Government of Rajasthan

RAJASTHAN SDG INDEX 2020

Directorate of Economic & Statistics
Rajasthan, Jaipur

Executive Summary: Sustainable Development Goals Index - Rajasthan

With the rapid change in environment due to global warming and increasing inequality across the world, it has been recognized that growth is not enough to ensure the welfare of people. Sustainable Development Goals are a collection of 17 global goals which were developed after intensive public consultation and engagement with national government, civil societies and stakeholders around the world. These 17 Goals were built on the successes of the Millennium Development Goals, and include areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. The 17 SDGs comprise of 169 associated targets, which are interconnected in nature. The targets for each goal are accompanied with indicators that focus on measurable outcomes. Each target has defined monitoring indicators to measure progress towards reaching the target. In total, there are 244 indicators listed in the SDGs global indicator framework for monitoring the progress in the world.

This assignment aims to develop the sustainable development goals index for the state of Rajasthan based on the methodology and chosen set of indicators on the lines of NITI Aayog's Sustainable Development Goals Index. The SDG Index of Rajasthan aims to measure the performance of district on the SDG's. Additionally, SDG Index can be broken down into goal level score in order to help understand what goals have been achieved and where more effort is needed. The SDG Index has been developed using 31 indicators spanning across 12 goals. To develop this index, data was sourced from publicly available sources and data shared by Directorate of Economics and Statistics (DES). After the data collection, the team worked on aggregating the data to develop individual SDG score for each district in Rajasthan which was then used to develop the Sustainable development goals index for Rajasthan.

For each goal, the SDG score range in between 0 to 100 with 0 being the worst among the group and 100 meaning that all the targets under that goal have been achieved. The list of goal wise indicators used in the preparation of SDI is as follows:

S/N	Goal	Indicator Detail
1	Goal 1	BPL Population in Rajasthan as per BPL Census (Rural) (%) (modified 1.1.1)*
2		Households with any usual member covered by any health scheme or health insurance (%) (1.3.1)
3		Persons provided employment as a percentage of persons who demanded employment under MGNREGA (%) (1.3.3)
4		JSY beneficiaries out of the total deliveries happing in public institutions and private accredited institutions (%) (modified 1.3.5)*
5		Number of homeless households per 10,000 households (1.4.4)
6	Goal 2	Children under age 5 years who are stunted (%) (2.2.1)
7		Pregnant women aged 15-49 years who are anaemic (<11.0g/dl) (%) (2.2.4)
8	Goal 3	Under-five mortality rate per 1,000 live births (3.2.1)
9		Percentage of children aged 12-23 months fully immunized (BCG, Measles and three doses each of polio and DPT) (%) (3.2.3)*
10		Annual notification of Tuberculosis cases per 1 lakh population (3.3.2)

S/N	Goal	Indicator Detail
11	Goal 4	Adjusted Net Enrolment Ratio at Elementary (Class 1-8) and Secondary (Class 9-10) school (%) (4.1.2)
12		Children in the age group of 6-13 who are out of school (%) (4.1.7)
13		Average Annual Drop-out rate at secondary level (%)
14		School teachers professionally qualified (%) (4.c.1)
15	Goal 5	Sex Ratio at Birth for children born in the last five years (female per 1000 male) (5.1.3)*
16		Current Use of Family Planning Methods (currently married women age 15–49 years) - Any modern method (%) (5.6.1)*
17	Goal 6	Households with an improved drinking-water source (Rural) (%) (6.1.1)*
18		Rural households with individual household toilets (%)
19		Districts verified to be Open Defecation Free (%) (6.2.2)
20		Stage of Ground Water Extraction (%) (6.4.1)*
21	Goal 7	Households electrified (%) (7.1.1)
22		Households using Clean Cooking Fuel (%) (7.1.2)
23	Goal 8	Annual growth rate of GDDP per capita (at constant price of 2011-12) (8.1.1)*
24		Households with a bank account (%) (8.10.2)
25	Goal 9	Targeted habitations connected by all-weather roads under Pradhan Mantri Gram Sadak Yojana (%) (9.1.1)
26	Goal 11	Urban households living in slums (%) (11.1.3)
27		Wards with 100% door to door waste collection (%)
28	Goal 15	Total land area covered under forest (%) (15.1.1)
29		Change in forest area from 2015 to 2017 (%) (15.2.1)
30	Goal 16	Reported murders per 1 lakh population
31		Population covered under Aadhaar (%) (16.9.2)

Modified NIF indicators

The methodology used to calculate SDG Index is as follows:

1. **Priority Indicator selection and data collection:** Based on the data availability, 31 indicators are selected from the list of 62 priority indicators used by NITI Aayog for developing the Sustainable Development Goals India Index. Data collected on these indicators is from government sources. The details of the data collected is present at **Annexure – 1.**

2. **Target Setting:** We use the targets set by NITI Aayog for each indicator in calculating the Sustainable Development Goals Index. The details on the targets used is present at **Annexure – 2.**

3. **Normalization:** Since the indicators used in the construction of index have different units of measurement, the units are normalized in order to be able to compare different districts based on a variety of indicators. Normalisation transforms all data into dimensionless numbers. Normalization

of the indicators is done using the formula used by NITI Aayog in the calculation of SDG India Index. For each indicator the normalised values range from 0 to 100. An indicator value of 100 means that the district has achieved the target in terms of that indicator. If a district scores more than 100 on an indicator i.e. it is doing better than the target set by the NITI Aayog, then its value is capped at 100. The district wise normalised scores are present at **Annexure − 3** and the normalised and capped scores are present at **Annexure − 4**.

For positive indicators the normalised value of an indicator is calculated as follows:

$$z = \frac{x - \min(x)}{T(x) - \min(x)} \times 100$$

Where:

z is the normalised score for the indicator

x is the indicator value in raw data

min (x) is the minimum observed value of the indicator in the dataset

T (x) is the target value of the indicator

For negative indicators the normalised value of an indicator is calculated as follows:

$$z = [1 - \frac{x - T(x)}{max(x) - T(x)}] \times 100$$

Where:

z is the normalised score for the indicator

x is the indicator value in raw data

max (x) is the maximum observed value of the indicator in the dataset

T (x) is the target value of the indicator

4. **Weighting:** Each indicator is assigned a weight, indicating the importance it has in influencing SDGs. Here, each indicator has been assigned equal weight. This is based on the assumption that each indicator is valued equally for sustainable development.

5. **Calculating SDI score for each goal:** For each goal, the index value is calculated for each district by taking the arithmetic mean of the normalized values of all the priority indicators within a goal. The values for SDG score range in between 0 to 100 with 0 being the worst performer in the group and 100 being the achiever of the target. The details on goal wise scores for each district is present at **Annexure − 5**.

6. **Calculating SDG Index score for a district:** The SDG Index score for a district is calculated by taking the arithmetic mean of SDI score of each goal for that district. Each goal is assigned an equal weight in calculating the SDI score for the district. District wise composite SDI score and ranks is present in **Table − 1**. The goal wise top 5 and bottom five districts are present at **Annexure − 6** and a snapshot of district wise analysis is present at **Annexure − 7**.

Table -1: SDG Rajasthan Index composite scores and Ranks

District	SDG Rajasthan Index score	Rank
Jhunjhunu	69.66	1
Jaipur	69.36	2
Dausa	67.31	3
Churu	65.52	4
Karauli	65.36	5
Kota	65.28	6
S.Madhopur	64.48	7
Ganganagar*	64.48	8
Alwar	63.98	9
Nagaur	63.54	10
Sikar	62.82	11
Bundi	62.44	12
Bhilwara	61.81	13
Bikaner	61.34	14
Tonk	61.10	15
Hanumangarh	60.21	16
Dholpur	59.98	17
Jhalawar	59.60	18
Banswara	58.91	19
Ajmer	58.70	20
Chittorgarh	58.31	21
Pali	57.98	22
Bharatpur	57.93	23
Sirohi	57.30	24
Udaipur	57.24	25
Dungarpur*	57.24	26
Rajsamand	57.09	27
Barmer	55.72	28
Jodhpur	55.30	29
Jalore	54.67	30
Pratapgarh	54.19	31
Baran	52.19	32
Jaisalmer	51.57	33

*Ranks of respective districts are different at 3 decimal points

Annexure – 6: Top 5 and bottom 5 districts for each goal

Goal	Rank	Top five Districts	Rank	Bottom Five Districts
SDG 1	Rank 1	Nagaur	Rank 29	Sirohi
	Rank 2	Dholpur	Rank 30	Pratapgarh
	Rank 3	Churu	Rank 31	Udaipur
	Rank 4	Karauli	Rank 32	Baran
	Rank 5	Jodhpur	Rank 33	Dungarpur
SDG 2	Rank 1	Sikar	Rank 29	Pali
	Rank 2	Hanumangarh	Rank 30	Baran
	Rank 3	Jhunjhunu	Rank 31	Dungarpur
	Rank 4	Dausa	Rank 32	Banswara
	Rank 5	Ganganagar	Rank 33	Udaipur
SDG 3	Rank 1	Kota	Rank 29	Pratapgarh
	Rank 2	Jhunjhunu	Rank 30	Dholpur
	Rank 3	Jhalawar	Rank 31	Banswara
	Rank 4	Churu	Rank 32	Udaipur
	Rank 5	Ganganagar	Rank 33	Jalore
SDG 4	Rank 1	Jaipur	Rank 29	Jalore
	Rank2	Kota	Rank 30	Pali
	Rank3	Hanumangarh	Rank 31	Chittorgarh
	Rank4	Jhunjhunu	Rank 32	Sirohi
	Rank5	Ganganagar	Rank 33	Jhalawar
SDG 5	Rank 1	Hanumangarh	Rank 29	Pratapgarh
	Rank 2	Bikaner	Rank 30	Jaisalmer
	Rank 3	Bundi	Rank 31	Ajmer
	Rank 4	Banswara	Rank 32	Rajsamand
	Rank 5	Sikar	Rank 33	Alwar
SDG 6	Rank 1	Hanumangarh	Rank 29	Barmer
	Rank 2	Banswara	Rank 30	Jalore
	Rank 3	Dungarpur	Rank 31	Nagaur
	Rank 4	Ganganagar	Rank 32	Jodhpur
	Rank 5	Kota	Rank 33	Jaisalmer
SDG 7	Rank 1	Kota	Rank 29	Bharatpur
	Rank 2	Jaipur	Rank 30	Barmer
	Rank 3	Jhunjhunu	Rank 31	Karauli
	Rank 4	Ajmer	Rank 32	Pratapgarh
	Rank 5	Jodhpur	Rank 33	Banswara
SDG 8	Rank 1	Jaipur	Rank 29	Sirohi
	Rank 2	Ganganagar	Rank 30	Banswara

Goal	Rank	Top five Districts	Rank	Bottom Five Districts
	Rank 3	Hanumangarh	Rank 31	Barmer
	Rank 4	Jhunjhunu	Rank 32	Rajsamand
	Rank 5	Churu	Rank 33	Tonk
SDG 9	Rank 1	S.Madhopur	Rank 29	Ajmer
	Rank 2	Chittorgarh	Rank 30	Hanumangarh
	Rank 3	Baran	Rank 31	Bikaner
	Rank 4	Dholpur	Rank 32	Jalore
	Rank 5	Dausa	Rank 33	Sikar
SDG 11	Rank 1	Karauli	Rank 29	Barmer
	Rank 2	Jhunjhunu	Rank 30	Kota
	Rank 3	Tonk	Rank 31	Jaisalmer
	Rank 4	Alwar	Rank 32	Baran
	Rank 5	Sikar	Rank 33	Jodhpur
SDG 15	Rank 1	Udaipur	Rank 29	Jodhpur
	Rank 2	Sirohi	Rank 30	Kota
	Rank 3	Alwar	Rank 31	Tonk
	Rank 4	Karauli	Rank 32	Churu
	Rank 5	Pratapgarh	Rank 33	Hanumangarh
SDG 16	Rank 1	Jalore	Rank 29	Pratapgarh
	Rank 2	Rajsamand	Rank 30	Karauli
	Rank 3	Barmer	Rank 31	Dholpur
	Rank 4	Pali	Rank 32	Baran
	Rank 5	Jhunjhunu	Rank 33	Bharatpur

Annexure – 7: District wise analysis snapshot

District	Goal 1	Goal 2	Goal 3	Goal 4	Goal 5	Goal 6	Goal 7	Goal 8	Goal 9	Goal 11	Goal 15	Goal 16	Composite
						Index Score							
Ajmer	60.50	47.18	38.94	59.31	22.56	79.58	71.74	73.30	42.21	77.55	54.71	76.77	58.70
Alwar	54.85	58.94	30.87	79.85	15.26	85.10	56.52	75.68	84.08	98.81	70.53	57.28	63.98
Banswara	48.73	11.27	17.36	77.56	61.34	95.35	50.00	61.47	79.71	81.70	58.16	64.29	58.91
Baran	40.93	25.20	35.79	50.68	33.72	89.45	57.09	72.27	100.00	50.00	53.86	17.23	52.19
Barmer	54.32	55.94	29.09	71.16	36.17	76.74	51.20	50.00	48.60	62.18	50.77	82.42	55.72
Bharatpur	57.52	44.62	35.61	68.30	49.24	84.01	52.06	73.76	78.55	89.68	56.24	5.52	57.93
Bhilwara	54.65	35.06	26.55	54.87	59.42	80.70	58.41	73.12	90.05	86.86	50.63	71.35	61.81
Bikaner	55.20	64.11	37.46	66.93	73.48	77.21	65.50	76.56	33.92	73.52	50.55	61.64	61.34
Bundi	55.85	34.21	31.63	56.62	61.74	92.09	55.84	73.09	75.78	96.13	64.14	52.22	62.44
Chittorgarh	52.69	27.30	23.87	41.46	51.12	85.29	57.32	73.60	100.00	83.13	52.20	51.74	58.31
Churu	62.70	63.46	44.81	72.92	44.15	87.17	60.13	77.90	81.68	93.91	30.44	66.94	65.52
Dausa	51.26	75.77	39.37	62.67	60.14	85.05	52.35	73.33	94.60	98.38	54.53	60.24	67.31
Dholpur	65.07	37.65	22.24	80.77	31.39	89.58	54.63	73.93	95.33	88.28	63.54	17.35	59.98
Dungarpur	12.24	19.58	33.13	66.57	29.43	95.02	52.46	71.75	77.49	98.52	61.15	69.52	57.24
Ganganagar	59.22	73.72	44.02	80.85	60.40	94.91	65.45	79.64	52.93	62.30	50.88	49.48	64.48
Hanumangarh	60.59	79.01	36.68	81.24	73.96	97.65	57.15	78.36	38.54	67.78	0.73	50.87	60.21
Jaipur	50.63	71.51	34.25	91.28	53.69	78.54	74.03	79.72	85.27	87.69	56.91	68.84	69.36
Jaisalmer	48.62	50.93	37.93	51.58	24.52	50.00	52.57	69.89	62.71	53.96	50.55	65.60	51.57
Jalore	48.76	41.01	13.91	48.39	41.87	76.61	58.30	75.08	23.83	85.35	53.27	89.60	54.67
Jhalawar	58.63	28.25	45.47	28.64	32.37	86.87	57.38	73.61	94.27	88.26	60.14	61.31	59.60
Jhunjhunu	54.04	78.63	49.50	81.17	51.72	78.34	71.97	78.16	57.91	100.00	54.37	80.11	69.66
Jodhpur	61.33	53.79	35.06	76.37	44.31	63.64	68.42	69.25	58.15	15.09	50.00	68.23	55.30
Karauli	61.55	51.98	34.66	79.72	54.02	81.51	50.80	71.86	91.25	100.00	70.10	36.91	65.36
Kota	51.23	50.04	53.15	85.46	39.31	93.13	77.12	75.86	92.72	58.97	44.21	62.17	65.28
Nagaur	69.99	61.70	40.06	70.42	29.46	68.80	56.75	73.20	71.44	91.97	50.53	78.20	63.54
Pali	59.32	26.79	41.98	48.21	38.25	81.24	66.13	71.26	47.17	82.50	52.05	80.87	57.98
Pratapgarh	45.65	39.26	23.79	57.86	25.39	84.80	50.57	71.43	66.86	72.78	66.67	45.19	54.19
Rajsamand	47.31	31.31	34.51	50.55	19.67	82.03	57.15	28.84	80.30	98.32	66.16	88.99	57.09
S.Madhopur	58.85	65.15	24.29	61.71	31.79	85.43	53.03	74.34	100.00	88.75	65.21	65.26	64.48
Sikar	52.66	80.38	36.52	72.28	60.97	83.12	67.28	74.00	0.00	98.80	53.11	74.77	62.82
Sirohi	47.05	35.06	24.29	40.00	52.16	90.41	65.68	68.01	56.50	81.47	76.64	50.34	57.30
Tonk	56.19	45.53	42.38	76.05	46.90	90.35	55.09	23.10	86.23	99.60	42.76	69.06	61.10
Udaipur	43.48	10.22	16.01	76.75	50.32	81.82	56.64	70.19	63.89	81.91	85.52	50.15	57.24
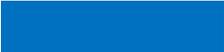
Achiever – SDI score is equal to 100

Front Runner – SDI score is less than 100 but greater than or equal to 65

Performer – SDI score is less than 65 but greater than or equal to 50

Aspirant – SDI score is less than 50