

VIKASIT KARNATAKA BY 2047: SUSTAINABLE DEVELOPMENT GOALS AS THE GUIDING FRAMEWORK

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Abstract

To realize the vision of "Vikasit Karnataka" by 2047, a comprehensive strategy centered on Sustainable Development Goals (SDGs) is essential. This study aims to estimate the SDG targets and budget requirements for Karnataka, focusing on achieving significant progress in poverty alleviation, hunger reduction, health, education, gender equality, and environmental sustainability. The research utilizes baseline data from state departments and expert consultations to project targets and budget needs, under two scenarios: Business As Usual (BAU) and Budget Required for Achieving Targets (BRAT). Notable findings include the projected budget increase for SDG 1 (No Poverty) from Rs. 5,08,218 crores in 2030 to Rs. 14,16,114 crores by 2047, reflecting substantial investments required for poverty alleviation and social protection. Similarly, budgets for SDG 2 (Zero Hunger) and SDG 3 (Good Health and Well-being) show significant increases to address hunger and improve healthcare infrastructure. Investments for SDG 4 (Quality Education) and SDG 7 (Affordable and Clean Energy) also rise markedly to enhance educational access and support renewable energy initiatives. Despite notable achievements, challenges remain in areas such as gender equality, clean water access, and infrastructure development. To address these, strategic policy measures are proposed, including expanding social protection, improving nutritional programs, investing in rural healthcare, enhancing educational quality, and promoting gender equality. Additionally, advancing clean energy, urban sustainability, and environmental conservation are critical. Effective implementation of these strategies, supported by robust financial planning and stakeholder collaboration, will be crucial for Karnataka to achieve its vision of sustainable and inclusive development by 2047.

Key Words: *Vikasit Karnataka, 2047, SDGs, Budget.*

1. Introduction

The Millennium Development Goals (MDGs) were a major global effort to achieve development goals up until 2015. When the MDGs period ended, 2016 marked the beginning of the ambitious 2030 Agenda, which introduced a new approach to sustainable development. This approach connects economic, social, and environmental aspects across generations, recognizing that decisions in one area affect others, creating both benefits and challenges. The 17 Sustainable Development Goals (SDGs) and 169 targets are organized around five key themes: People, Planet, Peace, Prosperity, and Partnerships (GoK, 2020: <https://www.imf.org/en/Topics/SDG>).

To support India's commitment to national development and the Sustainable Development Goals (SDGs), NITI Aayog has been tasked with creating national indicators, monitoring progress across ministries, and working with States to meet the SDG targets. The government has launched various policies, schemes, and programs focused on reducing poverty, improving human development, ensuring gender and social equality, and addressing climate change. India is aligning its programs with the UN SDGs under the 'Strategy for New India @ 75' to promote the idea of 'Sabka Saath, Sabka Vikas' which means 'Collective efforts for Inclusive growth' ensuring no one is left behind. For this national agenda to succeed, it needs strong support from action plans at the State level. The Karnataka SDG 2030 - Strategy and Action Plan serves as a guide for the State to achieve its goals and targets.

Karnataka is growing into a strong economy with a focus on improving human development and ensuring inclusive growth. As one of the more advanced states in India, it is highly responsive to global development programs from organizations like the United Nations Development Programme (UNDP) and the World Bank. The State has become a leader in various development areas and could serve as a model for other states in achieving the goals of the People's Agenda 2030.

The Planning, Programme Monitoring, and Statistics Department (PPMS) in Karnataka is in charge of creating strategies to achieve the Sustainable Development Goals (SDGs) by 2030. The department has set up a Monitoring and Coordination Committee and a Steering Committee to develop effective action plans for the SDGs. They have also established a technical cell and goal-specific committees to regularly check progress. These committees have worked with various departments to finalize strategies and action plans. They have also set up a system to track budget needs and measure progress with specific indicators for 2022 and 2030. Each month, the State reviews NITI Aayog's priority indicators from the SDG India Index Report of 2018 as part of the Karnataka Development Programme (KDP) review. Karnataka is actively promoting awareness about the SDGs.

Karnataka, with its forward-thinking approach, has successfully met many of the goals set in Vision 2020 and is now focused on achieving the Sustainable Development Goals (SDGs) by 2030. The SDGs are a global set of goals aimed at making progress in social, economic, and environmental areas. NITI Aayog, which monitors SDG progress in India, created the SDG India Index 2019, using 100 indicators to assess each state's performance. Karnataka ranked 6th in the country with a score of 66 out of 100. The State leads in 11 SDGs, with 12 indicators in the Performer category, 34 in Front Runners, 21 in Achievers, and 31 in Aspirants (Gok, 2020). These goals are key to Karnataka's vision for 2030 and its aim to become a developed state by 2047.

2. Research Objectives:

- To Estimate the SDG Targets for 2047 to Achieve Vikasit Karnataka.
- To Estimate the Budget Requirements for 2047 to Achieve Vikasit Karnataka.

3. Research Methodology

The Vision document analyzes the status, targets, and budget requirements for achieving the SDGs in Karnataka. Baseline data was provided by relevant departments, and goal committees, in consultation with these

departments, estimated state-level targets for key indicators. These estimates considered past performance, potential, benchmarks from the best-performing states, and national targets. Sub-indicators were also developed for a more detailed understanding of the goals and targets. The strategies and action plans were formulated based on these targets, with budget requirements projected under two scenarios: Business As Usual (BAU) and Budget Required for Achieving Targets (BRAT). Special emphasis was placed on poorly performing indicators and the targets set for 2030 when estimating budget needs.

Data from the Karnataka Vision 2030 report was used to estimate SDG targets and budget requirements specifically for 2030. Based on this, growth rates from 2018-19 BE to 2030 were estimated and then applied to project figures for 2047, which is how the SDG targets and budget needs were estimated to achieve the vision of "Vikasit Karnataka 2047."

4. Karnataka's Achievement of SDGs: An Overview

In 2018, NITI Aayog and UN India created the SDG India Index Baseline Report, which covers 13 of the 17 SDGs (excluding Goals 12, 13, 14, and 17) for States and Union Territories. This report helps design strategies and action plans for achieving the SDGs. Karnataka's SDG Index Score for 2030 is estimated to be between 36 and 88. The state is ranked 3rd overall and is classified as a 'Performer' with a score of 64. This puts Karnataka ahead of states like Tamil Nadu (66) but slightly behind Kerala (69) and Himachal Pradesh (69). The table 1 shows Karnataka's performance for all SDGs. Karnataka is performing well in several Sustainable Development Goals (SDGs).

Table 1: Performance of Karnataka across all SDGs

Category Karnataka	SDG Goal	Score Karnataka	Rank
Front Runner (65-99)	SDG 3: Good Health and Well-being	69	5
	SDG 4: Quality Education	76	5
	SDG 7: Affordable and Clean Energy	77	5
	SDG 8: Decent Work and Economic Growth	72	11
	SDG 10: Reduced Inequalities	68	16
	SDG 15: Life on Land	88	8
	SDG 16: Peace, Justice and Strong Institutions	74	12
Performer (50-64)	SDG 1: No Poverty	52	17
	SDG 2: Zero Hunger	54	11
	SDG 6: Clean Water and Sanitation	62	14
	SDG 9: Industry, Innovation and Infrastructure	57	7
Aspirants (0-49)	SDG 5: Gender Inequality	43	6
	SDG 11: Sustainable Cities and Communities	36	16
Karnataka (All Goals)		64	3

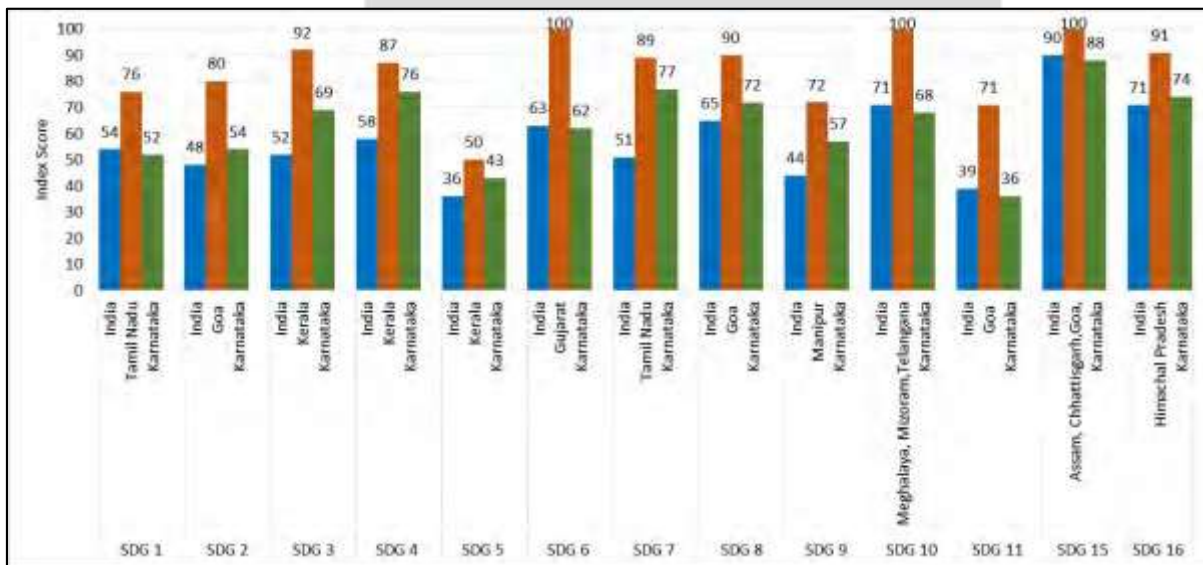
Source: NITI Aayog, 2018.

The state is a front-runner in Goal 3 (Good Health and Well-being) with a score of 69, Goal 4 (Quality Education) with a score of 76, Goal 7 (Affordable and Clean Energy) with a score of 77, Goal 8 (Decent Work and Economic Growth) with a score of 72, Goal 10 (Reduced Inequalities) with a score of 68, Goal 15 (Life on Land) with a score of 88, and Goal 16 (Peace, Justice, and Strong Institutions) with a score of 74. Karnataka is in the 'Performer' group for Goal 1 (No Poverty) with a score of 52, Goal 2 (Zero Hunger) with a score of 54, Goal 6 (Clean Water and Sanitation) with a score of 62, and Goal 9 (Industry, Innovation, and Infrastructure) with a score of 57. However, the state is classified as 'Aspirant' for Goal 5 (Gender Equality) with a score of 43 and Goal 11 (Sustainable Cities and Communities) with a score of 36. The focus needs to be on improving these two areas.

4.1 Goal-wise SDG Index of Karnataka and India

Figure 1 shows the status and targets for all of India and the current status for Karnataka. Karnataka performs better than the national average in many goals but is lagging in SDGs 6 (Clean Water and Sanitation), 10 (Reduced Inequalities), 11 (Sustainable Cities and Communities), and 15 (Life on Land). This situation is concerning. To address inequalities, Karnataka needs targeted strategies and time-bound actions across all departments and programs. The SDGs are grouped based on their themes: Goals 1, 2, 3, 4, 5, and 7 focus on human development and services; Goals 6, 11, 12, 13, 14, and 15 address environmental issues; Goals 8, 9, and 10 cover economic and cross-cutting issues; and Goals 16 and 17 promote peace and inclusivity. Strategies for achieving these goals by 2030 and for Karnataka's development by 2047 have been developed, excluding Goal 17.

Fig 1: Goal-wise SDG Index of Karnataka and India



Source: NITI Aayog, 2018

4.2 Karnataka and India: Achievements and Challenges in No Poverty

Voluntary National Reviews have highlighted that countries are primarily focused on eradicating extreme poverty. Over the past 20 years, India has made significant progress in reducing poverty through various schemes. These include the Mahatma Gandhi National Rural Employment Generation Act (MGNREGA), Pradhan Mantri Jan Dhan Yojana, Deendayal Antyodaya Yojana, and self-employment programs like PMGSY. The Mudra Yojana supports the development of small and medium enterprises (MSMEs), and Direct Benefit Transfer ensures transparency and efficiency in delivering benefits.

Karnataka has also implemented several self-employment schemes through various programs such as the Dr. B R Ambedkar Development Corporation and the Chief Minister's Employment Generation Programme. Women-specific schemes like 'Udyogini' and Stree Shakti are also promoted. Despite these efforts, Karnataka's performance in poverty reduction, with a score of 52, is still behind Tamil Nadu's score of 72. One area where Karnataka lags is in providing maternity benefits, with only 19% of eligible beneficiaries receiving them. Other indicators are close to the national average.

Table 2: Performance of SDG 1 (No Poverty): Karnataka and India

Indicators	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Percentage of population living below National Poverty line	20.9	21.9	10.95	5.22	66	62	100	100
Percentage of households with any usual member covered by any health scheme or health insurance	28.1	28.7	100	100	26	26	100	100
Persons provided employment as a percentage of persons who demanded employment under MGNREGA	84.3	84.8	100	100	64	65	100	100
Proportion of the population (out of total eligible population) receiving social protection benefits under Maternity Benefit	19.9	36.4	100	100	19	35	100	100
SDG 1 Index Score					52	54	100	100

*Note: * Estimated in Vision 2030 Report, GoK*

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

The table 2 shows the details of Karnataka's poverty-related performance. Karnataka's performance on SDG 1 (No Poverty) shows notable progress and ambitious targets. Currently, 20.9% of the population lives below the National Poverty Line, but the state aims to reduce this to 10.95% by 2030 and 5.22% by 2047. The index score for this indicator stands at 66, with a target of 100 for 2047. Coverage of health schemes is at 28.1%, with a goal of universal coverage (100%) by 2030 and 2047. Employment under MGNREGA is robust at 84.3%, with an aim to achieve full employment (100%) by both targets. Maternity Benefit coverage is at 19.9%, with a target of 100% for both years. The overall SDG 1 Index Score is 52, with a target of 100 by 2047. These targets reflect Karnataka's commitment to eradicating poverty and improving social protection across various indicators.

4.3 Karnataka and India: Achievements and Challenges in Zero Hunger

To end hunger and malnutrition, key strategies include creating resilient food production systems and adopting sustainable farming practices. The National Mission on Sustainable Agriculture (NMSA), along with other climate action missions, focuses on maintaining food production through eco-friendly and adaptive agricultural methods. Major programs like RKVY and Pradhan Mantri Krishi Sinchayee Yojana aim to boost agricultural productivity, while state schemes such as Krishi Bhagya and Pashu Bhagya support integrated agriculture efforts. For improving nutrition security, the National Food Security Act and Antyodaya Anna Yojana enhance access through the Public Distribution System. Programs like Integrated Child Development Services (ICDS), Mid-Day Meal Programmes, and Pradhan Mantri Matru Vandana Yojana address the nutritional needs of children, pregnant women, and new mothers. State initiatives such as Annabhagya, Matru-poorna Yojane, and Ksheerabhagya also tackle malnutrition issues.

Among four key indicators for this goal, the national average score is low at 48, while top-performing states like Goa and Delhi score 80 and 72, respectively. Karnataka, with a score of 54, performs slightly above the national average. Karnataka's performance on SDG 2 (Zero Hunger) reveals both progress and substantial targets in Table 3. The ratio of rural households covered by the public distribution system relative to those with incomes below Rs. 5,000 is 1.1, with targets of 1.29 for 2030 and 1.5 for 2047, reflecting an index score of 76, aiming for 100 by 2047. Stunting among children under 5 years is currently at 36.2%, with ambitious targets of 21.0% by 2030 and 12.2% by 2047, translating to an index score of 44. Anaemia in pregnant women is at 45.4%, with targets of 23.6% and 12.3%, achieving an index score of 51. Cereal production per unit area stands at 2158 Kg/Ha, with targets set at 5018 Kg/Ha by 2030 and 11671 Kg/Ha by 2047, resulting in an index score of 43. The overall SDG 2 Index Score is 54, aiming for 100 by 2047, indicating a strong commitment to addressing hunger and malnutrition.

Table 3: Performance of SDG 2 (Zero Hunger): Karnataka and India

Indicators	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Ratio of rural households covered under public distribution system to rural households where monthly income of highest earning member is less than Rs.5,000	1.1	1.01	1.29	1.5	76	64	100	100
Percentage of children under age 5 years who are stunted	36.2	38.4	21.0	12.2	44	36	100	100
Percentage of pregnant women aged 15-40 years who are anaemic (11.0g/dl) (%)	45.4	50.3	23.6	12.3	51	40	100	100
Rice, wheat and coarse cereals produced annually per unit area (Kg/Ha)	2158	2509	5018	11671	43	50	100	100
SDG 2 Index Score					54	48	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.4 Karnataka and India: Achievements and Challenges in Good Health and Well-Being

Public health is a valuable asset for any nation and is essential for achieving sustainable development. In India, the National Health Mission is implementing various programs to make primary healthcare accessible to everyone. Key initiatives include Aayushman Bharat – Pradhan Mantri Jan Aarogya Yojana, Mission Indradhanush, Integrated Disease Surveillance Programme, National Mental Health Programme, and the National Programme for controlling blindness, cancer, diabetes, heart disease, and stroke.

In Karnataka, these efforts are supported by state initiatives like Aarogya Karnataka and Arogya Kavacha (108) Emergency Service, which started in 2008 under a public-private partnership. Additionally, Arogya Sahayavani (104) offers a toll-free helpline that provides consultation services for minor health issues. Karnataka's performance on SDG 3 (Good Health and Well-Being) highlights critical areas for improvement and ambitious targets in Table 4. The Maternal Mortality Ratio (MMR) is currently 108, with a target to reduce it to 70 by 2030 and 46 by 2047, achieving an index score of 77 with an aim of 100 by 2047. The Under-Five Mortality Rate (U5MR) stands at 32, with targets to bring it down to 11 by 2030 and 4 by 2047, reflecting an index score of 69. Immunization coverage for children is at 62.6%, with a goal of 100% by 2030 and 2047, resulting in an index score of 42. Tuberculosis case notifications are 123 per 1 lakh population, with the aim to eliminate it (0 cases) by 2047, scoring 76 on the index. The density of healthcare professionals is 453 per 100,000 population, with targets of 550 by 2030 and 668 by 2047, showing an index score of 82. Karnataka's targets reflect a strong commitment to improving healthcare outcomes.

Table 4: Performance of SDG3 (Good Health and Well Being): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Maternal Mortality Ratio (MMR)	108	130	70	46	77	64	100	100
Under-Five Mortality Rate (U5MR)	32	50	11	4	69	42	100	100
Percentage of children aged fully immunized and three doses of Pentavalent	62.6	62	100	100	42	41	100	100
Annual Notification of Tuberculosis cases per 1 lakh population	123	138	0	0	76	74	100	100
Number of governmental physicians, nurses and midwives per 1,00,000 population	453	221	550	668	82	39	100	100
SDG 3 Index Score					69	52	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.5 Karnataka and India: Achievements and Challenges in Quality Education

Ensuring inclusive and equitable quality education under SDG 4 remains a priority, with a focus on improving access for low-income and rural students. There is also a strong emphasis on closing the 'digital gap' through computer literacy initiatives. The state aims to expand educational opportunities from early childhood to postgraduate levels. In line with the Government of India's push for rights-based education, marked by the

Right to Education Act of 2009, Karnataka has launched various programs and schemes like Samagra Shiksha, Shala Kosh, Shagun, Shaala Saarthi, and Kasturba Gandhi Balika Vidyalayas.

To measure India's progress on Quality Education, seven national indicators have been identified, covering two of the ten SDG targets. India has a score of 58, with Kerala leading the way with a score of 87. Karnataka also ranks high with a score of 76, outperforming India in six of the seven indicators. However, one area of concern is the high dropout rate at the secondary level, which is 26.18%, significantly higher than India's average of 17.06%. Karnataka's performance on SDG 4 (Quality Education) shows both progress and areas needing improvement. The Adjusted Net Enrolment Ratio for elementary and secondary schools is 85.5%, with a target of 100% by 2030 and 2047, indicating an index score of 73. Learning outcomes in language, mathematics, and EVS for Class 5 students have a high accuracy of 68.7%, with a goal to maintain this level at 100% by 2047. For Class 8 students, the accuracy in core subjects is currently 54.5%, with improvement targets to reach 59.4% by 2047, scoring 88 on the index. The percentage of out-of-school children is low at 1.5%, aiming for complete enrollment (0%) by 2047, with an index score of 79. However, the high drop-out rate at the secondary level, currently at 26.2%, needs significant reduction to 6.6% by 2047, with an index score of 27. Teacher professionalization and pupil-teacher ratio targets are also prioritized, reflecting Karnataka's commitment to enhancing education quality (Table 5).

Table 5: Performance of SDG4 (Quality Education): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Adjusted Net Enrolment Ratio at Elementary (Class 1-8) and Secondary (Class 9-10) school (%)	85.5	75.8	100	100	73	56	100	100
Percentage correct responses on Learning Outcomes in Language, Mathematics and EVS for Class 5 students	68.7	54.7	67.9	67.1	100	50	100	100
Percentage correct responses on Learning Outcomes in Language, Mathematics, Science and Social Science for Class 8 students	54.5	44.6	57.2	60.0	88	45	100	100
Percentage of children in the age group of 6-13 are out of school	1.5	3.0	0	0	79	54	100	100
Average Annual Drop-out rate at secondary level (%)	26.2	17.1	10	3.8	27	68	100	100
Percentage of school teachers professional	95.9	81.2	100	100	94	73	100	100
Percentage of elementary and secondary schools with Pupil Teacher Ratio less than/equal to 30	76.1	70.4	100	100	69	62	100	100
SDG 4 Index Score					76	58	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.6 Karnataka and India: Achievements and Challenges in Gender Equality

SDG 5 addresses various issues such as discrimination against women, violence, reproductive health, ownership rights, and access to technology. Despite progress, like increased girls' enrollment in primary education, gender equality remains a challenge in many areas. Women often struggle to gain political representation, leadership roles, equal pay, and face workplace harassment and gender-based violence. India has passed several laws, such as the Protection of Women from Domestic Violence Act (2005) and the Sexual Harassment of Women at Workplace Act (2013). Various schemes like Beti Bachao Beti Padhao, Sukanya Samridhi Yojana, MUDRA Yojana, and Pradhan Mantri Ujjwala Yojana have been introduced, along with the Maternity Benefits Bill, to improve women's access to employment.

Karnataka is considered gender-friendly and has implemented additional state schemes like Bhagyalaxmi, Udyogini, and Santwana through the Karnataka Women Development Corporation. The state has also established policies for women empowerment, the girl child, and transgender individuals. India uses six national indicators to measure progress on four of the nine SDG 5 targets. The national score is 36, with Kerala, Chandigarh, and Sikkim leading with scores of around 50. Karnataka, with a score of 43, is in the "Aspirant" category. Fewer women in Karnataka (2.68%) have won seats in the state legislative assembly compared to the national average (8.70%), and the target of 50% is still far off. However, Karnataka performs better than the national average in sex ratio at birth (935 vs. 898) and in the percentage of women experiencing marital violence (24.40% vs. 33.3%).

Karnataka's performance on SDG 5 (Gender Equality) indicates areas needing significant progress. The sex ratio at birth is 935 females per 1,000 males, with targets to improve to 973 by 2047, reflecting an index score of 84. The wage gap between women and men shows that women earn 70% of what men earn, with a goal to achieve and surpass parity by 2047, scoring 43 on the index. Spousal violence is reported by 24.4% of ever-married women, with a target to eliminate it, scoring 55 on the index. Women's representation in the state legislative assembly is alarmingly low at 2.68%, with an ambitious target of 59% by 2047, scoring only 5 on the index. The female labor force participation rate is 42% of the male rate, with a target to more than double this by 2047, scoring 34 on the index. Family planning methods are used by 51.8% of women, with a goal for universal usage, reflecting an index score of 37. These figures underscore the need for focused efforts to achieve gender equality in Karnataka (Table 6).

Table 6: Performance of SDG5 (Gender Equality): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Sex Ratio at Birth (female per 1000 male)	935	898	954	973	84	54	100	100
Average female to male ratio of average wages/salaries received per day by regular age/salaried employees for rural and urban	0.7	0.7	1	1.3	43	44	100	100
Percentage of ever married women aged 15-49 who have ever experienced spousal violence	24.4	33.3	0	0	55	39	100	100

Percentage of seats won by women in the general elections to state legislative assembly*	2.68	8.7	50	59	5	17	100	100
Ratio of Female Labour force participation rate to Male labour force participation rate	0.42	0.32	1	2.38	34	21	100	100
Percentage of women in the age group of 15-49 years using modern methods of family planning	51.8	53.5	100	100	37	39	100	100
SDG 5 Index Score					43	36	100	100

Note: * Estimated by GoK (Vision 2030 Report)

Estimated by Author

Source: NITI Aayog, 2018

4.7 Karnataka and India: Achievements and Challenges in Clean Water and Sanitation

The water sector goal under SDG 6 goes beyond just providing drinking water and sanitation; it also focuses on water conservation, setting a higher standard than the previous Millennium Development Goals (MDGs). Managing the demand for water is challenging due to competing needs from households, industry, energy, agriculture, and food production. Additionally, climate change, conflicts, natural disasters, and overuse of groundwater make it harder to ensure water availability for everyone. India has implemented several initiatives like the National Rural Drinking Water Programme, National Water Quality Sub-Mission, Namami Gange, and Swachh Bharat Mission Gramin. Karnataka has also introduced state-specific schemes such as water purification plants, Jaladhare, and Jalamrutha a community-driven program focused on water conservation, rejuvenation, and greenery.

To assess progress on Clean Water and Sanitation, five national indicators cover three of the eight SDG 6 targets. Gujarat and three Union Territories have achieved a perfect score of 100, while both India and Karnataka scored close to 63 and 62, respectively. Although Karnataka declared all 30 districts open defecation free in November 2019, it lags in providing safe and adequate drinking water in rural areas, with only 48.72% coverage compared to the national average of 71.80%. As a result, improving access to clean water is one of the top priorities in Karnataka's Vision 2025. Karnataka's performance on SDG 6 (Clean Water and Sanitation) reflects both progress and significant areas for improvement. Currently, 48.7% of the rural population has access to safe and adequate drinking water, with a target of universal coverage by 2030 and 2047, scoring 35 on the index. The percentage of rural households with individual toilets is 87.6%, with an aim for 100% by 2047, reflecting an index score of 73. The state is halfway to being Open Defecation Free (50%), with a goal of complete coverage by 2047, scoring 50 on the index. In urban areas, the installed sewage treatment capacity is 34.5% of the sewage generated, with targets to reach 91.8% by 2047, scoring 50 on the index. Groundwater management is relatively strong, with 65.8% of annual groundwater withdrawal against availability, aiming for 74.5% by 2047, scoring 100 on the index. These targets emphasize Karnataka's commitment to improving water and sanitation access (Table 7).

Table 7: Performance of SDG6 (Clean Water and Sanitation): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Percentage of population having safe and adequate drinking water in rural areas	48.7	71.8	100	100	35	64	100	100
Percentage of rural households with individual household toilets	87.6	82.7	100	100	73	63	100	100
Percentage of to be Open Defecation Free	50.0	32.0	100	100	50	32	100	100
Installed sewage treatment capacity as a proportion of sewage created in urban	34.5	37.6	68.8	91.8	50	55	100	100
Percentage annual ground water withdrawal against net annual availability	65.8	61.5	70.0	74.5	100	100	100	100
SDG 6 Index Score					62	63	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.8 Karnataka and India: Achievements and Challenges in Affordable and Clean Energy

SDG 7 aims to significantly boost the contribution of renewable energy to the global energy supply and double the rate of energy efficiency. This goal includes diversifying energy sources, developing renewable energy, improving energy efficiency, educating the public on sustainable energy use, and expanding access to electricity in rural areas. India has launched various initiatives to support these goals, such as the National Solar Mission, Green Energy Corridor, Off-Grid Solar Applications Programme, National Biogas and Manure Management Programme, and Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya). Additionally, schemes like Anila Bhagya and subsidized electricity programs such as Bhagya Jyothi and Kuteer Jyothi have been implemented in Karnataka.

To track progress on SDG 7, three national indicators capture two of the five SDG 7 targets. The overall score for India is 51, with Tamil Nadu and Mizoram leading the way with scores of 89 and 78, respectively. Karnataka ranks among the top three states with a score of 77. The state has a higher percentage of households using clean cooking fuel (54.70%) and a significant share of renewable energy in its installed capacity (40%), compared to the national average of 17.51%. Karnataka's performance on SDG 7 (Affordable and Clean Energy) shows a positive trajectory but highlights areas needing further improvement in Table 8. The percentage of electrified households is high at 96.5%, with a target to reach 100% by 2030 and maintain it through 2047, scoring 85 on the index. However, only 54.7% of households use clean cooking fuel, with an ambitious goal to achieve full coverage by 2030 and 2047, reflecting an index score of 45. The renewable energy share of installed generating capacity is 40.8%, which is already close to the 2030 target of 40%, but the target for 2047 slightly decreases to 39.2%, which may indicate a balanced approach between renewable and other energy sources. The overall targets underscore Karnataka's commitment to providing affordable and clean energy to all its citizens, but the state needs to accelerate its efforts, particularly in increasing the use of clean cooking fuel.

Table 8: Performance of SDG7 (Affordable and Clean Energy): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Percentage of households electrified	96.5	94.6	100	100	85	78	100	100
Percentage of households using Clean Cooking Fuel	54.7	43.8	100	100	45	32	100	100
Renewable share of installed generating capacity (%)	40.8	17.5	40	39.2	100	43	100	100
SDG 7 Index Score					77	51	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.9 Karnataka and India: Achievements and Challenges in Decent work and Economic Growth

Inclusive growth requires sustained economic growth and decent work opportunities. This includes equal pay for equal work, labor rights protection, safe working conditions, and the elimination of child and forced labor. Decent work is essential in all employment sectors, promoting entrepreneurship, recognizing informal work, and formalizing small and medium-sized enterprises (MSMEs). This goal is closely linked with SDGs 5 (Gender Equality) and 10 (Reduced Inequalities). The Government of India (GOI) has introduced several initiatives to support these objectives, including the Prime Minister's Employment Generation Programme, Start-up India, Skill India, National Apprenticeship Promotion Scheme, and Pradhan Mantri Kaushal Vikas Yojana. Karnataka has also implemented programs like the Chief Minister's Koushalya Karnataka Yojane, Karnataka Livelihood Scheme, and Rajeev Gandhi Chaitanya Yojane. Bengaluru has become a hub for start-ups, supported by the state's Start-Up policy.

India's progress on Goal 8 is measured using four national indicators covering three of the 12 SDG targets. Goa leads among states with a score of 90. Both India and Karnataka have nearly achieved 100% household bank account access. However, the national unemployment rate remains high, while Karnataka performs better with a score of 99 and a higher number of ATMs per lakh population compared to the national average. Karnataka's performance on SDG 8 (Decent Work and Economic Growth) reflects a mix of achievements and challenges. The annual GDP per capita growth rate is 6.4%, with ambitious targets to reach 10.0% by 2030 and 15.7% by 2047, reflecting a current index score of 56. The unemployment rate, averaging 16.5 per 1,000 persons, is relatively low, with targets to reduce it further to 13.3 by 2047, scoring an impressive 99 on the index. Financial inclusion is strong, with 100% of households having a bank account, achieving full target scores. However, the number of ATMs per 100,000 population is 26.2, with goals to significantly increase this to 99 by 2047, reflecting a lower index score of 43. These indicators highlight Karnataka's focus on economic growth and job creation, but also the need to enhance financial infrastructure to support inclusive economic development (Table 9).

Table 9: Performance of SDG8 (Decent work and Economic Growth): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Annual growth rate of GDP per capita (at constant price of 2011-12)	6.4	6.5	10.0	15.7	56	58	100	100
Average unemployment rate per 1000 persons for males and females	16.5	63.5	14.8	13.3	99	82	100	100
Percentage of households with a bank account	100.0	100.0	100.0	100	90	96	100	100
Number of ATMs per 1,00,000 population	26.2	16.8	51.0	99.0	43	22	100	100
SDG 8 Index Score					72	65	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.10 Karnataka and India: Achievements and Challenges in Industry, Innovation and Infrastructure

This goal emphasizes the need to shift industrial growth towards more equitable and sustainable practices, focusing on innovation, efficient resource use, and reducing environmental impacts. Achieving a diversified, dynamic, and inclusive industrialization is crucial, as it is linked with other goals like domestic growth, job creation, and self-sufficiency. The Government of India has launched initiatives like the Pradhan Mantri Gram Sadak Yojana, Bharatmala, Sagarmala, Make in India, and Digital India (including the Aadhaar program). However, India has a low score of 44 on this goal, while Delhi and Puducherry have achieved top scores of 100. Karnataka, despite scoring zero in targeted rural road development under PMGSY, has achieved 100% coverage of Gram Panchayats under Bharat Net and has outperformed the national average in three other indicators.

Karnataka has also implemented schemes like Namma Gram Namma Raste and the Chief Minister Gram Sadak Yojane to improve rural transport and communication. Karnataka leads the India Innovation Index 2019 among major states and ranks second nationally after Delhi. Bengaluru is recognized globally as one of the top 20 startup ecosystems, reflecting Karnataka's leadership in software, IT-enabled services, biotechnology, nanotechnology, and precision engineering. The state aims to be a leader in these sectors by 2025, setting the stage for achieving SDG 9 by 2030. Four national indicators are used to measure India's progress towards this goal.

Karnataka's performance on SDG 9 (Industry, Innovation, and Infrastructure) shows progress in connectivity but reveals areas needing substantial improvement. Notably, none of the targeted habitations are yet connected by all-weather roads under the Pradhan Mantri Gram Sadak Yojana, with a target of 100% coverage by 2030 and 2047, scoring 0 on the index. Mobile tele-density is high, with 98.5 connections per 100 persons, nearly reaching the target of 100%, reflecting a strong score of 97. However, internet penetration is lower, with 44.3 subscribers per 100 people, aiming for complete coverage by 2047, scoring 33 on the index. The state has achieved full coverage of Gram Panchayats under Bharat Net, reaching the target of 100%. These

indicators suggest that while Karnataka is advancing in digital connectivity, there is a critical need to improve physical infrastructure, particularly in rural areas, to support sustainable development (Table 10).

Table 10: Performance of SDG9 (Industry, Innovation and Infrastructure): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Percentage of targeted habitations connected by all-weather roads under Pradhan Mantri Gram Sadak Yojana	0*	47.4	100	100	0	47	100	100
Number of mobile connections per 100 persons in rural and urban area (Mobile Tele density)	98.5	83.0	100	100	97	65	100	100
Number of Internet Subscribers per 100 population	44.3	33.5	100	100	33	20	100	100
Percentage of Gram Panchayats covered under Bharat Net	100	42.4	100	100	100	42	100	100
SDG 9 Index Score					57	44	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.11 Karnataka and India: Achievements and Challenges in Reduced Inequalities

Growing inequalities in income distribution and access to opportunities among different social groups lead to the deprivation of human rights. To ensure no one is left behind, these inequalities are addressed through direct action and strategies that help develop skills and provide access to opportunities. The Government of India has launched initiatives like Pradhan Mantri Jan Dhan Yojana, Prime Minister Employment Generation Programme, MGNREGA, Deen Dayal Upadhyaya Grameen Kaushalya Yojana, and Stand-up India Scheme to reduce these inequalities. In Karnataka, access to education, skills, livelihood, and employment is supported through special funding under the Scheduled Castes Sub-Plan (SCP) and Tribal Sub-Plan (TSP) schemes, which cover various human development sectors. The state also promotes land access for irrigation through the Land Purchase Scheme (1991) under the Ganga Kalyan Scheme. India's progress towards reducing inequality is measured by five national indicators covering three of the ten SDG targets. India has a score of 71, with most states and union territories (UTs) being Front Runners, scoring above 65. Karnataka, although slightly below the national average, has fully utilized its tribal sub-plan funds and scored 86 in the utilization of SC sub-plan funds, surpassing the national score.

Another aspect of inequality is the uneven growth across regions, leading to deprivation in backward or aspirational areas. The High-Power Committee on Redressal of Regional Imbalances (HPCRRI 2000) identified the North Karnataka region as having two-thirds of the state's most backward talukas, which are arid, less-irrigated, and drought-prone. The committee recommended a Special Development Plan of Rs. 31,000 crores over eight years (2002-2010), which was implemented starting in 2007-08, with Rs. 24,519 crores spent on 114 backward talukas. The Karnataka Human Development Report 2015, Karnataka District Human Development

Reports 2014, and Karnataka Agricultural Policy 2016 outline steps to improve human development indicators in the state, which, if implemented effectively, could help achieve Karnataka Vision 2025 and the SDGs by 2030. Karnataka's performance on SDG 10 (Reduced Inequalities) shows mixed results in addressing economic and social disparities. The Palma Ratio of Household Expenditure, which measures income inequality, is 1.8 in urban areas and 0.8 in rural areas. The urban ratio highlights significant inequality, with a target to reduce it to 1 by 2047, while rural areas are closer to the target, achieving a perfect score of 100. Transgender labor force participation stands at 0.6, with an ambitious goal to reach parity (1) by 2047, reflecting a current score of 56. The state demonstrates strong utilization of funds aimed at marginalized communities, with 90.2% of the Scheduled Caste Sub Plan and 105.4% of the Tribal Sub Plan funds utilized, achieving scores of 86 and 100, respectively. These indicators suggest progress in some areas, but there is a critical need to address urban income inequality and improve the inclusion of transgender individuals in the workforce (Table 11).

Table 11: Performance of SDG10 (Reduced Inequalities): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Palma Ratio of Household Expenditure in Urban India	1.8	1.4	1	1	0*	50	100	100
Palma Ratio of Household Expenditure in Rural India	0.8	0.9	1	1	100	100	100	100
Ratio of Transgender Labour force participation in labour force participation rate	0.6	0.6	1	1	56	61	100	100
Percentage of Scheduled Caste Sub Plan fund utilized	90.2	77.7	100	100	86	68	100	100
Percentage of Tribal Sub Plan fund utilized	105.4	83.0	100	100	100	76	100	100
SDG 10 Index Score					68	71	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.12 Karnataka and India: Achievements and Challenges in Sustainable Cities and Communities

India has seen rapid urban growth, with its urban population rising by 91 million from 2001 to 2011. It's expected that 416 million more people will move to cities between 2018 and 2050. To tackle urban challenges, the Indian government has launched several programs, including the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Jawaharlal Nehru National Urban Renewal Mission, Pradhan Mantri Awas Yojana (PMAY), and the Smart Cities Mission. In Karnataka, while the state has not performed well under PMAY, it has introduced several other housing schemes like the Devaraj Urs Housing Scheme, Dr. B. R. Ambedkar Niwaas Yojane, Suvarna Karnataka Yojane (KHB), Chief Minister's One Lakh Bengaluru Housing Scheme, and Pourkarmikaa Grahabhagya Yojane to address the growing need for urban housing.

India's progress on Goal 11, which focuses on sustainable cities, is measured by four national indicators related to two of the ten SDG targets for 2030. According to the SDG India Index, India has a low score of 39, with Goa being the only state in the top category with a score of 71. Most states are in the Aspirant category with scores below 49. Karnataka's scores are close to the national average, but there is concern about the low

percentage of houses completed under PMAY compared to the overall demand, with Karnataka at 4.6% and India at 3.3%.

Table 12 presents the, Karnataka's performance on SDG 11 (Sustainable Cities and Communities) reflects notable gaps and targets for improvement. Currently, only 4.6% of houses have been completed under the Pradhan Mantri Awas Yojana (PMAY) relative to net demand, with a target of 100% completion by 2030 and 2047, scoring just 5 on the index. The percentage of urban households living in slums is 5.4%, with a goal to eradicate slums entirely by 2047, showing a significant challenge compared to the current score of 55. Waste management is a mixed picture: 61.3% of wards have 100% door-to-door waste collection, meeting the 100% target, while only 22% of waste is processed, with a goal to process all waste by 2047, achieving a score of 22. These indicators highlight the need for accelerated efforts to improve housing, slum conditions, and waste processing in urban areas.

Table 12: Performance of SDG11 (Sustainable Cities and Communities): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Houses completed under PMAY as a percentage of net demand assessment for houses	4.6	3.3	100	100	5	3	100	100
Percentage of urban households living in slums	5.4	5.4	0	0	55	55	100	100
Percentage of wards with 100% door to door waste collection	61.3	73.6	100	100	61	74	100	100
Percentage of waste processed	22.0	24.8	100	100	22	25	100	100
SDG 11 Index Score					36	39	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.13 Karnataka and India: Achievements and Challenges in Life on Land

Goal 15 focuses on protecting and restoring land ecosystems, including managing forests, fighting desertification, and preventing land degradation. The Indian government has launched several initiatives to address these issues, such as the National Environment Policy 2006, the National Agroforestry Policy 2014, and various conservation programs like Project Tiger and Project Elephant.

Karnataka has 20.11% of its land covered by forests, which is the highest in India. It ranks third in the country for the total amount of forest stock, which is important for absorbing carbon and fighting climate change. The state is home to about 25% of India's tiger and elephant populations. Karnataka has also taken steps to protect its biodiversity, following the Biodiversity Act of 2002, with the Karnataka Biodiversity Board overseeing conservation efforts. For Goal 15, India has been evaluated based on four indicators. India scored 90 overall, with many states and union territories achieving a perfect score of 100. Karnataka scored 100 on three of the four indicators, with an overall score of 88. The only area needing improvement is increasing the forest cover to meet the target of 33%, as Karnataka's forest cover is currently 19.58%.

Table 13: Performance of SDG15 (Life on Land): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Percentage of total land area covered under forest	19.6	21.5	33	55.6	54	61	100	100
Decadal change in extent of water bodies within forests from 2005 to 2015 (%)	8.5	18.2	0	0	100	100	100	100
Change in forest area from 2015 to 2017 (%)	0.6	0.2	0	0	100	100	100	100
Percentage change in estimated population of wild elephants over 5-year period	-0.3	19.5	0	0	99	100	100	100
SDG 15 Index Score					88	90	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

Data presented in Table 13 shows that Karnataka's performance on SDG 15 (Life on Land) reveals a commitment to environmental conservation but highlights areas for progress. Currently, 19.6% of the state's total land area is covered by forests, with targets to increase this to 33% by 2030 and 55.6% by 2047, reflecting a low index score of 54. The decadal change in water bodies within forests from 2005 to 2015 is 8.5%, with a target to halt any loss by 2030 and 2047, achieving an index score of 100. The forest area remained stable from 2015 to 2017, with a target to maintain this stability, also scoring 100. The population of wild elephants declined by -0.3% over five years, with a target to reverse this trend, reflecting an index score of 99. These indicators highlight Karnataka's efforts in forest management and wildlife conservation, though further action is needed to achieve long-term targets for forest cover and wildlife population stability.

4.14 Karnataka and India: Achievements and Challenges in Peace, Justice and Strong Institutions

Goal 16 focuses on creating effective, accountable, and inclusive political institutions to support sustainable development. It includes targets related to reducing violence and corruption, stopping trafficking, strengthening institutions, and promoting human rights and freedoms. Since good governance is crucial for achieving many other goals like poverty reduction, education, and equality, progress in Goal 16 is essential.

Karnataka has made significant progress in e-governance, improving transparency and efficiency in government services. Notable projects include Bhoomi, Nemmadi, Mobile One, Sakala, e-Janma (for registering births and deaths), and Khajane I & II. India's performance on Goal 16 is assessed using six indicators. India's overall score is 71, with all states and union territories scoring above 50. Himachal Pradesh and Pondicherry scored the highest, with 91 and 92 respectively. Karnataka scored 74 and has achieved full targets for reporting corruption crimes per 1 crore people and Aadhaar coverage (92.90%). However, Karnataka has fewer courts per 10 lakh people (12.2) and was ranked as the fourth most corrupt state by Transparency International, indicating more work is needed to improve governance.

Karnataka's performance on SDG 16 (Peace, Justice, and Strong Institutions) shows both progress and areas needing improvement. The rate of reported murders is 2.5 per 1 lakh population, with targets to reduce this to 1.2 by 2030 and 0.6 by 2047, achieving a current index score of 61. Reported cognizable crimes against children stand at 22.7 per 1 lakh population, with a goal to eliminate such crimes by 2047, scoring 84 on the index. The number of courts per 10 lakh people is 12.2, with ambitious targets to increase this to 33.8 by 2030 and 93.4 by 2047, reflecting a score of 24. Corruption crimes are reported at 7.0 per crore population, aiming for 17.0 by 2047, scoring 100. Birth registration is high at 94.9%, with a target of 100%, and Aadhaar coverage is 92.9%, also targeting full coverage. These indicators highlight Karnataka's strides in institutional strengthening and public service but underscore the need for continued efforts to improve safety, judicial infrastructure, and crime reduction (Table 14).

Table 14: Performance of SDG15 (Peace, Justice and Strong Institutions): Karnataka and India

Indicator	Raw Data				Index Score			
	KA	India	2030*	@2047#	KA	India	2030*	@2047#
Reported murders per 1 lakh population	2.5	2.4	1.2	0.6	61	64	100	100
Reported cognizable crimes against children per 1 lakh population	22.7	24.0	0	0	84	84	100	100
Estimated number of courts per 10 Lakh persons	12.2	12.8	33.8	93.4	24	26	100	100
Estimated reported corruption crimes per 1 crore population	7.0	34.0	17.0	41.2	100	99	100	100
Percentage of births registered	94.9	88.3	100	100	86	67	100	100
Percentage of population covered under Aadhaar	92.9	89.5	100	100	92	89	100	100
SDG 16 Index Score					74	71	100	100

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

4.15 Budget Requirements for 2047 to Achieve Vikasit Karnataka.

The Fig 2 shows that the budgetary allocation for achieving the Sustainable Development Goals (SDGs) in Karnataka up to 2030 and for the Vikasit Karnataka vision at 2047 illustrates a significant commitment to sustainable development, with substantial increases in funding required for various goals over time. This analysis examines the budgetary needs for each SDG, highlighting the financial strategies necessary to achieve these ambitious targets.

The budget for SDG 1 (No Poverty) is projected at Rs. 5,08,218 crores for 2030 and Rs. 14,16,114 crores for 2047. The substantial increase in allocation reflects the need for extensive investment in poverty alleviation programs, social safety nets, and infrastructure development to lift people out of poverty. Achieving this target will require comprehensive strategies, including enhancing financial inclusion, expanding social protection schemes, and promoting sustainable economic growth.

For SDG 2 (Zero Hunger), the budget is set at Rs. 1,75,729 crores for 2030 and Rs. 6,20,462 crores for 2047. This significant increase indicates the necessity of scaling up efforts to combat hunger and improve food security. Investments will focus on enhancing agricultural productivity, improving food distribution systems, and supporting nutrition programs. The long-term goal reflects a commitment to eradicating hunger and ensuring food security for all.

The allocation for SDG 3 (Good Health and Well-being) is relatively modest at Rs. 16,314 crores for 2030, with a considerable increase to Rs. 59,970 crores by 2047. This reflects the need for sustained investment in healthcare infrastructure, disease prevention programs, and health promotion initiatives. The focus will be on improving health outcomes, reducing mortality rates, and ensuring universal health coverage.

The budget for SDG 4 (Quality Education) is Rs. 84,851 crores for 2030 and Rs. 2,75,740 crores for 2047. The significant increase underscores the importance of enhancing educational infrastructure, improving access to quality education, and investing in teacher training. Achieving these targets will require strengthening educational institutions, promoting inclusive education, and addressing disparities in educational access.

For SDG 5 (Gender Equality), the budget is set at Rs. 749 crores for 2030, with a rise to Rs. 1,981 crores by 2047. The relatively lower figures reflect a targeted approach to addressing gender disparities, including programs focused on women's empowerment, gender-based violence prevention, and economic opportunities for women. The increase over time signifies a growing commitment to achieving gender equality and addressing gender-based inequalities.

The budget for SDG 6 (Clean Water and Sanitation) is Rs. 86,039 crores for 2030 and Rs. 2,54,605 crores for 2047. This substantial increase highlights the need for investment in water and sanitation infrastructure, improving access to clean water, and ensuring effective waste management. Achieving these goals will involve upgrading water supply systems, expanding sanitation facilities, and promoting water conservation efforts.

For SDG 7 (Affordable and Clean Energy), the budget is Rs. 1,46,455 crores for 2030, increasing to Rs. 2,79,557 crores by 2047. This reflects the need for substantial investments in energy infrastructure, including renewable energy sources, energy efficiency programs, and expanding access to clean energy. The long-term goal emphasizes transitioning to sustainable energy systems and ensuring affordable energy access for all.

The allocation for SDG 9 (Industry, Innovation, and Infrastructure) is Rs. 2,59,285 crores for 2030 and Rs. 7,24,237 crores for 2047. This significant increase underscores the importance of investing in industrial growth, innovation, and infrastructure development. Key areas include improving transportation networks, supporting technological advancements, and fostering industrial development to drive economic growth and development.

For SDG 10 (Reduced Inequalities), the budget is Rs. 30,875 crores for 2030, with a substantial increase to Rs. 84,615 crores by 2047. This increase reflects the need for targeted interventions to address income inequality, enhance social inclusion, and promote equitable economic opportunities. Investments will focus on social protection programs, improving access to education and healthcare, and addressing systemic inequalities.

The budget for SDG 11 (Sustainable Cities and Communities) is Rs. 36,216 crores for 2030 and Rs. 99,809 crores for 2047. This reflects the need for investments in urban planning, infrastructure development, and sustainability initiatives. Key areas include improving housing, enhancing public transportation, and promoting sustainable urban development to create resilient and inclusive cities.

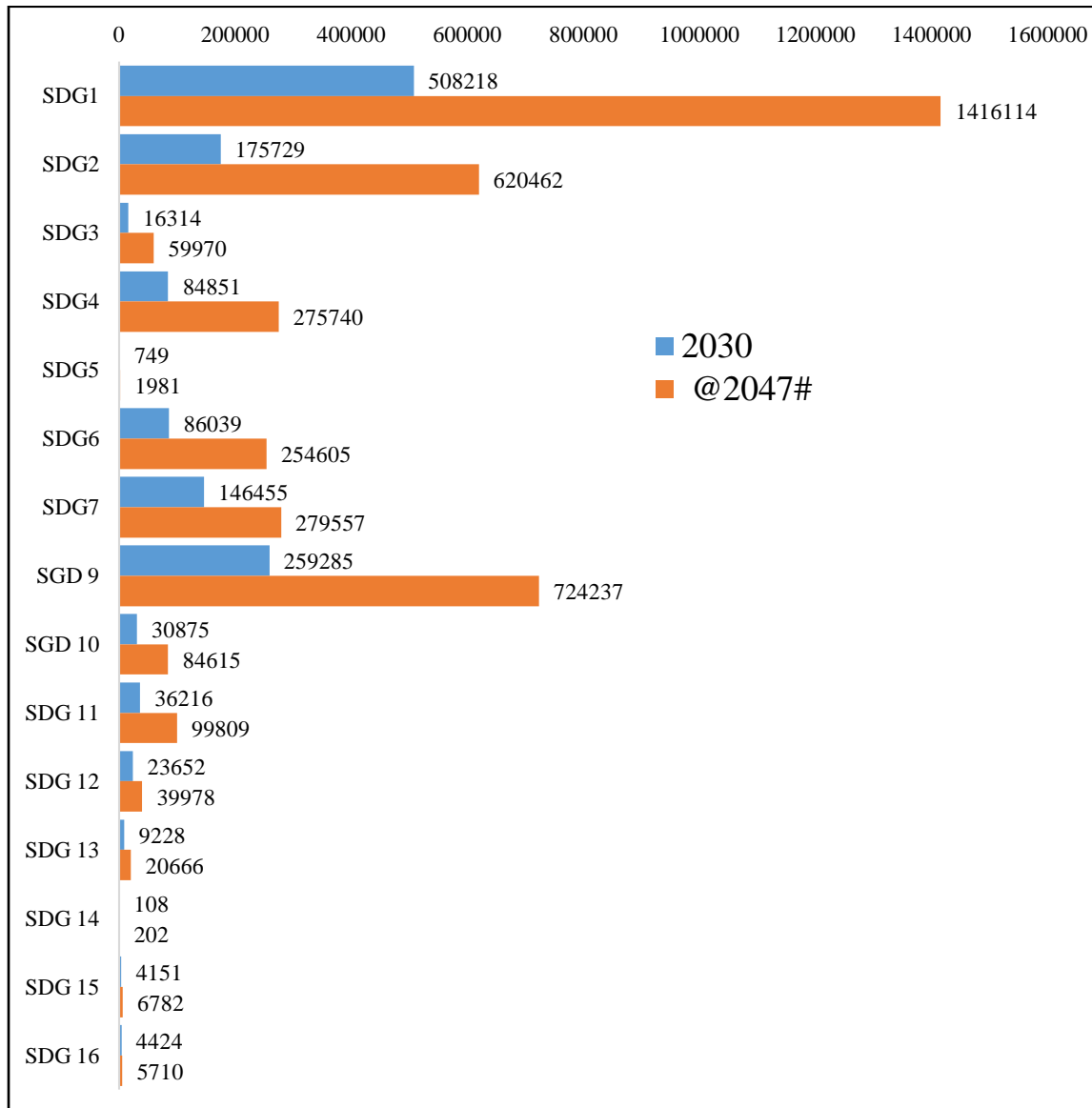
For SDG 12 (Responsible Consumption and Production), the budget is Rs. 23,652 crores for 2030, increasing to Rs. 39,978 crores by 2047. This indicates a commitment to promoting sustainable consumption and production patterns. Investments will focus on waste management, resource efficiency, and sustainable practices in production and consumption to minimize environmental impact.

The budget for SDG 13 (Climate Action) is Rs. 9,228 crores for 2030 and Rs. 20,666 crores for 2047. This increase reflects the need for substantial investment in climate change mitigation and adaptation strategies. Key areas include reducing greenhouse gas emissions, promoting climate-resilient infrastructure, and supporting climate action initiatives to address the impacts of climate change.

For SDG 14 (Life below Water), the budget is relatively modest at Rs. 108 crores for 2030, increasing to Rs. 202 crores by 2047. This reflects targeted efforts to protect marine environments and promote sustainable use of ocean resources. Investments will focus on marine conservation, pollution control, and sustainable fisheries management.

The budget for SDG 15 (Life on Land) is Rs. 4,151 crores for 2030, increasing to Rs. 6,782 crores by 2047. This reflects the need for investments in biodiversity conservation, forest management, and land restoration. The focus will be on protecting ecosystems, restoring degraded lands, and promoting sustainable land use practices.

For SDG 16 (Peace, Justice, and Strong Institutions), the budget is Rs. 4,424 crores for 2030, with a rise to Rs. 5,710 crores by 2047. This indicates a focus on strengthening institutions, promoting rule of law, and ensuring justice and peace. Investments will include improving judicial infrastructure, enhancing transparency and accountability, and supporting peacebuilding efforts.

Fig 2: Budget for achieving the targets till 2029-30 and @2047 (In Crores)

Note: * Estimated in Vision 2030 Report, GoK

Estimated by Author using data from Vision 2030 Report, GoK

Source: NITI Aayog, 2018

The budget allocations for the SDGs up to 2030 and for the Vikasit Karnataka vision at 2047 reflect a comprehensive and ambitious strategy to address various development challenges. The significant increase in funding across most goals indicates a commitment to achieving sustainable development and addressing critical issues such as poverty, hunger, health, education, and environmental sustainability. Achieving these targets will require effective implementation, monitoring, and evaluation to ensure that resources are used efficiently and that the goals are met in a timely manner.

5. Conclusions and Policy Implications

Karnataka's performance in advancing towards the Sustainable Development Goals (SDGs) highlights both notable achievements and persistent challenges. The state has demonstrated progress in reducing poverty (SDG 1) but continues to lag behind states like Tamil Nadu. Karnataka aims to cut its poverty rate to 5.22% by 2047 while striving to improve social protection through expanded health schemes and better maternity benefits. In addressing Zero Hunger (SDG 2), Karnataka exceeds the national average but struggles with high child

malnutrition rates, including stunting and anemia. The state has set ambitious targets to reduce these rates significantly by 2047 and to substantially increase cereal production. Health and well-being (SDG 3) are areas of significant focus, with Karnataka making strides through initiatives such as Aarogya Karnataka and Arogya Kavacha. The state aims to reduce maternal and child mortality rates, achieve universal immunization, and eliminate tuberculosis by 2047. In Quality Education (SDG 4), Karnataka has achieved notable progress in primary education but faces challenges with high dropout rates at the secondary level. Addressing this issue and enhancing teacher quality are crucial for meeting future educational targets. Gender Equality (SDG 5) remains a challenging area, despite several state-led initiatives aimed at women's empowerment. Karnataka's targets for 2047 include increasing women's legislative representation and achieving wage parity, though significant gaps in these areas remain. In Clean Water and Sanitation (SDG 6), Karnataka has improved its sanitation infrastructure but still lags in providing adequate drinking water in rural areas. The state aims for universal access to clean water and sanitation by 2047. Karnataka is a leader in Affordable and Clean Energy (SDG 7), with a significant share of renewable energy. However, increasing the use of clean cooking fuel remains a challenge. The state's performance in Decent Work and Economic Growth (SDG 8) shows near-complete financial inclusion and low unemployment, but there is a need to increase ATM access and sustain GDP growth. Lastly, in Industry, Innovation, and Infrastructure (SDG 9), Karnataka excels in digital connectivity and innovation but needs to improve physical infrastructure, especially in rural areas. The state has set ambitious targets for 2047, reflecting its commitment to achieving these goals despite the challenges. Overall, Karnataka's SDG performance indicates a strong commitment to sustainable development, with significant progress in some areas and critical challenges to address in others, particularly in education dropouts, gender equality, and clean water access.

Karnataka's budgetary allocations for achieving Sustainable Development Goals (SDGs) up to 2030 and for the Vikasit Karnataka vision at 2047 reveal a substantial commitment to sustainable development. For SDG 1 (No Poverty), the budget is projected to increase from Rs. 5,08,218 crores in 2030 to Rs. 14,16,114 crores by 2047, reflecting a need for extensive investments in poverty alleviation and social protection. SDG 2 (Zero Hunger) sees a rise from Rs. 1,75,729 crores to Rs. 6,20,462 crores, focusing on combating hunger and improving food security. For SDG 3 (Good Health and Well-being), the budget grows from Rs. 16,314 crores to Rs. 59,970 crores, highlighting a push towards enhancing healthcare infrastructure and universal health coverage. SDG 4 (Quality Education) shows a significant increase from Rs. 84,851 crores to Rs. 2,75,740 crores, aiming to improve educational access and quality. SDG 5 (Gender Equality) sees a more modest rise from Rs. 749 crores to Rs. 1,981 crores, targeting gender disparities and empowerment. Investments for SDG 6 (Clean Water and Sanitation) escalate from Rs. 86,039 crores to Rs. 2,54,605 crores to enhance water and sanitation infrastructure. SDG 7 (Affordable and Clean Energy) budget increases from Rs. 1,46,455 crores to Rs. 2,79,557 crores, emphasizing renewable energy. Other significant increases include SDG 9 (Industry, Innovation, and Infrastructure) from Rs. 2,59,285 crores to Rs. 7,24,237 crores and SDG 10 (Reduced Inequalities) from Rs. 30,875 crores to Rs. 84,615 crores. The budgets for SDGs 11 through 16 also reflect increased investments, targeting urban sustainability, responsible consumption, climate action, and institutional strengthening. These

allocations illustrate Karnataka's comprehensive strategy to address developmental challenges and achieve the SDGs by 2047.

To achieve "Vikasit Karnataka" by 2047, a strategic approach is essential, involving enhanced financial allocations, efficient resource management, and robust implementation frameworks. To achieve Vision 2047 for a "Vikasit Karnataka," the state must implement comprehensive policy measures across several key areas. Expanding social protection by increasing coverage for maternity benefits and enhancing self-employment schemes like Udyogini and Stree Shakti is crucial for poverty alleviation. Targeted poverty reduction efforts should address the needs of vulnerable populations through improved education, healthcare, and local fund devolution. Strengthening the public distribution system and implementing robust nutritional programs will combat hunger and improve nutrition. Advancing health and well-being requires increasing healthcare coverage, investing in rural infrastructure, and intensifying maternal and child health services. Enhancing quality education involves reducing dropout rates, improving learning outcomes, and strengthening teacher training. Promoting gender equality through increased female representation in legislation and workforce participation, alongside addressing gender-based violence, is essential. Improving water and sanitation by expanding access to safe drinking water and enhancing waste management is necessary. Advancing affordable and clean energy involves promoting clean cooking fuels, maintaining high electrification rates, and investing in renewable energy. Economic growth can be sustained by diversifying into IT, biotechnology, and precision engineering, alongside enhancing financial infrastructure. Strengthening infrastructure includes improving rural connectivity, expanding digital access, and reducing regional disparities. Urban sustainability can be advanced by accelerating housing projects and improving slum conditions. Environmental conservation efforts should focus on expanding forest cover, protecting wildlife, and ensuring habitat preservation. Finally, enhancing governance through judicial infrastructure improvements and anti-corruption measures will foster transparency and justice. By addressing these areas with targeted, strategic initiatives, Karnataka can move towards becoming a model of sustainable development by 2047.

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