Sustainable Development Goal - 13

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Dear Friends,

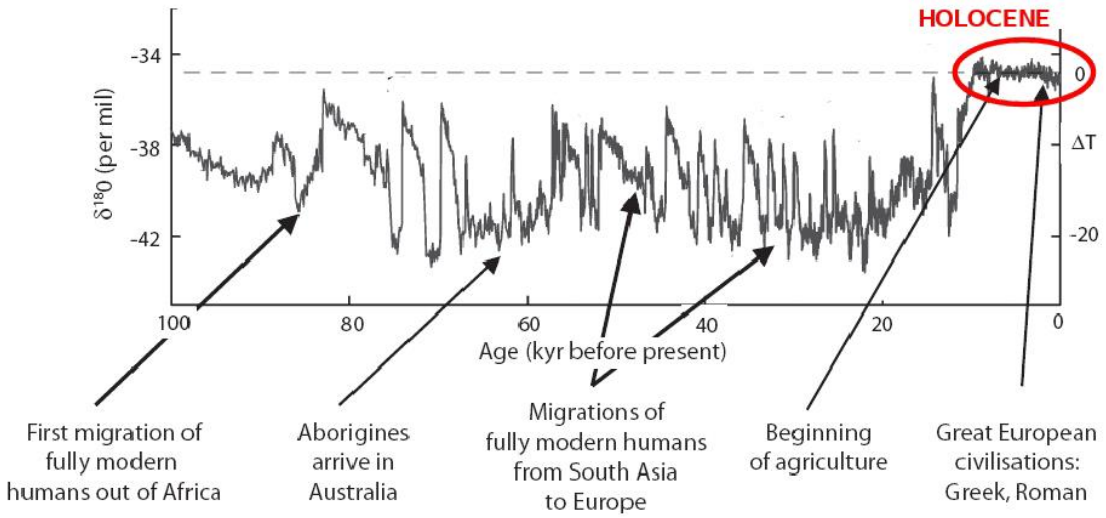
This month we shall discuss the 13th Sustainable Development Goal: Climate Action. In this blog, we shall try to explain:

a. What it is and why is this relevant
b. What are its indicators and targets
c. Where do we stand in India
d. What can we do to support the goal

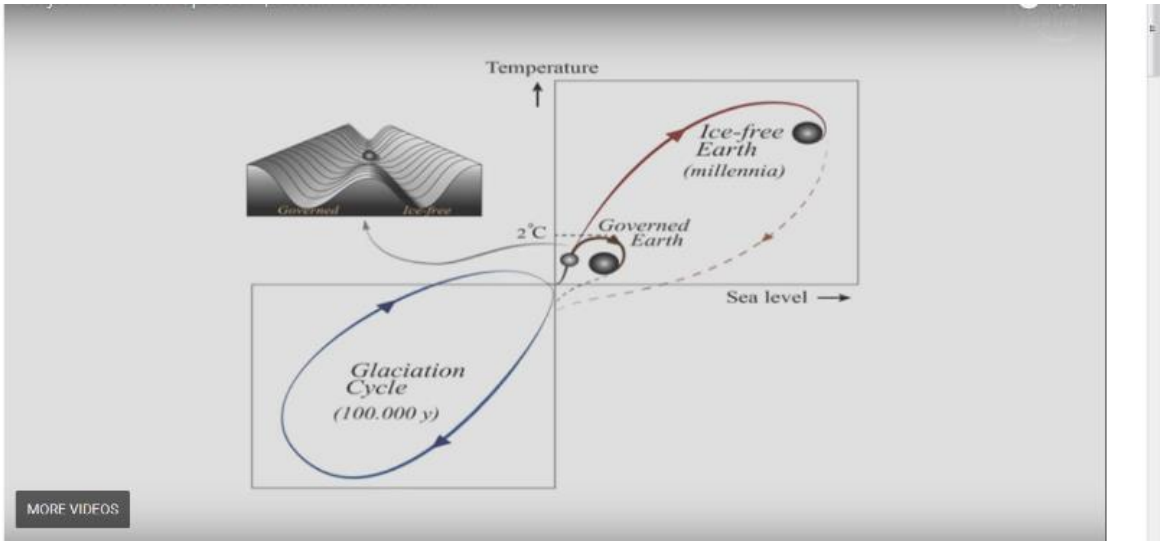
As stated earlier, I have little to contribute on my own. I have attempted to provide a few references, so that if anyone is interested in probing deeper, you could do so.

What is SDG 13? [1]

The purpose of SDG 13 is to 'Take urgent action to combat climate change and its impacts'. What is climate change? In order to answer this question, we need to recall two figures from our earlier blogs as under:



Average Surface Temperature past 100,000 Years (Source: MOOC - PB & HO)



Possibility of entering into an ice-free state (Source: WEF 2017: Beyond the Anthropocene - Stockholm Resilience Centre).

The first Fig.1 shows the historical variations in our Earth's average surface temperature over the past 100,000 years. It shows that the Earth was passing through the ice ages, with some variations over the past 90,000 years. This is also represented in the lower left quadrant in Fig. 2. Then, according to science, a small change occurred in the tilt of the Earth in its orbit around the sun, and this led to an end of the ice age and the beginning of the Holocene period. This almost coincided with the discovery of agriculture by humans, resulting in the establishment of river valley civilizations across the globe. This is marked by a red circle on Fig. 1 and corresponds to the small loop near the origin in Fig. 2. It shows the present condition on Earth. The average surface temperature is reported to be 0.8 degree Celsius. The Paris Agreement of 2015 aims at keeping the global warming within 1.5 to 2 degree Celsius. The larger loop at the top right box points out the highly risky potential of our Mother Earth entering into a completely unknown 'Ice-free Earth' if we fail to take appropriate climate action.

If we can collectively govern our Earth appropriately, we may reasonably expect the earth to follow the small loop, shown by the black curve. However, if we fail to do so, there is a good chance that the Earth moves into a completely unknown warming cycle, unknown to all forms of life on Earth.

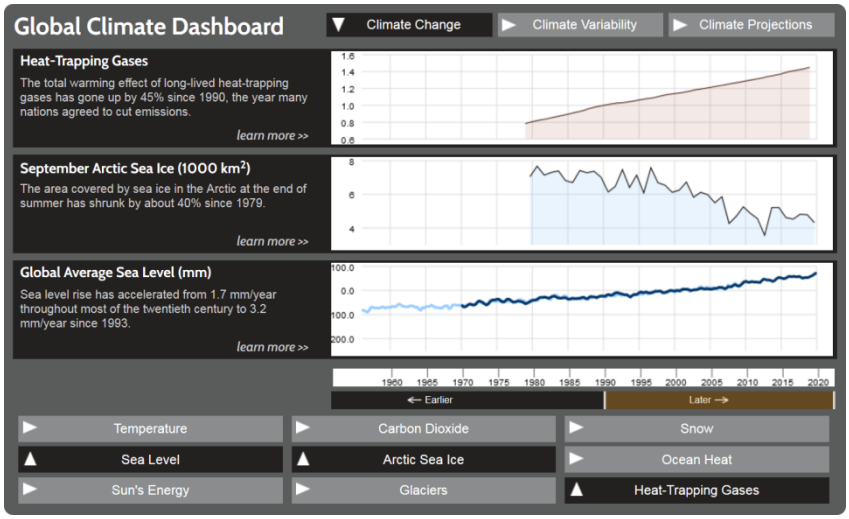
What does governing the Earth appropriately mean? The answer to this question is hidden in the idea of a Green House. In cold countries, it is customary to create a covered area for cultivating flowers and other vegetables that require a warmer environment. This is called a Green House, the cover helps to retain the inside a bit warmer. The same phenomenon is happening for the entire Earth. We burn fossil fuels to generate electricity, and emit CO_2 and other gases into the atmosphere. Our agricultural activities generate methane, CH_4. All these gases have accumulated in the atmosphere since the onset of the industrial revolution. These gases are acting as a cover, and are preventing the heat from Earth's surface to dissipate into outer space. This is causing gradual warming of the Earth. We must be able to govern our activities in such a way that we stop adding to the accumulation of these 'Green House Gases – GHGs' in the atmosphere, and eventually take scientific measures to lower the concentration of the GHGs to the pre-industrial level of 250 – 280 ppm (parts per million), as

against a record high of 417 ppm in May 2020. Source: https://www.forbes.com/sites/trevornace/2020/06/10/carbon-dioxide-levels-just-hit-417ppm-highest-in-human-history/?sh=5c7c3000229f

Why is this important? [2]

The consequences of entering into an 'Ice-free Earth' are extremely difficult to imagine. One sure effect would be the rise in the mean sea level, adversely affecting the lives of people living in low-lying coastal regions. This also endangers many island nations like Maldives, and there is a separate group within the UN. Natural disasters are already on the rise, including wildfires, droughts, hurricanes and floods. Many agencies are tracking climate change related parameters, and one link is https://www.climate.gov/maps-data. An example is shown below. You may look at temperature, CO_2, snow, sea level, arctic sea ice, ocean heat, sun's energy, glaciers and heat trapping gases (GHGs). The trends are rather alarming. We present some extracts from https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide below:

> "The global average atmospheric carbon dioxide in 2019 was 409.8 parts per million (*ppm* for short), with a range of uncertainty of plus or minus 0.1 ppm. Carbon dioxide levels today are higher than at any point in at least the past 800,000 years.
>
> "In fact, the last time the atmospheric CO_2 amounts were this high was more than 3 million years ago, when temperature was 2°–3°C (3.6°–5.4°F) higher than during the pre-industrial era, and sea level was 15–25 meters (50–80 feet) higher than today". Author: Rebecca Lindsey August 14, 2020.



The UN Secretary General has launched a Youth Advisory Group on July 27, 2020 and has called for continued climate action for small developing island states.

What are its indicators and targets? [3]

The indicators for SDG-13 are as under:

13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
13.2 Integrate climate change measures into national policies, strategies and planning

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

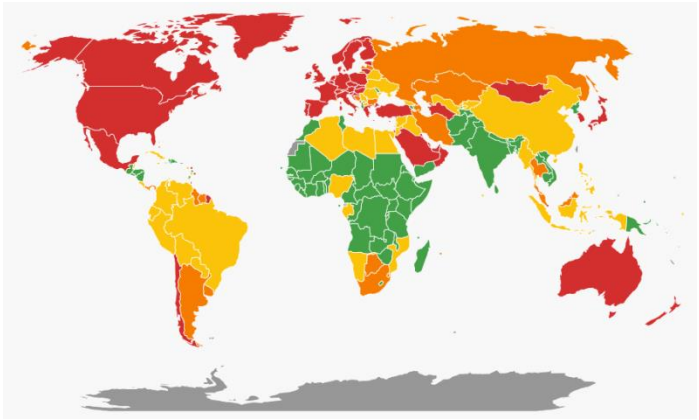
13.A Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

13.B Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities

* Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.

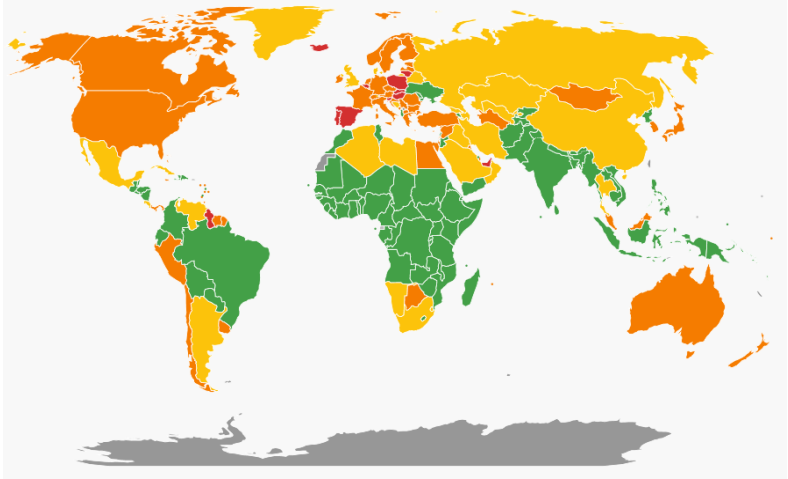
Where do we stand in India?

The following images [4] offer some national as well as global status on SDG-13 and trends:



Status of SDG-13 in 2020

The above figure shows that the status in India comes under the category 'SDG achieved' while the trend (below) shows that India is 'Maintaining SDG achievement'.



Trends SDG-13 in 2020

Specifically, India's standing in 2019 [5] is shown below:

SDG13 – Climate Action

Energy-related CO_2 emissions per capita (tCO_2/capita)	1.7	● ↑
Imported CO_2 emissions, technology-adjusted (tCO_2/capita)	0.1	● ••
People affected by climate-related disasters (per 100,000 population)	2,359.6	● ••
CO_2 emissions embodied in fossil fuel exports (kg/capita)	2.1	● ••

The standing in 2020 [6] is as under:

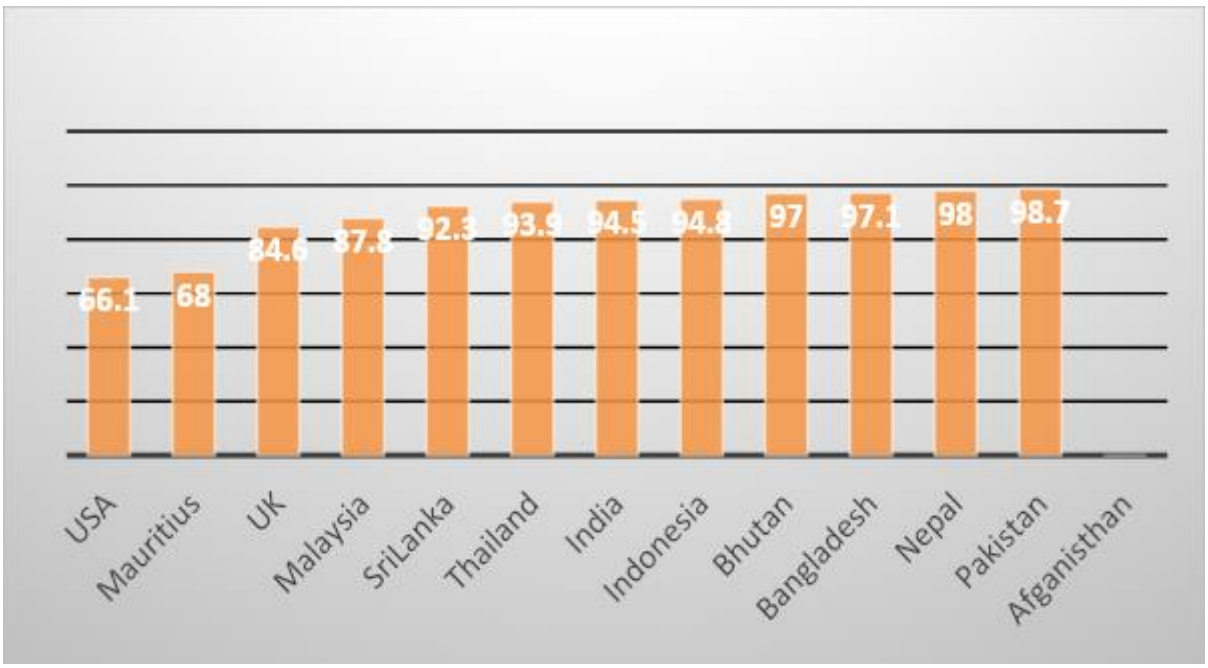
SDG13 – Climate Action

Energy-related CO_2 emissions (tCO_2/capita)	1.8	2017	● ↑
CO_2 emissions embodied in imports (tCO_2/capita)	0.1	2015	● ↑
CO_2 emissions embodied in fossil fuel exports (kg/capita)	1.6	2018	● ●

Major challenges | Significant challenges | Challenges remain | SDG achieved | Information unavailable

↓ Decreasing | → Stagnating | ↗ Moderately improving | ↑ On track or maintaining SDG achievement

In the following graph we offer a comparison of SAARC nations, 3 ASEAN countries and UK, and USA on the performance on SDG-13 in 2019. India and all other SAARC nations fair relatively better than others on this score, except Afghanistan (data not available) and Mauritius. The lowest in the comparison group on this index is the USA followed by Mauritius.



If we look at the indicators level, the comparison is shown below [5]:

This data should be cited as: Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2019): Sustain

Country	Normalized Score sdg13_co2pc	Dashboard Color sdg13_co2pc	Normalized Score sdg13_co2import	Dashboard Color sdg13_co2import	Normalized Score sdg13_affected	Dashboard Color sdg13_affected	Normalized Score sdg13_co2export	Dashboard Color sdg13_co2export
Afghanistan	98.30	green	97.23	green	95.37	red		
Bangladesh	97.94	green	97.99	green	92.55	red	100.00	green
Bhutan	96.86	green	94.57	green			99.50	yellow
India	92.73	green	98.27	green	86.89	red	100.00	green
Mauritius	84.96	orange	0.00	red	86.86	red	100.00	green
Nepal	98.81	green	97.62	green	95.42	red	100.00	green
Pakistan	96.20	green	100.00	green	98.73	yellow	99.99	green
Sri Lanka	95.76	green	92.14	green	81.26	red	100.00	green
Indonesia	92.89	green	95.19	green	99.46	green	91.64	yellow
Malaysia	66.45	red	100.00	green	93.43	red	91.12	yellow
Thailand	80.88	red	100.00	green	94.84	red	99.92	green
United Kingdom	75.76	red	68.17	red	99.88	green	94.69	yellow
United States	34.52	red	42.30	red	89.90	red	97.78	yellow
China	72.67	red	100.00	green	95.48	red	99.94	green
	CO_2 per capita prod		**CO_2 per capita imp**		**Climate dis. Affe. Pe**		**CO_2 per capita export**	

India has been conscious of the necessity of taking appropriate climate actions and developed a National Action Plan on Climate Change (NAPCC) way back in 2008. The plan emphasizes development of clean and efficient energy systems, resilient urban infrastructure, industrial efficiency (material and energy use); and taking care of the entire ecosystem covering agriculture, water use, forests, urban spaces and the fragile mountain eco-systems. Eight separate National Missions drive this initiative, supported by 32 state and union territory level plans, according to the Indian Voluntary National Report 2020 [9].

The Climate Change Performance Index 2020 report [8] is shown below:

Rank		Country	Score***	Categories
1.*		–	–	
2.		–	–	
3.		–	–	
4.	–	Sweden	75.77	
5.	▲	Denmark	71.14	
6.	▼	Morocco	70.63	
7.	▲	United Kingdom	69.80	
8.	▼	Lithuania	66.22	
9.	▲	India	66.02	
10.	▲	Finland	63.25	
11.		Chile	62.88	
12.	–	Norway	61.14	
13.	▲	Luxembourg	60.91	
14.	▼	Malta	60.76	
15.	▼	Latvia	60.75	
16.	▼	Switzerland	60.61	
17.**	▲	Ukraine	60.60	

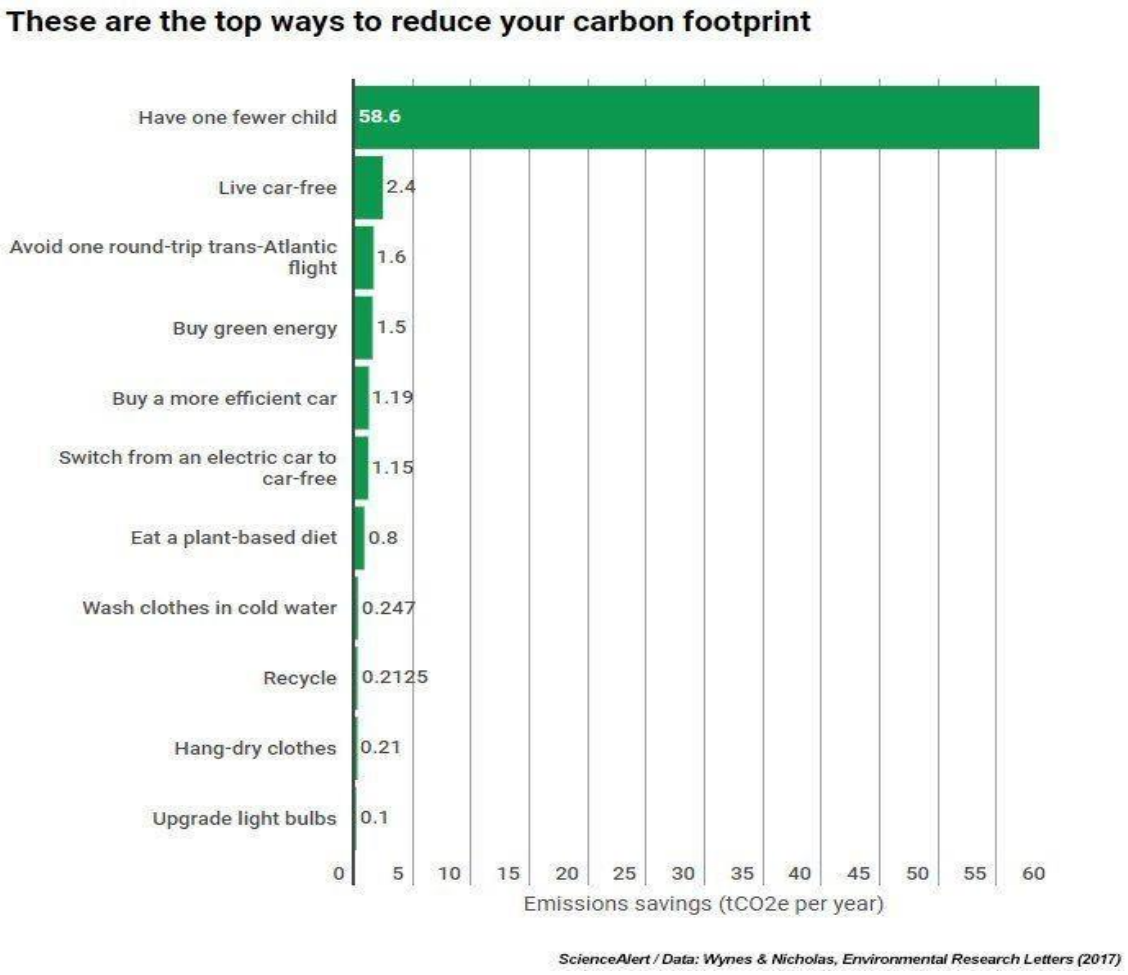
Legend: “GHG Emissions” (40% of overall score), - Blue
“Renewable Energy” (20% of overall score), - Green
“Energy Use” (20% of overall score) – Magenta and
“Climate Policy” (20% of overall score). - Orange

What can we do to support the goal?

The historic Paris Agreement of December 2015 was arrived at, with a view to limiting global warming to 1.5 – 2 ºC. This translates into reducing the GHG emissions by 7.6% annually, beginning this year. Ironically, the Covid-19 pandemic has perhaps enforced this reduction as noted by Earth Overshoot Day. As we have seen in the last month, this date fell on July 29 in 2018 and 2019. For 2020, this was August 22, reflecting the impact of Covid-19, and reduced consumptions globally. While it is nobody's case that it should require a catastrophe like Covid-19 to actually our consumption levels, it does illustrate that life is still possible, while we refrain from un-necessary consumption patterns.

Fortunately for India, we are well within the permitted ranges of CO_2 per capita emissions from production, consumption and imports, primarily due to perhaps our relatively lower stage of development, with a large segment of the population not having access to electricity, clean fuel, sanitation etc. As we try to overcome these shortcomings, our figures are bound to go up. The solution lies in attempting to embrace renewable energy sources, and taking up voluntary population control measures. The following graph [7] shows that the maximum savings result from having fewer children.

In addition, using mass transportation systems, avoiding air travel, using green energy, buying local produce and vegetarian food habits also contribute significantly to a reduction in our carbon footprint.



References

1. https://www.un.org/sustainabledevelopment/climate-change/ Accessed on October 09 2020 12:20 IST
2. 13_Why-it-matters.pdf
3. https://unstats.un.org/sdgs/indicators/indicators-list/
4. SDG Index Dashboard https://dashboards.sdgindex.org/#/IND Accessed on May 28 2020 13:10 IST
5. Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G. (2019): Sustainable Development Report 2019. New York: Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN).
6. Sachs, J., Schmidt-Traub, G., Kroll, C., Lafortune, G., Fuller, G., Woelm, F. 2020. The Sustainable Development Goals and COVID-19. Sustainable Development Report 2020. Cambridge: Cambridge University Press.
7. https://www.earthovershoot.org/what-we-do/facts.html Accessed on Nov. 2 2020.
8. https://www.climate-change-performance-index.org/ Accessed on Nov. 6, 2020.
9. VNR_2020_India_Report.pdf