# Sustainable development Goals in India An Interrelationship Study

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Abstract: India is a land of rich heritage in culture, with nearly 135 crores of population with many of the natural resources availability across the different parts of the nation, Industrialization is at a pace in such a way that India is changing its face in front of the many developed economic nations and on offset it is also affecting the environment, it is the time everyone should think towards what best can be done towards the natural environment or society through the strategy known as Sustainability concept. Research paper is carried out to understand how sustainability helps in well-being of the community, paper also identifies how sustainable development goals such as Gender equality, Zero Hunger, Poverty, Equality etc. in India is managed by the people and Paper tries to obtain the interrelationship between the sustainable development goals for wellbeing of the society.

**Keywords:** Sustainable development Goals (SDGs), Corporate Social Responsibility (CSR), Sustainable Development Index (SDI), Millennium Development Goals (MDGs)

#### Introduction

dvancement of mankind throughout the most recent decades has prompted the undeniably negative atmosphere changes and catastrophic events, yet in addition wars and political and financial shakiness. Through their activity, people have adversely affected on nature, jeopardizing the endurance of the Earth and the people in the future. These conditions have shown changes in the conduct pointing towards more judicious and effective administration of all resources that will permit less weight and ecological effect. Such capable conduct that will guarantee the drawn-out misuse of resources, without endangering people in the future is considered inside the idea of maintainable improvement advancing during the 70s and particularly in the 80 of the only remaining centuries. The idea of practical improvement depends on the idea of advancement (financial improvement in accordance with natural limitations), the idea of requirements (redistribution of resources to guarantee the personal satisfaction for all) and the idea of people in the future (the chance of long-haul use of resources to guarantee the vital personal satisfaction for people in the future). The Sustainable Development Goals (SDGs) which came into effect on 1 January, 2016 is an improvement on the Millennium Development Goals (MDGs)

#### **Sustainable Development Goals**

Sustainable development goals are referred as Goals which are set across globally, which where adapted by all members of United Nations States in 2015 for eradicating Poverty and secure the planet and guarantee that all individuals appreciate harmony and success by 2030.

The Sustainable Development Goals (SDGs) which became effective on 1 January, 2016 in India is an enhancement for the Millennium Development Goals (MDGs)

In India, it has been observed that sizable advancement is happening with new reforms in education policy, Enhancement of Girl Child education implicates gender equality in all the areas and different sectors is observed, though we are having efficient Doctors but lagging with the innovation and support from Government as we had seen always budget lags with investment in hospital sector and the effect of which we are observing during Pandemic era of COVID 2019.



Source: www.un.org/sustainabledevelopment/sustainable-development-goals/

#### **Challenges of SDG Setting**

Some of the major challenges which are faced by India in Enacting Sustainable development goals by considering different verity of culture, different states population and state of balanced development of economy are furnished below

#### **Defining Indicators**

Past record shows that we have been not fruitful in setting pertinent indicators to gauge results. Quality instruction has not effectively been characterized. India's definition "safe" drinking water (Water supply from the piping system to the cities, villages from the lakes or river or ponds is equivalent to water supplied from the borewell and well) implies that official information recommends 86% of Indians approach safe drinking water and, subsequently, we are "on target" for the MDG objective on drinking water.

However, the diseases borne by the variation in the quality of water such as Amoebiasis, Cholera, Typhoid, diarrhoea insists, this is not the case.

## Financing SDGs

In India, the cost of estimation for implementation of SDG by 2030 will be approximately US\$14.4 billion. Recent allocation of funds to different social sector schemes such as "Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Fasal Bima Yojana (PMFBY) and Rashtriya Krishi Vikas Yojana (RKVY) etc.." has reached more than 85% utilization which is a good sign but effective and proper utilization of funds is a major challenge for India n Government and High growth and redistribution itself are also not enough. Presence of proper allocation of funds by the government along with the private financing from different sources are essential for financing the SDGs.

### Monitoring and Ownership

Relatedly, a third noteworthy task will be as for proprietorship. Reports propose that NITI Aayog will assume a critical part in following advancement. Nonetheless, individuals at the Aayog have communicated reservations on having the option to take on this mammoth assignment. Additionally, if states are relied upon a significant job (giving the devolution post fourteenth Finance Commission), it will require possession broadly, yet additionally at the state and neighbourhood level.

## **Progress Measurement**

last but not the least is the query of progress measurement or accomplishment. By the administration of the Government's non-availability of data at sub-national level, periodicity issues and inadequate inclusion of regulatory information, gained exact estimating ground of even MDGs basically unthinkable.

#### **Sustainability Development Indices**

The SDG India Index is an aggregate measure which can be understood and used by everyone—policymakers, businesses, civil society and the general public. It has been designed to provide an aggregate assessment of the performance of all Indian States and UTs, and to help leaders and change makers evaluate their performance on social, economic and environmental parameters. It aims to measure India and its States' progress towards the SDGs for 2030.

Year:2019-20 Sustainable Development Goals (SDG) Composite State/UT **SDG** Index Score Andhra Pradesh Arunachal Pradesh Assam Bihar Chhattisgarh Goa Gujarat Haryana Himachal Pradesh Jharkhand Karnataka Kerala Madhya Pradesh Maharashtra Manipur Meghalaya Mizoram 42. Nagaland Odisha Punjab Rajasthan Sikkim Tamil Nadu Telangana Tripura Uttar Pradesh Uttarakhand 

West Bengal	52	40	70	50	38	83	58	72	68	73	34	57	37	88	73	60
A and N Islands	48	38	65	61	48	85	73	55	13	94	47	69	72	85	65	61
Chandigarh	48	73	54	80	47	100	84	64	74	33	83	77	54	93	89	70
D and N Haveli	33	45	57	53	44	91	80	63	100	57	41	65	41	100	80	63
Daman & Diu	58	12	50	43	39	96	81	54	100	82	54	41	46	89	76	61
Delhi	54	56	54	64	27	61	96	60	100	69	63	39	30	82	64	61
Jammu & Kashmir	58	55	62	54	53	85	76	46	49	47	33	61	59	74	69	59
Lakshadweep	56	57	58	62	37	69	43	43	0	93	0	75	100	100	82	63
Puducherry	56	71	71	67	35	86	97	58	86	92	53	43	39	37	94	66
India	50	35	61	58	42	88	70	64	65	64	53	55	60	66	72	60
Target	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Niti Aayoga Report of India 2019-20

## Objective of the Study

For a business to strive in the world with competition and policies adopted by the government are crucial for businesses and at the same time it is the

Prime objective is to understand the different SDG's that is adapted by the government of India and challenges that are faced in implementation.

Study is also carried out to identify sustainability development index of each state of India and to determine the relationship existing between them for the effective implementation of SDG.

## Research Methodology

Research is done by considering the conceptual research for gathering the information on different challenges faced by the Government for implementation of Sustainable development Goal.

Descriptive research is also used to describe different sustainable Development goals and to determine the effect of one on the other

For obtaining up of information secondary data is used by considering different literature review and the Niti Aayoga website and reports.

## **Analysis**

SDGs	1	2	3	4	5	6	7	
Mean	52.17	46.86	59.47	57.78	39.72	83.47	73.58	
SD	11.14	17.36	11.55	12.43	6.57	8.82	14.8	
Variance (%)	21.36	37.04	19.42	21.52	16.54	10.57	20.11	
SDGs	8	9	10	11	12	13	15	16
Mean	62.56	54.92	65.28	49.17	58.17	49.89	84.56	73.69
SD	12.75	25.7	16.80	17.65	16.247	15.45	16.54	9.54
Variance (%)	20.38	46.79	25.74	35.90	27.93	30.96	19.56	12.94

By looking at the data it can be observed that the mean value across different states and Union territories for sustainable development goals Index is above 50% for goals such as No Poverty, good health & Well being, Quality Education, Clean Water and Sanitization, Affordable & clean energy, decent water and economic growth, industry innovations & infrastructure, Reduced Inequality, sustainable production & Consumption, Life on land and Peace justice, whereas other SDG Index are near to 50% only Index which is less in gender inequality which need to be improved. In India in order to curb this inequality Government has taken many measures such as Beti Bachao Beti Padhao, Support to Training and Employment Programme for Women, Pradhan Mantri Matru Vandana Yojana and few others.

Sustainable Development Goal Index for each State and Union territories is having less variation which indicates that there is consistency in development across the different goals for all States and Union territories except Zero Hunger, Sustainable cities and communities along with Industry Innovation and infrastructure. The result of which states has to look over these aspects for the development of the nation.

				Bi Va	riate Co	orrelatio	ons for S	Sustaina	ble Deve	elopmen	t Goals					
		SDG 1	SDG 2	SDG 3	SDG 4	SDG 5	SDG 6	SDG 7	SDG 8	SDG 9	SDG 10	SDG 11	SDG 12	SDG 13	SDG 15	SDG 16
SDG	Pearson Correlation	1	0.26	0.32	.347	0.07	0.22	0.20 4	0.04	0.17	0.12 6	0.14 1	0.10 4	0.19 7	0.16 5	0.24
1	Sig. (2- tailed)		0.11	0.05 6	0.03	0.68	0.19	0.23	0.78	0.32	0.46 4	0.41	0.54 4	0.24 9	0.33	0.15
SDG	Pearson Correlation	0.26 6	1	0.10 9	.569	0.18	0.27	.402	.440	0.16 8	0.29	0.01	0.32	0.04	0.03	0.28 5
2	Sig. (2-tailed)	0.11 7		0.52 8	0	0.28 5	0.10 4	0.01	0.00 7	0.32 6	0.08 6	0.94 7	0.05	0.81	0.84	0.09
SDG	Pearson Correlation	0.32	0.10 9	1	.510	0.13 8	0.08 8	0.30	.431	0.27 7	0.22	0.13 5	0.20	0.25 6	0.01	.368
3	Sig. (2-tailed)	0.05 6	0.52 8		0.00	0.42	0.60 8	0.07	0.00	0.10	0.18 7	0.43	0.24	0.13	0.93 5	0.02 7
SDG	Pearson Correlation	.347	.569	.510	1	0.24 9	0.00 5	.440	0.08 9	0.03 8	0.07 8	0.22 8	0.18	0.12	0.09 4	.436
4	Sig. (2-tailed)	0.03	0	0.00		0.14	0.97 9	0.00	0.60	0.82 4	0.65	0.18	0.29	0.48 7	0.58 5	0.00
SDG	Pearson Correlation	0.07 1	0.18	0.13 8	0.24 9	1	0.23 9	0.06 7	0.00 4	0.06	0.22	0.25 8	0.10 9	0.19 7	0.12	0.21
5	Sig. (2-tailed)	0.68	0.28	0.42	0.14		0.16	0.69 7	0.98	0.69 4	0.19	0.12 9	0.52 9	0.25	0.47 8	0.2
SDG	Pearson Correlation	0.22	0.27 5	0.08 8	0.00	0.23	1	0.18 4	0.21	0.24	0.10 4	0.25	0.02	0.07 5	0.02	0.24 7
6	Sig. (2-tailed)	0.19	0.10 4	0.60	0.97 9	0.16		0.28	0.22	0.15 4	0.54 7	0.14	0.90 5	0.66 4	0.90	0.14 6
SDG	Pearson Correlation	0.20 4	.402	0.30 5	.440	0.06 7	0.18 4	1	0.18 4	0.28 9	0.14	.446	0.08	0.10 4	0.23	.340
7	Sig. (2-tailed)	0.23	0.01	0.07	0.00 7	0.69 7	0.28		0.28	0.08	0.40 8	0.00	0.61 7	0.54 6	0.16	0.04
SDG 8	Pearson Correlation	0.04 8	.440	.431	0.08	0.00 4	0.21	0.18 4	1	.362	0.09	.553	.412	0.01	0.03	0.16 5
	Sig. (2-	0.78	0.00	0.00	0.60	0.98	0.22	0.28		0.03	0.59	0	0.01	0.93	0.84	0.33

	tailed)	3	7	9	5			3			9		3	2	7	5
SDG	Pearson Correlation	0.17	0.16 8	0.27 7	0.03	0.06	0.24	0.28	.362	1	0.07 1	.472	.452	0.21 4	0.17 9	.335
9	Sig. (2-tailed)	0.32	0.32 6	0.10	0.82 4	0.69 4	0.15 4	0.08	0.03		0.67 9	0.00 4	0.00	0.21	0.29 8	0.04 6
SDG	Pearson Correlation	0.12 6	0.29	0.22	0.07	0.22	0.10 4	0.14	0.09	0.07 1	1	0.30	0.11	.340	0.03	0.03
10	Sig. (2-tailed)	0.46 4	0.08 6	0.18 7	0.65 2	0.19	0.54 7	0.40 8	0.59 9	0.67 9		0.07	0.49 9	0.04	0.82 6	0.82 4
SDG	Pearson Correlation	0.14 1	0.01	0.13	0.22	0.25 8	0.25	.446	.553	.472	0.30 5	1	- .457 **	0.14 8	0.09 9	0.23
11	Sig. (2-tailed)	0.41	0.94 7	0.43	0.18 1	0.12 9	0.14 1	0.00 6	0	0.00 4	0.07		0.00	0.39	0.56 4	0.17 8
SDG	Pearson Correlation	0.10 4	0.32	0.20 1	0.18	0.10 9	0.02	0.08	.412	.452	0.11 6	.457	1	0.08	.408	0.01 8
12	Sig. (2-tailed)	0.54 4	0.05	0.24	0.29	0.52 9	0.90 5	0.61 7	0.01	0.00	0.49 9	0.00		0.64	0.01 4	0.91 6
SDG	Pearson Correlation	0.19 7	0.04	0.25 6	0.12	0.19 7	0.07	0.10 4	0.01	0.21 4	.340	0.14 8	0.08	1	0.14	0.31
13	Sig. (2-tailed)	0.24 9	0.81	0.13	0.48 7	0.25	0.66 4	0.54 6	0.93 2	0.21	0.04	0.39	0.64		0.40 4	0.06 4
SDG	Pearson Correlation	0.16 5	0.03	0.01	0.09	0.12	0.02	0.23	0.03	0.17 9	0.03	0.09 9	.408	0.14	1	0.13
15	Sig. (2-tailed)	0.33	0.84	0.93 5	0.58 5	0.47 8	0.90	0.16	0.84 7	0.29 8	0.82 6	0.56 4	0.01	0.40 4		0.44 4
SDG	Pearson Correlation	0.24	0.28	.368	.436	0.21	0.24 7	.340	0.16 5	.335	0.03 9	0.23	0.01 8	0.31	0.13	1
16	Sig. (2-tailed)	0.15	0.09	0.02 7	0.00	0.2	0.14 6	0.04	0.33 5	0.04 6	0.82 4	0.17 8	0.91 6	0.06 4	0.44 4	

<sup>\*.</sup> Correlation is significant at the 0.05 level (2-tailed).

As per Niti Aayoga Report 2019 prevails for the effectiveness of Each of the Goals of sustainable development is having an interconnection with other SDGs. in order to understand how much there is an interconnection research has been taken and Bivariate analysis is carried out. Except SDG 14 Life Below water is not considered and the following observations are made from the data.

SDG 1 i.e. No Poverty index is interconnected with all other SDG index except SDG 9 and the data reveals that SDG 5 and SDG 8 are having very low correlation with the values of 0.071 and 0.048, whereas SDG 6, SDG 9 and SDG 11 are showing negative correlation with the values -0.222, -0.17, -0.141 and all others are moderately correlated this data predicts that in order to enhance No poverty goal by 2030 the government should Put up measures for increasing the other SDGs.

SDG 2 i.e. Zero hunger is interconnected with SDG 1, 3, 4,5, 6, 7, 8, 10, 12, 13 respectively and the positive correlation are observed between SDG1 with SDG4, SDG7 with the values 0.569,0.402, whereas negative values are observed in SDG6, SDG8, SDG9, SDG10 and all other SDGs are moderately correlated. Which indicates in order to increase SDG 2 Index. States and Union territories has to take measure in increasing moderate index valued SDGs and convert the negative correlated values into positive one.

<sup>\*\*.</sup> Correlation is significant at the 0.01 level (2-tailed).

SDG 3 i.e., Good health and Well being is having interconnection with SDG 1,2,4,5,6,10,11,12 respectively and it is having positive correlation with SDG 4 i.e., quality education which indicates government has taken good measure in educating the people regarding good health maintenance and good environment. All other SDGs are moderately correlated except SDG 12 with negative correlated value of -0.201 which need to be converted into positive value.

SDG 4 i.e., Quality education is interrelated with all SDGs except SDG 15 and SDG 4 is more correlated with SDG 2, SDG 3 & SDG 7 with 0.569, 0.510 & 0.440 apart from these other SDGs have lesser correlated values with SDG 4. And it indicates that behind many of the Education policies made by government of India is still lagging behind in certain states and Union territories because of other SDGs

SDG 5 i.e., Gender Equality is interconnected with all SDGs, SDG5 is moderately Correlated with all the SDGs except SDG 8 SDG 9 and SDG 10 which have negative values with -0.004, -0.068, -0.224. this indicates that though in our country SDG 5 value is 42 in order to upgrade this index value measures such as Improvement in economic growth, Industry innovations and Reduction in inequality needs to be done.

SDG 6 i.e., Clean Water & Sanitation Is having a value of 88 and it is interrelated with all SDGs but SDG 1, SDG 2, SDG 15 Shows negative value and all other SDGs are very less Moderately correlated, which indicates for clean water and sanitation development, Education, sustainable cities, Industry innovation and climate actions need to be improved.

SDG 7 i.e., Affordable & Clean Energy is having a value of 70 and it is interrelated with all SDGs except 15 and 16, however SDG 7 is positively correlated with SDG2 SDG 4 and SDG 11, whereas it is negatively correlated with SDG 10 SDG 12 and SDG 13 and SDG 15. SDG 7 is moderately correlated with other SDGs; this indicates that the sustainable cities and communities and quality education will lead to the development of affordable and clean energy.

SDG 8 i.e., Decent work & Economic Growth Is having a value of 64 and it is interrelated with all SDGs except SDG 15 and SDG 13. SDG 8 having a positive correlation with SDG 3 SDG 9 and SDG 11. SDG8 is negatively correlated with SDG 2, SDG 10 SDG 12 and SDG 15. Apart from this all other SDGs are moderately correlated. Data indicates that Economic growth is possible only when negative correlated SDG are enhanced.

SDG 9 i.e., Industry Innovation and Infrastructure 9 is having a value of 65 and is interconnected with SDG 5 6 7 8 9 10 11 12 and SDG 13. SDG 9 is positively correlated with SDG 11 and negatively correlated with SDG 10, SDG 12 and SDG 13. all other SDGs are moderately positive correlated. it can be said that from the niti Aayog report SDG is not connected with SDG 4 which need to be adopted for improvement of SDG9

SDG10 i.e., Reduced Inequality is having a value of 64 and interconnected with all the SDGs except SDG 12 and 13. SDG 10 is negatively correlated with SDG 2, SDG 4, SDG 6, SDG 7 SDG 8, SDG 9, SDG 11 and SDG 16. SDG 10 is moderately correlated with SDG 12 & SDG 15.

SDG11 i.e., Sustainable cities and communities with a value of 53 is interconnected with SDG 1 SDG 3 SDG 5 SDG 6 SDG 9 SDG 10 SDG 12 AND SDG 16. SDG 11 is having a positive correlation with SDG 3 SDG 5 SDG 6 SDG 9 SDG16 whereas negatively correlated with SDG 10 and SDG12

SDG12 i.e., Sustainable Consumption & Production is having index value of 55 and is interconnected with All SDGs except SDG1, SDG5, SDG10 and SDG16. SDG 12 is negatively correlated with SDG 7 SDG 8 SDG 9 and SDG11. SDG 12 is Less moderately positive correlated with other inter-connected SDGs.

SDG13 i.e., Climate Action is having an index value of 60 and are interconnected with all SDGs except SDG 8 and data also predicts that SDG 13 is negatively correlated with SDG 2 SDG 7 SDG 9 and SDG 11, apart from these other interconnected SDGs are having moderately positive correlated values

SDG15 i.e., Life on land is having an index value of 66 and interconnected with SDG 1 SDG 2 uh SDG 3 SDG 5 SDG 6 SDG 10 SDG 12 and. SDG 15 is positively correlated with SDG 1 SDG 5 SDG 10 and SDG 13. apart from this other interconnected SDGs are negatively correlated

SDG16i.e., Peace Justice and Strong Institution is having an index value of 72 and interconnected with SDG 1 SDG 4 SDG 5 SDG 8 10 and SDG 11. SDG 16 is negatively correlated with SDG 10. Whereas other SDGs are positive correlated

#### Conclusion

Based on the Data of Mean of Sustainable Development Goals and Sustainable development goals of India for the year 2019-20 provided in the chart, it can be said that India is having Sustainable Development Index above 50 which indicates that India is moving towards the path of achievement of Sustainable Development Goals 2030. It is also observed that implementation of sustainable development goals is not an easy task and the one need to cross many hurdles or take a risk of initiating strategies to reach the goals.

Sustainable Development Goals are having interconnection with each other as predicted by the NITI Aayog which has constructed the SDG India Index spanning across 15 SDGs (leaving out Goals 14).

Sustainable development goals indices show some moderate, negative and positive correlation together. The Index tracks the progress of all the States and Union Territories (UTs) on a set of 62 National Indicators, measuring their progress on the outcomes of the interventions and schemes of the Government of India. The SDG India Index is intended to provide a holistic view on the social, economic and environmental status of the country and its States and UTs, hence Government of all the States and UTs major objective is to increase these indices in such a way if there is increase in Gender equality, economic growth, quality education similarly other SDGs will automatically increase the Goal of No Poverty, similarly with other SDGs improvement happen. In order to achieve these goals it is not only the responsibility of Government but it is also a responsibility of corporates to include these goals as corporate social responsibility to improve the society and also as a human being it is his role to take care of our surroundings and stick to the goals of sustainability, by practicing all the measures of sustainability development goals Indian can reach to a pace where it can be recognized and followed by other countries.

## **Bibliography**

Sachs JD. From millennium development goals to sustainable development goals. The Lancet 2012 Jun 9; 379(9832):2206-11

Avani Kapur Four challenges that India faces in achieving sustainable development goals. 2015. Available from www.business-standard.com > Punditry > Social Specs

Lu Y, Nakicenovic N, Visbeck M, Stevance AS. Policy: Five priorities for the UN Sustainable Development Goals. Nature. 2015 Apr 23; 520(7548):432-3.

Niti Aayog Report, SDG INDIA INDEX & DASHBOARD 2019-20

Niti Aayog Report, SDG INDIA INDEX & DASHBOARD 2018

Jewitt Sarah and Sujatha Raman. 2017. "Energy Poverty, Institutional reform and Challenges of Sustainable Development: The Case of India." Progress in Development studies 17(2): 173-85 https://doi.org/10.1177/1464993416688837