tamil Nadu and Kerala.

6. Various measures announced in Budget 2022-23 on green energy

Sovereign green bonds: In 2022-23 budget it has been announced that the government will issue sovereign green bonds to mobilise funds to set up green infrastructure projects in the public sector and reduce carbon footprint. These funds will enable the government to achieve the 500 GW renewable energy target by 2030. This is just one of the many measures announced by the FM on green energy . FM also announced various measures to boost energy transition trough electric vehicles (EVs) and solar and green energy.

Battery swapping policy: For EV, the government has announced the launch of **a battery swapping policy**, which will create interoperability standards for batteries. The government will encourage the private sector to offer battery as a service by providing land resources.

Special mobility zones will be developed for electric vehicles to promote clean technology and green mobility in public transport. Building laws and town planning will also be modernised for battery charging infrastructure. The budget will also promote energy saving and efficiency in large commercial buildings.

Additional duty of Rs. 2 per litre will being levied on unblended fuel from October 2022, which will encourage ethanol blending of fuel by oil marketing companies.

Aspirational districts reach out: To improve citizens' quality of life in the country's most backwards districts Aspirational

districts programme has been launched in 112 districts. 95% of these districts have made significant progress in key sectors such as health, nutrition, financial inclusion and basic infrastructure.

Conclusion

Sustainable Development is a historic opportunity for the world communities to deliver inclusive growth, eliminate poverty and reduce the risk of climate change by changing perspectives and approaches to economic development. For the sustainable development of India, it is necessary to achieve all the 17 SDGs. All the 17 SDGs are integrated and interconnected; action in one area will have at least some impact on others. Therefore, it is an enormous task to achieve all 17 SDGs up to 2030. Simultaneous achievement of these goals requires the effective involvement of every sector and each level of society. In the world, India has the second largest population. . For the achievement of SDGs, steps taken by India, matter a lot to the world. If India succeeds in attaining the SDGs it would mean a larger section of the world has achieved it. Therefore it is necessary for India to develop some effective methods which can be used for implementing, monitoring and measuring the progress of SDGs. The major challenges for India seem to be the defining suitable indicators**,** data deprivation, financing SDGs, and to identify suitable method to measure the progress**.** To overcome these challenges an Indian Index for Sustainable Development (IISD) can be developed by taking a base to the Ibrahim index and It also requires major participation of public along with the Govt. in making efforts to achieve sustainable development.

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