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For UPSC CSE

11-12 August 2024

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SAMYAK IAS, NEAR RIDDHI-SIDDHI, JAIPUR

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3. Perseid meteor shower - The Hindu
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8. Three Indian Ocean structures named Ashoka, Chandragupt and Kalpataru - Indian Express

Economy

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20. How Centre's Clean Plant Programme plans to boost production of fruits - Indian Express

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Art and Culture

Relevance: Indian Culture - Salient aspects of Art Forms, Literature and Architecture from ancient to modern times

1. Gotipua/ Bandha Nritya - The Hindu

Gotipua/ Bandha Nritya

- **Literal meaning:** In Oriya language, "Goti" means "single" and "Pua" means "boy".
- **Performance:** Gotipua dance is performed in Orissa by young boys who dress up as female to praise Lord Jagannath and Lord Krishna. The boys start to learn it at an early age until the adolescence.
- **Distribution:** Raghurajpur, Odisha (near Puri) is a historic village known for its Gotipua dance troupes.
- **Music:** The dance of the Gotipuas is accompanied by traditional Odissi music with the primary percussion being the Mardala(Percussive Instrument).

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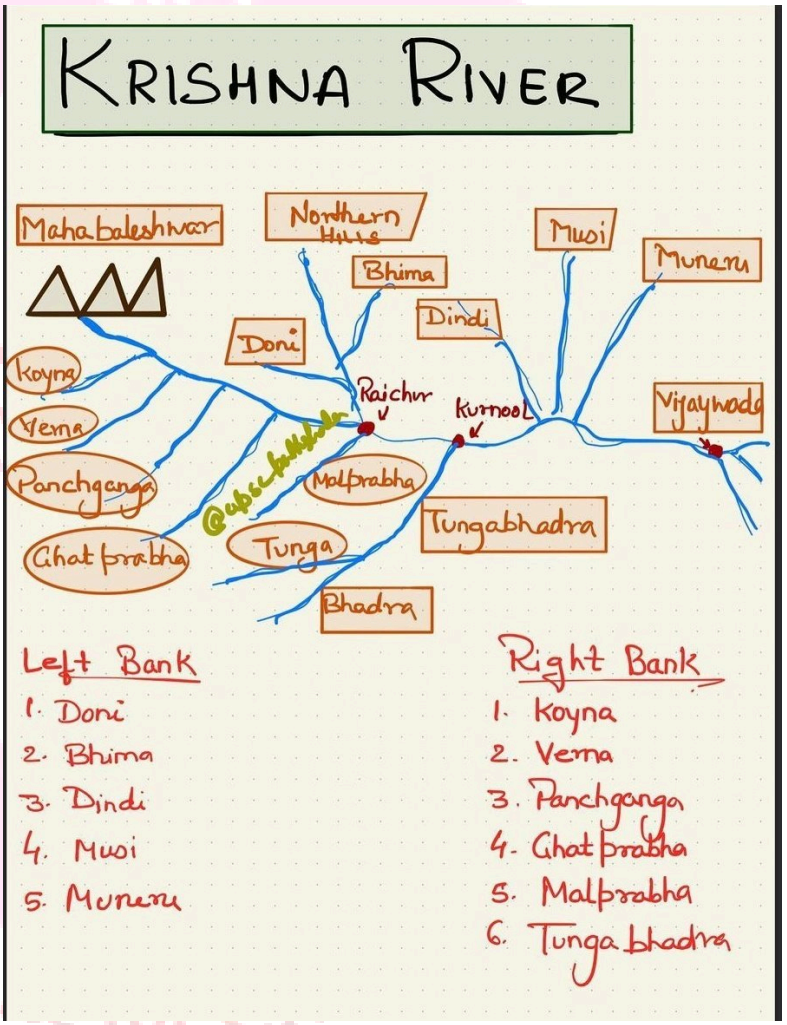
Geography

Relevance: Distribution of Key Natural Resources

2. Tungabhadra River - The Hindu

- **About:** A major river in the south Indian peninsula, a tributary of the Krishna River.
- **Formation:** Formed by the union of Tunga and Bhadra rivers and hence the name.
- **Origin:** Both Tunga and Bhadra Rivers originate on the eastern slopes of the Western Ghats.
- **Confluence:** The two rivers merge at Koodli in the Shimoga district of Karnataka, giving birth to the Tungabhadra River.
- **Course:** It joins the Krishna River at Sangamaleshwaram in Andhra Pradesh.
- **Mouth:** The Krishna River finally ends in the Bay of Bengal.
- **Length:** ~ 531 km
- **Catchment area:** 28,000 sq km

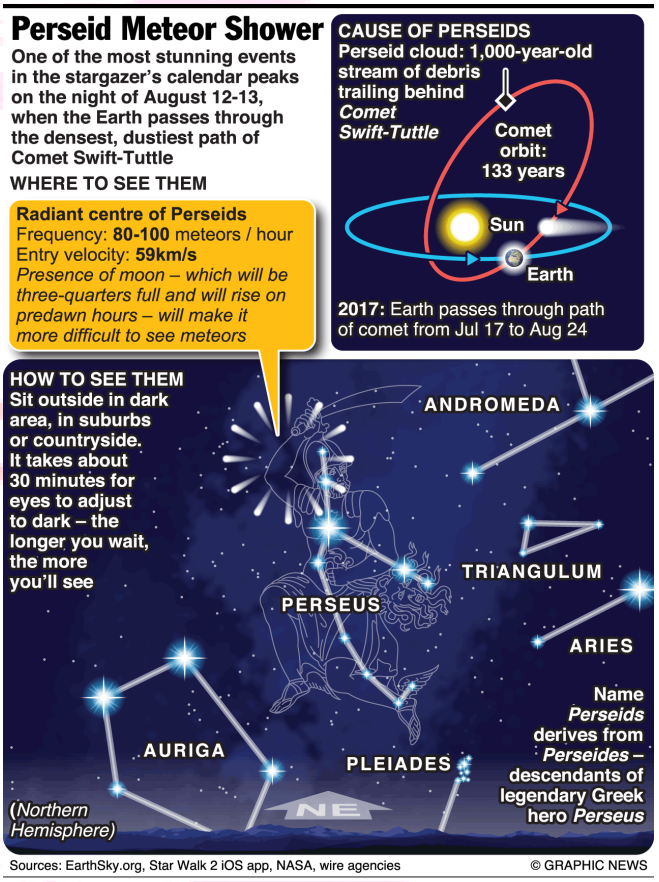


- **States:** Karnataka and Andhra Pradesh.
- **Major Tributaries:** Varada and Hagari (Vedathy) River.
- **Major Dams:** Tunga Anicut Dam, Bhadra Dam, Hemavathy Dam, Tungabhadra Dam.

Relevance: Important Geophysical Phenomena

3. Perseid meteor shower - The Hindu

- **Literal meaning:** Perseid is believed to be derived from the Perseus constellation.
- **Perseids:** Usually swift and bright, leave a trail of light and colour behind them as they traverse through the night sky - ~ 100 meteors seen per hour.
- **Generate fireballs:** Fireballs are big bursts of light and color that last longer than a regular shooting star. This happens because fireballs come from larger pieces of material from comets.



Meteor Shower

- **Meteor:** A space rock that comes into Earth's atmosphere. As it falls, the air makes it really hot because of the friction.
- **Why a bright streak:** Not the rock itself, but the hot air around it.
- **Occurrence:** When many space rocks hit the atmosphere over Earth together, we call it a meteor shower.

Relevance: Geography of the World and India

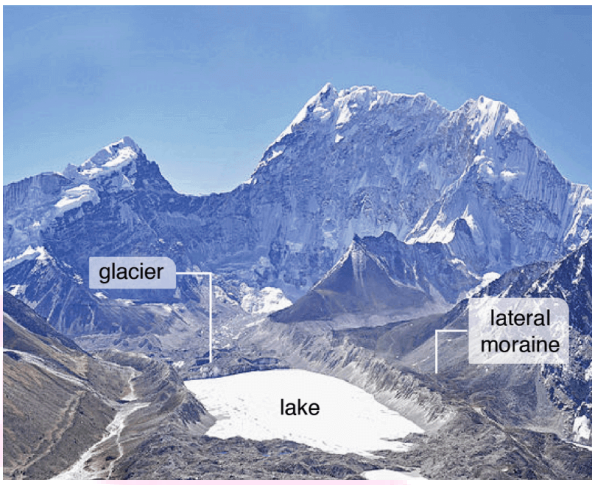
4. Glacial lakes multiply in Himachal and Tibet, poses threat to lives and infra downstream - The Hindu

Context

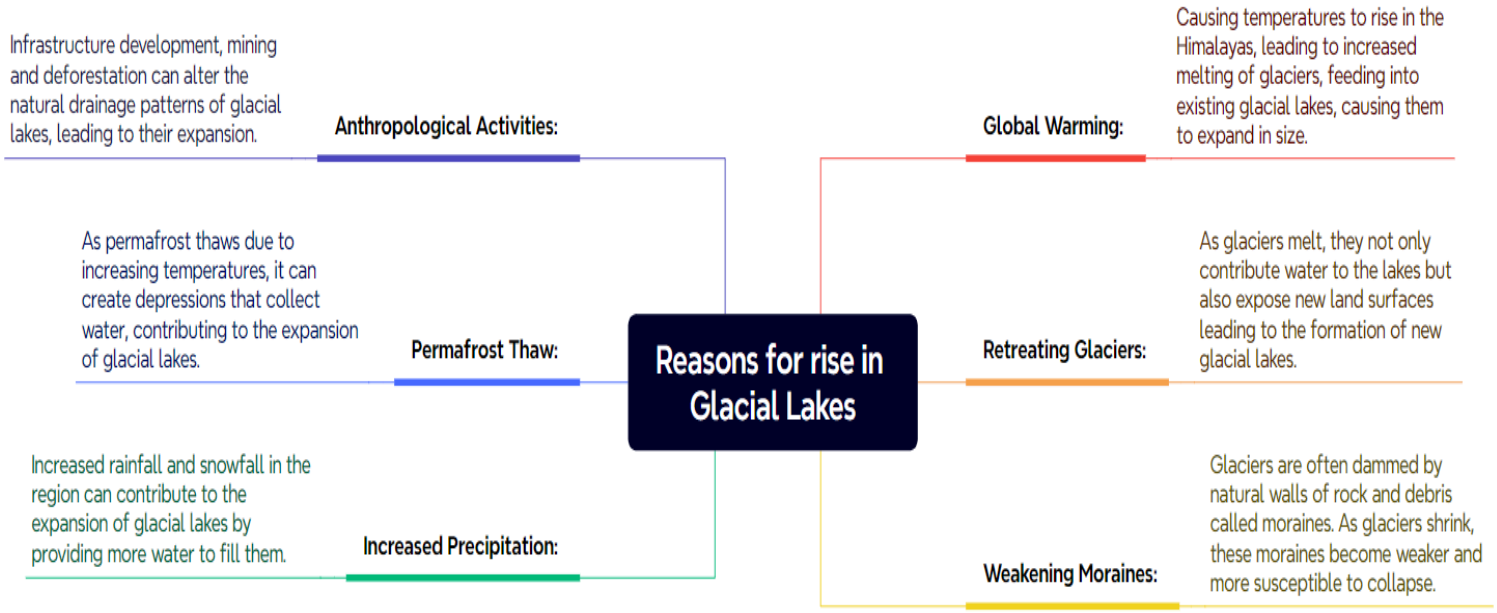
The number of glacial lakes in the Satluj river catchment area has almost doubled from 562 in 2019 to 1,048 in 2023. The catchment area of the Satluj basin was studied from upstream of Jhakri to the Mansarover Lake in Tibet, in the Trans Himalayan Region from where the river originates.

Glacial lakes

- **About:** Large bodies of water that sit in front of, on top of, or beneath a melting glacier.
- **Lake formation:** As a glacier withdraws, it leaves behind a depression that gets filled with meltwater, thereby forming a lake.
- **Damming:** Such lakes are mostly dammed by unstable ice or sediment composed of loose rock and debris.



Reasons for rise in Glacial Lakes (Mains Analysis)



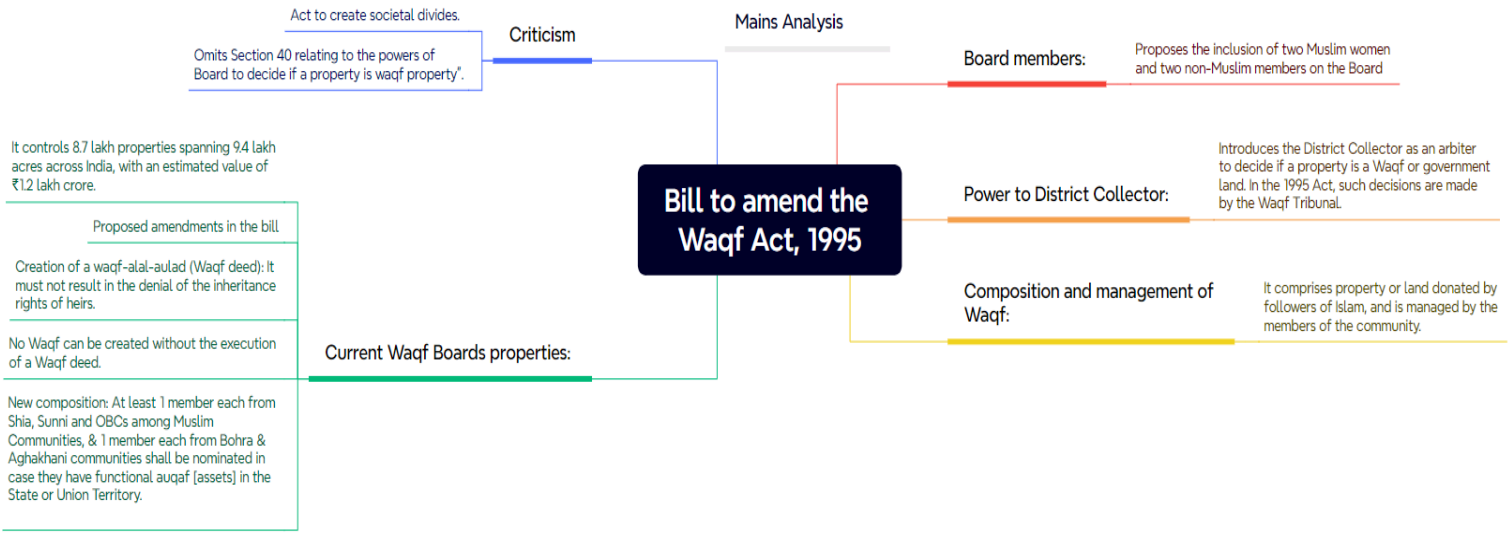
Polity

Relevance: Parliament and State Legislatures—Structure, Functioning, Conduct of Business, Powers & Privileges and Issues Arising out of these

5. On amendments to the Waqf Act - The Hindu

Context

Recently, the Union government introduced a Bill in the Lok Sabha to amend the 1995 Waqf Act (1995 Act). The proposed amendments seek to significantly reform the law by enhancing the Centre's regulatory authority over waqf properties and, for the first time, permitting the inclusion of non-Muslim members in Waqf Boards.



Waqf Board (Prelims)

- **About:** A legal entity capable of acquiring, holding and transferring property. It can sue and be sued in court.
- **Functions:** It administers Waqf properties, recovers lost properties and sanctions the transfer of immovable Waqf properties through sale, gift, mortgage, exchange, or lease, with at least two-thirds of the board members voting in favour of the transaction.

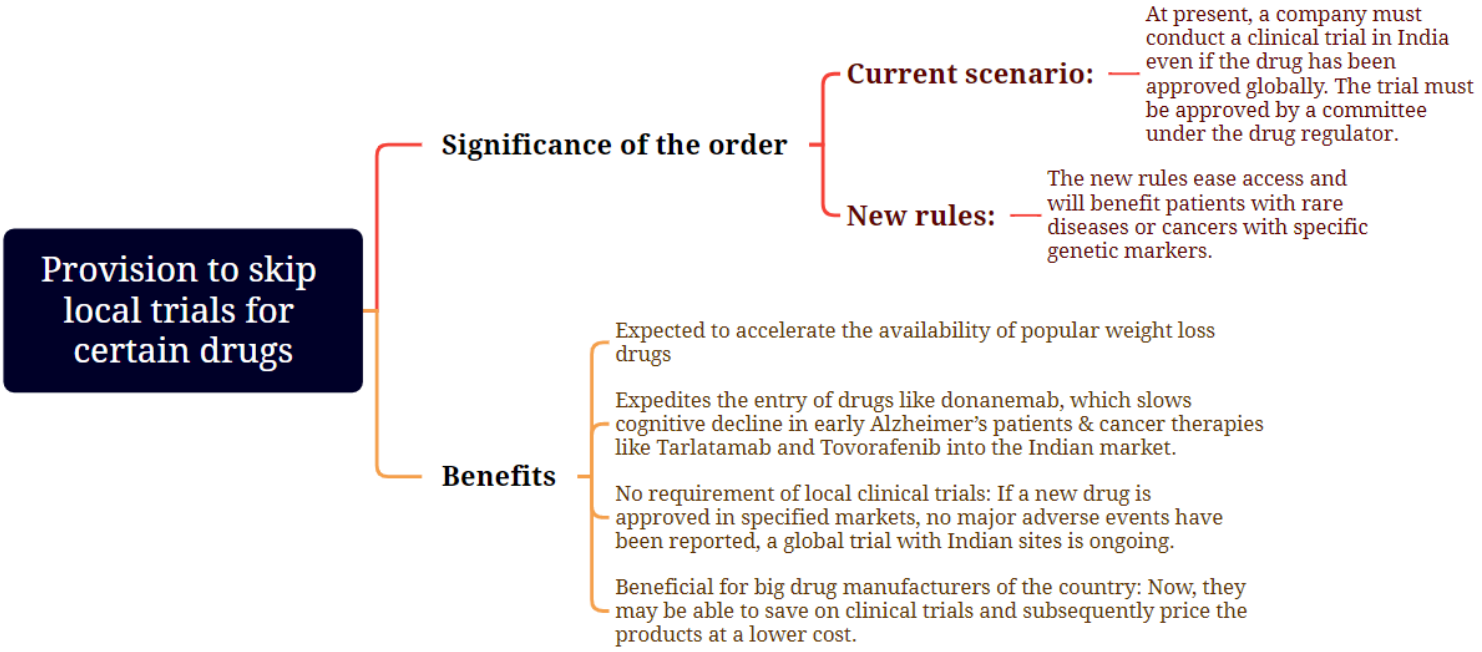
Relevance: Parliament and State Legislatures

6. Provision to skip local trials for certain drugs: regulator's rationale - Indian Express

Context

New drugs for weight loss, Alzheimer's or cancer, that have been approved by top regulatory authorities abroad but are awaiting approval in India, will no longer be required to undergo clinical trials in the country. Pharma companies can now obtain regulatory clearance to sell their products in India if they can demonstrate that their new drugs offer a "significant therapeutic advance over the current standard of care," and have been approved by regulators in any of six countries or regions - United States, United Kingdom, Japan, Australia, Canada, and the European Union — all known for their rigorous regulatory approval process.

Significance of the order (Mains Analysis)



World Affairs

Relevance: Effect of Policies and Politics of Developed and Developing Countries on India's interests, Indian Diaspora

7. Will Saudi's new law aid migrant workers? - The Hindu

Context

The Kingdom of Saudi Arabia, one of the world's largest recipients of migrant domestic workers (MDWs), will roll out a new domestic workers law in September. The six GCC states (Saudi Arabia, the UAE, Qatar, Kuwait, Oman, and Bahrain) employ close to 5.5 million migrant domestic workers, and all of them exclude MDWs from labour laws, with only four having passed specific domestic worker laws.

Migrants working in Saudi Arabia

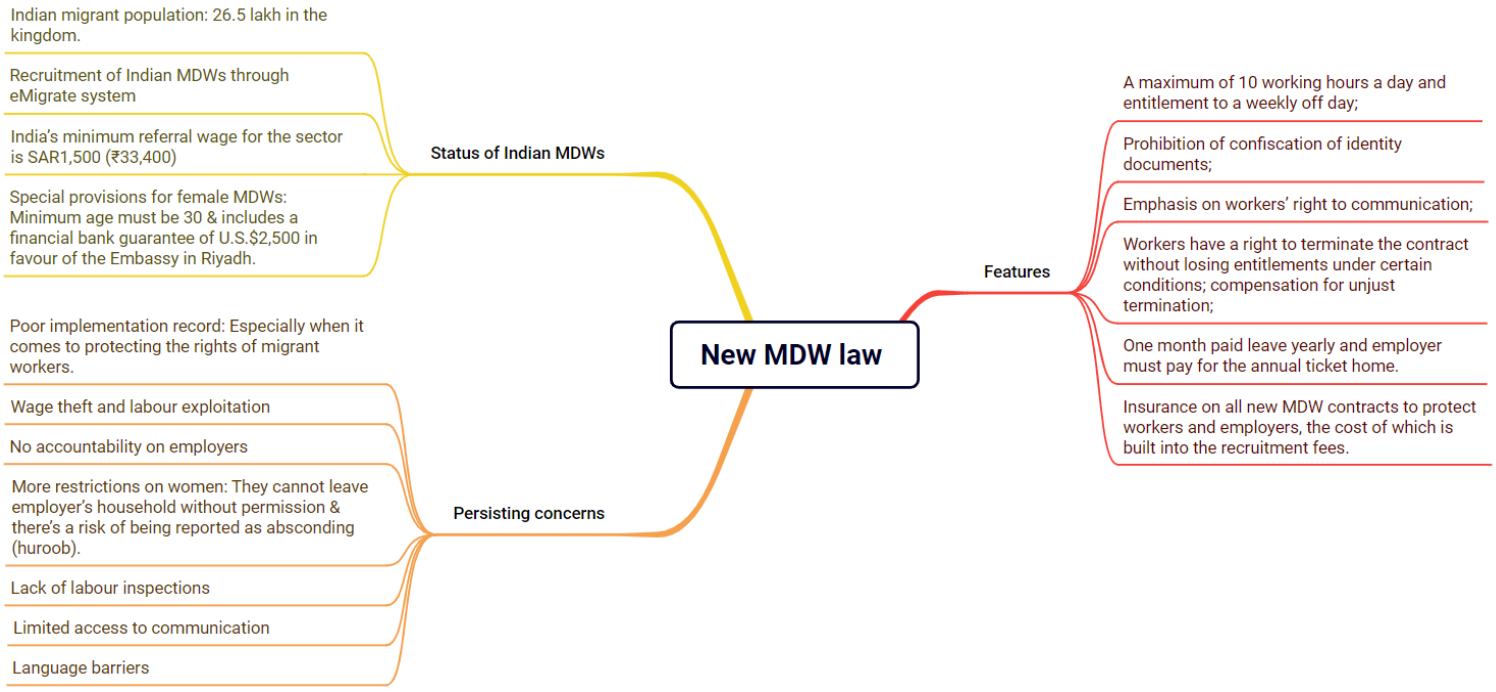
- **Total migrant domestic workers:** 39,13,925 migrant domestic workers with 27,32,344 males and 11,81,581 females, making up 25% of the total workforce.
- **Impact of exclusion of these workers from the labour law:** It leaves huge gaps in protection, as monitoring mechanisms such as labour inspections, complaints mechanisms, and the Wages Protection System do not apply to the sector.
- **Increase in vulnerabilities:** Further exacerbated by the systemic marginalisation of migrant workers under the Kafala system as thr employer-tied visa system leaves lower-income migrant workers at the absolute mercy of their sponsors.
- **Issues for migrant workers in Saudi Arabia:**
    - Female MDWs face extreme abuse at the hands of their employers within households and by officials when they seek remedy.
    - Justice mechanism fails migrant workers in general.
    - No minimum wage system and mandatory referral wages apply only when prescribed in bilateral agreements by origin countries.
    - MDWs are not only paid poorly but there are no clear calculations for overtime, though almost all of them are overworked.

Migrant domestic workers

- **Meaning:** Employed by individuals to render services in their household.
- **Cause of issues:** Exclusion from labour laws and the stranglehold of the Kafala system.

Working of Kafala system

Features of the new MDW law



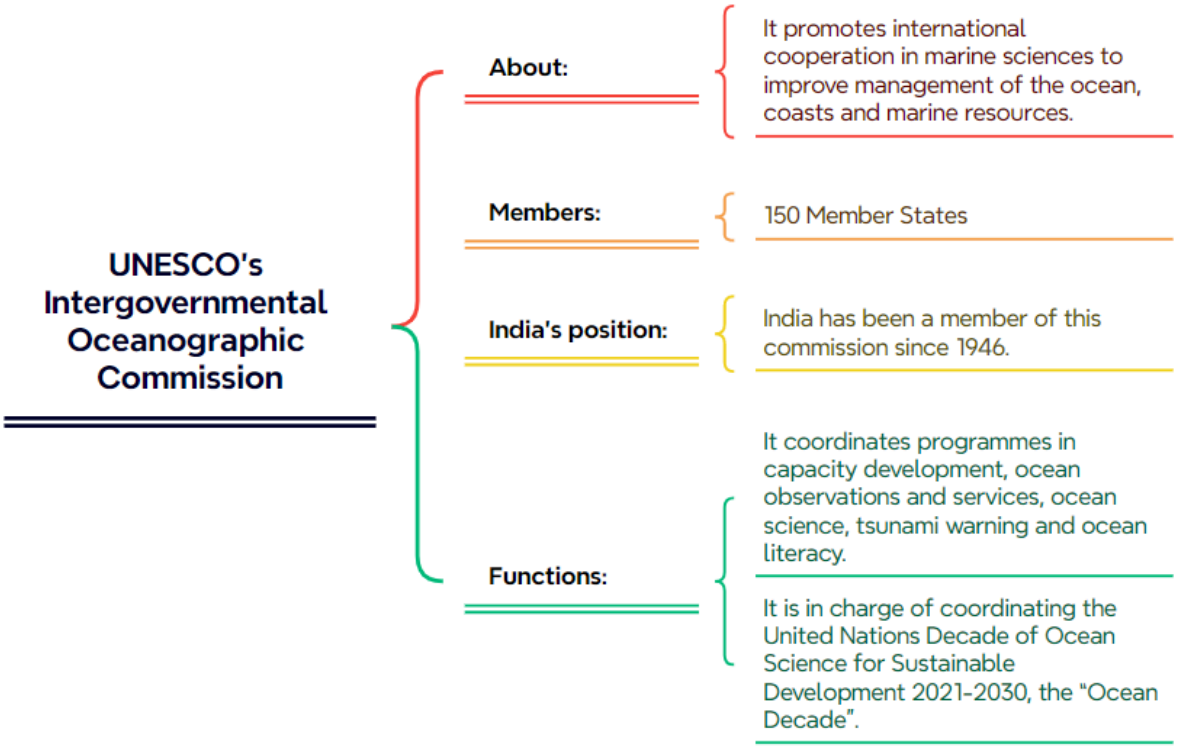
Relevance: Bilateral, Regional and Global Groupings and Agreements involving India and/or affecting India's interests

8. Three Indian Ocean structures named Ashoka, Chandragupt and Kalpataru - Indian Express

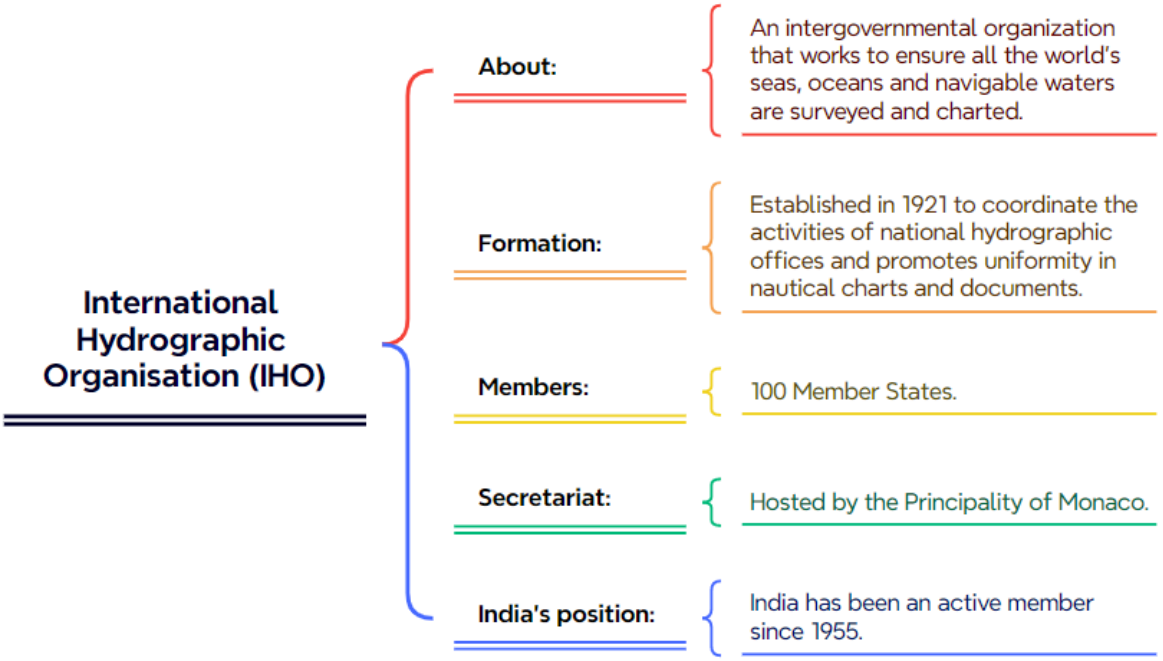
Context

Recently, three underwater geographical structures located in the Indian Ocean for which the International Hydrographic Organization (IHO) and UNESCO's Intergovernmental Oceanographic Commission (IOC) have awarded names originally proposed by India.

UNESCO's Intergovernmental Oceanographic Commission

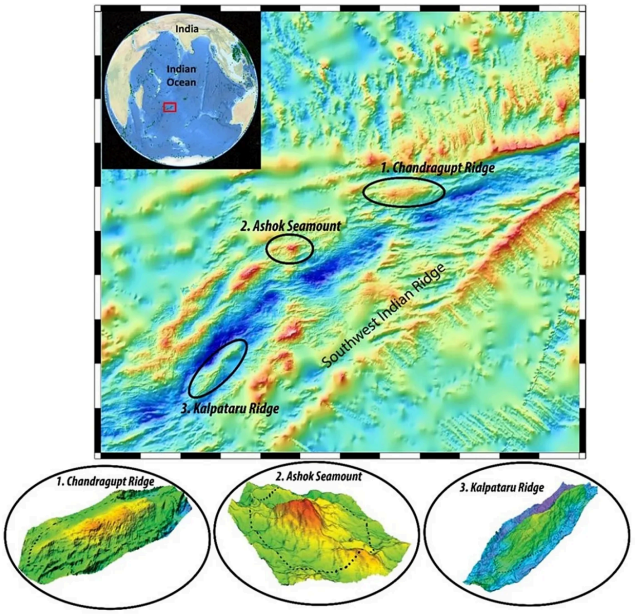


International Hydrographic Organisation (IHO)



Seven structures in the Indian Ocean named after India

- **Discovery of 3 recently named structures:** Discovered by oceanographers from the National Centre for Polar and Ocean Research (NCPOR), Goa.
- **Location:** Located along the Southwest Indian Ridge area of the Indian Ocean & discovered during an international survey exploration programme.



- **Previously named structures:**
  - **Raman Ridge (accepted in 1992):** Discovered in 1951 by a US oil vessel named after Physicist and Nobel Laureate Sir CV Raman.
  - **Panikkar Seamount (accepted in 1993):** Discovered by the India research vessel Sagar Kanya named after NK Panikkar, a renowned oceanographer.
  - **Sagar Kanya Ridge (accepted in 1991):** A seamount named after the research vessel itself.
  - **DN Wadia Guyot:** Named after a geologist DN Wadia when an underwater volcanic mountain (guyot) was discovered in 1992 by Sagar Kanya.
- **3 new structures:** Named after the rulers of the Mauryan dynasty namely Ashoka Seamount and the Chandragupta Ridge and one more was named Kalpataru Ridge in the Indian Ocean.

Economy

Relevance: Indian Economy and issues

9. FDI in manufacturing rises 69% during 2014-24 - Indian Express

FDI in manufacturing rises 69% during 2014-24

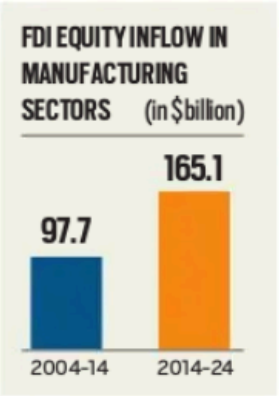
Foreign direct investment inflows in the manufacturing sector during 2014-24 rose by 69 per cent to $165.1 billion, Parliament was informed recently.

In a written reply to the Rajya Sabha, Minister of State for Commerce and Industry Jitin Prasada said that India is rapidly emerging as a preferred country for foreign investment in the manufacturing sector.

$383.50 billion: Total FDI inflow reported in the country during the past five financial years (2019-20 to 2023-24)

Replying to a separate question, Prasada said that the initiatives taken by the Government have led to a decline in dependency on imports in several sectors including mobiles

The import of mobile phones has decreased from Rs 48,609 crore in 2014-15 to Rs 7,674 crore in 2023-24



On the other hand, the exports have increased from Rs 1,566 crore in 2014-15 to more than Rs 1,28,982 crore in 2023-24, he said

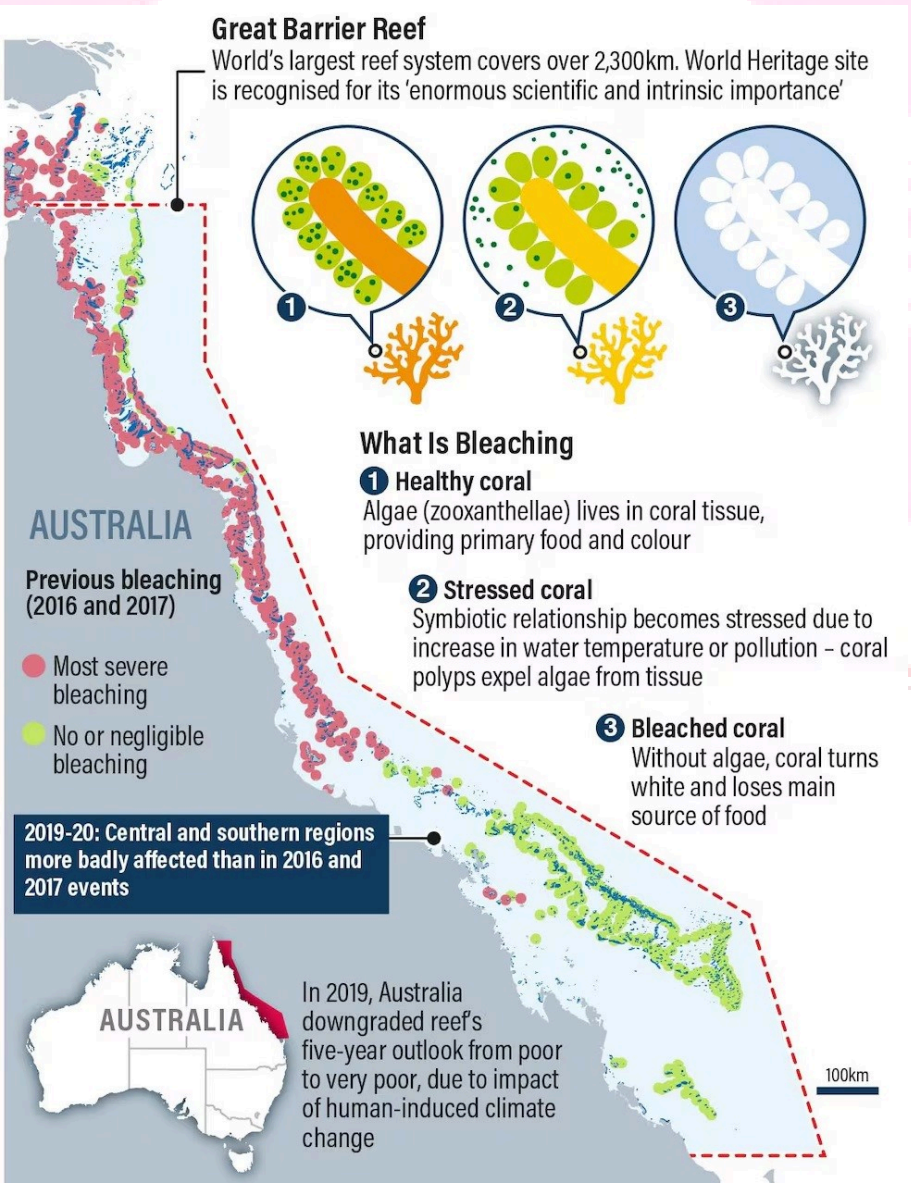
Environment

Relevance: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment

10. Record temperatures in Great Barrier Reef seen in last decade - The Hindu

Context

Water temperatures in and around the Great Barrier Reef, Australia, in the past decade have been the warmest in the past 400 years. These periods of warming increase the risk of mass coral bleaching and mortality and are likely driven by human-induced climate change.



Consider the following statements: (2018)

1. Most of the world's coral reefs are in tropical waters.
2. More than one-third of the world's coral reefs are located in the territories of Australia, Indonesia and Philippines.
3. Coral reefs host far more number of animal phyla than those hosted by tropical rainforests.

Which of the statements given above is/are correct?

A. 1 and 2 only
B. 3 only
C. 1 and 3 only
D. 1, 2 and 3

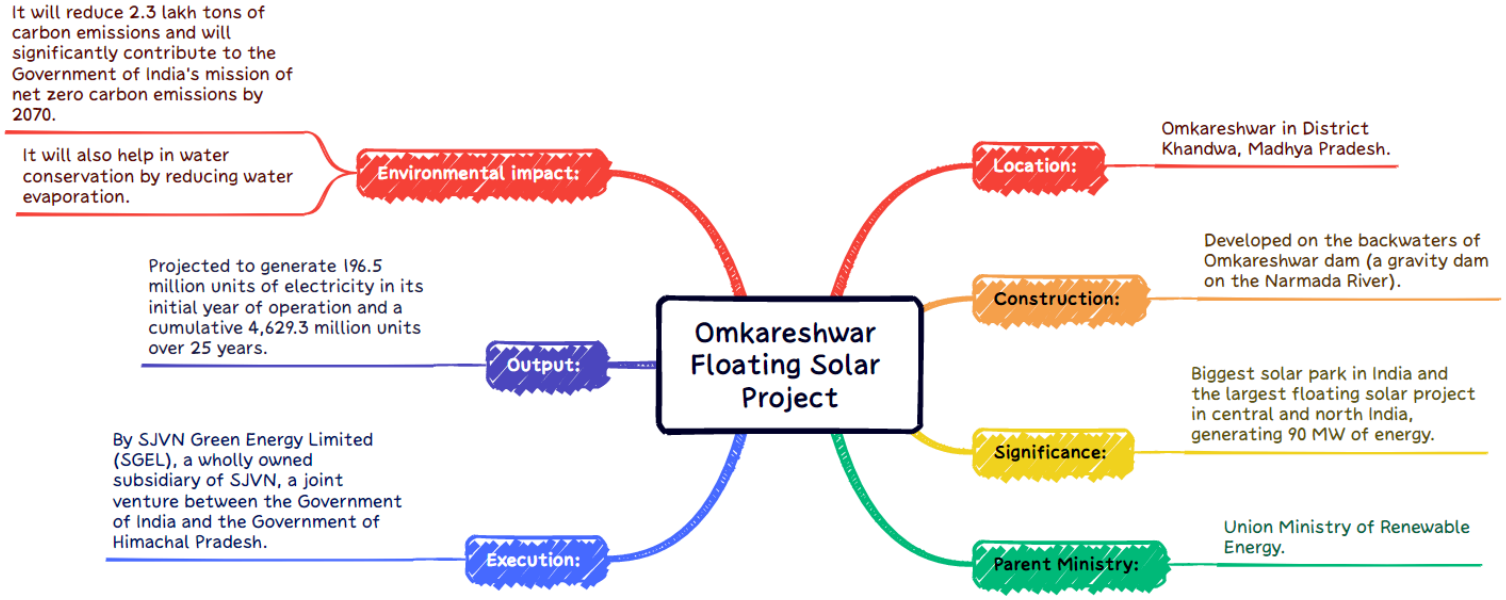
Relevance: Conservation, Environmental Pollution and Degradation

11. North India's largest floating solar project commissioned - Indian Express

Context

Madhya Pradesh has commissioned the largest floating solar project in central and north India, generating 90 MW at Omkareshwar.

Omkareshwar Floating Solar Project



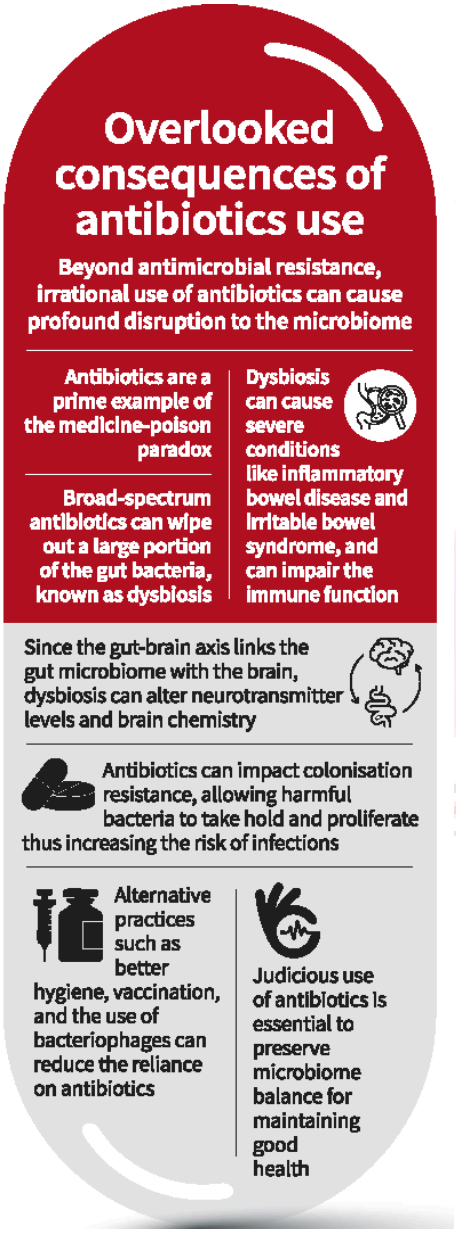
Sci and tech

Relevance: Science and Technology- Developments and their Applications

12. Hidden dangers of irrational use of antibiotics on microbiome - The Hindu

Context

Antibiotics are often hailed as miracle drugs, capable of curing once-deadly infections and saving countless lives. However, the overuse and misuse of antibiotics in humans, animals, and agriculture have severe and often overlooked consequences.



Relevance: Achievements of Indians in Science & Technology

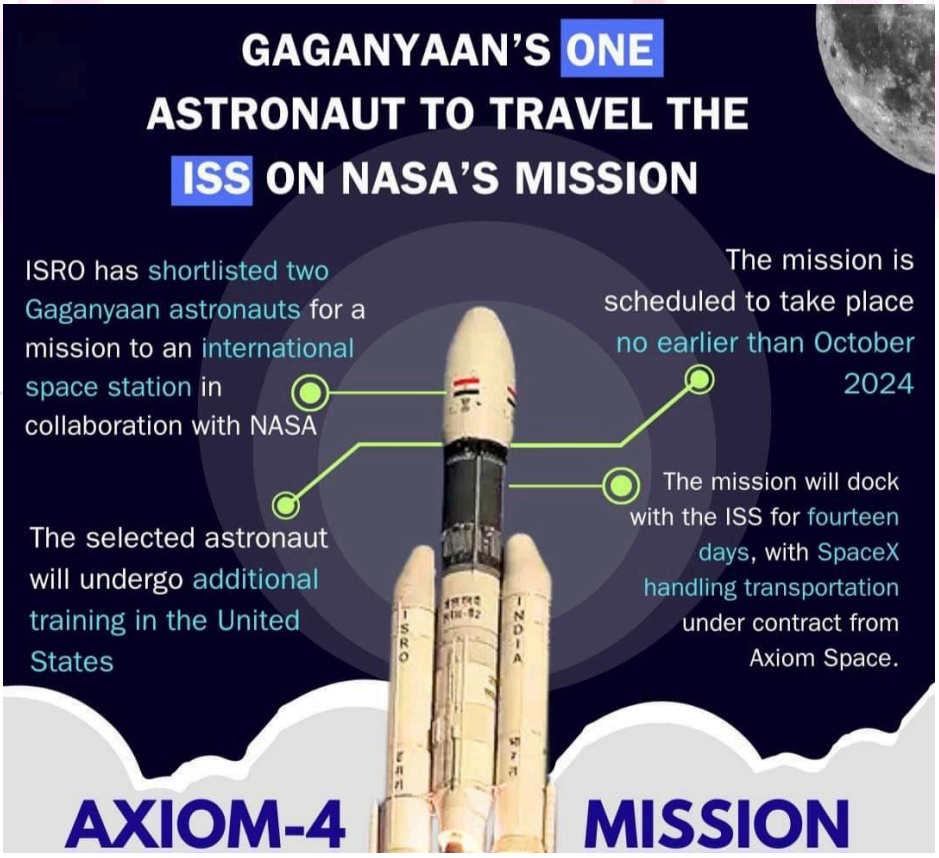
13. Why are India's 'Gaganyatris' going to the ISS? - The Hindu

Context

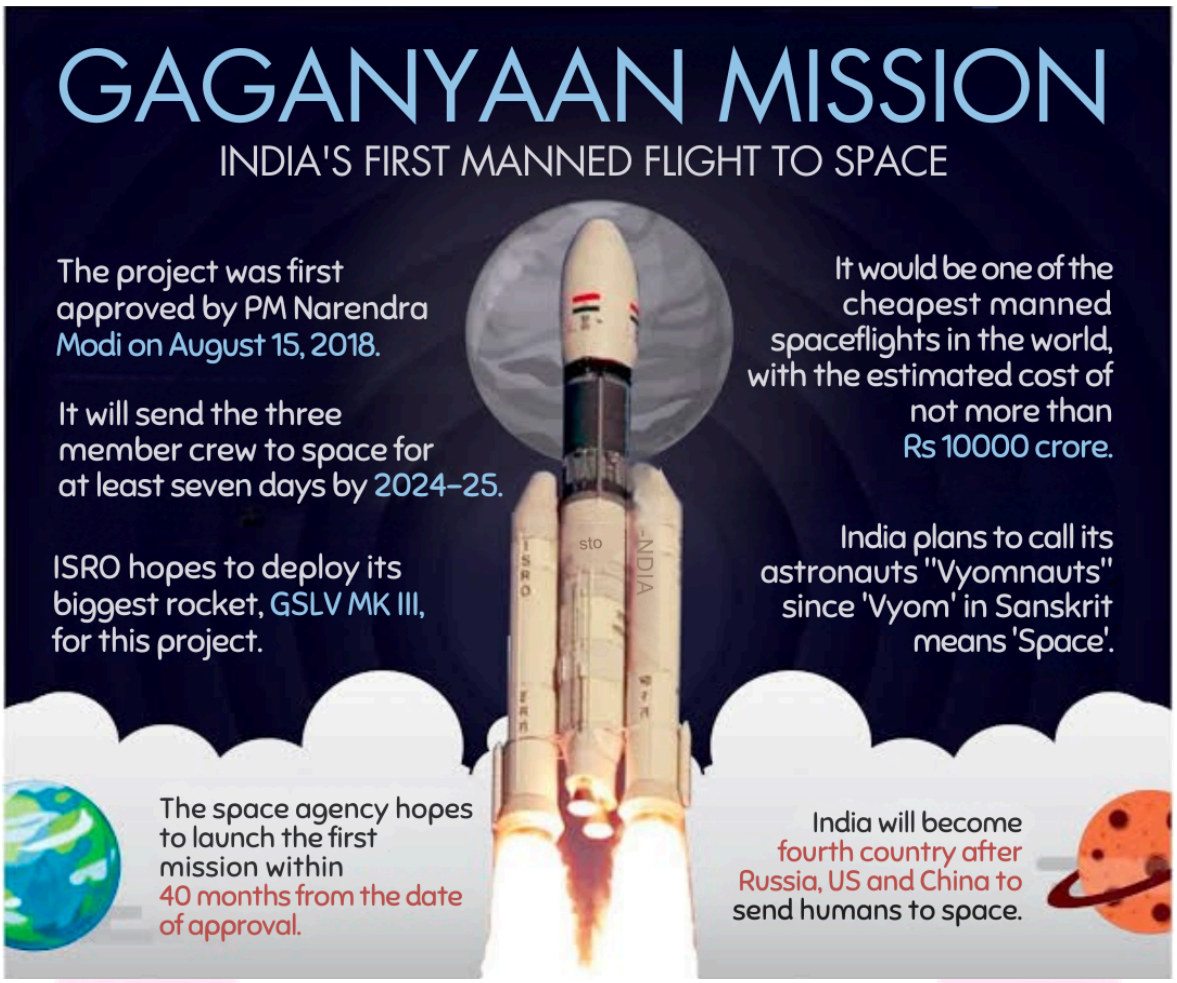
Recently, the ISRO announced that two of the astronauts selected for its maiden human spaceflight mission, 'Gaganyaan', will train in the U.S. for a mission to the International Space Station. Wing Commander Shubhanshu Shukla has been assigned to fly to the ISS while Group Captain Prashanth Nair will be his backup. Both astronauts have flown to the U.S. and have begun their training.

New mission

- **A joint effort to the International Space Station in 2024:** The two astronauts or "Gaganyatris", are the Indian participants in this mission.
- **Components of the mission:** The Gaganyatris will undertake selected scientific research and technology demonstration experiments on board the ISS as well as engage in space outreach activities.
- **Significance of the mission:** The experiences gained during this mission will be beneficial for Gaganyaan and it will also strengthen human space flight cooperation between ISRO and NASA.



Gaganyaan



Relevance: Science and Technology- Developments and their Applications

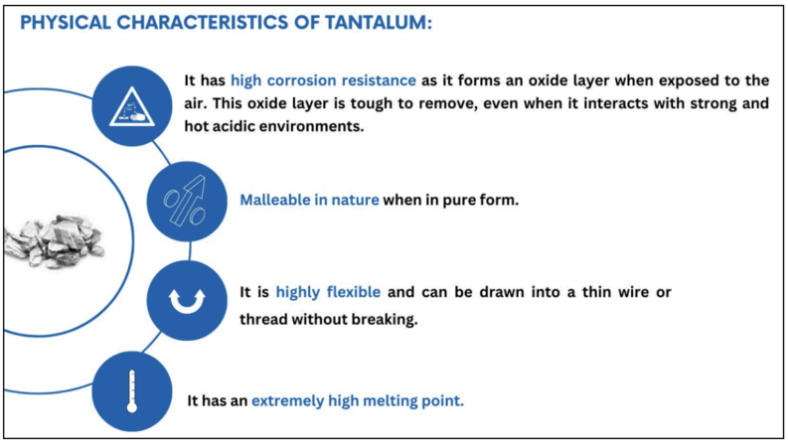
14. Tantalum Deposits - PIB

Context

The Central Government has notified a list of 24 minerals including Tantalum, in Part D of the First Schedule of the MMDR Act, 1957 as Critical and Strategic minerals.

Tantalum

- **About:** A rare metal with the symbol Ta and atomic number 73.
- **Occurrence:** It rarely occurs in nature. Instead, it is typically found in the ore columbite-tantalite



(usually referred to as coltan).

- **Major Producers:** Democratic Republic of Congo, Rwanda, Brazil and Nigeria.
- **Physical appearance:** A shiny, silvery metal which is soft when it is pure.
- **Features:**
    - Immune to chemical attacks at temperatures below 150 degrees Celsius.
    - Resistant to corrosion due to an oxide film on its surface.
    - Ductile meaning it can be stretched, pulled, or drawn into a thin wire or thread without breaking.
    - Has an extremely high melting point, exceeded only by tungsten and rhenium.
- **Applications:**
    - **Electronics:** The capacitors made from tantalum are capable of storing more electricity in smaller sizes without much leakage than any other type of capacitor.
    - **Other sectors:** It is also used to make components for chemical plants, nuclear power plants, aeroplanes, and missiles.
    - **Medical sector:** It does not react with bodily fluids and is used to make surgical equipment and implants, like artificial joints.

Relevance: Science and Technology- Developments and their Applications

15. NASA closes the WISE but aging eyes of an orbiting telescope - Indian Express

Context

Recently, scientists and engineers in Southern California got an exclusive glimpse at a recent snapshot of Fornax, a constellation of stars in the Southern Hemisphere.

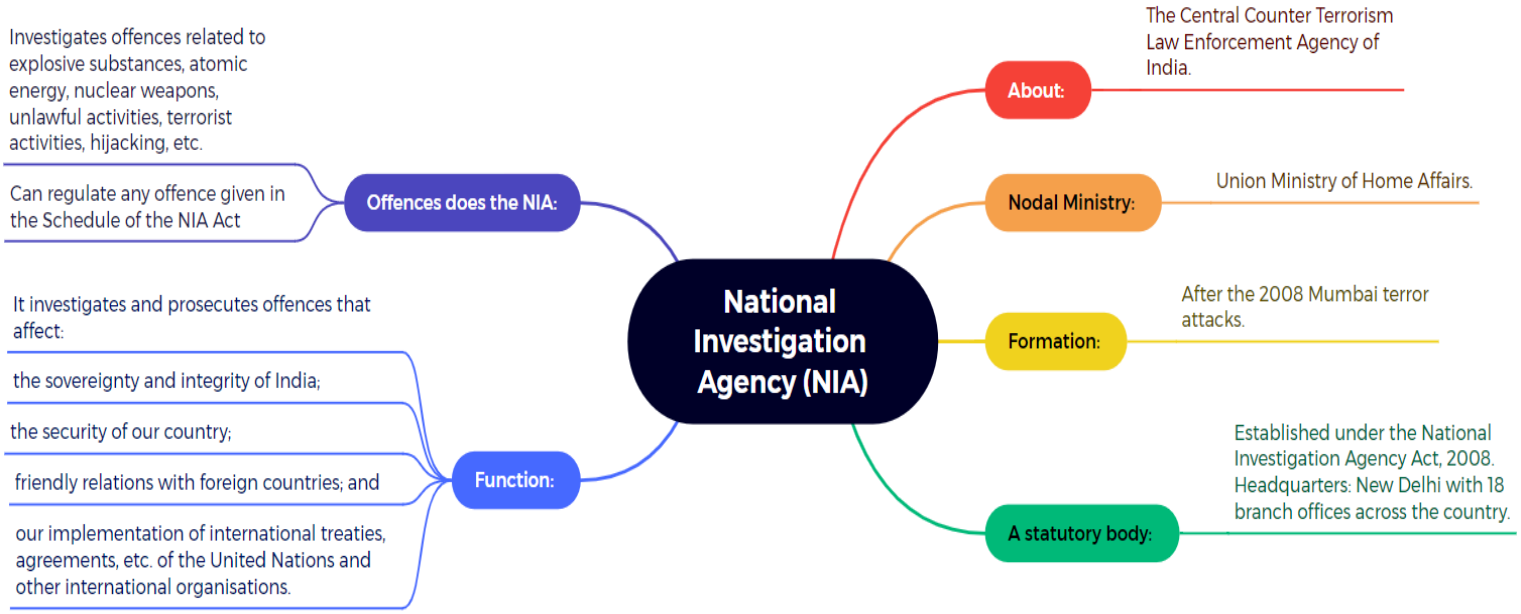
NEOWISE Telescope

- **Launch:** In 2009 by NASA as the Wide-Field Infrared Survey Explorer, or WISE.
- **Aim:** To survey the sky in infrared, detecting asteroids, stars and some of the faintest galaxies in space.
- **Orbit:** Formerly orbited at an altitude of 310 miles, NEOWISE now sits just 217 miles above Earth's surface, its descent spurred by increasing solar activity.
- **Achievements:** NEOWISE detected more than 158,000 minor planets, 34,000 of which had never been discovered previously.
- **Significance:** NEOWISE data have been used to set limits on the numbers, orbits, sizes and probable compositions of asteroids throughout our solar system and enabled the discovery of the first known Earth Trojan asteroid.

Internal Security

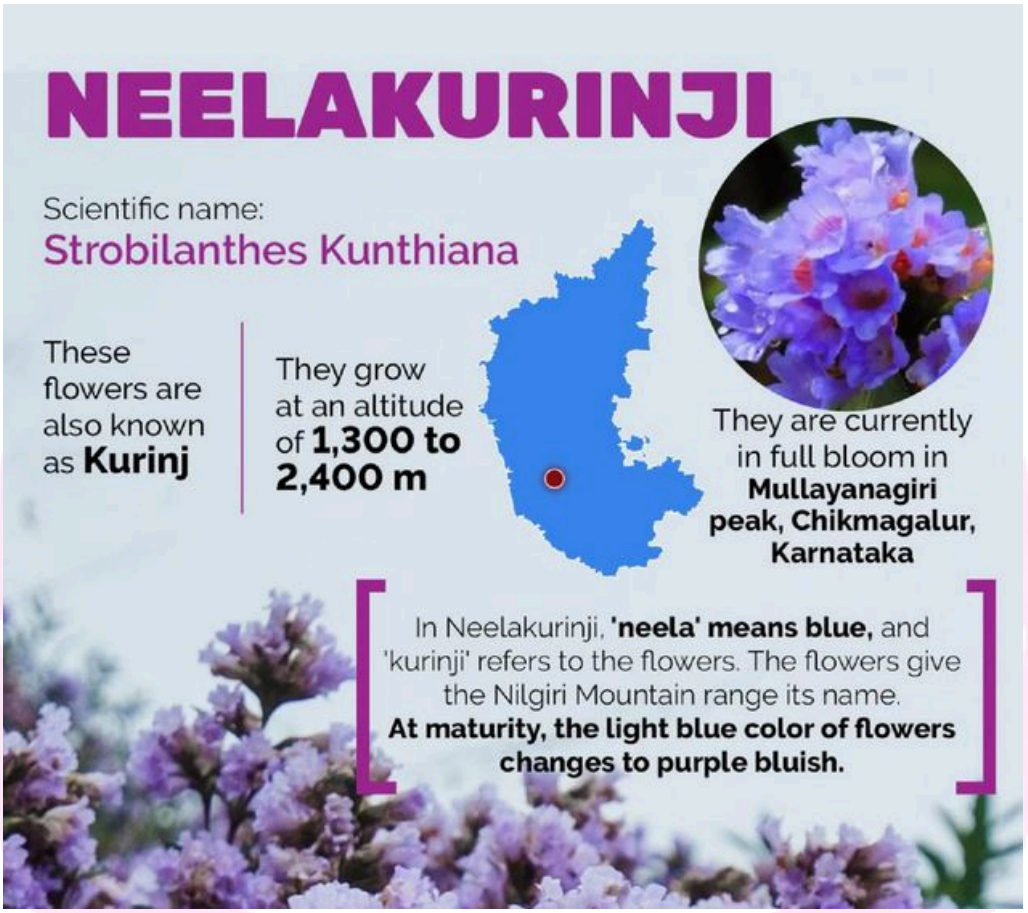
Relevance: Security Challenges and their Management

16. National Investigation Agency (NIA) - The Hindu



Miscellaneous

17.Neelakurinji - The Hindu



- **About:** A shrub found in the shola forests of the Western Ghats in Kerala, Karnataka and Tamil Nadu.
- **Height:** Grow at an altitude of 1,300 to 2,400 metres.
- **Naming:** Nilgiri Hills meaning the blue mountains, got their name from the purplish blue flowers of Neelakurinji that bloom only once in 12 years.
- **Conservation:**
    - Kurinjimala Sanctuary of Kerala: It protects the Kurinji in Kottakamboor and Vattavada villages in Idukki district.
    - Kurinji Andavar temple: Located in Kodaikanal of Tamil Nadu dedicated to Tamil God Murugan also preserves these plants.
- **Distribution:** Besides the Western Ghats, it is also seen in the Shevroy in the Eastern Ghats, Sanduru hills of Bellary district in Karnataka.

18. K. Natwar Singh - The Hindu

Former External Affairs Minister K Natwar Singh died on Saturday at age 93, after a prolonged illness. K Natwar Singh was awarded the Padma Bhushan, India's

third-highest civilian award, in 1984. He later received the Padma Vibhushan, the second-highest civilian award, for his role in the Non-Aligned Movement Summit in 1983.

19. FIRST-EVER MEGAQUAKE ADVISORY' ISSUED BY JAPAN: WHAT THIS MEANS - Indian Express

Context

After a 7.1-magnitude earthquake shook southern Japan recently, the country's meteorological agency issued its first-ever "megaquake advisory". The warning said the likelihood of strong shaking and large tsunamis is higher than normal on the Nankai Trough, a subduction zone (a region where tectonic plates collide with each other, and the heavier one slides under another) along Japan's southwest Pacific coast.

Nankai Trough

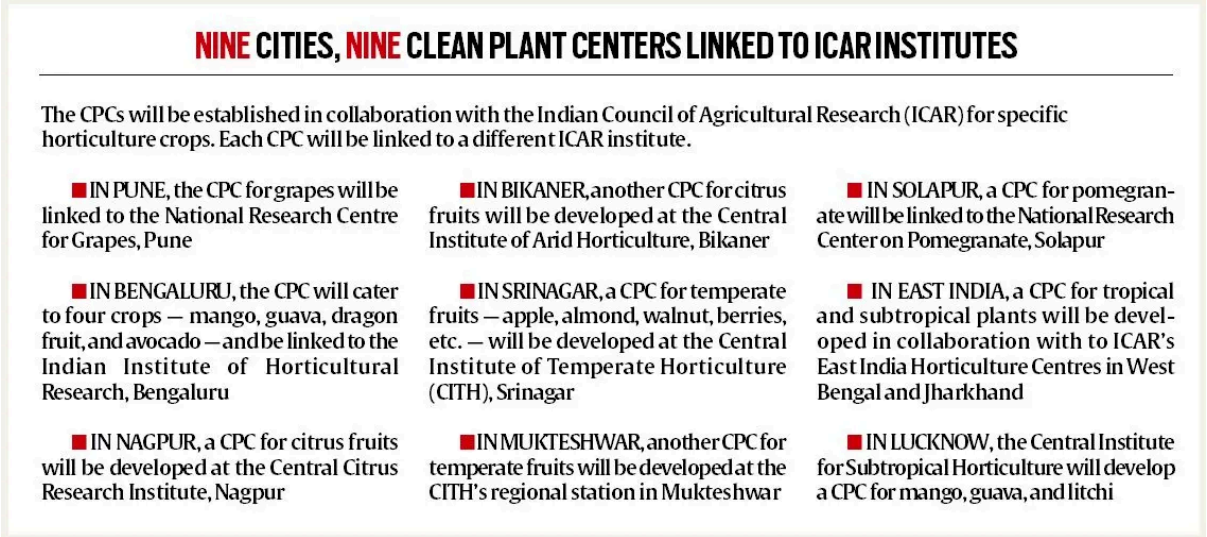
- **Location:** Runs from Shizuoka, west of Tokyo, to the southern tip of Kyushu Island.
- **About:** An underwater subduction zone (~ 900 km long) where Eurasian Plate collides with Philippine Plate, pushing the latter under the former. This accumulates tectonic stress which can cause a megaquake — an earthquake with a magnitude larger than 8.
- **Significance:** The trough has produced large earthquakes roughly every 100 to 150 years. These tremors usually come in pairs, with the second often rupturing in the subsequent two years - the most recent "twin" earthquakes in 1944 and 1946.
- **Can earthquakes be predicted:** No. An accurate prediction of an earthquake needs a precursory signal from within the earth, indicating a big quake is on the way. Currently, there is no equipment to find such precursors.

20. How Centre's Clean Plant Programme plans to boost production of fruits - Indian Express

Context

The Union Cabinet recently approved the Clean Plant Programme (CPP), aimed at increasing the yield and productivity of horticulture crops in India. First announced in Union Finance Minister Nirmala Sitharaman's interim Budget speech in February 2023, the CPP is also targeted at enhancing the quality of fruit crops across the nation.

Working of CPP



NINE CITIES, NINE CLEAN PLANT CENTERS LINKED TO ICAR INSTITUTES

The CPCs will be established in collaboration with the Indian Council of Agricultural Research (ICAR) for specific horticulture crops. Each CPC will be linked to a different ICAR institute.

- IN PUNE, the CPC for grapes will be linked to the National Research Centre for Grapes, Pune
- IN BIKANER, another CPC for citrus fruits will be developed at the Central Institute of Arid Horticulture, Bikaner
- IN SOLAPUR, a CPC for pomegranate will be linked to the National Research Center on Pomegranate, Solapur
- IN BENGALURU, the CPC will cater to four crops — mango, guava, dragon fruit, and avocado — and be linked to the Indian Institute of Horticultural Research, Bengaluru
- IN SRINAGAR, a CPC for temperate fruits — apple, almond, walnut, berries, etc. — will be developed at the Central Institute of Temperate Horticulture (CITH), Srinagar
- IN EAST INDIA, a CPC for tropical and subtropical plants will be developed in collaboration with to ICAR's East India Horticulture Centres in West Bengal and Jharkhand
- IN NAGPUR, a CPC for citrus fruits will be developed at the Central Citrus Research Institute, Nagpur
- IN MUKTESHWAR, another CPC for temperate fruits will be developed at the CITH's regional station in Mukteshwar
- IN LUCKNOW, the Central Institute for Subtropical Horticulture will develop a CPC for mango, guava, and litchi

- **3 main components** geared towards helping farmers obtain virus-free, high-quality planting material in order to increase crop yields and improve income opportunities:
  - **Development of 9 Clean Plant Centers (CPCs):** To provide disease diagnostics and therapeutics, create mother plants to be sent to nurseries, and quarantine all domestic and imported planting materials intended for commercial propagation and distribution;
  - **Enhancement of infrastructure:** Development of large-scale nurseries to facilitate the efficient multiplication of clean planting material — the mother plants obtained from the CPCs will be multiplied in nurseries and distributed to farmers;
  - **Creation of regulatory and certification process:** To ensure thorough accountability and traceability in the production and sale of planting material.