Prelim Bits 10-01-2024 | UPSC Daily Current Affairs

Effects of industries on Dahej

Industrial pollution has destroyed local fisheries in Dahej near Bharuch, Gujarat.

Dahej

- **Location** - Near the ancient port site of ***Barygaza*** (near today's Bharuch) on the ***Gulf of Khambhat,*** Gujarat.
- **Economic importance** - It began to be developed as a ***Special Economic Zone (SEZ)*** in 1990.
- It is one of the four ***Petroleum, Chemical and Petrochemicals Investment Regions (PCPIR)*** in the country.

- **Ecological significance** - The freshwater of the Narmada enters the saline waters of the Gulf of Khambhat in Dahej.
- Many types of sea life including shrimp, bumla, salmon, boi, makul are found here.
- It is also the breeding ground of the ***Hilsa*** ('palwa' in Gujarat) fish.

Gujarat has the longest coastline in the country (1,600 km) and an Exclusive Economic Zone covering an area of 0.214 million square kilometres.

Effects of industries on Dahej

- Dahej is witnessing the increasing stench of chemicals in the air, turbid sea water and decreasing of fish population.
- The Gujarat Ecology Commission, in its environmental strategy for the year 2014-2019, found Bharuch district to be ***critically polluted*** in terms of industrial

waste.

Reference

Down to earth | Just Transition in Petrochemicals

Nine-degree Channel

The Indian Air Force (IAF) has proposed to set up a forward fighter airbase in Minicoy Islands, to safeguard the sea lanes of communications and to keep the Arabian Sea free from non-state actors in the region.

- **Location** - In the Indian Ocean between the Laccadive Islands of Kalpeni and Suheli Par, and Maliku Atoll of Minicoy.
- **Features** - Approximately 200 km wide with a depth of 2597 metres.

Channel	Location
8 Degree Channel	Minicoy Island and Maldives
9 Degree Channel	Laccadive Islands and Minicoy Island
10 Degree Channel	Little Andaman and Nicobar

Lakshadweep

- An archipelago consisting of 36 islands.
- India's smallest and ***uni-district*** Union Territory.
- Almost all the inhabited islands are ***coral atolls.***
- **Capital -** Kavaratti
- The territory falls under the jurisdiction of the ***Kerala High Court.***

References

1. Hindustan Times | Proposed military base at Minicoy Islands
2. Britannica | Lakshadweep

Rock Glaciers

A study has pointed out that the 100 active permafrost structures identified in Jhelum basin, can cause catastrophic disasters in future.

- A rock glacier is a *mass of rock, ice, snow, mud, and water* that moves slowly down a mountain under the *influence of* ***gravity*****.**
- **Formation** - They typically form in ***mountainous regions*** where there is a combination of permafrost, rock debris, and ice.
    - A pre-existing glacier may accumulate debris and rocks as it moves.
    - Over time, if the glacier recedes or thaws, the debris-covered ice can transform into a rock glacier.

  Permafrost - Thick ground layers frozen for at least 2 years

- **Types** - They are classified as ***'active' or 'relict'*** to indicate the status of permafrost within them, identified by the appearance of the rock surfaces.



- **Rock glaciers in Kashmir Himalayas** - The Kashmir Himalayas dotted with these rock glaciers is facing deglaciation (retreat or melting of ice sheets and glaciers).
- The study has pointed that rock glaciers will become a more common mountain landform in the future, as debris concentrations increase in the melting glaciers due to global warming.
- The researchers found that some rock glaciers near glacial lakes in the region such as *Chirsar Lake and Bramsar Lake* particularly increase the risk of *glacial lake outburst floods (GLOFs).*

Reference

Down to Earth | Active permafrost structures identified in Jhelum basin

Halo orbit

Aditya-L1 spacecraft was successfully placed in halo orbit around the Lagrangian point (L1).

- A halo orbit is a *periodic, 3-dimensional orbit* that occurs near one of the L1, L2, or L3 Lagrange points.
- These points are locations in space where the gravitational pull from two celestial bodies is equal.
- It is called a halo orbit because the tracked orbit looks like a halo around the moon.



Reference

The Hindu | Aditya L1 placed in halo orbit

Air Quality in Indian Cities

The Centre's ambitious attempt to improve air quality in some of India's most polluted cities suggests that a majority of Indian cities are far from making significant progress.

- The goal of the National Clean Air Programme (NCAP) is to reduce average particulate matter (PM) concentrations 40% by 2026 (compared to 2017) in 131 cities.

  PM 2.5 is considered the most dangerous grade of pollutant.

- The aim was to cut pollution 20-40% by 2024 in cities, which was later shifted to 2026.
- **Status -** Delhi has seen average annual PM 2.5 levels decline by 5.9%.
- Navi Mumbai has seen a 46% rise in PM 2.5 levels and Mumbai saw a 38.1% rise and Ujjain, a 46% rise.
- Jaipur and Visakhapatnam saw PM 2.5 increase 13% and 12% rise respectively and Pune 10%.
- **Reduction -** Sharp decline in PM 2.5 from 2019-2023 were Varanasi, with a 72%

average reduction in PM 2.5 levels and 69% reduction in PM 10 levels.

- Agra too reported a 53% decline, as did Jodhpur with a 50% decline.
- **PM 10 -** With respect to PM 10 levels, apart from Varanasi and Talcher, no other cities have met the 40% reduction target yet.

PM10 is particulate matter 10 micrometers or less in diameter.

Reference

The Hindu – Majority of Indian cities far from clean air target

