Sustainable Cities and Communities: A Comparative Analysis of India and Global Progress

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Abstract – The UN Agenda 30 aspires to achieve 17 goals and 168 targets by embracing economic, environmental, and social aspects of the well-being of societies. The agendas chalked reflect an interlinkage of five Ps of sustainable development i.e. People, Planet, Prosperity, Peace, and Partnership. SDG 11 aims at building sustainable cities and communities with the aim to make cities and human settlements inclusive, safe, resilient, and sustainable. The paper is developed with the objective to explore India's standing in terms of achievement and challenges with respect to targets SDG11. The paper presents a comparative study of progress done by India and the world. The paper used secondary data from SDG Tracker, SDG Index, SDG India Index by Niti Aayog to provide a comparative framework to benchmark the various SDG 11 indicators with respect to India and the world. A period from 2000 to 2024 is taken to compare the indicators such as urban population growth, access to public transport, air quality, and housing conditions to understand the trends. It provides insights into how the world, including India, are progressing towards SDG 11 goals. The paper concludes that the substantial gaps are present for India to achieve the targets by 2030, and challenges remain to improve its SDG score.

Keywords – Sustainable Development Goals, SDG 11, Sustainable Cities, Sustainable communities.

I. INTRODUCTION

Urbanization is expected to be on rise, with the countries marching towards higher GDP growth and development transitory. At the same time, migration from rural to urban areas too increasing. As projected by the UNO, 68% of the world population would be living in the cities by 2025 compared to current level of 55% and 90% of this increased urban population will be concentered in Asia and Africa. (UN DESA, 2018). The number of large cities with population more than 300,000 has grown from 355 in 1955 to 1861 in 2020. (Pirlea, 2020). The cities across the continents occupy approx. 3% of land and generate 80% global GDP but on the other hand use 60-80% of energy consumption and emits 75% of the carbon. (World Bank, 2023). On the same line, India has also experienced proliferation of cities. 36.36 % of total population resided in urban areas which is projected to be 53% by 2047. (UNO 2022). As per census 2011, 5.4 % of Indian population lives in slum and 17% of urban population live in slum. By 2030, India will have 10 mega cities with population more than 10 million (Dixon, 2018) which will have serious problems in terms of congestions and decline in infrastructure availability.

The instances of generic urbanization and associated migration would be seriously impacting and overburdening existing urban infrastructures related to affordable housing, sewage treatment, public transport, and clean water. Cities perform multifaceted functions

contributing to overall growth process but also witness the byproducts of growth in terms of poverty, inequality, environmental hazards, and communicable diseases (McMichael AJ, 2000). Urban poor living in slums are reported to be more prone to communicable and non-communicable diseases, poor nutrition, congestion, contaminated water. (Alirol E, 2011). Urban Policies across the countries ought to manage infrastructure and social services by focusing on access to housing, education, health care, decent work, and a safe environment for urban poor. (WUP 2018).

It becomes critical as to how cities are governed, planed, and designed which will impact how urban communities realise human rights and address growing inequality in terms of urban infrastructure. cities and urban communities impact the realisation of human rights for all and how the growing urban inequalities are addressed. This study presents national experiences from India focusing on challenges related to urban sustainability. It covers issues of data unavailability for various indicators and challenges of achieving targets related to urban waste management, sanitation, disaster resilience and the need of the interaction at different scales of governance

II. OBJECTIVE & METHODOLOGY

1) To develop a comparative analysis of SDG 11 and related targets for India and the world.
2) To understand the challenges in improving SDG 11 score for India.

The data for the above study has been selected from the secondary database available on the sites of SDG Tracker: Our World in Data, The Atlas of Sustainable Development Goals 2020, Sustainable Development Report 2024 - SDG Index, India SDG index by Niti Aayog. The raw database was further analyzed using statistical tools to compare indicators such as urban population growth, access to public transport, air quality, and housing conditions. A comparative framework was designed to map India's progress with global trends including,

A. Indicators:

Key indicators relevant to SDG 11 was considered like 11.1, 11.2, 11.5, 11.6 (based on the criteria of availability of quantifiable data at national and global level)

B. Benchmarks

A benchmark was set based on global averages and long-term objective targeted in SDG Index of India by Niti Aayog.

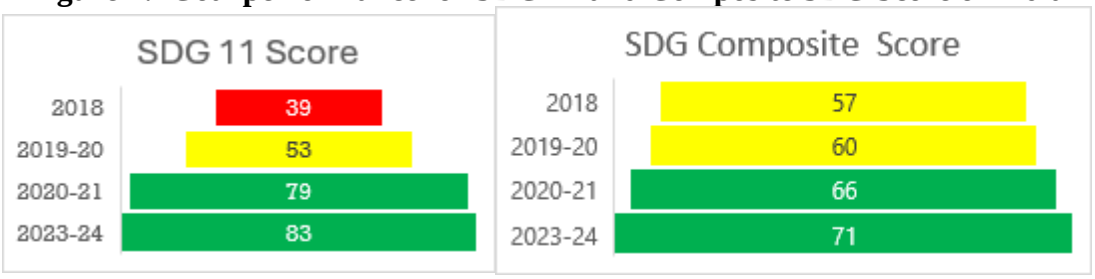
C. Gap Analysis

Identify gaps between India's performance and global standards.

III. COMPARATIVE OVERVIEW

India's overall composite SDG score has substantially improved from the baseline period of 2018 to 2023-24 (last reported data).

Figure 1: Goal performance for SDG 11 and Composite SDG Score of India



Source: SDG Tracker, India (PIB, 2024-25)

Since 2018, India has witnessed substantial progress in several key SDGs. Significant progress has been made in Goals 1 (No Poverty), 3 (Good Health and Well-being), 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 9 (Industry, Innovation, and Infrastructure) and 11 (Sustainable Cities and Communities). (SDG tracker 2023-24, PBI). As SDG 11 goals are closely linked to other goals related to good health, poverty, clean energy, innovations therefore improvement of Score in SDG 11 was also witnessed. India was in the list of aspirants (Red)in 2018, became a performer (yellow) and front runner (green) in 2020-21

and 2023-24. A substantial improvement in terms of percentage from 2018 to 2023-24 compared to the composite score has been achieved. (112.8 % jump in the SDG 11 score compared to 24.5 % increase in the overall composite SDG index during the period from 2018 to 2023-24). Likewise, institutionalization of governance in terms of Prime Minister Awas Yojana (PMAY), Jal Jeevan Mission, Swachh Bharat Abhiyan have also contributed to improving scores at national level. A disintegrated analysis of SDG 11 with respect to its indicator will help in understanding the gap and position of India at world level.

Table 1: Indicator wise analysis of SDG 11.

Year SDG 11-Indicators	2000	2005	2010	2015	2020	Long term Objective (2030)	World*
11.1 – Proportion of Urban Population living in slums (%)	55.3	53.02*	51.8	50.41*	49.01	0	31.39**
11.6- Annual mean concentration of PM2.5(ug/m^3)	37.4	44	50.6	50.6	50	6.3 microns	32.45***
11.5-Access to improved water source/piped (%)	73.65	71.97	70.08	68.2	66.31	100	77.52***
11.2- Population to the convenient access to public transport in cities (%)	-	-	-	-	69.85	100	57.01**

Source – SDG India Tracker, * SDR 2024, ** 2020, *** 2022

More of the provisions among, water, sanitation, living area, housing durability, and security of tenure. SDG score for 11.1., put India in the red category (aspirant) implying significant challenges remained to address. Urban population living in slums stood at close to 50% against the target of providing safe houses to all. An "improved" drinking-water source implies accessibility of contaminated free water to households, where India challenges remain. The country is in the red category with the improvement rate being stagnant over the years. SDG indicator 11.6 measures air pollution as the population-weighted mean annual concentration of PM2.5 suspended particles measuring less than 2.5 microns for the urban population. Major challenges remain as the score has deteriorated and challenges remain. In terms of accessibility of public transport, India has fared well relative to world average, though still significant gaps remain in terms of long-term objectives.

A comparative performance of indicators 11.1 (Target- Safe and resilient Housing), 11.2 (Target- Transport accessibility), 11.5 (Target- Disaster related death- Safe water) and 11.6 (Target- Environment Impact), of India relative to different regions of the world based on income level criteria shows that challenges remain critically high for India. The Indian dashboard shows Red in three categories out of four. A trend analysis for proportion of urban population in slum and air quality index keeps India's Performance as stagnant meaning improving at less than 50% rate. The trend analysis for accessibility to contaminated free water sources show deterioration over the period. For indicator 11.2, accessibility of quality public transport for urban population, time series analysis could not be done, due to the lack of data for major periods.

Figure 2: Comparative performance of SDG 11 targets Region wise with India

Regions	11.1	Trend	11.5	Trend	11.2#	11.6	Trend
OECD members	green	↑	green	↑	yellow	yellow	↗
Sub-Saharan Africa	red	→	red	↓	red	red	→
Low-income Countries	red	→	red	→	red	red	→
Lower-middle-income Countries	red	→	red	↓	orange	red	→
Upper-middle-income Countries	orange	--	yellow	↗	orange	red	↗
High-income Countries	green	↑	green	↑	yellow	yellow	→
World	red	→	orange	↓	orange	red	→
India	red	→	red	↓	yellow	red	→

Source -SDR 2024, Colour code & Time series – SDR 2024, Raw data # data not enough for trend analysis.

green	Goal Achievement
yellow	Challenges remain
orange	Significant challenges
red	Major challenges
grey	Insufficient data

↑	On track or maintaining achievement
↗	Moderately Increasing
→	Stagnating
↓	Decreasing

An analysis of data from SDG India Index which was prepared by Niti Aayog with baseline period of 2018 provide clear understanding of attempts taken by the Government to address and achieve the targets fixed by the United Nations Organisation under Agenda 2030. The data show substantial improvement in many of the indicators though challenges remain.

There has been significant decline in the number of urban poor living in Katcha house, courtesy to the houses built under Pradhan Mantri Awas Yojana. Similarly, Swachh Bharat Mission has positively contributed in terms of toilet construction and waste disposal and management. Other noteworthy attempts taken by the Government of India are Smart Cities Mission, the Jawaharlal Nehru National Urban Renewal Mission, the Atal Mission for Rejuvenation and Urban Transformation. these programmes have contributed to improve national score of SDG 11 by addressing the challenge of improving urban spaces.

Table 2: Gap between Current (2021) and Target of Major SDG 11 Indicators for India

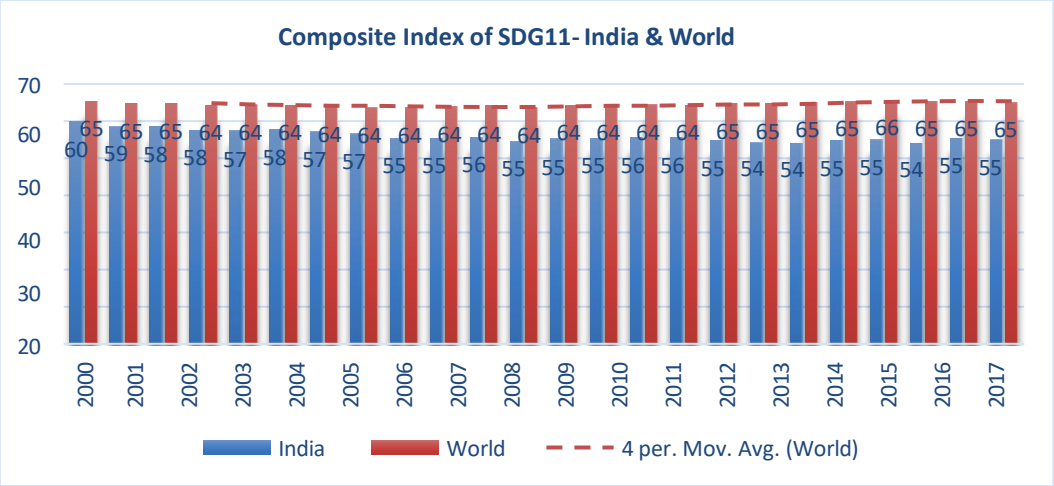
National level Sub goals	11.1 Housing and Services:			11.2 Transport systems	11.6 Environment Impacts			
Indicators	urban households living in katcha house	urban households with drainage facility	household toilets constructed under SBM(U) (2023)	Deaths due to road accidents in urban areas (per 1,00,000 population)	Percentage of wards with 100% door to door waste collection (SBM(U))	Percentage of MSW processed to the total MSW generated (SBM(U))	Percentage of wards with 100% source segregation (SBM(U))	Installed sewage treatment capacity as a percentage of sewage generated

								in urban areas
India	0.8%	87.6%	95.29%	12	97%	68.1%	78.03%	39%
Target	0	100%	100	7.05	100%	100%	100%	100%

Source: NITI Aayog. (2021). SDG India Index and Dashboard 2020-21, GOI.

An analysis of the panel data from Sustainable Development Goals – SDG Index, with respect to Goal 11- sustainable cities and communities provide interesting insights to India's performance with respect to the global average. India's performance has remained has deteriorated with significant challenges remaining unsolved. The world average remained constant but comparatively better than the national average.

Figure 3: Performance of Composite Index of SDG 11.



Source – SDR 2024

IV. RESULTS AND DISCUSSION

Rapid urbanisation is the positive outcome of a country's growth process exerting but it also creates burden on urban infrastructures in terms of availability of public provisions, health and environment quality. The Uno Agenda 30 has laid down quantitative criteria and related indicators to achieve 17 goals and related targets. Goal 11 related to sustainable cities and communities provide a road map to tackle the future challenges that cities are going to face due to large numbers of urban poor and climate related disasters.

Government of India in response to meet SDGs goals has adopted various policies national policies and programmes like mart Cities Mission, Atal Mission for Rejuvenation of Urban Transformation (AMRUT), Swachh Bharat Mission, Pradhan Mantri Awas Yojana, NULM, and Rurban mission. SSD 11 targets has improved significantly but there is a relative gap in performance between sub- targets.

There are cities sustainable. A report prepared by the world bank stated that by 2036, India needs to spend 1.2 percent of GDP per annum on urban infrastructures. This would be a daunting task against the background of the total capital expenditure on urban infrastructure, which averaged at 0.6 % of GDP for the period between 2011 and 2018.

Niti Aayog has started preparing SDG Index tracker for India with baseline year as 2018, but there are limitations of data availability with respect to various indicators. There is need for developing qualitative index for targets like green space, heritage protection, urban governance and integrated planning approach.

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