

# 1. Emission norms for thermal power plants

**Topic: Environment and Ecology**



**In News:** The Union Ministry of Environment, Forest and Climate Change (MoEf&CC) September 5, 2022 once again granted more time to the thermal power plants for meeting the Sulphur dioxide (SO<sub>x</sub>) standards.

## More on the Topic:

- The deadline for the power plants within a 10-km radius of Delhi-NCR and cities with a population of more than 10 lakh has been extended from December 31, 2022 to December 31, 2024.
- Thermal power plants within 10 kilometres of the Delhi-National Capital Region or cities with million-plus populations were supposed to meet the SO<sub>x</sub> standards by the end of this year. The compliance deadline for this category of plants as well as the rest has now been pushed by two years.

## Emissions from Thermal Power Plants:

- The main emissions from coal combustion at thermal power plants are carbon dioxide (CO<sub>2</sub>), nitrogen oxides, Sulphur oxides, chlorofluorocarbons (CFCs), and airborne inorganic particles such as fly ash and soot; CO<sub>2</sub>, methane, and CFCs are greenhouse gases.
- **Coal-based thermal power stations contribute over half sulphur dioxide (SO<sub>2</sub>), 30% oxides of nitrogen (NO<sub>x</sub>), about 20% particulate matter (PM), etc.**
- Persistent burning of coal in thermal power stations and a delay in implementation of latest carbon capture storage technology are among major reasons of air pollution in India.

## The Emission Norms for Thermal Power Plants:

- To limit particulate matter, sulphur dioxide and nitrous oxide emission from thermal plants, India put in place a phased-approach that directs **440 coal-fired units** —

responsible for about 166,000 MW of power — to put in place measures to limit pollution by December 2022. This date has been differed now.

- The measures which has to be mandatorily set up include, acquiring flu-gas desulphurisation technology.
- **The removal of Sulphur Dioxide is called Flue Gas Desulphurization.** The method removes gaseous pollutants such as Sulphur Dioxide from exhaust flue gases generated from boilers and furnaces.
- As per Centre for Science and Environment (CSE) estimates, these norms can help reduce PM emissions by about 35%, NOx emission by about 70%, and SO2 emissions by more than 85% by 2026-27 against a business-as-usual scenario with no pollution control technologies.

Source: Indian Express

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## 2. Gemini North telescope

Topic: Science and Technology



**In News:** Gemini North telescope has captured brilliant image of two galaxies merging.

**More on the Topic:**

- As the two galaxies merge into each other, their opposing gravitational forces will trigger bursts of star formation and will distort the structures of both galaxies. Over a period that will last millions of years, these galaxies will continuously swing past each other in loops that tighten with each repetition.

**About Gemini Twin Telescope:**

- Gemini North is one of the twin telescopes at the International Gemini Observatory, Hawaii, which is operated by the United States National Science Foundation's (NSF) NOIRLab.
- Gemini North Telescope, located on the dormant volcano Mauna Kea on the island of Hawaii in the Northern Hemisphere, and

- Gemini South Telescope, located at the Cerro Tololo Inter-American Observatory on Cerro Pachon in Chile in the Southern Hemisphere.
- The two telescopes have been optimized for observations at infrared wavelengths by having their primary mirrors coated with silver.

Source: Hindu

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### 3. Climate Reparation

**Topic: Environment and Ecology**



**In News:** Facing the worst flooding disaster, Pakistan is demanding climate reparations from the Global North that is responsible for 92% of excess global carbon emissions.

**More on the Topic:**

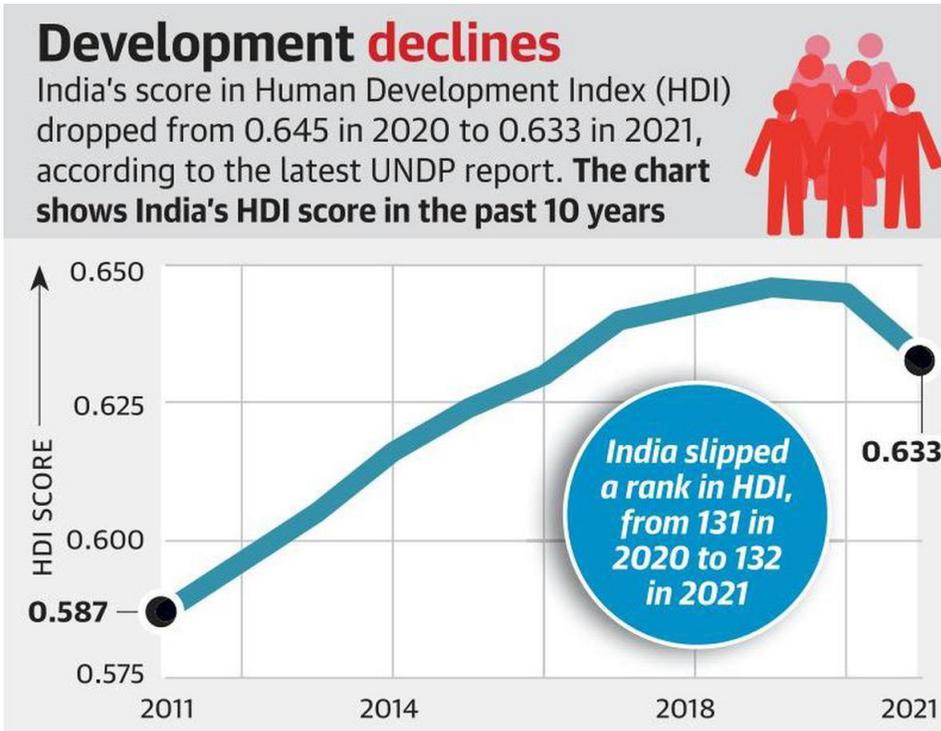
- Climate reparations refer to a call for money to be paid by the Global North to the Global South as a means of addressing the historical contributions that the Global North has made (and continues to make) toward climate change.
- **Countries in the Global North are responsible for 92% of excess global carbon emissions.**
- **Climate reparations are also about the need for acknowledgment and accountability** for the loss of land and culture - and how that has affected us in the Global South - as a result of climate change.
- **The element of accountability is what differentiates climate reparations from climate aid.**
- The demand for compensation for loss and damage from climate disasters is an extension of the universally acknowledged “Polluter Pays” principle.
- The call for climate reparations is one of the **key elements within demands for climate justice.**

Source: Hindu

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## 4. Human Development Index (HDI)

**Topic: Reports and Indices**



**In News:** India ranked 132nd among 191 countries and territories on the 2021 Human Development Index (HDI). It is published by UNDP.

### More on the Topic:

- Switzerland, Norway and Iceland topped the HDI 2021.
- India ranked 132nd among 191 countries and territories on the HDI 2021-2022. Last year, the country ranked 131.
- The report said around 90 per cent of countries registered a decline in their HDI value in 2020 or in 2021.
- People across the globe are feeling more distressed and insecure about their lives and the future, in the wake of the Covid pandemic.

### India Specific Findings:

- **India's latest HDI value of 0.633 places the country in the medium human development category**, lower than its value of 0.645 in the 2020 report.
- The report attributes the drop in HDI from 0.645 in 2019 to 0.633 in 2021 to India's falling life expectancy from 69.7 years to 67.2 years during the survey period.

- Among India’s neighbours, Sri Lanka (73rd), China (79th), Bangladesh (129th), and Bhutan (127th) are ranked above India, while Pakistan (161st), Nepal (143rd), and Myanmar (149th) are worse off.

**About Human Development Index:**

- Pakistani economist **Mahbub -ul-Haq** developed Human Development Index (HDI) as a measure to track progress on three key dimensions of human development ,
- **A long and healthy life, access to education, and a decent standard of living** in 1990 with the objective — **“people are the real wealth of nations”**.

**It is calculated using the following four indicators:**

- Life expectancy at birth,
- Mean years of schooling,
- Expected years of schooling, and
- Per capita Gross National Income.

**Source: Indian Express**

## 5. National Clean Air Program

**Topic: Environment and Ecology**



**In News:** A large number of cities under the National Clean Air Programme (NCAP) and non-NCAP cities need a substantial reduction in PM 2.5 levels to meet the national ambient air quality standards in all climatic zones.

**More on the Topic:**

- NCAP and non-NCAP cities are showing similar trends in PM 2.5 levels. The analysis stressed the need to adopt regional air quality planning for all cities and regions to improve overall air quality.
- As per the air quality analysis, **the NCAP has set a national level target of a 20-30% reduction in PM2.5 and PM10 concentrations by 2024** from the 2017 base year.
- But the latest performance assessment of NCAP cities by the Central Pollution Control Board (CPCB) for disbursement of performance-linked funds has considered only PM10 data that is largely coarse dust particles.
- As the monitoring of PM2.5 -- the tinier particles that are much more harmful -- is limited, a uniform assessment of cities based on PM2.5 reduction has not been considered for performance assessment.

**About NCAP:**

- National Clean Air Programme (NCAP), launched in 2019, is India's flagship program for better air quality in 132 cities.
- The plan includes **102 non-attainment cities, across 23 states and Union territories**, which were identified by the Central Pollution Control Board (CPCB) on the basis of their ambient air quality data between 2011 and 2015.
- Non-attainment cities are those that **have fallen short of the National Ambient Air Quality Standards (NAAQS) for over five years.**

Source: Indian Express

## 6. Sutlej-Yamuna Link Canal

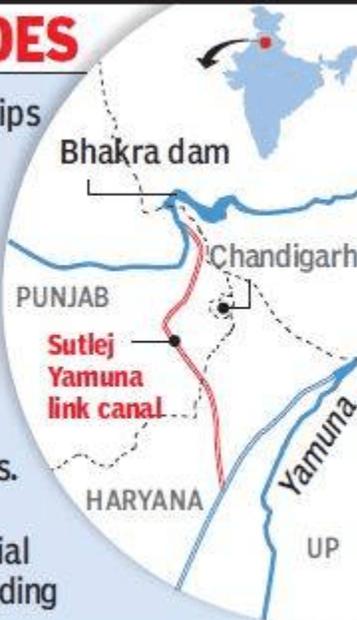
Topic: Geography

### DRAGGING ON FOR DECADES

- ▶ **1966** | Reorganisation of Punjab; it is decided that Haryana will get share of Sutlej water
- ▶ **1977** | Land acquisition starts for 214km Sutlej Yamuna link – 122km of it in Punjab and 92km in Haryana
- ▶ **1980** | Haryana completes its

portion. Punjab skips deadlines, moves SC repeatedly

- ▶ **2004** | SC orders Punjab to complete canal. State govt passes Act terminating water-sharing pacts. Matter referred to SC for presidential reference. Still pending



**In News:** The SC has directed Punjab and Haryana CMs to meet within the month to discuss on Sutlej Yamuna Link canal dispute.

**More on the Topic:**

- Satluj Yamuna Link Canal or SYL as it is popularly known, is an **under-construction 214-kilometer (133 mi) long canal in India to connect the Sutlej and Yamuna rivers.**
- However, the proposal met obstacles and was referred to the Supreme Court of India.
- It was defined as river water sharing between the states of Punjab and Haryana.
- Canal, once completed, will enable sharing of waters of rivers Ravi and Beas between Haryana and Punjab.
- **SYL canal will help in addressing water shortage in southern parts of Haryana.**
- Haryana completed its stretch of SYL Canal in 1980, while Punjab kept delaying the construction on pretext of non-availability of spare water.

**Source: Business Standard**

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## 7. INCOVACC Intranasal Vaccine

**Topic: Environment and Ecology**



**In News:** Bharat Biotech's iNCOVACC, the world's first intranasal vaccine for Covid-19 received approval for emergency use in India.

**More on the Topic:**

- The vaccine was jointly developed by Covaxin-maker Bharat Biotech and Washington University St. Louis.
- It is a **recombinant replication deficient adenovirus vectored vaccine** with a pre- fusion stabilized spike protein.
- It uses a **modified chimpanzee adenovirus**, which cannot replicate in body, to carry Covid spike protein to induce immunity.

**Advantages:**



- Nasal vaccines **stimulate antibodies in airway passages**, making them effective against viruses that attack respiratory tissues.
- They can be **self-administered, easing pressure on healthcare personnel** and making them more acceptable to people who fear needles.
- Delivering a vaccine in the form of nasal drops is **expected to make it more cost-effective** in low- and middle-income countries.

Source: Business Standard

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