

Analysis of EPI Scores, Ranking of Countries and States of India and relationship with changes in policies, High Priority Areas and Indicators.

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A sustainable growth strategy should be based on an effective and balanced utilization of national resources, detailed short and long-term sustainable macro and micro level planning including emergency management, execution setup, process and Performance evaluation. Environmental Performance Index (EPI) is being evolved at both global and national level to enable assessing progress made in achieving the targets and goals set. Criteria and indicators selected are the backbone of the assessment methodology. Identification of high Priority areas at the national level and corresponding indicators in sync with global targets and updating of policies and legislations at the national level is a challenging task.

The paper attempts to analyze the results of the EPI assessment methodology, Scores and ranking being evolved in India (2012-2020) with Yale 2020 and compares it with 26 of the 180 countries evaluated by Yale EPI (2012 to 2020). India has been ranked at 168 by yale in 2020. The analysis leads us to the need for in depth discussion, continuity of the indicators and weightage of the Categories, inclusion of Disaster management as a criteria and assessment of the implementation and progress made by a country.

Keywords: *Environment, Performance index, Yale EPI Ranking, Global Matrix for Environment, indicators, Categories, Scores and ranks.*

Environmental Performance Index

The Environmental Performance Index (EPI) identifies targets and goals for several core environmental policy categories and measures how close countries come to meet them. The main objective of the EPI is to improve the empirical data basis for long term environmental protection measures and to facilitate improved analytical assessments and adherence to policies and legislations.

PC-EPI 2013 & 2020

The PC- EPI 2013¹ is comprised of 5 categories and 16 indicators for which standards have been notified and in respect of indicators with no standards, eg. forests, etc. a method was evolved and these integrated to arrive at a composite index. The criteria were air pollution, water quality, forests, waste management and climate change. To ensure the use of the best-suited metrics, the indicator selection criteria applied were relevance (the indicator clearly tracks the environmental issue of concern), performance orientation (the indicator tracks ambient conditions or on-the-ground results to national standards and requirements) and data quality (the data used represent the measures taken by the states).

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Table-1. PC-Environmental Performance Index, Criteria and Indicators ---2020,2016 and 2013.

S. No	Criteria	Indicators 2020	Data Sets	Indicators 2016	Data sets	Indicators 2013	data sets
1	Air Pollution	1. NOx, 2. SOx, 3. PM2.5, PM10	4	1. NOx, 2. SOx, 3. SPM	3	1. NOx, 2. SOx, 3. SPM	3
2	Forests	1. TFC as % of state GA and Contribution to National Forest Cover, 2. Change in forest cover, 3. Growing Stock and 4. Afforestation efforts.	4	1. TFC as % of state GA and Contri. to National Forest Cover, 2. Change in forest cover, 3. Growing Stock and 4. Afforestation efforts.	4	1. TFC as % of state GA and Contri. to National average, 2. Increase/ decrease in forest cover, 3. Growing Stock and 4.Afforestation efforts.	4
3	Water quality	1. % Dom. Waste water treated, and 2. Surface water quality (.DO , BOD & TFC). 3. Ground water extraction % and 4. % of 17 Cat. Of Ind. complying with WWT Standards.	4	1. % Dom. Waste water treated, 2. Surface water quality (.DO , BOD & TFC). 3. Ground Water extraction %	3	1. Percentage of Dom. Waste water, 2. Surface water quality (.DO , BOD & TFC) and 3. Ground Water extraction %	3
4	Waste Management	1. MSW, 2. Bio-med.,3. Hazardous Wastes and 4.E- waste.	4	1. MSW, 2. Bio-med.,3. Hazardous Wastes and 4.E- waste.	4	1. MSW, 2. Bio-med.,3. Hazardous Wastes	3
5	Climate Change	1. Preparation of SAPCCs, 2.% RE Gen Capacity, 3.CO2 Saved from LED , 4. % Grid connected Solar Power and Lives lost per Crore population.	5	1.Preparation of SAPCCs, 2. RE Growth rate including mini hydro and 3. Electricity intensity of SGDP.	3	1.Preparation of SAPCCs, 2. RE Growth rate including mini hydro and 3. Electricity intensity of SGDP	3
6	Biodiversity	1.Indigenous livestock population change, 2. change in wetland 3. change in Protected Area Network and 4. % desertification.	4	1.Indigenous livestock population change 2. change in wetland 3. change in Protected Area Network	3		
7	Agriculture	1.Change in land under Agriculture,2. Vuln. Agri.Dist., 3. %' shares in total GSVA 17-18, 4. Land under Micro irrigation.	4				
8	Fisheries	1. Fish Stock change, 2. Marine and Biodiversity Protected Area, 3. Funds for dev. of fisheries and 4. Valuation (Cr) of marine fish landing. 2017 +2018 and Share % of landing.	4				
9	Disaster Management	1. Status of State and district DM plan, 2. Institutional .Setup. 3. Budget and 4. Avg. Forest fire incidence ,2016+17.	4				
TOTAL	9		37		20		16

Yale Environment Performance index

The Yale Environmental Performance Index (EPI)³ is a matrix which aims at establishing an international composite environment index to rank country performance on environmental issues.

The Yale 2020 Environmental Performance Index (EPI)³ released in June 2020, provides a data-driven summary of the state of environmental compliance using 32 performance indicators across 11 issue categories, the EPI ranks 180 countries on environmental health and ecosystem vitality. The 2020 rankings includes for the first time a waste management indicator and a pilot indicator on CO2 emissions from land cover change. Other new indicators enables analysis of air quality, biodiversity & habitat, fisheries, ecosystem services, and climate change. **Disaster management ,both natural and manmade needs to be included as a category with indicators.**

The 2018 Yale Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators across ten issue categories covering environmental health and ecosystem vitality. The 2018 EPI data and methodology have generated new rankings based on advances in environmental science and analysis. The 2010 Environmental Performance Index (EPI) ranks 163 countries on 25 performance indicators tracked across ten policy categories covering both environmental public health and ecosystem vitality

The six EPI Reports (2010-2020)³ indicates the need for national sustainability efforts on a number of fronts, especially cleaning up air quality, protecting biodiversity, and reducing GHG emissions. The overall EPI rankings indicate which countries are doing best against the array of environmental pressures that every nation faces. Such an analysis can assist in refining policy choices, understanding the determinants of environmental progress, and maximizing the return on governmental investments. Every alternate year countries have been ranked . **Table 2A and 2B** indicates 30 top ranked countries with scores for the year 2010—2012-2014 and 2016-2018-2020.

Analysis of the Yale EPI 2010-2020.

An analysis of **Table 2A, 2B & 2C ,2D** indicates that during the period 2010-2020 ,1013 assessment of countries (168-180) lead to a total of only 56 countries occupying a position among the top 30 countries in the decade. As per the EPI 2020 ranking, only 11 countries were listed in all the six years, 16 countries were ranked only once from the 56 countries ,9 countries were listed 4 years,3 countries three years, 4 countries 2 years and 1 one year. The result of the analysis raises a lot of questions regarding the , change in number of Category, incomparable scores , methodology, repetition of indicators and inclusion under 2 categories with varying weightages, inclusion of exposure, exceedance , growth rate etc. The prime objective of EPI is analysis of the effect of policy and law notified by the countries and meeting of the standards and Goals set by the country and globally. It is felt that a detailed discussion on the process, scores and ranking is necessary.

During the period 2010-2020 India was ranked 123/163 with a score of 35.3, 125/132 (Sc 36.23), 155/178 (Sc 31.23), 141/180 (Sc 53.58) , 177/180 (Sc 30.57) and 168/180 (Sc 27.6) in that order. A drop in Ranking from 141 to 177 and in Scores from 53.58 to 30.57 during 2016-2018 needs a thorough analysis. **Table-2C & 2D** highlights the issue further in terms of inconsistency in scoring , (drop by 13%) ranking 16th ranked Switzerland in 2016 as 1st in 2018, disappearance of 14 countries after 2012, in the 30 top ranked countries , etc

**Table-2A -30 top ranked countries with scores.
for the year 2010—2012-2014**

Top 30 countries and score Yale						
RK	2010 EPI	25 indict	RK	2012 E 22 indicat	RK	2014 I 20 indicat
1	Iceland	93.5	1	Switze 76.69	1	Switze 87.67
2	Switzerland	89.1	2	Latvia 70.37	2	Luxer 83.29
3	Costa Rica	86.4	3	Norwe 69.92	3	Austra 82.4
4	Sweden	86	4	Luxem 69.2	4	Singa 81.78
5	Norway	81.1	5	Costa 69.03	5	Czech 81.47
6	Mauritius	80.6	6	France 69	6	Germ 80.47
7	France	78.2	7	Austri 68.92	7	Spain 79.79
8	Austria	78.1	8	Italy 68.9	8	Austri 78.32
9	Cuba	78.1	9	UK 68.82	9	Swed 78.09
10	Colombia	76.8	10	Swede 68.82	10	Norw 78.04
11	Malta	76.3	11	Germa 66.91	11	Nethe 77.75
12	Finland	74.7	12	Slovak 66.62	12	Unitec 77.35
13	Slovakia	74.5	13	icelanc 66.28	13	Denm 76.92
14	UK	74.2	14	New z 66.05	14	Icelar 76.5
15	New Zealar	73.4	15	Albani 65.85	15	Slove 76.43
16	Chile	73.3	16	Nethe 65.65	16	NewZ 76.41
17	Germany	73.2	17	Lithuar 65.5	17	Portug 75.8
18	Italy	73.1	18	Czech 64.79	18	Finlar 75.72
19	Portugal	73	19	Finlar 64.44	19	Irelan 74.67
20	Japan	72	20	Croati 64.16	20	Eston 74.66
21	Latvia	72.5	21	Denme 63.61	21	Slova 74.45
22	Czech Repul	71.6	22	Polanc 63.47	22	Italy 74.36
23	Albania	71.4	23	Japan 63.36	23	Grec 73.28
24	Panama	71.4	24	Belgiu 63.02	24	Canad 73.14
25	Spain	70.6	25	Malay 62.51	25	UAE 72.91
26	Belize	69.9	26	Brune 62.49	26	Japan 72.35
27	Antigua & B	69.8	27	Colom 62.33	27	Franc 71.05
28	Singapore	69.6	28	Slover 62.25	28	Hungi 70.28
29	Serbia	69.4	29	Taiwai 62.23	29	Chile 69.93
30	Ecuador	69.3	30	Brazil 60.9	30	Polan 69.53

**Table-2B -30 top ranked countries with scores
for the year 2016—2018--2020**

Top 30 countries and score Yale								
RK	2016 EPI	20 indict	RK	2018 EPI	24 indicators	RK	2020 EPI	32 Ind.
1	Finland	90.88	1	Switzerland	87.42	1	Denmark	82.5
2	Iceland	90.51	2	France	83.95	2	Luxembourg	82.3
3	Sweden	90.43	3	Denmark	81.6	3	Switzerland	81.5
4	Denmark	89.21	4	Malta	80.9	4	United Kingd	81.3
5	Slovenia	88.98	5	Sweden	80.51	5	France	80
6	Spain	88.91	6	UK	79.89	6	Austria	79.6
7	Portugal	88.63	7	Luxembourg	79.12	7	Finland	78.9
8	Estonia	88.59	8	Austria	78.97	8	Sweden	78.7
9	Malta	88.48	9	Ireland	78.77	9	Norway	77.7
10	France	88.2	10	Finland	78.64	10	Germany	77.2
11	New Zealand	88	11	Iceland	78.57	11	Netherlands	75.3
12	UK	87.38	12	Spain	78.39	12	Japan	75.1
13	Australia	87.22	13	Germany	78.37	13	Australia	74.9
14	Singapore	87.04	14	Norway	77.49	14	Spain	74.3
15	Croatia	86.98	15	Belgium	77.38	15	Belgium	73.3
16	Switzerland	86.93	16	Italy	76.96	16	Ireland	72.8
17	Norway	86.9	17	New Zealand	75.96	17	Iceland	72.3
18	Austria	86.64	18	Netherlands	75.46	18	Slovenia	72
19	Ireland	86.6	19	Israel	75.01	19	New Zealand	71.3
20	Luxembourg	86.58	20	Japan	74.69	20	Canada	71
21	Greece	85.81	21	Australia	74.12	21	Czech Republ	71
22	Latvia	85.71	22	Greece	73.6	22	Italy	71
23	Lithuania	85.49	23	Taiwan	72.84	23	Malta	70.7
24	Slovakia	85.42	24	Cyprus	72.6	24	USA	69.3
25	Canada	85.06	25	Canada	72.18	25	Greece	69.1
26	UAE	84.72	26	Portugal	71.91	26	Slovakia	68.3
27	Czech Rep.	84.67	27	USA	71.19	27	Portugal	67
28	Hungary	84.6	28	Slovakia	70.6	28	South Korea	66.5
29	Italy	84.48	29	Lithuania	69.33	29	Israel	65.8
30	Germany	84.5	30	Bulgaria	67.85	30	Estonia	65.3
						30	Costa Rica	67.85

Table 2C Analysis of Yale EPI Scores.

Rank 2020	Country	yale epi sc 2020. 32 indic	yale epi sc 2018. 24 indicators	yale epi sc 2016. 20 indicators	yale epi sc 2014. 20 indicators	yale epi sc 2012. 22 indicators	yale epi sc 2010. 25 indicators
168	INDIA	27.6	30.57	53.58	31.23	36.23	35.3
1	Denmark	82.5	81.6	89.21	76.92	63.61	
2	Luxembourg	82.3	79.12	86.58	83.29	69.2	
3	Switzerland	81.5	87.42	86.93	87.67	76.69	89.1
4	UK	81.3	79.89		77.35	68.82	74.2
5	France	80	83.95	88.2	71.05	69	78.2
6	Austria	79.6	78.97	86.64	78.32	68.92	78.1
7	Finland	78.9	78.64	90.88	75.72	64.44	74.7
8	Sweden	78.7	80.51	90.43	78.09	68.82	86
9	Norway	77.7	77.49	86.9	78.04	69.92	81.1
10	Germany	77.2	78.37	84.5	80.47	66.91	73.2
11	Netherlands	75.3	75.46		77.75	65.65	
12	Japan	75.1	74.69		72.35	63.36	72
13	Australia	74.9	74.12	87.22	82.4		
14	Spain	74.3	78.39	88.91	79.79		70.6
15	Belgium	73.3	77.38			63.02	
16	Ireland	72.8	78.77	86.6	74.67		
17	Iceland	72.3	78.57	90.51	76.5	66.28	93.5
18	Slovenia	72		88.98	76.43	62.25	
19	New Zealand	71.3	75.96	88	76.41	66.05	73.4
20	Canada	71	72.18	85.06	73.14		
20	Czech Rep.	71			81.47	64.79	71.6
20	Italy	71	76.96	84.48	74.36	68.9	73.1
23	Malta	70.7	80.9	88.48			76.3
24	USA	69.3	71.19				
25	Greece	69.1	73.6	85.81	73.28		
26	Slovakia	68.3	70.6	85.42	74.45	66.62	74.5
27	Portugal	67	71.91	88.63	75.8		73
28	South Korea	66.5					
29	Israel	65.8	75.01				
30	Estonia	65.3		88.59	74.66		

Table 2D Analysis of Yale EPI Scores

Rank 2010-18	Country	y. epi sc 2020. 32 indi	y. epi sc 2018. 24 indi	yale epi sc 2016. 20 indi	yale epi sc 2014. 20 indi	yale epi sc 2012. 22 indi	yale epi sc 2010. 25 indi
19	Isreal		75.01				
24	Cyprus		72.6				
15	Albania					65.85	71.4
29/23/17	Lithuania		69.33	85.49		65.5	
30	Bulgaria		67.85				
14/4	Singapore			87.04	81.78		69.6
15/20	Crotia			86.98		64.16	
21	Greece			85.81			
22/2/21	Lativia			85.71		70.37	72.5
3-May	Costa Rica					69.03	86.4
25	Malaysia					62.51	
26	Brunei					62.49	
27/10	Colombia					62.33	76.8
29	Taiwan					62.23	
30	Brazil					60.9	
6	Mauritius						80.6
9	Cuba						78.1
24	Panama						71.4
26	Belize						69.9
27	Antig and Barbuda						69.8
29	Serbia						69.4
30	Ecuador						69.3
26/25	UAE			84.72	72.91		
28	Hungary				70.28		
29/16	Chile				69.93		73.3
37/30/22	Poland	60.9			69.53	63.47	

Yale EPI Ranking of Countries and India.

The Yale EPI has calculated scores/targets for core environmental policy categories and measures how close countries come to meet them. In addition to publishing the composite index and individual country scores, a country ranking has also been released. The recent publication of the Yale EPI (2020) has placed India in the 168th position, out of 180 countries assessed and which compares it to the lowest ranked countries. Our analysis has traced the individual results for India, based on an analysis of indicators and data as well as an assessment of the underlying methodology of the index. As part of this assessment, the scientific validity of the ranking has been further investigated based on PC-EPI 2013, 2016 and 2020 which is based on data published by various departments/ ministries of the Government of India⁴. **Table-4 and 4.1-4.9 highlights the scores of each of the 37 indicator under 9 Criteria for PC-EPI 2020 and Table 5 A and B projects the scores of each criteria and for all 37, States and Union territories for PC-EPI 2013 and 2016. (Annexure)**

Regarding the relevance of the EPI for adequately assessing Indian environment policies and Laws a number of pivotal factors could be singled out. These include the selection, conceptualisation and weightage of individual indicators, the data quality and the policy scores. The selection and weightage of certain policy scores and indicators has been driven by the claim to complement the environment indicator set of the Sustainable Development Goals. However, such selection and weightage does not mirror sufficiently the specific dimensions of environmental problems typical for countries like India and therefore, reduces significantly the explanatory power of the EPI for India.

The low number of indicators due to repetition as well as the partly low data quality does not permit to capture and assess the environmental performance of a country in its entirety. The selected indicators do not reflect the pivotal environmental problems in a number of policy areas, which are of high concern for a country such as India. This includes in particular environmental problems with a strong quality dimension (for example, access to sanitation is less of a concern compared to the quality of sanitation and sewage treatment

There are already a number of existing regional cross-country indicator sets of International Organisations (OECD⁵, EU EEA), which may offer methodologies that are also scientifically sound and have a higher explanatory power in assessing the environmental performance.

At this point in time, it cannot be conceded that the claim to establish an analytically sound quantitative global composite index has been achieved. The explanatory power of the cross-country comparison for a country like India were each state is of the area of a country (**Fig-4**) is low due to significant and obvious methodological deficiencies and problems of the composite index. **Table 6** indicates the country area equivalent to an Indian state , Yale score EPI 2020, population of both and EPI 2013, 2016 and 2020 overall scores of the states and ranking in 2020.

Indicators , Data sets and Weightage of Yale EPI 2020 and PC-EPI 2020 is depicted in fig-5. A careful perusal of Yale EPI 2020 Indicators , Data sets and Weightage raises a set of questions. The proper assessment of a composite index requires a thorough analysis of these different levels of index aggregation. This includes the selection and quality of data; the selection and conceptualisation of the indicators; the applied weighting of individual indicators; the targets which are used as the indicator measurement baseline; as well as different statistical standard forms, which are usually applied to aggregation and weighting.

Fig-4 :- States in India with comparable land area of countries.

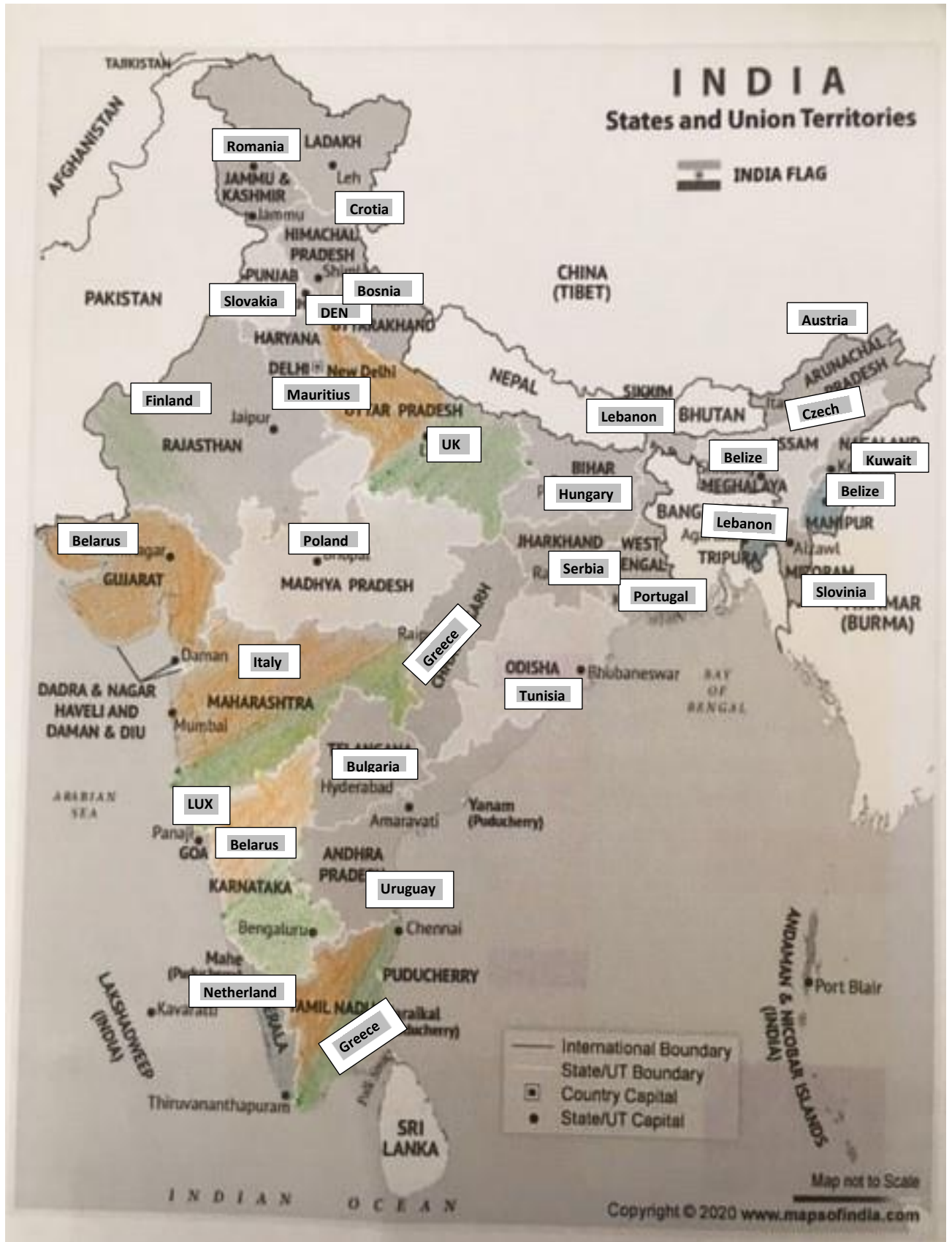
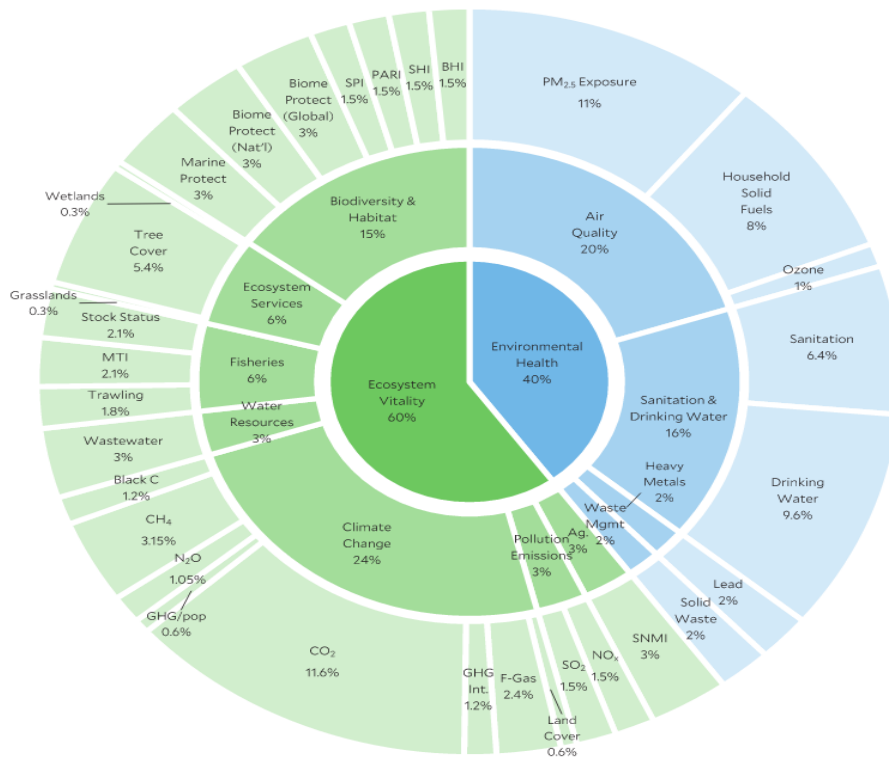
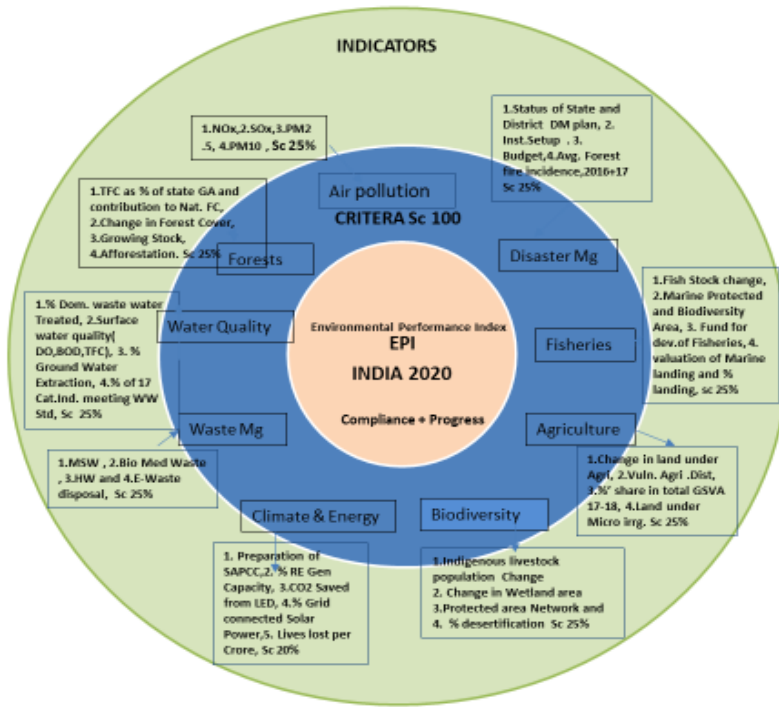


Table-6: Country area equivalent to Indian states , Yale score EPI 2020, population of both Countries and states , PC-EPI 2020 overall scores of the states and ranking in 2020 and GSDP CP and GSDP PC 18-19.

Yale Score 2020 Indi 32	Rank 2020 2	Country 3	Country Area Sq.Km 4	2018-20 Pop in Millions 5	GSDP CP \$B 18-19 Constant price	GSDP PC \$ 18-19 Per Capita	India's state/ UT with same area 6	State Area Sq.Km 7	Population in Millions 2019 8	Pop ratio col 8/col 5	EPI 2020 Score. 37 ind	India-States Rk 2020	GSDP CP \$B 18-19 Constant Price	GSDP PC \$ 18-19 Per Capita
27.6	168	INDIA	3,287,240	1352.6							38.18			
82.5	1	Denmark	42,924	5.800	280.70	48419	Haryana	44200	28.20	4.86	30.75	35	75.13	2535.20
82.3	2	Luxembourg	2590	0.614	58.80	96793	Goa	3702	1.59	2.58	43.24	7	9.42	2793.53
81.3	4	United Kingd	242490	66.650	2694.30	40502	Uttar Pradesh	240928	237.88	3.57	36.97	26	160.91	1549.11
79.6	6	Austria	83879	8.859	409.30	46260	Ar.Pradesh	83743	1.57	0.18	42.5	9	2.36	1974.93
78.9	7	Finland	338439	5.518	232.10	42061	Rajasthan	342240	81.03	14.52	35.91	28	95.83	2741.23
75.3	11	Netherlands	41543	17.280	857.90	49787	Kerala	38863	35.70	2.07	45.36	4	79.14	2983.00
72	18	Slovenia	20270	2.081	67.70	32728	Mizoram	21081	1.24	0.6	41.38	11	2.27	1346.41
71	20	Czech Repub	78866	10.690	355.30	33436	Assam	78438	35.61	3.33	38.26	21	34.93	1161.26
71	20	Italy	301337	60.320	2165.20	33828	Maharashtra	307713	123.14	2.04	38.89	19	400.00	2900.00
69.1	25	Greece	131940	10.720	269.70	25141	Chattisgarh	135,191	29.44	2.75	38.17	22	32.79	1370.78
69.1	25	Greece	131940	10.720	269.70	25141	Tamil Nadu	130,058	77.84	7.26	43.07	8	170.82	1600.20
68.3	26	Slovakia	49035	5.458	170.10	31226	Punjab	50362	30.14	5.52	31.13	33	56.26	5060.03
67	27	Portugal	91568	10.197	298.20	28999	West Bengal	88752	99.61	9.77	40.14	16	113.30	4657.74
Yale Score 2010-18	Rk 2010-18	Country	Country Area Sq.Km	2018-20 Pop in Millions 5	GSDP CP \$B 18-19 Constant price	GSDP PC \$ 18-19 Per Capita	India's state/ UT with same area	State Area Sq.Km	Population in Millions 8	Pop ratio col 8/col 5	EPI 2020 Score. 37 ind	India-States Rk 2020	GSDP CP \$B 18-19 Constant Price	GSDP PC \$ 18-19 Per Capita
45.1	82	Mauritius	2040	1.265	26.70	21075	Delhi	1484	18.71	14.79	32.3	32	85.26	6484.21
57	41	Bulgaria	110990	7.00	135.70	19321	Telangana	114840	39.36	5.62	37.92	24	86.69	941.03
63.1	34	Crotia	56594	4.076	96.80	23664	Himachal P	55673	7.45	1.83	41.66	10	16.67	1299.97
63.7	33	Hungary	93030	9.773	278.10	28465	Bihar	94163	124.80	12.77	31.06	34	55.79	620.01
64.7	32	Romania	238400	19.41	477.90	24538	J&K +Ladakh	222236	13.90	9.65	40.74	14	15.97	1075.54
55.2	45	Serbia	88361	6.982	112.10	16049	Jharkhand	79714	38.59	5.53	32.97	31	32.94	2887.73
53	49	Belarus	207600	9.485	168.30	17742	Karnataka	191791	67.56	7.12	46.32	3	160.79	1287.46
60.9	37	Poland	312679	38.49	1093.20	28786	Madhya P	308,245	85.36	2.22	38.32	20	75.73	990.07
49.1	61	Uruguay	175015	3.47	72.10	12712	Andhra P	160,205	53.90	15.53	46.59	2	87.89	2138.84
46.7	71	Tunisia	155360	11.82	128.30	11094	Odhisia	155,707	46.36	3.92	43.65	5	54.80	1564.88
41.9	101	Belize	22806	0.398	2.90	9674	Manipur	22327	3.09	7.77	37.73	23	2.67	2385.77
45.4	78	Bosnia and H	51197	3.281	42.30	19321	Uttrakhand	53483	11.25	3.43	38.91	18	27.34	2904.00
53	49	Belarus	207600	9.485	168.30	17742	Gujarat	191791	63.87	6.73	48.03	1	168.36	3341.07
53.6	47	Kuwait	17818	4.271	267.60	64684	Nagaland	16579	2.25	0.53	36.72	27	2.50	2192.93
41.9	101	Belize	22806	0.398	2.90	9674	Meghalaya	22429	3.37	8.46	37.73	15	3.66	1653.68
45.4	78	Lebanon	10452	6.825	79.50	11607	Tripura	10486	4.17	0.61	39.73	17	5.28	2811.80
45.4	78	Lebanon	10452	6.825	79.50	11607	Sikkim	7096	0.69	0.1	40.49	13	2.49	2893.15

Fig-5:- Indicators , Data sets and Weightage of PC-EPI 2020 and Yale EPI 2020.



The quality and validity of a composite index⁶ depends largely upon the quality of indicators, which in turn depend largely on the quality of the data in use. The observation of trend developments will always become problematic if data sources, methodological development and selection of indicators are continuously changing, thus new results are difficult to compare. An improved ranking over a period of time may reflect changes that cannot necessarily be linked to real time^{7, 8}.

Comparison of States of India with Countries with comparable land area and better Yale Ranking

As shown in **fig-4**, India consists of 37 States and UT's, and as per details indicated in Table-6, 13 countries assessed during 2020 and ranked among 1-30 by Yale EPI have comparable land area with 12 States and 1 UT and 14 countries assessed during the decade (2010-2020) and ranked between (32 to 101) have comparable land area with 17 States and 1 UT. Before analyzing the lowest and highest Category and Indicator scores of countries and comparable Indian States it was felt that the population ratio be highlighted. As can be seen in **Table-6**, of the 30 States and UT's, only 5 Indian states have population less than the country compared and the remaining 25 States have a population ratio between 1.83-15.53. **Table-8A & 8B** lists the highest and lowest Criteria and indicator scores for countries based on Yale EPI and Indian states based on PC-EPI 2020 respectively.

The highest Score, Category and indicators (2020) of the countries are Pollution Emission(APE -9) and Sanitation & drinking water(H2O-4) and indicators SOx, NOx,USD and UWD. The lowest Score Category and indicators are Fisheries (FSH-12) and Ecosystem Services (ECS-1) and indicators Fish Stock Status(FSS-8), Marine Tropic Index (RMS-6), Fish caught by Trawling (FGT-8) and Tree Cover Loss (TCL-1).

In respect of scores of countries during the period 2010 to 2018 the highest categories and indicators are ; Pollution Emission (APE-12), waste management (WMG-2), Biodiversity and Habitat (BDH-2) and Air Quality (AIR-1) and indicators are SOx,NOx, WMG,PM2.5 and MPA. The lowest Score Category and indicators are Bio-diversity(BDH-1),Fisheries (FSH-13), Pollution Emission (APE-2) and Eco-System Services (ECS-1). The indicators are Fish Stock Status(FSS-7), Marine Tropic Index (RMS-7), Fish caught by Trawling (FGT-12), NOx and Tree Cover Loss (TCL-1).

Relationship between GDP and EPI

Relationship between GDP and EPI has been an area of discussion for decades. A comparison to assess the relationship of PC-EPI Scores and GSDP of Indian states(**Fig-6**) and Yale EPI scores and GDP of countries with similar land area (**Fig-7**) was attempted. As can be seen while the GSDP at CP (2013-2016-2020) showed an increasing trend among the Indian states, the PC-EPI scores showed a decreasing trend a few states like TN and Kerala rose in 2016 and fell in 2020.

The comparison of countries however indicates the rise of EPI score in 2016 from 2014 and a fall below 2014 in 2020 and this trend is maintained by all other countries, except Romania, Netherland, UK, Finland, Austria and Denmark. With regard to GDP the rise in 2016 from 2014 was marginal and in 2020 major countries saw a fall. However some Smaller countries like Poland, Hungary and Romania saw a rise. A significant rise and fall in EPI score and GDP is seen but no significant trend can be predicted.

Fig-6 :-Comparison of GSDP CP \$B and PC-EPI Scores of Select States of India

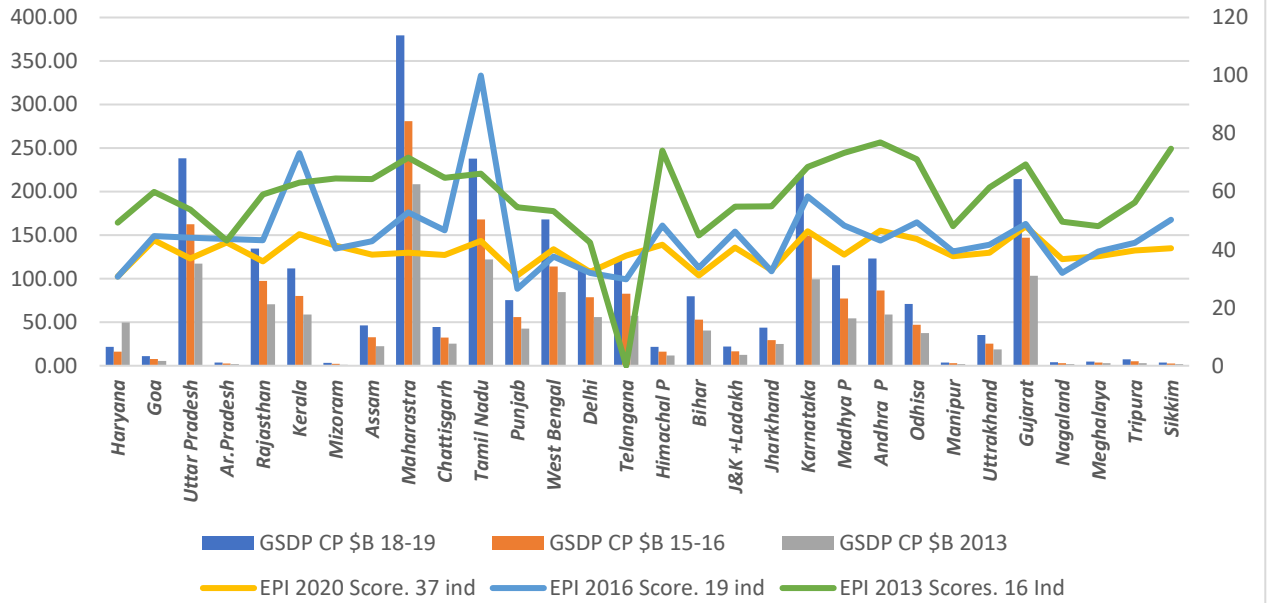


Fig-7 :-Comparison of GDP CP \$B and Yale EPI Scores of Countries with similar area of select Indian States

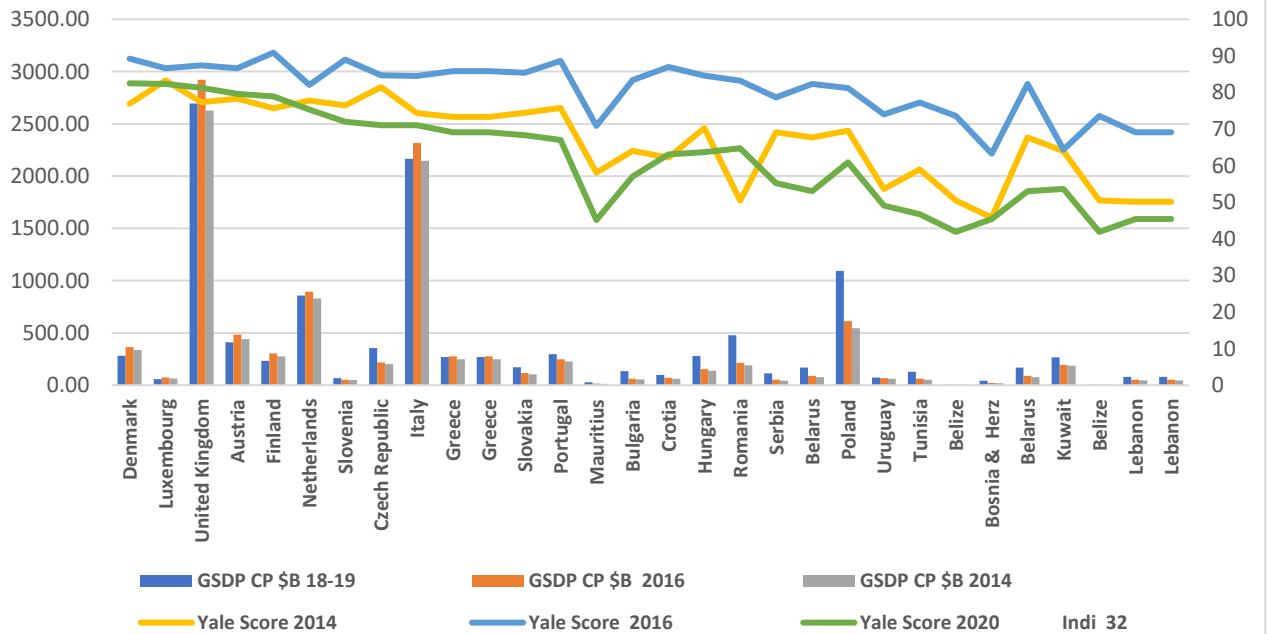


Table-7 :-GSDP CP \$B and PC-EPI score of Indian States and GDP and Yale EPI Score of countries with comparable Land area.

Country	GSDP CP \$B 18-19	GSDP CP \$B 2016	GSDP CP \$B 2014	Yale Score 2014	Yale Score 2016	Yale Score 2020 Indi 32	Indian States	GSDP CP \$B 18-19	GSDP CP \$B 15-16	GSDP CP \$B 2013	EPI 2020 Score. 37 ind	EPI 2016 Score. 19 ind	EPI 2013 Scores. 16 Ind
Denmark	280.70	365.53	338.06	76.92	89.21	82.5	Haryana	21.88	16.32	49.58	30.75	30.7	49.33
Luxembourg	58.80	72.87	64.50	83.29	86.58	82.3	Goa	11.02	7.86	5.45	43.24	44.72	59.91
United Kingdom	2694.90	2920.99	2627.35	77.35	87.38	81.3	Uttar Pradesh	238.32	162.54	117.48	36.97	44.13	53.88
Austria	409.30	484.09	439.97	78.32	86.64	79.6	Ar.Pradesh	3.51	2.64	1.79	42.5	43.69	43.1
Finland	232.10	304.33	274.02	75.72	90.88	78.9	Rajasthan	134.66	97.35	70.51	35.91	43.29	59.05
Netherlands	857.90	893.96	830.06	77.75	82.03	75.3	Kerala	111.66	80.28	58.90	45.36	73.29	63.11
Slovenia	67.70	52.35	47.85	76.43	88.98	72	Mizoram	3.18	2.16	1.19	41.38	40.35	64.48
Czech Republic	355.30	217.57	202.87	81.47	84.67	71	Assam	46.29	32.57	22.41	38.26	42.88	64.26
Italy	2165.20	2316.76	2147.97	74.36	84.48	71	Maharashtra	379.51	280.88	208.52	38.89	52.81	71.67
Greece	269.70	275.75	248.21	73.28	85.81	69.1	Chattisgarh	44.52	32.48	25.36	38.17	46.62	64.78
Greece	269.70	275.75	248.21	73.28	85.81	69.1	Tamil Nadu	237.74	168.07	122.12	43.07	100	66.16
Slovakia	170.10	115.41	102.53	74.45	85.42	68.3	Punjab	75.30	55.73	42.53	31.13	26.51	54.6
Portugal	298.20	247.05	226.97	75.8	88.63	67	West Bengal	168.23	113.9	84.49	40.14	37.62	53.30
Mauritius	26.70	14.70	12.70	58.09	70.85	45.1	Delhi	111.38	78.69	55.91	32.3	31.98	42.46
Bulgaria	135.70	59.66	54.96	64.01	83.4	57	Telangana	123.00	82.56	57.37	37.92	29.82	0
Crotia	96.80	69.04	61.28	62.23	86.98	63.1	Himachal P	21.88	16.32	11.83	41.66	48.33	74.14
Hungary	278.10	153.71	137.23	70.28	84.6	63.7	Bihar	79.64	53.09	40.34	31.06	33.75	44.94
Romania	477.90	212.97	190.10	50.52	83.24	64.7	J&K +Ladakh	22.05	16.74	12.45	40.74	46.22	54.83
Serbia	112.10	51.25	43.68	69.13	78.67	55.2	Jharkhand	43.94	29.52	24.96	32.97	32.57	54.91
Belarus	168.30	89.99	76.64	67.69	82.3	53	Karnataka	219.32	149.31	99.34	46.32	58.35	68.51
Poland	1093.20	612.43	544.01	69.53	81.2	60.9	Madhya P	115.62	77.31	54.42	38.32	48.36	73.34
Uruguay	72.10	66.54	59.88	53.61	73.98	49.1	Andhra P	123.28	86.32	58.77	46.59	43.13	76.96
Tunisia	128.30	59.75	51.47	58.99	77.28	46.7	Odhisa	70.83	46.94	37.39	43.65	49.44	71.18
Belize	2.90	1.85	1.70	50.46	73.55	41.9	Manipur	3.75	2.79	1.96	37.73	39.38	48.11
Bosnia & Herz	42.30	22.11	19.71	45.79	63.28	45.4	Uttrakhand	35.13	25.31	18.80	38.91	41.7	61.42
Belarus	168.30	89.99	76.64	67.69	82.3	53	Gujarat	214.56	147	103.50	48.03	48.85	69.44
Kuwait	267.60	191.35	188.12	63.94	64.41	53.6	Nagaland	3.90	2.79	2.02	36.72	32.01	49.6
Belize	2.90	1.85	1.70	50.46	73.55	41.9	Meghalaya	4.91	3.59	3.12	37.73	39.38	48.11
Lebanon	79.50	51.53	45.46	50.15	69.14	45.4	Tripura	7.20	5.13	3.09	39.73	42.39	56.24
Lebanon	79.50	51.53	45.46	50.15	69.14	45.4	Sikkim	3.83	2.58	1.76	40.49	50.28	74.78

Analysis of Changes in Yale EPI Weightage and number of Indicators during 2010-2020

Fig-8 and Table-9 clearly indicates that by 2020 a total of 62 indicators were identified to assign scores and rank Countries, 22 indicators were modified and definition of 19 were changed. Hence, following are some aspects that needs to be carefully reviewed:-

1. The Policy objectives; Environmental Health(EH) and Ecosystem Vitality (EV)weightage were changed from 50:50 to 40:60 respectively in 2018. Surprisingly only 6 indicators introduced in 2010 were part of 2020 32 indicator.
2. In 2020 , indicator PM 2.5 Exceedance, CO2 emission power and total were deleted. FGA, CO2 from land, GHG Intensity Trend, Wetland and Grass land loss and Controlled solid waste (MSW) were introduced.

3. In 2018 , of the 10 categories the Health Impact Category was deleted along with 3 indicators. Lead exposure and SNMI, PA Rep. Index and CH4, N2O and Black Carbon emissions (6) new indicators were introduced.
4. In 2016 ,5 new indicators were introduced and 4 of them were not used in 2018.

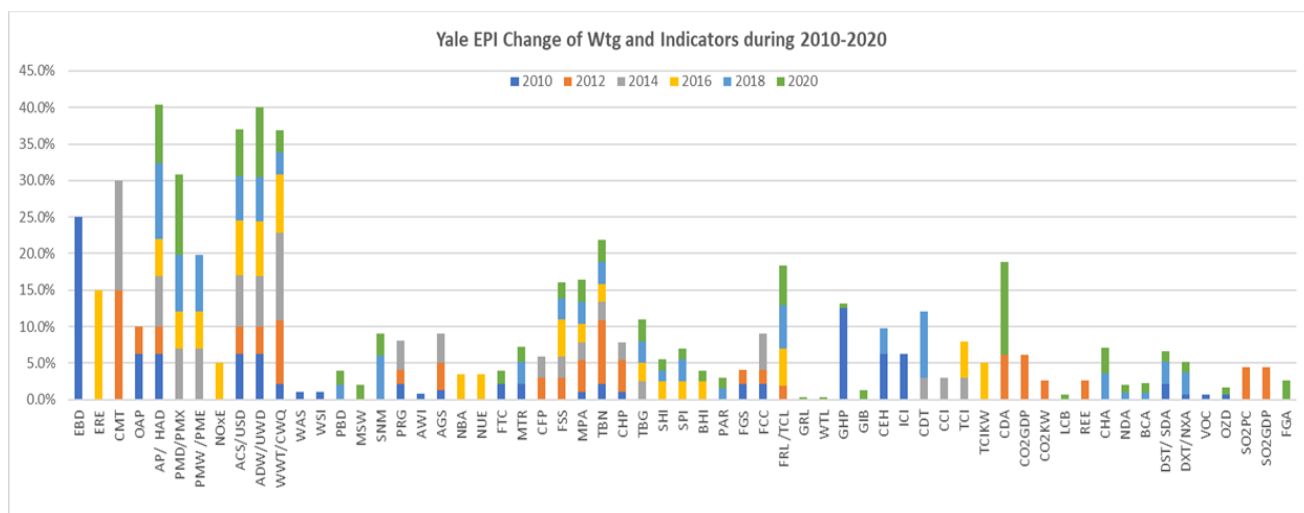
Table-8A:- Yale EPI Highest and lowest Criteria and indicator scores for countries

Y. Score 2020 Indi 32	Rank 2020	Country	Country Area Sq.Km	Country 2018-20 Pop in Millions	Country-Highest score and indicator	Country Highest score and Category	Country Lowest Score and Indicator	Country Lowest score and Category
27.6	168	INDIA	3,287,240	1352.6	85.9 , SHI	45, CC	1.2 , RMS	16.9 , FSH
82.5	1	Denmark	42,924	5.800	100 , SOx, NOx	100 ,APE	2.8 FGT	13.2 , FSH
82.3	2	Luxembourg	2590	0.614	100 , SOx, NOx	100 ,APE	0.0 FSS,RMS , FGT	0.0 FSH
81.3	4	United Kingdom	242490	66.650	100 , SOx, NOx	100 ,APE	0.0 RMS	8.8 , FSH
79.6	6	Austria	83879	8.859	100 , SOx, NOx	100 ,APE	0.0 FSS,RMS , FGT	0.0 , FSH
78.9	7	Finland	338439	5.518	100 , USD,UWD	100 , H2O	2.1 FGT	12.8 , FSH
75.3	11	Netherlands	41543	17.280	100 , SOx, NOx	100 ,APE	0.7 FGT	13.1, FSH
72	18	Slovenia	20270	2.081	100 , SOx,	90 ,APE	0.0 FSS,RMS , FGT	0.0 , FSH
71	20	Czech Republic	78866	10.690	100 , SOx, NOx	100 ,APE	0.0 FSS,RMS , FGT	0.0 , FSH
71	20	Italy	301337	60.320	99.2 USD	98.2 H2O	0.6 FSS	14.9 , FSH
69.1	25	Greece	131940	10.720	100 , UWD	98.2 H2O	4.5 FSS	15.7 , FSH
69.1	25	Greece	131940	10.720	100 , UWD	98.2 H2O	4.5 FSS	15.7 , FSH
68.3	26	Slovakia	49035	5.458	100 , SOx, Nox	100 ,APE	0.0 FSS,RMS , FGT	0.0 , FSH
67	27	Portugal	91568	10.197	100 , SOx,	93.5,APE	2 TCL	7.4 ECS
Yale Sc 2010-18	Rk 2010-18	Country	Country Area Sq.Km	2018-20 Pop In Millions	Highest score and indicator	Highest score and Category	Lowest Score and Indicator	Lowest score and Category
45.1	82	Mauritius	2040	1.265	98 WMG	98 WMG	0.0 RMS	19.3 BD
57	41	Bulgaria	110990	7.00	100 , SOx, NOx	100 ,APE	0.0 FSS,RMS , FGT	12.9 , FSH
63.1	34	Croatia	56594	4.076	100 , Sox	90.8 APE	3.3 FGT	11.8 , FSH
63.7	33	Hungary	93030	9.773	100 , NOx	96.9 ,APE	0.0 FSS,RMS,FGT	0.0 , FSH
64.7	32	Romania	238400	19.41	100 , SOx, NOx	100 ,APE	38.4 TCL	41.9 ECS
55.2	45	Serbia	88361	6.982	99.2 , NOx	89 ,APE	0.0 FSS,RMS,FGT	0.0 , FSH
53	49	Belarus	207600	9.485	100 , SOx,	80.4 ,APE	0.0 FSS,RMS,FGT	0.0 , FSH
60.9	37	Poland	312679	38.49	91.1 WMG	91.1 WMG	3.11 FGT	8, FSH
49.1	61	Uruguay	175015	3.47	71 PM2.5	67.7 AIR	0.0 FGT	6.5, FSH
46.7	71	Tunisia	155360	11.82	91 , NOx	84.2 ,APE	0.0 FGT	8.3, FSH
41.9	101	Belize	22806	0.398	100 MPA	87.9 , BD & Habitat	0.0 NOx	11.4 ,APE
45.4	78	Bosnia and Herzegovina	51197	3.281	91.3 , NOx	78.1 ,APE	0.0 FSS,RMS,FGT	0.0 , FSH
53	49	Belarus	207600	9.485	100 , SOx,	80.4 ,APE	0.0 FSS,RMS,FGT	0.0 , FSH
53.6	47	Kuwait	17818	4.271	91.1 , SOx,	81.7 ,APE	0.0 FSS& FGT	14.9 , FSH
41.9	101	Belize	22806	0.398	100 MPA	87.9 , BD & Habitat	0.0 NOx	11.4 ,APE
45.4	78	Lebanon	10452	6.825	71.1 , NOx	67.1 ,APE	0.0 FSS & FGT	14.2 , FSH
45.4	78	Lebanon	10452	6.825	71.1 , NOx	67.1 ,APE	0.0 FSS & FGT	14.2 , FSH

Table-8B:- PC- EPI Highest and lowest Criteria and indicator scores of Indian States

India States Rk 2020	India's state/ UT with same area	State Area Sq.Km	Population in Millions	States-India EPI 2020 Score (0-100). 37 ind	State Highest score and indicator	State Highest score and category	State Lowest Score and Indicator	State Lowest score and category
				India Avg				
35	Haryana	44200	28.204692	30.75	100, S & D plan,SDMA	98.86 ,DM	0.0, No. of Mr. Proc.Bio Sites	2.60, FSH
7	Goa	3702	1.58625	43.24	100, S & D plan,SDMA	99.85 , DM	0.0004, Livestock Chng	2.79, BD
26	Uttar Pradesh	240928	237.88273	36.97	100, SOx,NOX	98.82 , Airpol	0.0, No. of Mr. Proc.Bio Sites	2.12, FSH
9	Ar.Pradesh	83743	1.570458	42.5	100, S & D plan,SDMA	96.09, DM	0.0, No. of Mr. Proc.Bio Sites	0.49 , FSH
28	Rajasthan	342240	81.032689	35.91	100, S & D plan,SDMA	97.64 , DM	0.0, No. of Mr. Proc.Bio Sites	0.33, FH
4	Kerala	38863	35.699443	45.36	100, SOx,NOX, PM2.5	100 , Airpol	.72, Livestock Chng	5.86, BD
11	Mizoram	21081	1.239244	41.38	100, SOx,NOX, PM2.5	100 , Airpol	0.0, No. of Mr. Proc.Bio Sites	0.59 , FSH
21	Assam	78438	35.607039	38.26	100, SOx,NOX	92.33 , Airpol	0.0, No. of Mr. Proc.Bio Sites	19, FSH
19	Maharastra	307713	123.14422	38.89	100, SOx,NOX	86.08, Airpol	0.0009 HWMg	13.70, Waste Mg
22	Chattisgarh	135,191	29.436231	38.17	100, Sox,NOX	90.20 , Airpol	0.0, No. of Mr. Proc.Bio Sites	3.88, FSH
8	Tamil Nadu	130,058	77.841267	43.07	100, S & D plan,SDMA	97.05, DM	0.0, Livestock Chng	11.90, BD
33	Punjab	50362	30.141373	31.13	100, S & D plan,SDMA	98.04, DM	0.0, No. of Mr. Proc.Bio Sites	1.24, FSH
16	West Benga	88752	99.609303	40.14	100, S & D plan,SDMA	97.66, DM	5.37, Chng in FC	12.85, Forestry
India-States Rk 2020	State/ UT with same area	State Area Sq.Km	Population in Millions	EPI 2020 Score. 37 ind	State Highest score and indicator	State Highest score and category	State Lowest Score and Indicator	State Lowest score and category
32	Delhi	1484	18.710922	32.3	100, S & D plan,SDMA	99.88, DM	0.0, No. of Mr. Proc.Bio Sites	0.30 , FSH
24	Telangana	114840	39.362732	37.92	100, Sox NOX,PM 2.5	100, Airpol	0.0, No. of Mr. Proc.Bio Sites	1.49, FSH
10	Himachal P	55673	7.451955	41.66	100, S & D plan,SDMA	98.01, DM	0.0, No. of Mr. Proc.Bio Sites	1.27, FSH
34	Bihar	94163	124.79993	31.06	100, S & D plan,SDMA	97.94, DM	0.0, No. of Mr. Proc.Bio Sites	1.05, FSH
14	J&K +Ladakh	222236	13.89534	40.74	100, S & D plan,SDMA	98.31, DM	0.0, No. of Mr. Proc.Bio Sites	0.90, FSH
31	Jharkhand	79714	38.593948	32.97	100, S & D plan,SDMA	93.07, DM	0.0, No. of Mr. Proc.Bio Sites	1.12, FSH
3	Karnataka	191791	67.562686	46.32	100, SOx,NOX	91.98, Airpol	3.62 Land under Agri	17.79 Agri
20	Madhya P	308,245	85.358965	38.32	100, SOx,NOX	90.76, Airpol	0.0, No. of Mr. Proc.Bio Sites	1.85, FSH
2	Andhra P	160,205	53.903393	46.59	100, SOx,NOX	93.33, Airpol	5.91 Desertific	14.66, BD
5	Odhis	155,707	46.356334	43.65	100, SOx,NOX	87.72, Airpol	0.0, No. of Mr. Proc.Bio Sites	12.27 , FSH
23	Manipur	22327	3.091545	37.73	100, SOx, NOX,PM 2.5	100 , Airpol	0.0, No. of Mr. Proc.Bio Sites	1.02 , FSH
18	Uttrakhand	53483	11.250858	38.91	100, S & D plan,SDMA	93.17, DM	0.0, No. of Mr. Proc.Bio Sites	1.65 , FSH
1	Gujarat	191791	63.872399	48.03	100, S & D plan,SDMA	96.13, DM	0.49 Land Under Agri	17.15 , Agri
27	Nagaland	16579	2.249695	36.72	100, S & D plan,SDMA	93.96, DM	0.0, No. of Mr. Proc.Bio Sites	0.49 , FSH
15	Meghalaya	22429	3.36671	37.73	100, SOx, NOX,PM 2.5	100 , Airpol	0.0, No. of Mr. Proc.Bio Sites	0.32 , FSH
17	Tripura	10486	4.169794	39.73	100, S & D plan,SDMA	97.26 DM	0.0, No. of Mr. Proc.Bio Sites	0.85, FSH
13	Sikkim	7096	0.690251	40.49	100, S & D plan,SDMA	100 DM	0.0, No. of Mr. Proc.Bio Sites	0.00, FSH

Fig-8 :-Changes in Yale EPI Weightage and number of Indicators during 2010-2020



- In 2010 under the 2 policy objectives EH and EV there were 3 + 7 (10) categories and a total of 25 (5+20) indicators. While in 2012 under the two policy objectives and 10 categories only 22 indicators were retained and in 2014 , Air Pollution an important Category was removed along with the 2 indicators.

The Analysis clearly indicates that discussion needs to be held to evolve EPI. The statement in the report ,that scores and ranking cannot be compared or not comparable supports the above.

Conclusion

A sustainable growth strategy should be based on an effective and balanced utilization of national resources, detailed short and long-term sustainable macro and micro level planning including emergency management, execution setup, process and Performance evaluation. Environmental Performance Index (EPI) is being evolved at both global and national level to enable assessing progress made in achieving the targets and goals set. Criteria and indicators selected are the backbone of the assessment methodology. Identification of high Priority areas at the national level and corresponding indicators in sync with global targets and updating of policies and legislations at the national level is a challenging task.

The paper attempts to analyze the results of the EPI assessment methodology, Scores and ranking being evolved in India (2012-2020) with Yale 2020 and compares it with 26 of the 180 countries evaluated by Yale EPI (2012 to 2020). India has been ranked at 168 by yale in 2020. The analysis leads us to the need for in depth discussion, continuity of the indicators and weightage of the Categories, inclusion of Disaster management as a criteria and assessment of the implementation and progress made by a country.

Table-9 :-Yale EPI Category and Indicator weightage and 3 letter Abbreviation

Yale EPI			TLA	Indicator and Weightage							
S.No	Policy Objective	Category	Indicators	TLA	2010	2012	2014	2016	2018	2020	
1			Env. Bur of Diseases /	EBD	25.0%						
2		Health	Env Risk Exposure	ERE				15.0%			
3			Child mortality	CMT		15%	15.0%				
4				Urban Particulate	OAP	6.3%	3.75%				
5	ENV. HEALTH.		Indoor Air pol / Household Solid Fuels	AP/ HAD	6.2%	3.75%	7.0%	5.0%	10.4%	8.00%	
6	HLT (50%) {40%}	Air Quality	PM2.5 Exposure	PMD/PMX			7.0%	5.0%	7.8%	11.00%	
7				PM2.5 Exceedance	PMW /PME			7.0%	5.0%	7.8%	
8				Exposure to NO2	NOxE				5.0%		
9			Sanitation &	Access to sanitation /Unsafe Sanitation	ACS/USD	6.3%	3.75%	7.0%	7.5%	6.0%	6.40%
10		Drinking Water	Access to Drinking water /Unsafe DW	ADW/UWD	6.2%	3.75%	7.0%	7.5%	6.0%	9.60%	
11			WQI/ WWT /Chng in WQ/WR	WWT/CWQ	2.1%	8.75%	12.0%	8.0%	3.0%	3.00%	
12		Water Resources	water Stress	WAS	1.0%						
13				Water Scarcity index	WSI	1.0%					
14		Heavy Metal	Lead Exposure	PBD					2.0%	2.00%	
15		Waste Mgm	Controlled solid Waste	MSW						2.00%	
16			Sustainable Nitrogen Mgmt Index	SNM					6%	3.00%	
17			Pesticide Regulation	PRG	2.1%	1.94%	4.0%				
18			Agri water intensity	AWI	0.8%						
19		Agriculture	Agri Subsidies	AGS	1.3%	3.69%	4.0%				
20				Nitrogen Balance	NBA				3.5%		
21				Nitrogen Use Efficiency	NUE				3.5%		
22				Trawling Intensity / fish caught by twawling	FTC	2.1%					1.80%
23			Marine Trophic Index	MTR	2.1%				3.00%	2.10%	
24		Fisheries	Coastal Shelf Fishing Pressure	CFP		2.92%	3.0%				
25				Fish Stock over exploited /FS status	FSS		2.92%	3.0%	5.0%	3.00%	2.10%
26				Marine protection/ Marine Pt Area	MPA	1%	4.36%	2.5%	2.5%	3.0%	3.00%
27			Biome Protection /Nat. Biom Protect	TBN	2%	8.75%	2.5%	2.5%	3.0%	3.00%	
28			Critical Habitat Protection	CHP	1%	4.38%	2.5%				
29			Global Biome Protection	TBG			2.5%	2.5%	3.0%	3.00%	
30		Biodiversity & Habitat	Species Protection National /SH index	SHI				2.5%	1.5%	1.50%	
32				Species Protection Global / SP Index	SPI				2.5%	3.0%	1.50%
33				Biodiversity Habitat Index	BHI				2.5%		1.50%
34				PA Representativeness Index	PAR					1.5%	1.50%
35			Growing Stock	FGS	2.1%	1.94%					
36			Forest cover Change	FCC	2.1%	1.94%	5.0%				
37			Forest loss / Tree cover loss	FRL /TCL		1.94%		5.0%	6.00%	5.40%	
38		Ecosystem Services	Grassland Loss	GRL						0.30%	
39	ECOSYSTEM			Wetland loss	WTL						0.30%
40	VITALITY . ECO (50%) {60%}		GHG Emission/GHG PC	GHP	12.5%					0.66%	
41			GHG Intensity Trend	GIB						1.32%	
42			Elec. Carbon intensity/ CO2 Emission power	CEH	6.2%				3.6%		
43			Industrial Carbon intensity	ICI	6.3%						
44			Trend CO2 Emissions / CO2 Emission total	CDT			3.0%		9.00%		
45			Change in Carbon Intensity	CCI			3.0%				
46			Trend in Carbon Intensity	TCI			3.0%	5.0%			
47			Trend in Carbon Intensity per KWh	TCIKW				5.0%			
48			CO2 Per Capita / CO2 Growth Rate	CDA		6.13%				12.77%	
49			CO2per \$ GDP	CO2GDP		6.13%					
50			CO2 per KWH	CO2KW		2.63%					
51		Climate Change	CO2 from land cover	LCB						0.66%	
52				Renewable Electricity	REE		2.63%				
53			CH4 Emission /CH GR	CHA					3.6%	3.47%	
54			N2 O Emission /N2O GR	NDA					0.9%	1.16%	
55			Black Carbon Emission/BCGrowth Rate	BCA					0.9%	1.32%	
56			VOC Emission	VOC	0.70%						
57			Ecosystem Ozone /Ozone Exposure	OZD	0.70%					1.00%	
58			SO2 Per Capita	SO2PC		4.38%					
59			SO2 per\$ GDP	SO2GDP		4.38%					
60			F-gas Growth Rate	FGA						2.64%	
61		Air Pollution	SO2 Emission / SO2 Growth Rate	DST/ SDA	2.10%				3.0%	1.50%	
62				NOx Emission/ NOx Growth Rate	DXT/NXA	0.70%				3.0%	1.50%

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Table-4.0 EPI 2020 Scores and Ranking of States 3/4/20

S.No	States /Uts	AIRPOL*		FOREST		WATER QUALIT		WASTE MG		LIMATE CHANG		BIODIVERSITY		AGRICULTURE		FISHERIES		DISASTER MG		FINAL SC & RK	
		Avg.Sc *	Rk	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Avg.Sc	RK	Score	Rank
1	Andhra Pradesh	0.9333	12	0.5370	2	0.4352	14	0.3018	18	0.4855	9	0.1466	11	0.2299	21	0.2697	3	0.8538	33	0.4659	2
2	Arunachal Pradesh	0.9565	9	0.3840	10	0.3817	20	0.2502	25	0.4227	16	0.1816	6	0.2825	2	0.0049	28	0.9609	21	0.4250	9
3	Assam	0.9231	13	0.2296	15	0.4485	13	0.1955	30	0.3904	19	0.1113	18	0.2553	17	0.0219	14	0.8677	32	0.3826	21
4	Bihar	0.8391	24	0.0744	26	0.3666	23	0.0599	33	0.2386	35	0.0802	19	0.1470	33	0.0105	23	0.9794	15	0.3106	34
5	Chhatisgarh	0.9020	17	0.3759	9	0.4840	8	0.3069	17	0.2735	31	0.1326	13	0.1767	29	0.0388	10	0.7452	35	0.3817	22
6	Delhi	0.6124	36	0.0202	36	0.1764	33	0.3622	8	0.4414	14	0.0325	27	0.2593	15	0.0030	32	0.9998	6	0.3230	32
7	Goa	0.9444	11	0.0957	27	0.6066	2	0.5344	1	0.3722	22	0.0279	29	0.2693	9	0.0422	9	0.9985	9	0.4324	7
8	Gujarat	0.8437	23	0.2304	13	0.4349	15	0.3326	13	0.4903	7	0.5263	1	0.1715	30	0.3316	2	0.9613	20	0.4803	1
9	Haryana	0.7901	28	0.0299	32	0.1570	35	0.2731	19	0.2904	30	0.0291	28	0.1831	26	0.0260	12	0.9886	11	0.3075	35
10	Himachal Pradesh	0.9231	13	0.3150	12	0.5882	3	0.1408	31	0.4664	11	0.1406	12	0.1828	27	0.0127	20	0.9801	14	0.4166	10
11	J & K UT	0.8009	27	0.3648	8	0.3803	21	0.2729	20	0.3674	24	0.2381	2	0.2504	19	0.0090	25	0.9831	12	0.4074	14
12	Ladakh UT			0.0117	29	0.2500	30	0.0000	36	0.1537	37	0.0137	35	0.2500	20	0.0000	35	1.0000	1	0.1866	37
13	Jharkhand	0.7790	31	0.1935	18	0.5515	5	0.0299	34	0.2615	33	0.0542	23	0.1553	32	0.0112	22	0.9307	24	0.3297	31
14	Karnataka	0.9198	15	0.5757	1	0.3199	28	0.3527	10	0.5166	4	0.1779	8	0.1779	28	0.2179	5	0.9104	29	0.4632	3
15	Kerala	1.0000	1	0.4270	4	0.3602	24	0.3603	9	0.4479	12	0.0586	21	0.2751	5	0.2416	4	0.9122	28	0.4536	4
16	Madhya Pradesh	0.9076	16	0.3636	7	0.3756	22	0.2506	23	0.4343	15	0.2244	3	0.1440	34	0.0185	17	0.7307	37	0.3833	20
17	Maharashtra	0.8608	20	0.3511	5	0.4265	16	0.1370	32	0.3988	17	0.1895	5	0.1852	25	0.1543	6	0.7969	34	0.3889	19
18	Manipur	1.0000	1	0.0430	33	0.4831	9	0.2504	24	0.3938	18	0.0212	31	0.2708	8	0.0102	24	0.9232	26	0.3773	23
19	Meghalaya	1.0000	1	0.1554	21	0.4767	11	0.3164	15	0.4454	13	0.0269	30	0.2784	4	0.0032	31	0.9155	27	0.4020	15
20	Mizoram	1.0000	1	0.1357	25	0.5404	6	0.2501	27	0.5013	6	0.1128	17	0.2796	3	0.0059	27	0.8987	30	0.4138	11
21	Nagaland	0.8254	25	0.1472	22	0.5197	7	0.2502	25	0.2924	29	0.0384	26	0.2865	1	0.0049	28	0.9396	22	0.3672	27
22	Orissa	0.8772	19	0.5571	3	0.4006	18	0.2403	28	0.5682	3	0.1570	9	0.2721	6	0.1227	8	0.7334	36	0.4365	5
23	Punjab	0.8075	26	0.0306	31	0.1690	34	0.2612	21	0.2486	34	0.0688	20	0.2233	22	0.0124	21	0.9804	13	0.3113	33
24	Rajasthan	0.7894	29	0.1126	17	0.2063	32	0.3887	5	0.4727	10	0.1897	4	0.0925	36	0.0033	30	0.9764	17	0.3591	28
25	Sikkim	1.0000	1	0.0841	28	0.5549	4	0.2118	29	0.4866	8	0.0466	25	0.2623	12	0.0000	35	0.9985	9	0.4050	13
26	Tamilnadu	0.9565	9	0.2026	16	0.3553	25	0.3488	11	0.2688	32	0.1190	16	0.1937	23	0.4614	1	0.9705	19	0.4307	8
27	Telangana	1.0000	1	0.3973	6	0.1188	37	0.3884	6	0.3122	28	0.1291	15	0.1578	31	0.0149	19	0.8941	31	0.3792	24
28	Tripura	0.9020	17	0.1307	24	0.4795	10	0.3977	4	0.3767	21	0.0515	24	0.2565	16	0.0085	26	0.9726	18	0.3973	17
29	Uttar Pradesh	0.9892	8	0.1992	14	0.3003	29	0.3374	12	0.2346	36	0.1313	14	0.1865	24	0.0212	15	0.9277	25	0.3697	26
30	Uttaranchal	0.7682	32	0.3291	11	0.3423	26	0.3296	14	0.5060	5	0.1480	10	0.1307	35	0.0165	18	0.9317	23	0.3891	18
31	West Bengal	0.7857	30	0.1285	20	0.3970	19	0.3861	7	0.3545	26	0.1782	7	0.2721	6	0.1339	7	0.9766	16	0.4014	16
32	Andaman & Nicobar	0.8571	21	0.1522	19	0.6541	1	0.3135	16	0.5716	2	0.0547	22	0.2614	14	0.0232	13	0.9989	8	0.4319	6
33	Chandigarh	0.8502	22	0.0272	34	0.2067	31	0.4195	3	0.3443	27	0.0141	33	0.2526	18	0.0000	35	1.0000	1	0.3460	30
34	Dadra & Nagar Haveli	0.6802	34	0.0601	30	0.4546	12	0.4626	2	0.3678	23	0.0151	32	0.2622	13	0.0011	34	1.0000	1	0.3671	25
35	Daman & Diu	0.7047	33	0.0256	35	0.1294	36	0.0001	35	0.3807	20	0.0137	35	0.0067	37	0.0303	11	1.0000	1	0.2546	36
36	Lakshadweep	0.6667	35	0.1251	23	0.4184	17	0.0000	36	1.0000	1	0.0137	35	0.2656	11	0.0018	33	1.0000	1	0.3879	12
37	Pondicherry	1	1	0.0148	37	0.3284	27	0.2509	22	0.3615	25	0.0138	34	0.2689	10	0.0188	16	0.9997	7	0.3619	29

Annexure Table 4.1-4.9

AAQS ($\mu\text{g}/\text{cum}$) PERFORMANCE SCORES FOR STATES- FINAL-21/2/2020																	
Sl No	State/UT	SOX			NOX			PM2.5			PM 10			Final			
		($\mu\text{g}/\text{cum}$)	NAAQS	Score-1	($\mu\text{g}/\text{cum}$)	NAAQS	Score-2	Ann. Avg	NAAQS	Score-3	Ann. Avg	NAAQS	Score-4	Avg Sc, 1-3	Avg. Sc 1-4	Rank 1-3	Rank 1-4
1	A. Pradesh	7	50	1.0000	22	40	1.0000	75	60	0.8000		40		0.9333		12	
2	Aru. Pradesh	3	50	1.0000	7	40	1.0000	69	60	0.8696		40		0.9565		9	
3	Assam	7	50	1.0000	15	40	1.0000	78	60	0.7692		40		0.9231		13	
4	Bihar	9	50	1.0000	26	40	1.0000	116	60	0.5172	78	40	0.5128	0.8391	0.7575	24	17
5	Chhattisgarh	9	50	1.0000	22	40	1.0000	85	60	0.7059	45	40	0.8889	0.9020	0.8987	17	9
6	Delhi	7	50	1.0000	68	40	0.5882	241	60	0.2490	101	40	0.3960	0.6124	0.5583	36	19
7	Goa	7	50	1.0000	13	40	1.0000	72	60	0.8333	26	40	1.0000	0.9444	0.9583	11	3
8	Gujarat	15	50	1.0000	26	40	1.0000	113	60	0.5310	37	40	1.0000	0.8437	0.8827	23	11
9	Haryana	10	50	1.0000	17	40	1.0000	162	60	0.3704		40		0.7901		28	
10	H. Pradesh	2	50	1.0000	12	40	1.0000	78	60	0.7692	30	40	1.0000	0.9231	0.9423	13	4
11	J&K	4	50	1.0000	18	40	1.0000	149	60	0.4027		40		0.8009		27	
12	Ladakh																
13	Jharkhand	21	50	1.0000	38	40	1.0000	178	60	0.3371		40		0.7790		31	
14	Karnataka	3	50	1.0000	21	40	1.0000	79	60	0.7595	37	40	1.0000	0.9198	0.9399	15	5
15	Kerala	4	50	1.0000	16	40	1.0000	48	60	1.0000		40		1.0000		1	
16	M. Pradesh	11	50	1.0000	19	40	1.0000	83	60	0.7229	38	40	1.0000	0.9076	0.9307	16	6
17	Maharashtra	15	50	1.0000	36	40	1.0000	103	60	0.5825	40	40	1.0000	0.8608	0.8956	20	10
18	Manipur	3	50	1.0000	19	40	1.0000	29	60	1.0000		40		1.0000		1	
19	Meghalaya	5	50	1.0000	12	40	1.0000	59	60	1.0000		40		1.0000		1	
20	Mizoram	2	50	1.0000	6	40	1.0000	38	60	1.0000		40		1.0000		1	
21	Nagaland	2	50	1.0000	7	40	1.0000	126	60	0.4762		40		0.8254		25	
22	Orissa	6	50	1.0000	18	40	1.0000	95	60	0.6316	41	40	0.9756	0.8772	0.9018	19	8
23	Punjab	8	50	1.0000	3	40	1.0000	142	60	0.4225		40		0.8075		26	
24	Rajasthan	8	50	1.0000	11	40	1.0000	163	60	0.3681		40		0.7894		29	
25	Sikkim	6	50	1.0000	3	40	1.0000	33	60	1.0000		40		1.0000		1	
26	Tamil Nadu	10	50	1.0000	5	40	1.0000	69	60	0.8696	32	40	1.0000	0.9565	0.9674	9	2
27	Telangana	8.68	50	1.0000	11.3	40	1.0000	32	60	1.0000	98	40	0.4087	1.0000	0.8522	1	12
28	Tripura (H)	23	50	1.0000	14	40	1.0000	85	60	0.7059	43	40	0.9302	0.9020	0.9090	17	7
29	UP	11	50	1.0000	19	40	1.0000	62	60	0.9677	40	40	1.0000	0.9892	0.9919	8	1
30	Uttarakhand	24	50	1.0000	39	40	1.0000	197	60	0.3046	119	40	0.3361	0.7682	0.6602	32	18
31	West Bengal	7	50	1.0000	3	40	1.0000	168	60	0.3571		40		0.7857		30	
32	A & Nicobar		50	1.0000	12.8	40	1.0000	105	60	0.5714	55	40	0.7273	0.8571	0.8247	21	13
33	Chandigarh	2	50	1.0000	16	40	1.0000	109	60	0.5505	64	40	0.6250	0.8502	0.7939	22	14
34	D&NH	15	50	1.0000	80	40	0.5000	111	60	0.5405	33	40	1.0000	0.6802	0.7601	34	16
35	Daman & Diu	14	50	1.0000	73	40	0.5479	106	60	0.5660	32	40	1.0000	0.7047	0.7785	33	15
36	Lakshadweep	NA	50	0.0000	14	40	1.0000	33	60	1.0000		40		0.6667		35	
37	Puducherry	4.69	50	1.0000	31.1	40	1.0000	36	60	1.0000				1.0000		1	

Table- 4.2 FOREST 2020 Final

Forest		Total Forest Cover								Change in forest Cover				Forest Stock Million cum				in Ha			Overall		
S.No	States	GA sq.km	SFR 2019	% of GA	score	Cont to NFC	Score	Score-1	RK	SFR 2017	Change %	Score-2	RK	Forest Stock	TOF stock	Total Stock	Score-3	RK	Area 17-18	Score-4	RK	Avg.Sc	RK
1	Andhra Pradesh	162968	29137	17.88	0.1979	4.091	0.3761	0.2870	20	990	3.52	0.9659	2	156	62.3	218.3	0.4268	12	229409	0.4685	3	0.5370	2
2	Arunachal Pradesh	83743	66688	79.63	0.8816	9.363	0.8607	0.8712	1	-276	-0.41	-0.3354	36	420.8	90.7	511.5	1.0000	1	0	0.0000		0.3840	10
3	Assam	78438	28327	36.11	0.3998	3.977	0.3656	0.3827	15	222	0.79	0.2166	7	133.1	30.2	163.3	0.3193	16	0	0.0000		0.2296	15
4	Bihar	94163	7306	7.76	0.0859	1.026	0.0943	0.0901	32	7	0.1	0.0068	23	28.5	37.5	66	0.1290	20	35114	0.0717	8	0.0744	26
5	Chhatisgarh	135191	55611	41.14	0.4554	7.808	0.7178	0.5866	4	64	0.12	0.0624	14	323.7	86.3	410	0.8016	5	26037	0.0532	10	0.3759	9
6	Delhi	1483	195.44	13.18	0.1459	0.027	0.0025	0.0742	33	3.03	1.57	0.0030	24	0.5	1.3	1.8	0.0035	32		0.0000		0.0202	36
7	Goa	3702	2237	60.43	0.6690	0.314	0.0289	0.3489	18	8	0.36	0.0078	21	9.5	3.8	13.3	0.0260	30	15	0.0000		0.0957	27
8	Gujarat	196022	14857	7.58	0.0839	2.086	0.1918	0.1378	27	100	0.68	0.0976	10	52	114	166	0.3245	15	177148	0.3618	4	0.2304	13
9	Haryana	44212	1602	3.62	0.0401	0.225	0.0207	0.0304	36	14	0.88	0.0137	19	5.4	15.5	20.9	0.0409	29	17000	0.0347	14	0.0299	32
10	Himachal Pradesh	55673	15434	27.72	0.3069	2.167	0.1992	0.2531	23	334	2.21	0.3259	5	315.6	23.2	338.8	0.6624	9	9200	0.0188	17	0.3150	12
11	J & K UT	53258	21122	39.66	0.4391	2.966	0.2726	0.3558	17	348	1.68	0.3395	4	232.8	146.1	378.9	0.7408	7	11371	0.0232	15	0.3648	8
12	Ladakh UT	169421	2490	1.47	0.0163	0.350	0.0321	0.0242	37	23	0.93	0.0224	18			0	0.0000			0.0000		0.0117	29
13	Jharkhand	79714	23611	29.62	0.3279	3.315	0.3047	0.3163	19	58	0.25	0.0566	15	117.1	64.4	181.5	0.3548	14	22729	0.0464	11	0.1935	18
14	Karnataka	191791	38575	20.11	0.2227	5.416	0.4979	0.3603	16	1025	2.73	1.0000	1	327.7	89.6	417.3	0.8158	3	62108	0.1268	5	0.5757	1
15	Kerala	38863	21144	54.41	0.6023	2.969	0.2729	0.4376	12	823	4.05	0.8029	3	167.1	51.9	219	0.4282	11	19235	0.0393	13	0.4270	4
16	Madhya Pradesh	308245	77482	25.14	0.2783	10.878	1.0000	0.6392	2	68	0.09	0.0663	13	285.6	97.5	383.1	0.7490	6		0.0000		0.3636	7
17	Maharashtra	307713	50778	16.50	0.1827	7.129	0.6554	0.4190	13	96	0.19	0.0937	11	252.6	164.5	417.1	0.8154	4	37393	0.0764	7	0.3511	5
18	Manipur	22327	16847	75.46	0.8353	2.365	0.2174	0.5264	6	-499	-2.88	-0.4868	37	53.2	7.8	61	0.1193	22	6442	0.0132	19	0.0430	33
19	Meghalaya	22429	17119	76.33	0.8450	2.404	0.2210	0.5330	5	-27	-0.16	-0.0263	34	38.7	17.3	56	0.1095	24	2743	0.0056	23	0.1554	21
20	Mizoram	21081	18006	85.41	0.9456	2.528	0.2324	0.5890	3	-180	-0.99	-0.1756	35	19.1	42.8	61.9	0.1210	21	4020	0.0082	22	0.1357	25
21	Nagaland	16579	12486	75.31	0.8337	1.753	0.1612	0.4974	9	-3	0.02	-0.0029	33	36.9	11.4	48.3	0.0944	25		0.0000		0.1472	22
22	Orissa	155707	51619	33.15	0.3670	7.247	0.6662	0.5166	7	274	0.53	0.2673	6	258	81.5	339.5	0.6637	8	382364	0.7809	2	0.5571	3
23	Punjab	50362	1849	3.67	0.0406	0.260	0.0239	0.0323	35	12	0.65	0.0117	20	12.9	20	32.9	0.0643	26	6845	0.0140	18	0.0306	31
24	Rajasthan	342239	16630	4.86	0.0538	2.335	0.2146	0.1342	28	58	0.35	0.0566	15	46.3	81.9	128.2	0.2506	17	4387	0.0090	21	0.1126	17
25	Sikkim	7096	3342	47.10	0.5214	0.469	0.0431	0.2823	21	-2	-0.06	-0.0020	32	26.3	2	28.3	0.0553	27	365	0.0007	25	0.0841	28
26	Tamilnadu	130058	26364	20.27	0.2244	3.702	0.3403	0.2823	21	83	0.32	0.0810	12	127.8	66.3	194.1	0.3795	13	33147	0.0677	9	0.2026	16
27	Telangana	112077	20582	18.36	0.2033	2.890	0.2656	0.2345	25	163	0.8	0.1590	8	60.5	39.7	100.2	0.1959	19	489673	1.0000	1	0.3973	6
28	Tripura	10486	7726	73.68	0.8157	1.085	0.0997	0.4577	11	0	0	0.0000		21.7	6.5	28.2	0.0551	28	4858	0.0099	20	0.1307	24
29	Uttar Pradesh	240928	14806	6.15	0.0680	2.079	0.1911	0.1296	29	127	0.87	0.1239	9	135.8	88.3	224.1	0.4381	10	51513	0.1052	6	0.1992	14
30	Uttaranchal	53483	24303	45.44	0.5031	3.412	0.3137	0.4084	14	8	0.03	0.0078	21	418.3	19.9	438.2	0.8567	2	21397	0.0437	12	0.3291	11
31	West Bengal	88752	16902	19.04	0.2108	2.373	0.2182	0.2145	26	55	0.33	0.0537	17	76.6	38.1	114.7	0.2242	18	10653	0.0218	16	0.1285	20
32	Andaman & Nicobar	8249	6743	81.74	0.9049	0.947	0.0870	0.4960	10	1	0.01	0.0010	25	55.9	0.6	56.5	0.1105	23	713	0.0015	24	0.1522	19
33	Chandigarh	114	22.03	19.32	0.2139	0.003	0.0003	0.1071	30	0.47	2.18	0.0005	26	0.3	0.1	0.4	0.0008	33	176	0.0004	26	0.0272	34
34	Dadra & Nagar Haveli	491	207	42.16	0.4667	0.029	0.0027	0.2347	24	0	0	0.0000		1.9	0.8	2.7	0.0053	31	200	0.0004	26	0.0601	30
35	Daman & Diu	111	20.49	18.46	0.2044	0.003	0.0003	0.1023	31	0	0	0.0000		0	0.1	0.1	0.0002	35	15	0.0000		0.0256	35
36	Lakshadweep	30	27.1	90.33	1.0000	0.004	0.0003	0.5002	8	0	0	0.0000		0	0.1	0.1	0.0002	35	0	0.0000		0.1251	23
37	Pondicherry	490	52.41	10.70	0.1184	0.007	0.0007	0.0595	34	-1.26	-2.35	-0.0012	31	0.1	0.3	0.4	0.0008	33	63	0.0001	27	0.0148	37

Table-4.3 Water Quality 2020

SINo	State/UT	Sewage Gen & Tret			Surface water quality										GW*		% Ind.meeting WW St		F.Sc & RK	
		Sewage Gen. (MLD)	Treatment Capacity	Score-1	Rivers Monitored	DO		Total Coliform		Score	BOD			Score-2	% GW withdrawal - Avail.	Score-3	% of 17 Cat.of Ind.complng with WWT Standards	score4	Final Avg. Score	Rank
						% Violation	Score	Violation (%)	Count		Violation (%)	Count	Score							
1	A. Pradesh	1978.2	654	0.3306	16	12.3	0.8770	4.16	288	0.9584	42.56	632	0.5744	0.8033	44.15	0.5585	95.14	0.0486	0.4352	14
2	Aru. Pradesh				NA	NA		NA	NA				1.0000	0.3333	0.28	0.9972	80.38	0.1962	0.3817	20
3	Assam	386.6		0.0000	31	2.51	0.9749	5.31	188	0.9469	50.16	315	0.4984	0.8067	11.25	0.8875	90.01	0.0999	0.4485	13
4	Bihar	1117.1	137.5	0.1231	9	1.5	0.9850	55.6	135	0.4440	10.90	211	0.8910	0.7733	45.76	0.5424	97.24	0.0276	0.3666	23
5	Chhattisgarh	391.29	69	0.1763	8	0.67	0.9933	0	132	1.0000	3.00	120	0.9700	0.9878	44.43	0.5557	78.4	0.216	0.4840	8
6	Delhi	3800	2330	0.6132	1	68.4	0.3160	100	38	0.0000	92.00	140	0.0800	0.1320	119.61	-0.1961	84.34	0.1566	0.1764	33
7	Goa	23.68	18.18	0.7677	13	3.7	0.9630	3.7	27	0.9630	7.00	168	0.9300	0.9520	33.50	0.6650	95.82	0.0418	0.6066	2
8	Gujarat	1908.5	782.5	0.4100	23	21.3	0.7870	26.46	257	0.7354	25.00	235	0.7500	0.7575	63.89	0.3611	78.91	0.2109	0.4349	15
9	Haryana	670.21	312	0.4655	2	5.88	0.9412	100	31	0.0000	43.00	53	0.5700	0.5037	136.91	-0.3691	97.22	0.0278	0.1570	35
10	H. Pradesh	28.94	35.63	1.2312	11	2.26	0.9774	7.14	126	0.9286	2.00	255	0.9800	0.9620	86.37	0.1363	97.67	0.0233	0.5882	3
11	J&K	241.79	0	0.0000	5	10	0.9000	0	0	1.0000	57.00	7	0.4300	0.7767	29.47	0.7053	96.09	0.0391	0.3803	21
12	Ladakh																	1	0.2500	30
13	Jharkhand	908.68	0	0.0000	13	0	1.0000	0	58	1.0000	0.00	156	1.0000	1.0000	27.73	0.7227	51.66	0.4834	0.5515	5
14	Karnataka	2023.8	55.62	0.0275	19	2.5	0.9750	12.5	272	0.8750	20.00	337	0.8000	0.8833	69.87	0.3013	93.26	0.0674	0.3199	28
15	Kerala	806.49	0	0.0000	45	9.12	0.9088	4.91	285	0.9509	8.00	442	0.9200	0.9266	51.27	0.4873	97.32	0.0268	0.3602	24
16	M. Pradesh	1379.6	195.1	0.1414	30	5.2	0.9480	0	238	1.0000	34.00	327	0.6600	0.8693	54.76	0.4524	96.06	0.0394	0.3756	22
17	Maharashtra	10200	4254.3	0.4171	30	9.04	0.9096	0	567	1.0000	87.00	1447	0.1300	0.6799	54.62	0.4538	84.49	0.1551	0.4265	16
18	Manipur	26.74	0	0.0000	6	0	1.0000	0	10	1.0000	16.00	57	0.8400	0.9467	1.44	0.9856	100	0	0.4831	9
19	Meghalaya	32.09	0	0.0000	5	0	1.0000	0	765	1.0000	40.00	3.74	0.6000	0.8667	2.28	0.9772	93.71	0.0629	0.4767	11
20	Mizoram	5.71	0	0.0000	2	0	1.0000	0	16	1.0000	0.00	16	1.0000	1.0000	3.82	0.9618	80.01	0.1999	0.5404	6
21	Nagaland	14.98	0	0.0000	3	12.5	0.8750	0	0	1.0000	0.00	32	1.0000	0.9583	0.99	0.9901	86.96	0.1304	0.5197	7
22	Orissa	739.15	53	0.0717	21	0.47	0.9953	25.7	214	0.7430	13.00	512	0.8700	0.8694	42.18	0.5782	91.71	0.0829	0.4006	18
23	Punjab	1685.7	453.8	0.2692	4	4.35	0.9565	49.57	115	0.5043	49.00	140	0.5100	0.6569	149.00	-0.4900	76.03	0.2397	0.1690	34
24	Rajasthan	1530.2	54	0.0353	4	1.9	0.9810	0	52	1.0000	13.00	80	0.8700	0.9503	140.00	-0.4000	76.06	0.2394	0.2063	32
25	Sikkim				4	0	1.0000	0	99	1.0000	84.00	168	0.1600	0.7200	0.06	0.9994	50	0.5	0.5549	4
26	Tamil Nadu	1261.9	362.72	0.2874	5	3.38	0.9662	0.38	265	0.9962	16.00	282	0.8400	0.9341	80.94	0.1906	99.1	0.009	0.3553	25
27	Telangana														65.45	0.3455	87.03	0.1297	0.1188	37
28	Tripura	24		0.0000	2	0	1.0000	0	15	1.0000	61.00	28	0.3900	0.7967	7.88	0.9212	80	0.2	0.4795	10
29	UP	3851.7	1252.7	0.3252	14	19.3	0.8070	59.4	352	0.4060	73.00	579	0.2700	0.4943	70.18	0.2982	91.65	0.0835	0.3003	29
30	Uttarakhand	186.04	24.33	0.1308	2	0	1.0000	70.2	47	0.2980	36.00	99	0.6400	0.6460	56.83	0.4317	83.94	0.1606	0.3423	26
31	West Bengal	2525.6	567.8	0.2248	8	4.5	0.9550	92.3	156	0.0770	41.00	260	0.5900	0.5407	44.60	0.5540	73.16	0.2684	0.3970	19
32	A & N	12	10.42	0.8683	NA	NA		NA	NA				1.0000	0.3333	2.74	0.9726	55.77	0.4423	0.6541	1
33	Chandigarh	429.76	164.79	0.3834	NA	NA		NA	NA				1.0000	0.3333	89.00	0.1100	100	0	0.2067	31
34	D & NH				1	0	1.0000	0	0	1.0000			1.0000	1.0000	31.34	0.6866	86.84	0.1316	0.4546	12
35	D & D				NA	NA		NA	NA		100.00	7	0.0000	0.0000	61.40	0.3860	86.84	0.1316	0.1294	36
36	Lakshadweep				NA	NA		NA	NA				1.0000	0.3333	65.99	0.3401		1	0.4184	17
37	Pondicherry	64.44	0	0.0000	4	0	1	0	0	1	20	5	0.8	0.9333	74.33	0.2567	87.66	0.1234	0.3284	27

Table-4.4 Waste Management*

S.No.	State	MSW TPD 2017-18				Hazardous waste Mg.MTA			Bio-Medical Waste-KGD 2019			Electronic waste			Final Score Rank	
		Gen	Collect.	Treat.	Score-1	Gen.	T.dispd	Score-2	Quan.	Treat.	Score-3	Quan(ton)	T & recy*	Score-4	Score	Rank
1	A. Pradesh	6440	6331	500	0.0776	595749	29080.79	0.0488	10662.3	10662.27	1.0000	12780.30		0.0809	0.3018	18
2	Aru. Pradesh	13	11	0	0.0000		0		645.4	645.4	1.0000	131.70		0.0008	0.2502	25
3	Assam	650	350	0	0.0000	49043	0	0.0000	8564.95	6581.27	0.7684	2176.70		0.0138	0.1955	30
4	Bihar	1670	0	0	0.0000	3106	0	0.0000	33799	7439.39	0.2201	3055.60		0.0193	0.0599	33
5	Chhattisgarh	1896	1704	168	0.0886	103861	10029.3	0.0966	1104.49	1136.293	1.0288	2149.90	1650	0.0136	0.3069	17
6	Delhi	8370	8300	3240	0.3871	5528	0	0.0000	24667.1	24667.05	1.0000	9729.20		0.0616	0.3622	8
7	Goa	450	400	182	0.4044	26031	19011.23	0.7303	874	874	1.0000	427.40		0.0027	0.5344	1
8	Gujarat	10480	10480	2565	0.2448	4350000	124876	0.0287	29070	29070	1.0000	8994.30	37262.1	0.0569	0.3326	13
9	Haryana	3103	3103	188	0.0606	70957	244	0.0034	11662.9	11662.91	1.0000	4506.90	49981	0.0285	0.2731	19
10	Him. Pradesh	276	207	125	0.4529	24455	0	0.0000	30188	3027.6	0.1003	1595.10		0.0101	0.1408	31
11	J & K	1792	1322	320	0.1786	4496	0	0.0000	4618.58	4172.7	0.9035	1521.50		0.0096	0.2729	20
12	Ladakh													0.0000	0.0000	36
13	Jharkhand	3570	3570	65	0.0182	252467	152	0.0006	12498	1097.99	0.0879	2021.60		0.0128	0.0299	34
14	Karnataka	8697	7288	3000	0.3449	315453	2573.75	0.0082	67339	67339	1.0000	9118.70	44620.5	0.0577	0.3527	10
15	Kerala	1339	655	390	0.2913	115394	18750	0.1625	40990	38869.38	0.9483	6171.80		0.0391	0.3603	9
16	M. Pradesh	6678	4351	0	0.0000	251234	9516	0.0379	14824	13569	0.9153	7800.60	8985	0.0494	0.2506	23
17	Maharashtra	21867	21867	6993	0.3198	499133	449.7	0.0009	61918	6118	0.0988	20270.60	47810	0.1283	0.1370	32
18	Manipur	176	125	0	0.0000	0			529.14	529.14	1.0000	231.70		0.0015	0.2504	24
19	Meghalaya	208	175	55	0.2644	459		0.0000	1061.65	1062	0.9999	211.60		0.0013	0.3164	15
20	Mizoram	552	276	0	0.0000	0			747.63	748	1.0000	79.60		0.0005	0.2501	27
21	Nagaland	344	193	0	0.0000	10		0.0000	626.5	626.5	1.0000	145.10		0.0009	0.2502	25
22	Orissa	2575	2284	30	0.0117	646112	2027	0.0031	14197.5	13171.47	0.9277	2937.80	3000	0.0186	0.2403	28
23	Punjab	4456	4435	3.72	0.0008	113367	0	0.0000	15203	15203	1.0000	6958.50	150	0.0440	0.2612	21
24	Rajasthan	5037	2491	490	0.0973	762027	532713.9	0.6991	22502.6	16166.99	0.7185	6326.90	68670	0.0400	0.3887	5
25	Sikkim	49	49	0.3	0.0061	1051	0	0.0000	235.21	197.76	0.8408	78.10		0.0005	0.2118	29
26	Tamil Nadu	14500	14234	1607	0.1108	576733	114774	0.1990	46818.8	46818.8	1.0000	13486.20	52427	0.0854	0.3488	11
27	Telangana	6628	6225	3175	0.4790	249996	0	0.0000	15719	15719	1.0000	11800.00	11800	0.0747	0.3884	6
28	Tripura	415	368	250.4	0.6034	273	0	0.0000	1607	1582.88	0.9850	378.30		0.0024	0.3977	4
29	Uttar Pradesh	19180	19180	5197	0.2710	241867	3169.35	0.0131	43554	43554	1.0000	10381.10	86130	0.0657	0.3374	12
30	Uttaranchal	918	918	0	0.0000	20907	116.55	0.0056	2946	3837	1.3024	1641.10	28000	0.0104	0.3296	14
31	West Bengal	9500	8075	851	0.0896	126573	49004	0.3872	29774	29895	1.0041	10059.40	600	0.0637	0.3861	7
32	A & N	70	70	5	0.0714	0			187	221	1.1818	92.20		0.0006	0.3135	16
33	Chandigarh	370	360	250	0.6757	2116	0	0.0000	2503	2503	1.0000	359.70		0.0023	0.4195	3
34	D & NH	85	85	0	0.0000	4056.371	3448.47	0.8501	322	322	1.0000	29.40		0.0002	0.4626	2
35	Daman & Diu											40.80		0.0003	0.0001	35
36	Lakshadweep	21	0	0	0.0000	0	0		423	0	0.0000	7.40		0.0000	0.0000	36
37	Puducherry	495	485	0		26425	52	0.0020	5400	5400	1.0000	284.20		0.0018	0.2509	22

Table- 4.5 Climate Change

S.No	State/UT	SAPCC	Score-1	% RE Gen. Capacity	Score-2	Co2 saved LED bulbs per 1000 Pop	score-3	Instal. Grid connect Solar power %	Score-4	Lives lost per Cr	Score-5	1-5 final Sc	corr	Rank	Niti Final Avg. Sc 2-5	Niti Rank
1	A. Pradesh	Yes	1	39.74	0.3974	42.77	0.4277	33.99	0.3399	6	0.9932	0.6316	0.4855	9	70	2
2	Aru. Pradesh	Yes	1	75.12	0.7512	38.81	0.3881	2.22	0.0222	362	0.5877	0.5498	0.4227	16	31	26
3	Assam	Yes	1	30.79	0.3079	20.98	0.2098	7.74	0.0774	49	0.9442	0.5079	0.3904	19	47	14
4	Bihar	No	0	8.67	0.0867	19.00	0.19	33.1	0.331	49	0.9442	0.3104	0.2386	35	43	18
5	Chhattisgarh	No	0	5.45	0.0545	41.89	0.4189	30.53	0.3053		1.0000	0.3557	0.2735	31	29	27
6	Delhi	Yes	1	12.89	0.1289	59.52	0.5952	14.7	0.147		1.0000	0.5742	0.4414	14	30	8
7	Goa	No	0	0.84	0.0084	42.29	0.4229	98.96	0.9896		1.0000	0.4842	0.3722	22	41	19
8	Gujarat	Yes	1	31.69	0.3169	66.10	0.661	25.23	0.2523	36	0.9590	0.6378	0.4903	7	63	5
9	Haryana	No	0	21.88	0.2188	57.18	0.5718	9.8	0.098		1.0000	0.3777	0.2904	30	34	25
10	H. Pradesh	No	0	94.02	0.9402	120.58	1.2058	0.75	0.0075	105	0.8804	0.6068	0.4664	11	61	6
11	J&K	No	0	73.41	0.7341	65.47	0.6547	0.76	0.0076	6	0.9932	0.4779	0.3674	24	59	3
12	Ladakh				0.0000		0		0		1.0000	0.2000	0.1537	37		
13	Jharkhand	No	0	13.19	0.1319	40.82	0.4082	16.09	0.1609	0	1.0000	0.3402	0.2615	33	27	28
14	Karnataka	Yes	1	62.92	0.6292	37.16	0.3716	36.06	0.3606	1	0.9989	0.6721	0.5166	4	71	1
15	Kerala	Yes	1	44.79	0.4479	44.47	0.4447	6.19	0.0619	36	0.9590	0.5827	0.4479	12	56	10
16	M. Pradesh	Yes	1	33.65	0.3365	22.67	0.2267	26.18	0.2618	0	1.0000	0.5650	0.4343	15	47	14
17	Maharashtra	Yes	1	29.04	0.2904	18.55	0.1855	13.08	0.1308	11	0.9875	0.5188	0.3988	17	50	12
18	Manipur	Yes	1	40.41	0.4041	11.80	0.118	3.92	0.0392	0	1.0000	0.5123	0.3938	18	37	21
19	Meghalaya	Yes	1	73.95	0.7395	15.70	0.157	0.03	0.0003	0	1.0000	0.5794	0.4454	13	36	24
20	Mizoram	Yes	1	65.51	0.6551	59.05	0.5905	1.5	0.015	0	1.0000	0.6521	0.5013	6	45	16
21	Nagaland	No	0	52.34	0.5234	47.11	0.4711	1.12	0.0112	91	0.8964	0.3804	0.2924	29	51	11
22	Orissa	Yes	1	30.12	0.3012	124.84	1.2484	14.87	0.1487	2	0.9977	0.7392	0.5682	3	69	3
23	Punjab	No	0	38.87	0.3887	4.95	0.0495	18.01	0.1801	1	0.9989	0.3234	0.2486	34	57	9
24	Rajasthan	Yes	1	44.93	0.4493	22.62	0.2262	39.92	0.3992	0	1.0000	0.6149	0.4727	10	60	7
25	Sikkim	Yes	1	90.64	0.9064	25.87	0.2587	0.01	0.0001	0	1.0000	0.6330	0.4866	8	38	20
26	Tamil Nadu	No	0	49.05	0.4905	5.97	0.0597	19.82	0.1982	0	1.0000	0.3497	0.2688	32	45	16
27	Telangana			40.98	0.4098	6.34	0.0634	55.73	0.5573	0	1.0000	0.4061	0.3122	28	66	4
28	Tripura (H)	Yes	1	12.41	0.1241	27.62	0.2762	10.02	0.1002	44	0.9499	0.4901	0.3767	21	37	21
29	UP	No	0	25.25	0.2525	11.97	0.1197	15.95	0.1595	5	0.9943	0.3052	0.2346	36	48	13
30	Uttarakand	Yes	1	70.98	0.7098	51.45	0.5145	12.72	0.1272	53	0.9396	0.6582	0.5060	5	59	8
31	West Bengal	Yes	1	17.74	0.1774	10.13	0.1013	5.08	0.0508	21	0.9761	0.4611	0.3545	26	37	21
32	A & Nicobar	Yes	1	30.34	0.3034	71.56	0.7156	69.9	0.699	0	1.0000	0.7436	0.5716	2	72	2
33	Chandigarh	No	0	68.5	0.6850	28.75	0.2875	26.67	0.2667	0	1.0000	0.4478	0.3443	27	54	4
34	D&NH	No	0	1.92	0.0192	37.30	0.373	100	1	0	1.0000	0.4784	0.3678	23	41	6
35	Dam & Diu	No	0	7.49	0.0749	40.11	0.4011	100	1	0	1.0000	0.4952	0.3807	20	46	5
36	Lakshadweep	Yes	1	100	1.0000	250.45	2.5045	100	1		1.0000	1.3009	1.0000	1	100	1
37	Pondicherry	No	0	0.86	0.0086	34.31	0.3431	100	1	0	1.0000	0.4703	0.3615	25	39	7

Table-4.6 Bio-diversity criteria																		
S.No	States	Livestock				Wetland in Ha			Protected Areas				% desertification			Final BD		
		Population	Change	Sc-1	Rank	Rec 2019	Sc-2	Rank	Area 2018C	score	Sc-3	Rank	Area	Score	sc-4	Final Avg. Scr	Rank	
1	Andhra Pradesh	48.19	15.79	0.0994	3	72358	0.0598	6	6298.25	0.6067	0.3683	15	1.37	0.0045	0.0591	0.1466	11	
2	Arunachal Pradesh	1.26		0.0026	24	68022	0.0562	7	9778.57	0.9420	0.5719	4	12.62	0.0413	0.0959	0.1816	6	
3	Assam	13.83		0.0285	13	67857	0.0560	8	3817.93	0.3678	0.2233	16	25.23	0.0826	0.1372	0.1113	18	
4	Bihar	27.16	10.67	0.0560	7	3992	0.0033	25	3237.32	0.3119	0.1893	18	5.35	0.0175	0.0721	0.0802	19	
5	Chhatisgarh	13.49		0.0278	14	64398	0.0532	10	6659.37	0.6415	0.3895	12	1.6	0.0052	0.0598	0.1326	13	
6	Delhi	0.37		0.0008	26	18	0.0000	33	27.82	0.0027	0.0016	32	22.25	0.0729	0.1275	0.0325	27	
7	Goa	0.21		0.0004	29	1025	0.0008	30	754.91	0.0727	0.0442	24	3.49	0.0114	0.0660	0.0279	29	
8	Gujarat	21.65	-0.95	0.0446	11	1210675	1.0000	1	17098.54	1.6472	1.0000	1	1.83	0.0060	0.0606	0.5263	1	
9	Haryana	8.88		0.0183	16	1885	0.0016	29	281.46	0.0271	0.0165	28	7.75	0.0254	0.0800	0.0291	28	
10	Himachal Pradesh	5.12		0.0106	18	8221	0.0068	24	8387.48	0.8080	0.4905	8	0	0.0000	0.0546	0.1406	12	
11	J&K	9.9		0.0204	15	36262	0.0300	16	14168	1.3649	0.8286	2	5.71	0.0187	0.0733	0.2381	2	
12	Ladakh			0.0000	35		0.0000	33		0.0000	0.0000	36		0.0000	0.0546	0.0137	35	
13	Jharkhand	15.83		0.0326	12	16528	0.0137	20	1882.15	0.1813	0.1101	21	1.8	0.0059	0.0605	0.0542	23	
14	Karnataka	25.62	4.7	0.0528	8	53119	0.0439	13	9570.57	0.9220	0.5597	5	0.14	0.0005	0.0551	0.1779	8	
15	Kerala	3.48		0.0072	20	23157	0.0191	18	2486.4	0.2395	0.1454	19	2.45	0.0080	0.0626	0.0586	21	
16	Madhya Pradesh	35.62	11.81	0.0734	6	162573	0.1343	3	10815.68	1.0419	0.6325	3	0.86	0.0028	0.0574	0.2244	3	
17	Maharashtra	36.76	1.61	0.0758	5	116837	0.0965	4	8878.04	0.8553	0.5192	7	3.58	0.0117	0.0663	0.1895	5	
18	Manipur	0.97		0.0020	25	12424	0.0103	21	224.81	0.0217	0.0131	29	1.49	0.0049	0.0595	0.0212	31	
19	Meghalaya	1.55		0.0032	21	21470	0.0177	19	361.58	0.0348	0.0211	26	3.35	0.0110	0.0656	0.0269	30	
20	Mizoram	0.28		0.0006	28	12456	0.0103	21	1245.75	0.1200	0.0729	23	95.52	0.3128	0.3674	0.1128	17	
21	Nagaland	1.35		0.0028	23	11522	0.0095	23	222.36	0.0214	0.0130	30	22.48	0.0736	0.1282	0.0384	26	
22	Orissa	23.39		0.0482	10	64627	0.0534	9	8085.35	0.7789	0.4729	9	-0.33	-0.0011	0.0535	0.1570	9	
23	Punjab	8.61		0.0178	17	3068	0.0025	27	326.6	0.0315	0.0191	27	55.35	0.1812	0.2358	0.0688	20	
24	Rajasthan	49.14	-1.6	0.1013	2	56341	0.0465	11	9539.45	0.9190	0.5579	6	-0.46	-0.0015	0.0531	0.1897	4	
25	Sikkim	0.34		0.0007	27	2609	0.0022	28	2183.1	0.2103	0.1277	20	0.34	0.0011	0.0557	0.0466	25	
26	Tamilnadu			0.0000	35	45219	0.0374	14	6464.97	0.6228	0.3781	13	1.8	0.0059	0.0605	0.1190	16	
27	Telangana	24.94	22.21	0.0514	9	28239	0.0233	17	6708.38	0.6462	0.3923	11	-1.63	-0.0053	0.0493	0.1291	15	
28	Tripura	1.46		0.0030	22	3879	0.0032	26	603.64	0.0582	0.0353	25	33.55	0.1099	0.1645	0.0515	24	
29	Uttar Pradesh	58.53	-1.35	0.1207	1	42224	0.0349	15	6318.36	0.6087	0.3695	14	-16.69	-0.0546	0.0000	0.1313	14	
30	Uttaranchal	4.94		0.0102	19	54129	0.0447	12	7605.14	0.7326	0.4448	10	11.53	0.0378	0.0924	0.1480	10	
31	West Bengal	41.62	23.32	0.0858	4	438476	0.3622	2	3423.77	0.3298	0.2002	17	3.08	0.0101	0.0647	0.1782	7	
32	Andaman & Nicobar	0.19		0.0004	29	89022	0.0735	5	1543.33	0.1487	0.0903	22	0	0.0000	0.0546	0.0547	22	
33	Chandigarh	0.031		0.0001	33	60	0.0000	33	26.01	0.0025	0.0015	33	0	0.0000	0.0546	0.0141	33	
34	Dadra & Nagar Have	0.078		0.0002	32	322	0.0003	31	92.16	0.0089	0.0054	31	0	0.0000	0.0546	0.0151	32	
35	Daman & Diu	0.01		0.0000	35		0.0000	33	2.19	0.0002	0.0001	35	0	0.0000	0.0546	0.0137	35	
36	Lakshadweep	0.052		0.0001	33		0.0000	33	0.01	0.0000	0.0000	36	0	0.0000	0.0546	0.0137	35	
37	Pondicherry	0.13		0.0003	31	127	0.0001	32	3.9	0.0004	0.0002	34	0	0.0000	0.0546	0.0138	34	

Table-4.7 Agriculture														
Sl No	State/UT	G.Area Sq Km	Agri Land ,000 Ha	Sc-1	Agri Dist.	Agri Vul.Dis. VH &H	sc-2	Rev.Sc	Ha. in Micro irrg	Sc-3	% share in total GSVA 17-18	Sc-4	Final Score	Final Rank
1	A. Pradesh	275069	9047	0.0329	13	5	0.3846	0.6154	1584949	0.1565	34.37	0.1150	0.2299	21
2	Aru. Pradesh	83743	423	0.0051	14	0	0.0000	1.0000	613	0.0001	37.29*	0.1248	0.2825	2
3	Assam	78438	3364	0.0429	23	2	0.0870	0.9130	1221	0.0001	19.41*	0.0650	0.2553	17
4	Bihar	94163	6579	0.0699	37	21	0.5676	0.4324	114576	0.0113	22.23	0.0744	0.1470	33
5	Chhattisgarh	135191	5538	0.0410	16	7	0.4375	0.5625	297343	0.0294	22.16	0.0742	0.1767	29
6	Delhi	1483	53	0.0357	0			1.0000		0.0000	0.47	0.0016	0.2593	15
7	Goa	3702	197	0.0532	1	0	0	1.0000	2315	0.0002	7.09*	0.0237	0.2693	9
8	Gujarat	196022	12661	0.0646	25	14	0.5600	0.4400	1281136	0.1265	16.40*	0.0549	0.1715	30
9	Haryana	44212	3656	0.0827	19	9	0.4737	0.5263	594911	0.0587	19.27*	0.0645	0.1831	26
10	H. Pradesh	55673	812	0.0146	12	4	0.3333	0.6667	9290	0.0009	14.62	0.0489	0.1828	27
11	J&K	53258	1075	0.0202	12	1	0.0833	0.9167	80	0.0000	19.36*	0.0648	0.2504	19
12	Ladakh	169421		0.0000	2		0	1.0000		0.0000		0.0000	0.2500	20
13	Jharkhand	79714	4343	0.0545	18	9	0.5	0.5000	32412	0.0032	18.94	0.0634	0.1553	32
14	Karnataka	191791	12827	0.0669	27	14	0.5185	0.4815	1286640	0.1270	10.82	0.0362	0.1779	28
15	Kerala	38863	2266	0.0583	14	0	0.0000	1.0000	3128	0.0003	12.46*	0.0417	0.2751	5
16	M. Pradesh	308245	17252	0.0560	45	30	0.6667	0.3333	521425	0.0515	40.40*	0.1352	0.1440	34
17	Maharashtra	307713	21099	0.0686	33	17	0.5152	0.4848	1545369	0.1526	10.37	0.0347	0.1852	25
18	Manipur	22327	390	0.0175	9	0	0	1.0000	318	0.0000	19.63*	0.0657	0.2708	8
19	Meghalaya	22429	1056	0.0471	7	0	0	1.0000	615	0.0001	19.86	0.0665	0.2784	4
20	Mizoram	21081	367	0.0174	8	0	0	1.0000	4428	0.0004	29.99*	0.1004	0.2796	3
21	Nagaland	16579	694	0.0419	8	0	0	1.0000	5449	0.0005	30.90*	0.1034	0.2865	1
22	Orissa	155707	6784	0.0436	30	1	0.0333	0.9667	112649	0.0111	19.98	0.0669	0.2721	6
23	Punjab	50362	4285	0.0851	17	5	0.2941	0.7059	48281	0.0048	29.18*	0.0977	0.2233	22
24	Rajasthan	342239	25511	0.0745	32	31	0.9688	0.0313	1836750	0.1813	24.76	0.0829	0.0925	36
25	Sikkim	7096	97	0.0137	4	0	0	1.0000	9086	0.0009	10.33	0.0346	0.2623	12
26	Tamil Nadu	130058	8112	0.0624	29	11	0.3793	0.6207	503206	0.0497	12.58	0.0421	0.1937	23
27	Telangana	112077	6877	0.0614	10	5	0.5000	0.5000	221910	0.0219	14.28	0.0478	0.1578	31
28	Tripura (H)	10486	272	0.0259	4	0	0.0000	1.0000	2095	0.0002		0.0000	0.2565	16
29	UP	240928	18939	0.0786	70	30	0.4286	0.5714	99027	0.0098	25.7	0.0860	0.1865	24
30	Uttarakand	53483	1549	0.0290	13	7	0.5385	0.4615	7863	0.0008	9.41	0.0315	0.1307	35
31	West Bengal	88752	5655	0.0637	17	1	0.0588	0.9412	53317	0.0053	23.42	0.0784	0.2721	6
32	A & Nicobar	8249	28	0.0034	1			1.0000		0.0000	12.6*	0.0422	0.2614	14
33	Chandigarh	114	1	0.0088				1.0000		0.0000	0.54*	0.0018	0.2526	18
34	D&NH	491	24	0.0489	1	0	0	1.0000		0.0000		0.0000	0.2622	13
35	Dam & Diu	112	3	0.0268	1	1	1	0.0000		0.0000		0.0000	0.0067	37
36	Lakshadweep	32	2	0.0625				1.0000		0.0000		0.0000	0.2656	11
37	Pondicherry	480	29	0.0604	1	0	0	1.0000		0.0000	4.5	0.0151	0.2689	10

Table-4.8 Fisheries 2020

Sl No	State/UT	Fish St. 17-18	Fish St. 15-16	Crigin Fish Stock Top	Score-1	Rank	No. of Mf. Protect bgs	Area	Score-2	Rank	Fund 17-18 Lal	% of T.funds	Score-3	Rank	Val(CY) marine fish band 17-18	Share % of band	Score-4	Rank	Final Sc.	F. Rank	
1	A. Pradesh	3449558	2352263	1097295	0.5643	1	20	1874.8	0.0909	5	2162.88	7.1651	0.1907	3	432	2662	5.1	0.233	6	0.2697	3
2	Aru. Pradesh	4250	4050	200	0.0001	30			0.0000		222.9	0.7384	0.0197	24				0		0.0049	28
3	Assam	327263	294200	33063	0.0170	11			0.0000		799.66	2.6491	0.0705	8				0		0.0219	14
4	Bihar	587850	506887	80963	0.0416	6			0.0000		2.25	0.0075	0.0002	33				0		0.0105	23
5	Chhattisgarh	457167.2	342299	114868.2	0.0591	4			0.0000		1091.92	3.6172	0.0963	5				0		0.0388	10
6	Delhi	801	710	91	0.0000	31			0.0000		136.29	0.4515	0.0120	29				0		0.0030	32
7	Goa	124607	11111	113496	0.0584	5	4	100.78	0.0049	10	265.24	0.8787	0.0234	19	1729	920	1.8	0.082	9	0.0422	9
8	Gujarat	819068	809540	9528	0.0049	17	17	3849.1	0.1867	3	1527.43	5.0600	0.1347	4	6639	11536	21.9	1	1	0.3316	2
9	Haryana	190000.9	121000	69000.9	0.0355	9			0.0000		779.36	2.5818	0.0687	9				0		0.0260	12
10	H. Pradesh	12765.36	11799	966.36	0.0005	23			0.0000		572.26	1.8957	0.0505	13				0		0.0127	20
11	J&K	20700	20080	620	0.0003	27			0.0000		404.69	1.3406	0.0357	17				0		0.0090	25
12	Ladakh			0	0.0000	31			0.0000			0.0000	0.0000					0		0.0000	35
13	Jharkhand	190000	115995	74005	0.0381	7			0.0000		75	0.2485	0.0066	31				0		0.0112	22
14	Karnataka	602522.2	580570	21952.2	0.0113	14	10	206.9	0.0100	9	3324.31	11.0126	0.2931	2	6397	6442	12.2	0.557	4	0.2179	5
15	Kerala	562621	727570	-164949	-0.0848	37	19	802.9	0.0389	8	812.34	2.6911	0.0716	7	9699	10827	20.6	0.941	2	0.2416	4
16	M. Pradesh	143419.7	115017	28402.7	0.0146	12			0.0000		672.02	2.2262	0.0592	11				0		0.0185	17
17	Maharashtra	606012	579685	26327	0.0135	13	16	1680.8	0.0815	6	226.81	0.7514	0.0200	22	6807	5771	11	0.502	11	0.1543	6
18	Manipur	33000	32035	965	0.0005	23			0.0000		456.15	1.5111	0.0402	16				0		0.0102	24
19	Meghalaya	11961	11343	618	0.0003	27			0.0000		139.6	0.4625	0.0123	28				0		0.0032	31
20	Mizoram	7643.35	6828	815.35	0.0004	25			0.0000		261.39	0.8659	0.0230	20				0		0.0059	27
21	Nagaland	8990.5	8220	770.5	0.0004	25			0.0000		219.4	0.7268	0.0193	25				0		0.0049	28
22	Orissa	684962	521279	163683	0.0842	2	17	4163.5	0.2020	2	1077.68	3.5701	0.0950	6	9931	1255	2.4	0.11	7	0.1227	8
23	Punjab	136638.5	120088	16550.5	0.0085	15			0.0000		465.36	1.5416	0.0410	15				0		0.0124	21
24	Rajasthan	54035.34	42461	11574.34	0.0060	16			0.0000		83.28	0.2759	0.0073	30				0		0.0033	30
25	Sikkim	380	402	-22	0.0000	31			0.0000		0	0.0000	0.0000					0		0.0000	35
26	Tamil Nadu	712036.9	709163.1	2873.79	0.0015	20	16	2058.6	0.0999	4	11342.8	37.5757	1.0000	1	1245	8576	16.3	0.744	3	0.4614	1
27	Telangana	270037	236752	33285	0.0171	10			0.0000		479.78	1.5894	0.0423	14				0		0.0149	19
28	Tripura (H)	76800	69055	7745	0.0040	18			0.0000		341.92	1.1327	0.0301	18				0		0.0085	26
29	UP	628749.1	504808	123941.1	0.0637	3			0.0000		238.14	0.7889	0.0210	21				0		0.0212	15
30	Uttarakand	4578.53	4138	440.53	0.0002	29			0.0000		746.16	2.4718	0.0658	10				0		0.0165	18
31	West Bengal	1742092	1671420	70672	0.0363	8	8	4214.6	0.2044	1	649.32	2.1510	0.0572	12	2679	2759	5.2	0.237	5	0.1339	7
32	A & Nicobar	39504	37325	2179	0.0011	21	106	1565.6	0.0759	7	179.89	0.5959	0.0159	26				0		0.0232	13
33	Chandigarh	136	128	8	0.0000	31			0.0000			0.0000	0.0000					0		0.0000	35
34	D&NH	0	0	0	0.0000	31	1	92.16	0.0045	11		0.0000	0.0000					0		0.0011	34
35	Dam & Diu	24680.07	23031	1649.07	0.0008	22	1	2.18	0.0001	13	226.69	0.7510	0.0200	22	5783	1156	2.2	0.1	8	0.0303	11
36	Lakshadweep	20774	15938.46	4835.54	0.0025	19	1	0.01	0.0000		53.57	0.1775	0.0047	32				0		0.0018	33
37	Pondicherry	49922.71	53807.9	-3885.19	-0.0020	36	1	4	0.0002	12	150	0.4969	0.0132	27	1089	733	1.4	0.064	10	0.0188	16

Table-4.9 Disaster Management														Niti Score & Rank			
Sl No	State/UT	S. Plan	Disa	J. Plan	§-1	SDMA	§-2	Bdgt Cr	Score3	Forest fire incid ,2017	Avg. Forest fire incidence	§-4	Final Score	Rank	§-18/60	§-19/70	F.RK
1	A. Pradesh	yes	13	13	1	Yes	1	1017.4	0.9130	1877	1788	0.5020	0.8538	33	64	67	3
2	Aru. Pradesh	yes	25	25	1	Yes	1	159.49	0.9864	733	513	0.8571	0.9609	21	51	53	26
3	Assam	yes	33	33	1	Yes	1	239.4	0.9795	1887	1827	0.4913	0.8677	32	49	55	23
4	Bihar	yes	38	38	1	Yes	1	0	1.0000	272	296.5	0.9174	0.9794	15	48	50	28
5	Chhattisgarh	yes	26	26	1	Yes	1	224.48	0.9808	4373	3591	0.0000	0.7452	35	58	56	21
6	Delhi	yes	11	11	1	Yes	1		1.0000	5	3.5	0.9990	0.9998	6	62	61	5
7	Goa	yes	2	2	1	Yes	1	1.8	0.9998	32	21	0.9942	0.9985	9	64	65	7
8	Gujarat	yes	33	33	1	Yes	1	449.95	0.9615	574	418	0.8836	0.9613	20	64	64	9
9	Haryana	yes	22	22	1	Yes	1	160.2	0.9863	185	114	0.9682	0.9886	11	55	57	18
10	H. Pradesh	yes	12	12	1	Yes	1	329.83	0.9718	170	184.5	0.9486	0.9801	14	69	69	2
11	J&K	yes	20	20	1	Yes	1	252.9	0.9784	113	165	0.9540	0.9831	12	53	59	8
12	Ladakh	yes	2	2	1	Yes	1		1.0000		0	1.0000	1.0000	1			
13	Jharkhand	yes	24	24	1	Yes	1	189.45	0.9838	1133	936.5	0.7392	0.9307	24	50	53	26
14	Karnataka	yes	30	30	1	Yes	1	669.22	0.9428	1333	1082	0.6986	0.9104	29	64	66	6
15	Kerala	yes	14	14	1	Yes	1	3097.5	0.7352	456	310.5	0.9135	0.9122	28	69	70	1
16	M. Pradesh	yes	52	52	1	Yes	1	457.2	0.9609	4781	3728	-0.0383	0.7307	37	52	58	15
17	Maharashtra	yes	36	36	1	Yes	1	772.65	0.9340	3487	2681	0.2534	0.7969	34	64	64	9
18	Manipur	yes	16	16	1	Yes	1	9.9	0.9992	1094	1100	0.6938	0.9232	26	59	60	13
19	Meghalaya	yes	11	11	1	Yes	1	12.6	0.9989	1454	1210	0.6630	0.9155	27	52	54	25
20	Mizoram	yes	8	8	1	Yes	1	9	0.9992	1587	1453	0.5955	0.8987	30	59	56	21
21	Nagaland	yes	11	11	1	Yes	1	205.89	0.9824	930	804	0.7761	0.9396	22	51	57	18
22	Orissa	yes	30	30	1	Yes	1	778.5	0.9335	4416	3590	0.0003	0.7334	36	51	58	15
23	Punjab	yes	22	22	1	Yes	1	321.99	0.9725	320	182.5	0.9492	0.9804	13	60	62	12
24	Rajasthan	yes	33	33	1	Yes	1	574.65	0.9509	260	163	0.9546	0.9764	17	59	57	18
25	Sikkim	yes	4	4	1	Yes	1	54.93	0.9953	8	4	0.9989	0.9985	9	58	65	7
26	Tamil Nadu	yes	37	37	1	Yes	1	707.4	0.9395	301	207	0.9423	0.9705	19	66	67	3
27	Telangana	yes	31	31	1	Yes	1	226.5	0.9806	1748	1451	0.5959	0.8941	31	61	67	3
28	Tripura (H)	yes	8	8	1	Yes	1	16.2	0.9986	431	388.5	0.8918	0.9726	18	55	58	15
29	UP	yes	75	75	1	Yes	1	351.45	0.9700	1170	930.5	0.7408	0.9277	25	42	55	23
30	Uttarakand	yes	13	13	1	Yes	1	139.35	0.9881	376	938.5	0.7386	0.9317	23	60	64	9
31	West Bengal	yes	23	23	1	Yes	1	269.1	0.9770	364	253	0.9295	0.9766	16	56	60	13
32	A & Nicobar		3	3	1	Yes	1		1.0000	8	16	0.9955	0.9989	8	58	61	5
33	Chandigarh		1	1	1	Yes	1		1.0000	1	0.5	0.9999	1.0000	1	68	70	1
34	D&NH		1	1	1	Yes	1		1.0000	0	0	1.0000	1.0000	1	57	63	3
35	Dam & Diu		2	2	1	Yes	1		1.0000	0	0	1.0000	1.0000	1	63	61	5
36	Lakshadweep		1	1	1	Yes	1		1.0000	0	0	1.0000	1.0000	1	62	63	3
37	Pondicherry		4	4	1	Yes	1		1.0000	9	4.5	0.9987	0.9997	7	65	66	2

Annexure Table 5A PC-EPI Scores 2013

Table 2. Planning Commission environmental performance scores and ranking of states

State/Union Territory	Air pollution		Water		Forests		Waste management		Climate change		Final environmental performance index 2012		Final environmental performance index 2011	
	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank
Andhra Pradesh	0.9406	11	0.7807	4	0.8270	6	0.8473	6	0.4523	10	0.7696	1	0.7073	4
Arunachal Pradesh	0.3333	33	0.3333	32	1.0000	1			0.4885	6	0.4310	31	0.3377	34
Assam	0.9298	12	0.6536	19	0.4993	18	0.7643	12	0.3658	18	0.6426	14	0.5053	22
Bihar	0.5028	32	0.6074	26	0.3248	31	0.7777	11	0.0343	33	0.4494	30	0.3977	30
Chhattisgarh	0.8536	21	0.6656	17	0.5267	16	0.9373	1	0.2561	23	0.6478	11	0.5871	17
Delhi	0.6524	30	0.3571	31	0.3615	29	0.3333	31	0.4187	13	0.4246	32	0.4321	26
Goa	0.9608	7	0.9360	2	0.3223	32	0.7121	14	0.0645	29	0.5991	17	0.6561	10
Gujarat	0.8914	17	0.6969	8	0.5346	15	0.8255	9	0.5234	4	0.6944	7	0.5881	16
Haryana	0.7836	26	0.6524	20	0.4894	19	0.3997	30	0.1413	28	0.4933	27	0.5586	18
Himachal Pradesh	0.8939	15	0.9843	1	0.6531	10	0.8550	5	0.3208	20	0.7414	3	0.7309	2
Jammu & Kashmir	0.8571	20	0.6758	11	0.5783	13	0.4161	28	0.2139	26	0.5483	22	0.3516	33
Jharkhand	0.7703	28	0.6667	12	0.5549	14	0.7162	13	0.0374	32	0.5491	21	0.5167	20
Karnataka	0.9524	9	0.6825	10	0.7654	9	0.5418	18	0.4836	8	0.6851	8	0.6333	14
Kerala	1.0000	1	0.6433	24	0.4872	20	0.6528	16	0.3722	16	0.6311	15	0.6600	9
Madhya Pradesh	0.8127	22	0.7014	7	0.8886	3	0.8014	8	0.4629	9	0.7334	4	0.6387	12
Maharashtra	0.8647	18	0.8946	3	0.8444	4	0.5434	17	0.4365	11	0.7167	5	0.6469	11
Manipur	0.9048	12	0.6667	12	0.4601	23			0.3740	15	0.4811	28	0.6158	15
Meghalaya	0.8939	15	0.6544	18	0.4355	25	0.8718	4	0.4061	14	0.6524	10	0.6629	7
Mizoram	1.0000	1	0.6667	12	0.5071	17	0.4220	27	0.6280	2	0.6448	12	0.6822	6
Nagaland	0.9608	7	0.6458	22	0.3677	28	0.4679	23	0.0378	31	0.4960	26	0.4938	23
Odisha	0.8992	14	0.6486	21	0.9949	2	0.4372	25	0.5794	3	0.7118	6	0.6352	13
Punjab	0.7925	23	0.5673	29	0.2963	33	0.8328	7	0.2414	24	0.5460	23	0.4309	27
Rajasthan	0.7857	24	0.5921	27	0.3968	27	0.5234	19	0.6543	1	0.5905	18	0.5284	19
Sikkim	1.0000	1	0.6933	9	0.6230	11	0.9333	2	0.4892	7	0.7478	2	0.5073	21
Tamil Nadu	0.9524	9	0.7431	6	0.6221	12	0.8297	10	0.1607	27	0.6616	9	0.6627	8
Tripura	0.5881	31	0.6667	12	0.7851	8	0.4008	29	0.3713	17	0.5624	20	0.3720	31
Uttar Pradesh	0.7772	27	0.6456	23	0.4652	22	0.5018	20	0.3043	21	0.5388	24	0.4925	24
Uttarakhand	0.7850	25	0.5948	28	0.8280	5	0.4283	26	0.4351	12	0.6142	16	0.8086	1
West Bengal	0.7425	29	0.5739	30	0.4009	26	0.4567	24	0.4909	5	0.5330	25	0.4859	25
Andaman and Nicobar Islands	0.0000	0	0.3333	32	0.4409	24	0.4767	21	0.2853	22	0.3072	34	0.3981	29
Chandigarh	0.8637	19	0.6132	25	0.8047	7	0.8951	3	0.0384	30	0.6430	13	0.7168	3
Dadra and Nagar Haveli	1.0000	1	0.6667	12	0.3420	30	0.3333	31	0.0000		0.4684	29	0.4081	28
Daman and Diu	1.0000	1	0.3100	35	0.1921	34	0.4697	22	0.0000		0.3944	33	0.2057	35
Lakshadweep	0.0000	0	0.3333	32	0.4690	21	0.3333	31	0.3267	19	0.2925	35	0.3587	32
Puducherry	1.0000	1	0.7500	5	0.1908	35	0.6608	15	0.2162	25	0.5636	19	0.6873	5

Annexure Table 5B PC-EPI Scores 2016

Table-2: EPI 2016 Scores and Ranking (RK) * Based on 2016 data published										FINAL		FINAL		EPI-2016	
No	STATE / UT	AIRPOL		WATER		FORESTS		WASTES		Climate		Bio Diversity		N.Scores	Rank
		Scores	Rank	Scores	Rank	Scores	Rank	Scores	Rank	Scores	Rank	Scores	Rank		
1	A. Pradesh	0.9406	10	0.4554	30	0.6497	9	0.4227	23	0.2638	22	0.4642	3	0.5327	14
2	Aru. Prade	0.8107	24	0.3333	32	1.0000	1	0.25	34	0.4879	6	0.3365	10	0.5364	12
3	Assam	0.9298	11	0.6536	18	0.4776	17	0.4604	17	0.3654	17	0.3175	13	0.5341	13
4	Bihar	0.8362	20	0.6074	25	0.2457	30	0.5381	11	0.0339	34	0.2519	21	0.4189	29
5	Chhattisga	0.8536	19	0.6656	16	0.5705	11	0.5149	13	0.2546	23	0.2502	22	0.5182	16
6	Delhi	0.6524	32	0.3571	31	0.1652	34	0.632	4	0.4177	12	0.1476	34	0.3953	32
7	Goa	1	3	0.936	2	0.3076	27	0.6123	5	0.0637	30	0.3769	6	0.5494	10
8	Gujarat	0.8914	15	0.6969	7	0.3646	24	0.549	10	0.5223	4	0.5117	1	0.5893	6
9	Haryana	0.7836	28	0.6524	19	0.2255	31	0.3818	25	0.1405	29	0.1461	36	0.3883	33
10	H. Pradesh	0.8939	14	0.9843	1	0.5161	12	0.3818	25	0.3196	19	0.3294	11	0.5708	9
11	J&K	0.5238	34	0.6758	10	0.4884	16	0.3149	30	0.2124	26	0.3171	14	0.4221	28
12	Jharkhand	0.7703	30	0.6667	11	0.4775	18	0.2618	33	0.0369	33	0.1879	29	0.4002	31
13	Karnataka	0.9524	8	0.6825	9	0.6407	10	0.6321	3	0.4826	8	0.316	18	0.6177	3
14	Kerala	1	3	0.6433	23	0.4483	19	0.447	18	0.3717	15	0.2402	23	0.5251	15
15	M. Pradesh	0.8127	23	0.7014	6	0.8459	5	0.4226	24	0.4617	9	0.3247	12	0.5948	5
16	Maharash	0.8647	17	0.8946	3	0.7304	8	0.5644	9	0.4358	10	0.3162	17	0.6344	2
17	Manipur	0.9048	12	0.6667	12	0.4220	21	0.35	28	0.3736	14	0.1609	32	0.4797	21
18	Meghalay	0.8647	17	0.6544	17	0.4380	20	0.4249	22	0.4056	13	0.1657	30	0.4922	20
19	Mizoram	1	3	0.6667	11	0.5059	15	0.4742	16	0.6275	2	0.2008	27	0.5792	8
20	Nagaland	0.9608	7	0.6458	21	0.3972	22	0.29	32	0.0373	32	0.1595	33	0.4151	30
21	Orissa	0.8992	13	0.6486	20	0.7752	7	0.4372	20	0.5786	3	0.2646	20	0.6006	4
22	Punjab	0.4403	35	0.5673	29	0.1881	33	0.4319	21	0.2401	24	0.1475	35	0.3359	36
23	Rajasthan	0.7857	26	0.5921	27	0.3053	28	0.3464	29	0.6532	1	0.3396	9	0.5037	18
24	Sikkim	0.8107	24	0.6933	8	0.9545	2	0.6675	2	0.4873	7	0.4708	2	0.6807	1
25	Tamil Nad	0.9524	8	0.7431	5	0.5087	14	0.5942	7	0.1596	28	0.3165	16	0.5458	11
26	Telangana	0.5628	33	0.3253	35	0.7824	6	0.527	12	0.1884	27	0.4642	3	0.4750	23
27	Tripura	0.8293	22	0.6667	11	0.3390	26	0.6021	6	0.3708	16	0.2156	25	0.5039	17
28	UP	0.7772	29	0.6456	22	0.8566	4	0.6872	1	0.3035	20	0.2238	24	0.5823	7
29	Uttarakan	0.785	27	0.5948	26	0.3555	25	0.4788	15	0.4341	11	0.317	15	0.4942	19
30	West Ben	0.7425	31	0.5739	28	0.5144	13	0.3516	27	0.4904	5	0.2034	26	0.4794	22
31	A & Nicob	0.4071	36	0.3333	32	0.9491	3	0.3075	31	0.2849	21	0.3544	7	0.4394	27
32	Chandigar	0.8841	16	0.6132	24	0.2835	29	0.5931	8	0.038	31	0.3903	5	0.4670	24
33	D & NH	1.1795	1	0.6667	11	0.2191	32	0.4418	19	0	35	0.19	28	0.4495	25
34	D& Diu	1.2381	2	0.31	36	0.3809	23	0.0225	36	0	35	0.3534	8	0.3842	34
35	Lak'dwp	0.8306	21	0.3333	32	0.1515	35	0.2039	35	0.3267	18	0.307	19	0.3588	35
36	Pondi	1	3	0.75	4	0.0428	34	0.5066	14	0.2151	25	0.1619	31	0.4461	26

Table- Yale EPI 2020 Category, Indicator and Data Overview

Policy Objectives	Issue Category	WT	Indicator	WT	Data Set	TLA
ENVIRONMENTAL HEALTH. HLT (40%)	Air Quality-AIR	50%	PM2.5 Exposure Household Solid Fuels Ozone Exposure	55% 40% 5%	Ambient PM2.5 Exposure DALYrate-Household Solid Fuels	PMD HAD OZD
	1.Sanitation & Drinking Water-H2O	40%	Unsafe sanitation Unsafe Drinking Water	40% 60%	DALYrate-Unsafe sanitation DALYrate- Unsafe Drinking Water	USD UWD
	2.Heavy Metals-HMT 3.Waste Management-WMG	5% 5%	Lead exposure Controlled solid Waste	100% 100%	DALYrate- Lead exposure	PBD MSW
ECOSYSTEM VITALITY . ECO (60%)	1.Biodiversity and Habitat-BDH	25%	Terrestrial Biome Protection (National) -TBN	20%		TBN
			Terrestrial Biome Protection - Global -(TGB)	20%		TBG
			Marine protected areas-(MPA)	20%		MPA
			Protected Areas Representativeness Index-PARI	10%		PARI
			Species Habitat Index-SHI	10%		SHI
			Species Protection Index-SPI	10%		SPI
			Biodiversity Habitat Index-BHVI	10%		BHI
	2.Ecosystem Services	10%	Tree cover Loss Grassland Loss Wetland loss	90% 5% 5%		TCL GRL WTL
3.Fisheries	10%	Fish Stock Status Marine Tropic Index Fish Caught by Trawling	35% 35% 30%		FSS RMS FGT	
4.Climate Change- CCH	40%	CO2 Growth Rate CH4 Growth Rate F-gas Growth Rate N2 O Growth Rate Black Carbon Growth Rate CO2 from land cover GHG Intensity Trend GHG per capita	55% 15% 10% 5% 5% 2.5% 5% 2.5%		CDA CHA FGA NDA BCA LCB GIB GHP	
5.Pollution Emissions-APE	5%	SOx Growth Rate NOx Growth Rate	50% 50%		SDA NXA	
6. Agriculture-AGR	5%	Sustainable Nitrogen Mgmt Index	100%		SNM	
7.Water Resources-WRS	5%	Waste Water Treatment	100%		WWT	

