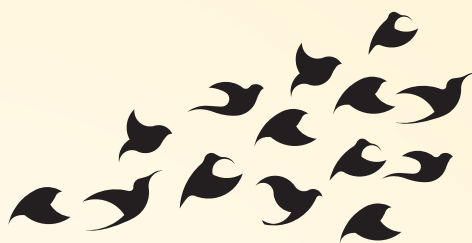




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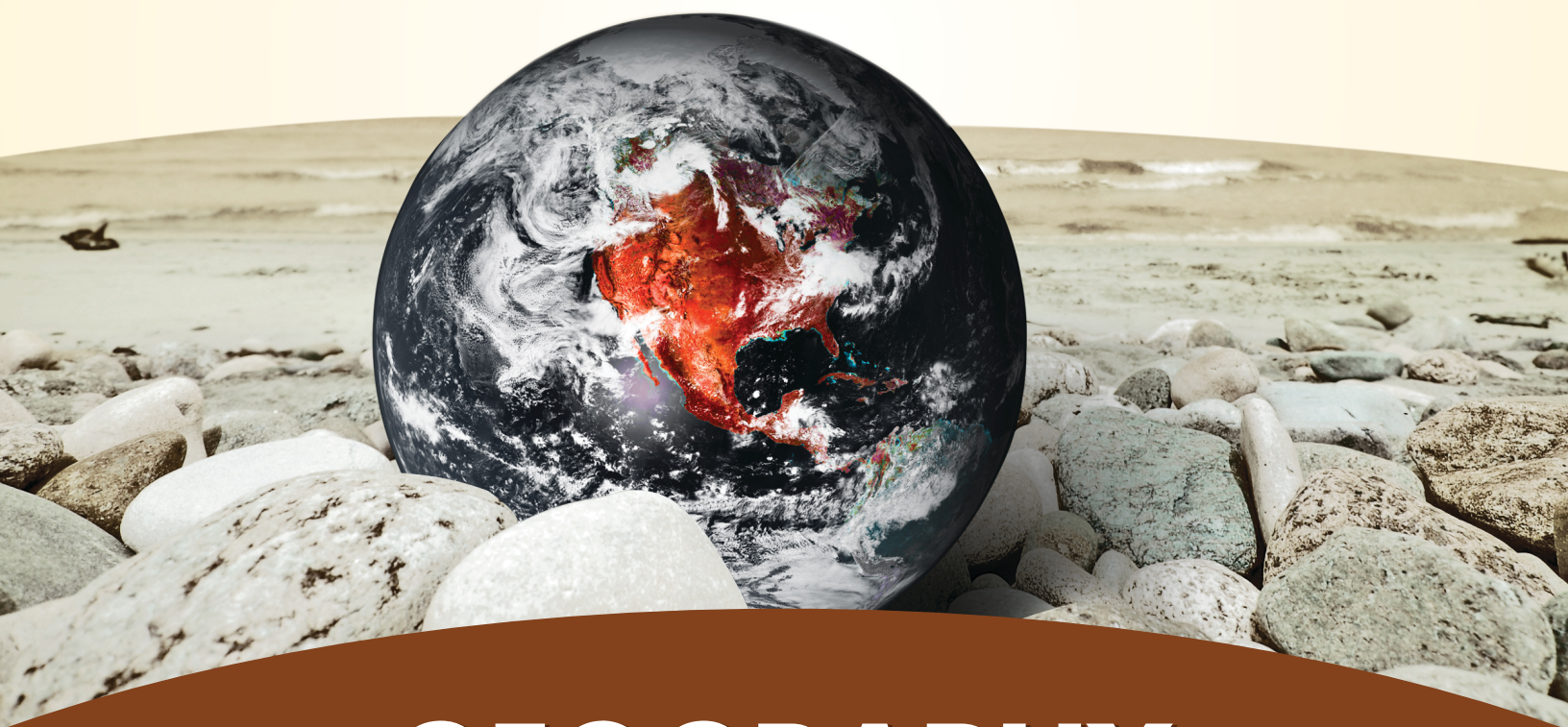


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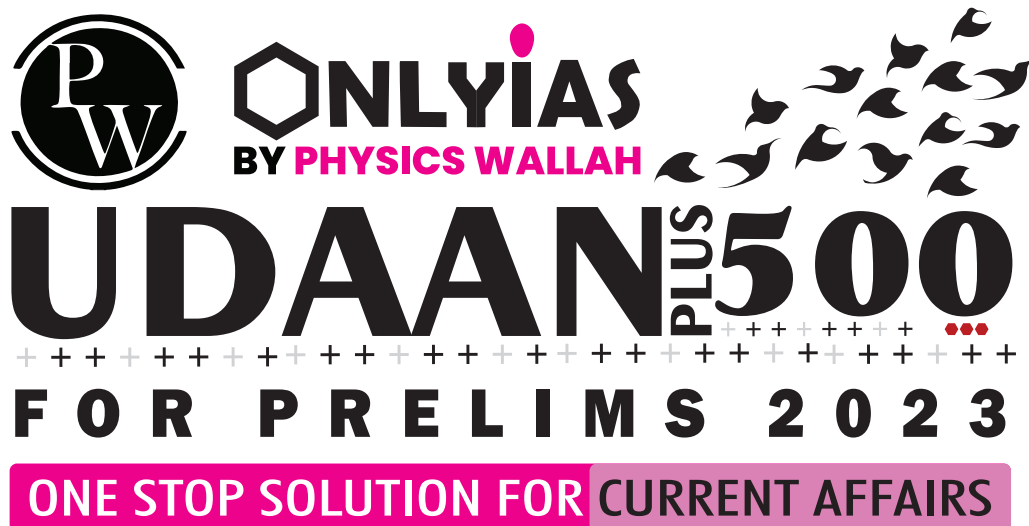
FOR PRELIMS 2023

ONE STOP SOLUTION FOR **CURRENT AFFAIRS**



GEOGRAPHY &

DISASTER MANAGEMENT



GEOGRAPHY & DISASTER MANAGEMENT

EDITION: 2023-24

Published By:



Mobile App: Physics Wallah (Available on Play Store)



Website: www.pw.live

Youtube Channel: Physics Wallah - Alakh Pandey
UPSC Wallah
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Email: support@pw.live

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BOOK FEATURES

- One Stop Solution for Current Affairs Preparation
- Special Focus on PYQs, Data and Facts
- Most Comprehensive Current Affairs Compilation
- Comprehensive Coverage of Topics with Crisp Content

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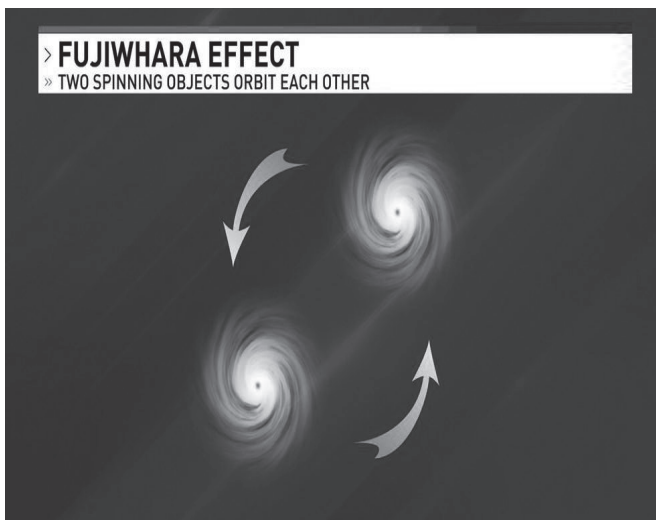
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GEOGRAPHICAL PHENOMENON IN NEWS

FUJIWHARA EFFECT

News: Typhoon Hinnamnor provided a textbook example of a meteorological phenomenon known as the Fujiwhara Effect.



About:

- The Fujiwhara Effect is **any interaction between tropical storms formed around the same time in the same ocean region** with their centers or eyes at a **distance of less than 1,400 km** with the intensity that could vary between a depression and a super typhoon.
- Wind speed of the depression is under **63 kmph**.
- Wind speed of a super typhoon is over **209 kmph**.
- The interaction could lead to **changes in the track and intensity of either or both** storm systems.
- In rare cases, the two systems could merge, especially when they are of similar size and intensity, to form a bigger storm.

- The Fujiwhara effect was identified by **Sakuhei Fujiwara**, a Japanese meteorologist whose first paper recognizing the Fujiwhara cases was published in 1921.

RAINBOW

News: Research has found that the **increased greenhouse gas emission** lead to changes in cloud cover and liquid precipitation and are projected to be a **net increase in mean global annual rainbow days**.

About:

- A rainbow is a **common atmospheric optical phenomenon**.
- It is a **multicoloured arc** consisting of **VIBRYOR** in the sky that results when water droplets **refract sunlight**.
- **Sunlight and rainfall** are therefore essential ingredients for rainbows.
- Rainbows can be viewed around the fog, sea spray or waterfalls.
- Rainbows are formed by the **refraction, reflection and dispersion** of light in water droplets.
- A rainbow is an **optical illusion**—it does not exist in a specific spot in the sky.
- The colours on a primary rainbow are always in order of their wavelength, **from longest to shortest → red, orange, yellow, green, blue, indigo and violet**.

BRIDGMANITE

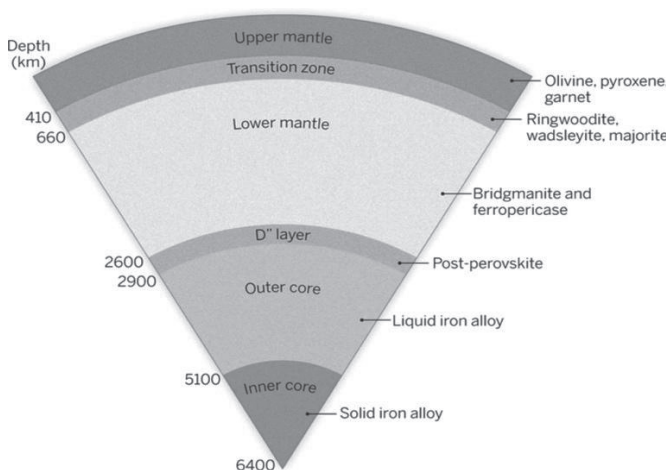
News: By studying a bridgmanite mineral, researchers have suspected that the **earth's inner heat dissipates sooner**, making it cool faster than expected.

About:

- Bridgmanite is the **most volumetrically abundant mineral** commonly found **between the earth's core and mantle**.
- It is also known as **Silicate perovskite/ Magnesium silicate/Calcium silicate mineral**, it makes up 70% of the lower mantle.
- Bridgmanite consists of **magnesium, iron, and calcium aluminium oxide** and has a **perovskite structure**.
- **Structure:** The perovskite structure of the Bridgmanite usually **occurs in ABX₃**.
 - A: Metal that forms cations - Magnesium or Calcium
 - B: Metal that forms smaller cations - Silicon or aluminium
 - X: Oxygen.

Study:

About 4.5 billion years ago, the surface of the earth was covered by magma and over the years, its surface cooled to form the outer crust.



- However, there's still **enormous thermal energy in the earth's core and mantle** which governs plate tectonics, earthquakes, and volcanism.
- **Radiative thermal conductivity** is one of the **fundamental heat conduction mechanisms** which is **strongly dependent on colour (opaqueness)**.
- So, **optical absorption measurement of the bridgmanite** was applied under high-pressure and high-temperature conditions that prevail in the earth's core-mantle boundary region.
- The results showed that the **thermal conductivity of bridgmanite was about 1.5 times higher than assumed**.
- These findings also suggest that **other rocky planets may be cooling and becoming inactive faster than expected**.
- On earth, this cooling will lead to **lesser tectonic activities** in future such as earthquakes, volcanism, and plate tectonics.
- However, it is **challenging to track** how long it will take for the cooling.

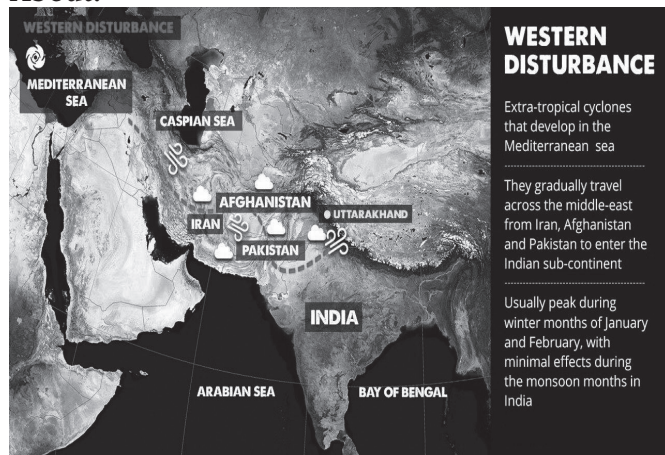
Bridgmanite in India

- Meteor showers occurred in **Nagpur on May 22, 2012**.
- The shower's giant meteorite weighed **one kilogram**.
- Meteorites are meteors that collide with the earth's surface. Thirty meteorites were collected after the meteor shower and were named as **Katol meteorites**.
- The scientists revealed their findings from their investigation on the Katol meteorites in October 2021. They figured out how bridgmanite formed during the latter stages of the earth's creation.
- As the report stated, **Bridgmanite was created under pressures ranging from 23 to 25 Gigapascals**.

WESTERN DISTURBANCES

News: Western disturbances causing rainfall in the north and central parts of India.

About:



- Western disturbance is an **extratropical storm**, **originating in the Mediterranean region** that brings sudden winter rain to the north-western parts of the Indian subcontinent.
- The disturbance travels **from the western to the eastern direction**.
- It is a **non-monsoonal precipitation pattern driven by the westerlies**.
- Extratropical storms are a global phenomenon with **moisture usually carried in the upper**

atmosphere, unlike their **tropical counterparts** where the moisture is carried in the lower atmosphere.

- In the case of the Indian subcontinent, **moisture is sometimes shed as rain** when the storm system encounters the Himalayas.
- Western disturbances are **more frequent and stronger in winter**.

Impacts of Western disturbances:

- Western disturbances, specifically the **ones in winter, bring moderate to heavy rain in low-lying areas and heavy snow** to mountainous areas of the Indian Subcontinent.
- They are the **cause of most winter and pre-monsoon season rainfall** across northwest India.
- Precipitation during winter has **great importance in agriculture**, particularly for **rabi crops**.

KAREWAS

News: In the name of development, Kashmir's highly fertile alluvial soil deposits called 'karewas' are being destroyed.

About:	• Lacustrine deposits or lake deposits in the Valley of Kashmir and Bhandarwah Valley of the Jammu Division are known as Karewas. • These are the flat-topped mounds that border the Kashmir Valley on all sides.
Formation of Karewas:	• Karewas were formed during the Pleistocene Period (1 million years ago) when the entire Valley of Kashmir was underwater. • Due to the rise of Pir Panjal, the drainage was impounded and a lake of about 5000 sq. km area was developed and thus a basin was formed. • Subsequently, the lake was drained through Bramulla gorge. The deposits left in the process are known as karewas.

Significance of Karewas:

- Karewas are 13,000-18,000m thick deposits of alluvial soil and sediments such as sandstone and mudstone.
- This makes them ideal for the cultivation of saffron, almonds, apples and other cash crops.
- Kashmir saffron received a Geographical Indication (GI) tag in 2020 for its longer and thicker stigmas, deep-red colour, high aroma and bitter flavour, is grown on these Karewas.
- However, despite their agricultural and archaeological importance, Karewas are now being excavated to be used in construction.



LONG PERIOD AVERAGE

News: The country is likely to receive a normal monsoon for the fourth consecutive year, the IMD said in its first Long Range Forecast (LRF) for this year.

About:

- The IMD predicts a “normal”, “below normal”, or “above normal” monsoon about a benchmark “Long Period Average” (LPA).
- According to the IMD, the “Long Period Average of rainfall is the rainfall recorded over a particular region for a given interval (like month or season) averaged over a long period like 30 years, 50 years, etc”.
- Along with the countrywide figure, the IMD also maintains LPAs for every meteorological region of the country.

Why is LPA needed?

- Because annual rainfall can vary greatly not

just from region to region and from month to month, but also from year to year within a particular region or month, an LPA is needed to smooth out trends so that a reasonably accurate prediction can be made.

- A 50-year LPA accounts for huge changes in either direction produced by fluke years due to events such as El Nino or La Nina, as well as recurring drought years and the growing frequency of extreme weather events induced by climate change.

AURORA

News: Stunning aurora glow was recently observed above Iceland after a ‘dead’ sunspot erupted.

About:

- An Aurora also known as **Polar light** is a display of light in the sky predominantly seen in the high latitude regions (Arctic and Antarctic).
- There are two types: the **Aurora borealis** and **Aurora Australis**, often called the northern lights and southern lights in the Arctic and Antarctic region respectively.
- They commonly occur at **high northern and southern latitudes**, less frequent at mid-latitudes, and seldom seen near the equator.
- While usually a **milky greenish colour**, auroras can also show **red, blue, violet, pink, and white**.

These colours appear in a variety of continuously changing shapes.

- They originate at altitudes of **100 to more than 400 km**.
- Auroras **affect communication lines, radio lines and power lines**.
- The **Sun's Energy**, in the form of the solar wind, is responsible for aurora.



Scientific reason:

- Auroras are a spectacular sign that **our planet is electrically connected to the Sun**.
- These light shows are provoked by **Solar winds** and fuelled by electrically charged particles **trapped in the earth's magnetic field**.
- The typical aurora is **caused by collisions** between fast-moving electrons from space with the oxygen and nitrogen in the earth's upper atmosphere.
- The electrons, which come from the earth's magnetosphere, the region of space **controlled by the earth's magnetic field**, transfer their energy to the oxygen and nitrogen atoms and molecules, making them "**excited**".
- As the gases return to their normal state, they **emit photons, small bursts of energy** in the form of light.
- When many electrons come from the magnetosphere to bombard the atmosphere, **the oxygen and nitrogen can emit enough light for the eye to detect**, giving us beautiful auroral displays.

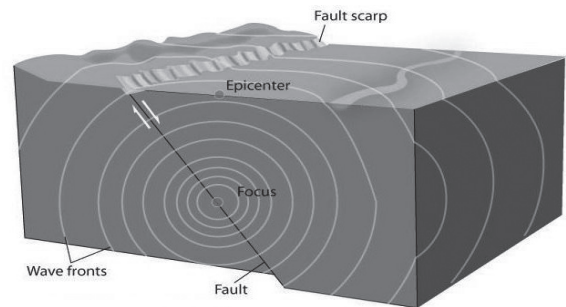
SLOW EARTHQUAKE WAVES

News: Scientists recently scanned a rock structure that is located 3,000 kilometres beneath Hawaii and is known to **slow earthquake waves**. The findings of the study are published in "**Nature Communications**".

About:

- Scientists have found a rock structure that is located **3,000 kilometres beneath Hawaii**.
- This structure is known to **slow earthquake waves**. They found that the speed of the earthquake waves travelling through the base could be **40% slower** than the surrounding regions.

Seismic waves radiate from the focus of an earthquake



How did these ultra-low-velocity zones form?

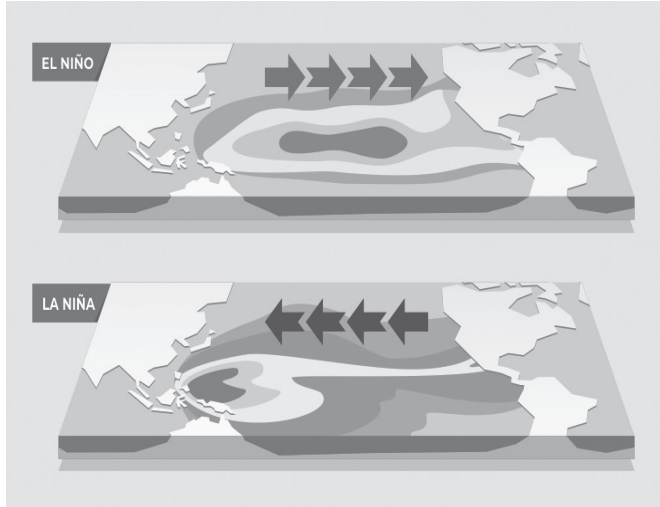
- The Rock Structure's origins can be traced to around four billion years ago when the earth was an infant. Around this time, scientists believe a **Mars-sized rock crashed into the earth raising the planet's temperatures and creating a magma ocean**.
- At some point, the **iron materials likely descended deep** into the interiors forming pockets called **ultra-low-velocity zones**.

LA NINA

News: In most of the years, meteorologists consider La Nina to be a friend of India.

About:

- La Nina, also known as **Little Girl**, is a weather pattern in the Pacific Ocean.
- It is the **periodic cooling of ocean surface temperature** along the tropical west coast of South America and warming along the east coast of Australia.
- It is the colder counterpart of El Nino (Little Boy).



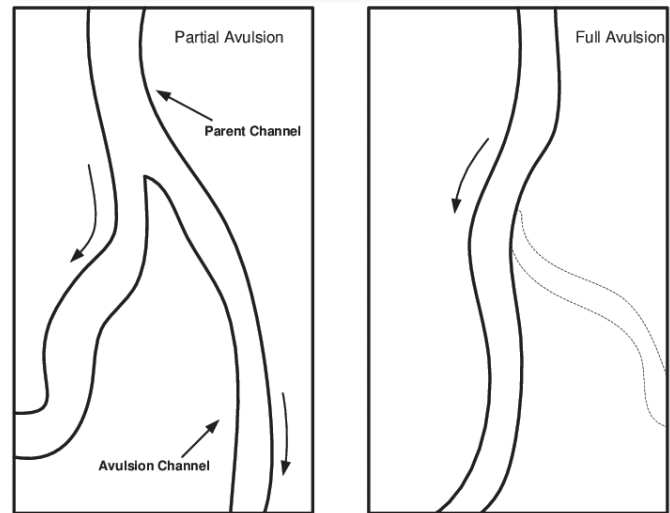
- Furthermore, it results in **heavy or better monsoon rains in India, droughts in Peru and Ecuador, heavy floods in Australia**, and high temperatures in the Indian Ocean and Western Pacific.
- The **Oceanic Nino Index (ONI)** is used to measure deviations from normal sea surface temperatures.

Difference between El Niño and La Niña:

- Both events start in the **Pacific Ocean**, but they are **opposites** in almost every other way.
- La Niña causes the water in the eastern Pacific to be colder than usual. In the same region, El Niño can cause the water to be warmer than usual.
- So, areas that are hit with drought during La Niña years can get lots of rain in El Niño years and vice versa.

AVULSION IN RIVERS

News: According to a new study, rivers lining tropical and desert regions are more likely to change directions. **These rivers expose the surrounding areas to floods as they abandon their usual route for a new one.**



About:

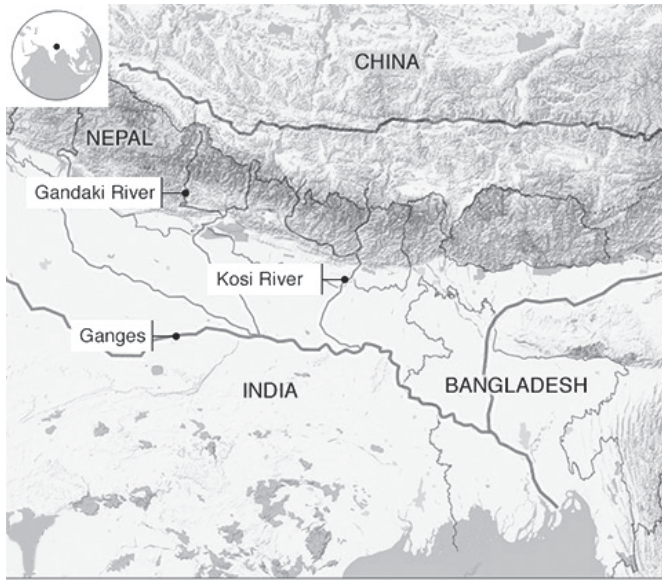
- Avulsion means a **sudden cutting off of land by flood or change in course of a body of water.**
- Avulsions are **rare and infrequent**, occurring only once a decade or century, or even less.
- Rivers lining tropical and desert regions are **more prone to avulsions.**

Key Findings:

- **Avulsions** have been documented worldwide as per the satellite imagery from **1973-2020** and historical maps.
- Rivers **altered routes in the mountain bases** while descending onto unconfined valleys or open oceans in 33 instances. **Kosi river** falls under this category.
- Along some of the world's largest waterways, such as the **Orinoco, Yellow, Nile and Mississippi Rivers**, **50 instances** occurred on low-sloping deltas.

Kosi River System:

- The Kosi is a transboundary river which flows through Tibet, Nepal and India.



- It has its **source in Tibet** which includes the **world's highest upland**, it then drains a large part of Nepal before emerging onto the Gangetic plains.
- Its three major tributaries, **the Sun Kosi, Arun and Tamur meet at one point** just upstream of a 10 km gorge cut through the Himalayan foothills.
- The river **crosses into northern Bihar** where it **branches into distributaries** before **joining the Ganges near Kursela** in the Katihar district.
- The Kosi carries the maximum amount of **silt and sand** after the Brahmaputra in India.
- It is also known as the “**Sorrow of Bihar**” as the annual floods affect about 21,000 sq. km. of fertile agricultural lands thereby disturbing the rural economy.

ATLANTIFICATION

News: According to a study, it is stated that parts of the arctic region near Norway are warming at as much as seven times the rate of warming in the rest of the world.



About:

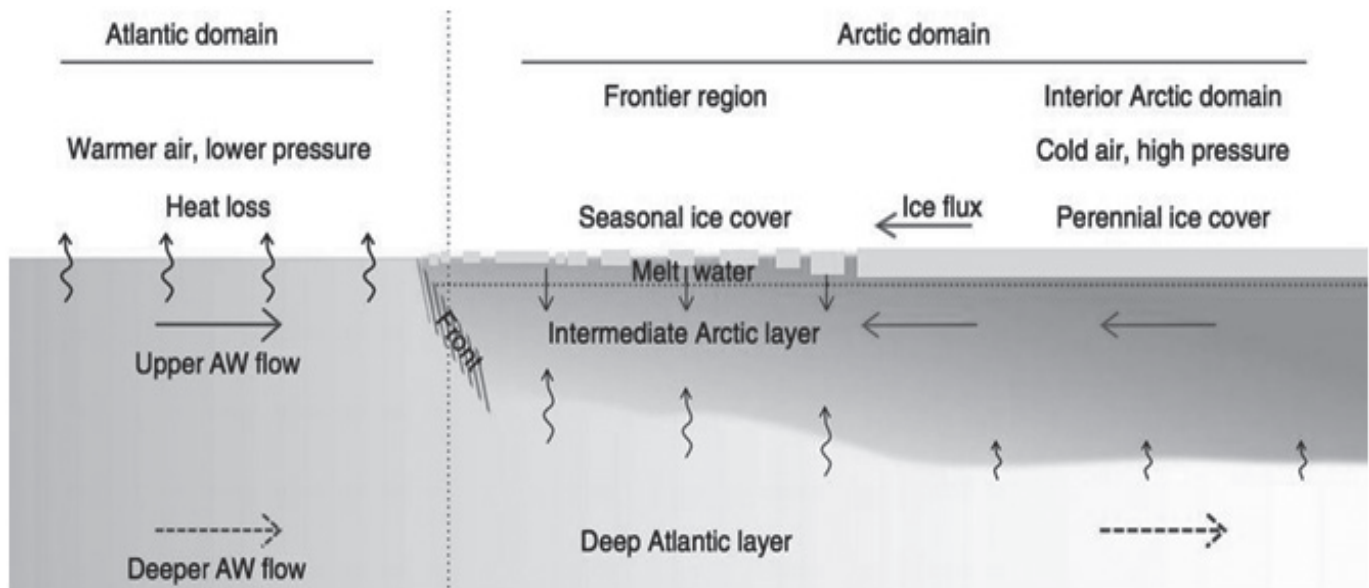
- The Barents Sea borders **the Norwegian and Greenland Seas in the west**, the **Arctic Sea in the north** and the **Kara Sea in the east**.
- The **Barents Sea is divided between Russia and Norway** as defined by the United Nations Convention on the Law of the Sea (UNCLOS).

Phenomenon of Atlantification:

- Scientists have identified ‘hotspots’ where areas of the Barents Sea have **begun to resemble the Atlantic**. This process is known as Atlantification.
- The north-flowing ocean currents transfer warm Atlantic waters into the Arctic Ocean via the Barents Sea.
- This warmer, saltier Atlantic water is usually fairly deep under the more buoyant arctic water at the surface.
- Lately, however, the Atlantic water has been creeping up. That heat in the Atlantic water is helping to keep ice from forming and melting existing sea ice from below.
- This process is called “**Atlantification**”. The ice is now getting hit both from the top by a warming atmosphere and at the bottom by a warming ocean.

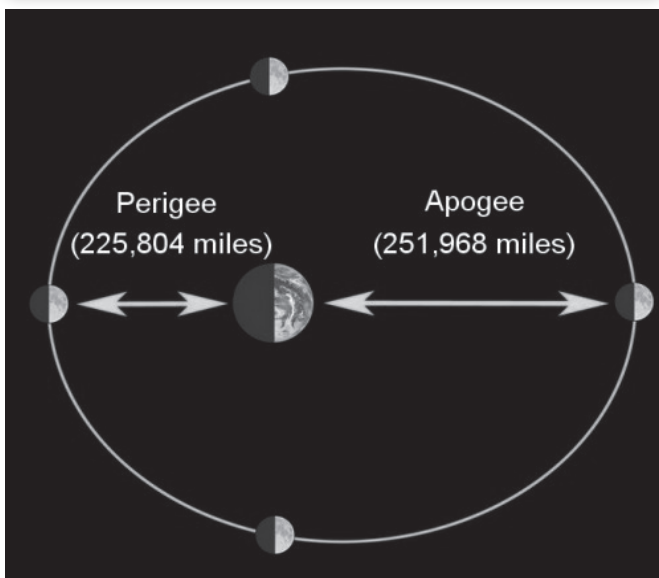
Reasons for Atlantification:

- In the background of all of this is **global climate change**.
- The arctic sea ice extent and thickness have been **dropping for decades** as **global temperatures rise**.
- As the arctic loses ice and the ocean **absorbs more solar radiation**, global warming is amplified.
- That affects **ocean circulation**, **weather patterns**, and **arctic ecosystems spanning the food chain**, from phytoplankton all the way to top predators.



SUPERMOON

News: The Strawberry Supermoon was seen worldwide in different time zones.



About Supermoon:

- A supermoon happens when simultaneously the Moon's orbit is closest to the Earth i.e. at **perigee** and it is **full moon**.
- As the Moon revolves around the Earth, there are times when the distance between the two is the shortest, called the **Perigee** and times when the distance is the greatest, called the **Apogee**.
- The term “**supermoon**” was coined by astrologer **Richard Nolle** in 1979.
- Some Native American tribes called this full moon the “**Strawberry Moon**” because it signals a time for gathering ripening strawberries and other fruits.
- During every 27-day orbit around the earth, the Moon reaches both its perigee, about 226,000 miles from earth, and its farthest point, or apogee, about 251,000 miles from earth.

- ‘Supermoon’ isn’t an official astronomical term, but typically it’s used to describe a full Moon that comes within at least 90 percent of perigee.
- Supermoons **only happen three to four times a year, and always appear consecutively**. Throughout most of the earth’s orbit around the sun, perigee and the full moon do not overlap.

THERI DESERT

News: There are a couple of theories that are being debated regarding the formation of the Theri desert, the most plausible being related to the role of southwest monsoonal winds.

About:	• It’s a tiny desert consisting of red sand dunes in Tamil Nadu. It is restricted to the Thoothukudi area • In Tamil, the red sands are known as Theri. • They are composed of sediments from the Quaternary Period (which began 2.6 million years ago) and are formed of marine deposits. • They have a relatively limited capacity for water and nutrient retention. • The aerodynamic lift can occur in the dunes, the push that allows things to go upward. It is the force that is opposed to weight.
Formation:	• Theris appear as gentle, undulating terrain. • The presence of limestone in many places indicates marine transgression. • The present-day Theris might have been formed by the confinement of beach sand locally, after the regression of the sea. • When high-velocity winds from the Western Ghats blew east, they induced the migration of sand grains and the accumulation of dunes.
Mineral composition of Theri:	• Heavy and light minerals are present including Ilmenite, Magnetite, Rutile, Garnet, Zircon, Diopside, Tourmaline, Haematite, Goethite, Kyanite, Quartz, Feldspar, and Biotite. • The iron-rich heavy minerals like ilmenite, magnetite, garnet, hypersthene, and rutile present in the soil had undergone leaching by surface water. • They were then oxidized because of favorable semi-arid climatic conditions.



KARAKORAM ANOMALY

News: A study investigated why glaciers in the Karakoram Range of Central-South Asia have not been as affected as others by Climate Change.



About:

- The 'Karakoram anomaly' is defined as the **stability or anomalous growth of glaciers in the central Karakoram**, against the retreat of glaciers in other nearby mountain ranges of the Himalayas and other mountainous ranges around the world.

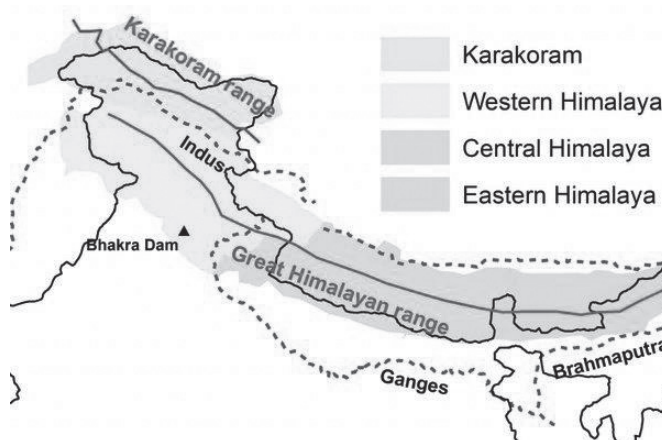
Key Findings:

- According to the researchers, the **recent resurrection of western disturbance** has been essential in initiating and maintaining the Karakoram Anomaly since the turn of the century.
- Western disturbances are formed over the **Caspian or Mediterranean Seas** and are responsible for **non-monsoonal rain** to northwest India.

- Previous research has shown the **impact of temperature in developing and maintaining the anomaly throughout time.**

Karakoram Range:

- The Karakoram is **part of a complex of mountain ranges at the centre of Asia**, including the Hindu Kush to the west, the Pamirs to the northwest, the Kunlun Mountains to the northeast, and the Himalayas to the southeast.
- The Karakorams cover parts of **Afghanistan, China, India, Pakistan, and Tajikistan.**

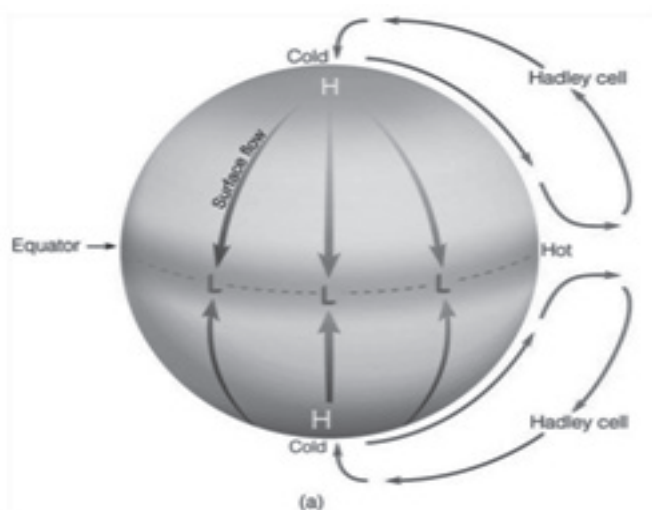


AZORES HIGH

News: A study revealed that an extremely large subtropical weather phenomenon known as 'Azores High' has **resulted in abnormally dry conditions** across the western Mediterranean, including the Iberian Peninsula, primarily occupied by Spain and Portugal.

About:

- Azores High is a **subtropical high-pressure system** that extends over the eastern subtropical North Atlantic and Western Europe during winter.



- It is associated with **anticyclonic winds** in the **subtropical North Atlantic**.
- It is formed by **dry air aloft descending the subtropics** and **coincides with the downward branch of the Hadley Circulation**.

Hadley Circulation:

- Hadley Cells are the **low-latitude overturning circulations** in which air rises at the equator and air sinks at **roughly 30° latitude**.

Effects of Azores High:

- An annual drying of **5-10 millimetres per year per decade** has been recorded in the Iberian Peninsula throughout the second half of the 20th century.
- A further **10-20% drop in winter precipitation** is expected by the end of the 21st century.
- These projected changes **make agriculture** in the Iberian region some of the **most vulnerable** in Europe.

PILEUS CLOUD

News: Haikou city in China observed a cloud shaped rainbow in the sky. The **phenomenon was not a rainbow**, but a cloud known as a **Pileus cloud**.



About:

- The 'Pileus cloud' is also known as a '**cap cloud**' or '**scarf cloud**'.
- It is **not a cloud in itself**, it is an **accessory cloud of a small horizontal extent**, in the form of a cap or hood above the top or attached to the upper part of a cumuliform cloud that often penetrates it.
- Several piles may fairly often be **observed in superposition**.
- Pileus cloud is created when the **quickly rising air in the cumulus cloud (or cumulonimbus) updraft pushes against the cooler air above it**.
 - This causes **condensation of the moisture right along the top of the updraft**, leading to the formation of the Pileus.



- When the sun is shining at a perfect angle, **diffraction of light** takes place between

the droplets and ice crystals in the cloud, giving the Pileus its rainbow-like colours.

- These clouds typically **only last a few hours**, as they are “eaten up” by the cloud that is above them.
- The Pileus cloud is **absorbed by the lower cloud** by convection.
- Pileus **isn't very common**, but it can be spotted on days when you could anticipate cumulus clouds developing into thunderstorms.
- The Pileus cloud should **not be confused with the lenticular cloud**. Lenticular clouds stand-alone while Pileus clouds are an accessory to cumuliform clouds.

Lenticular Clouds:

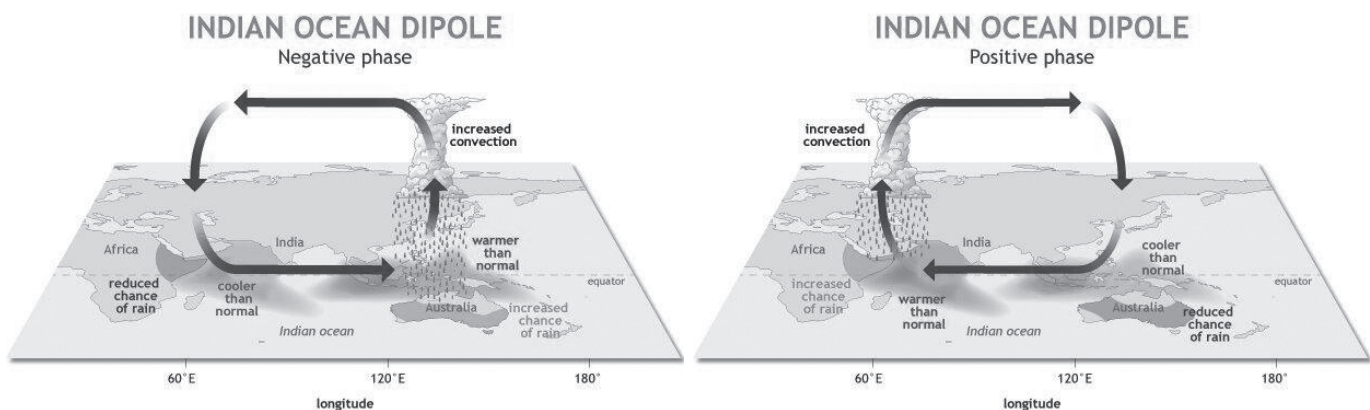
- Lenticular clouds are **stationary clouds** that **form mostly in the troposphere**, typically in parallel alignment to the wind direction.
- These strange clouds sometimes **create downwind hills or mountains**.
- Lenticular clouds are so named because **they resemble lentils**.
- They are **easily distinguished** from other cloud species by their distinctive UFO shape and smooth edges.

INDIAN OCEAN DIPOLE (IOD)

News: A negative Indian Ocean dipole event has been declared, increasing the chances of above-average rainfall over much of Australia.

About:

- **Indian Ocean Dipole** is defined as the **difference in sea surface temperature between two areas (or poles, hence a dipole)** – a western pole in the **Arabian Sea** (western Indian Ocean) and an **eastern pole in the eastern Indian Ocean**, south of Indonesia.
- In scientific terms, the IOD is a **coupled ocean and atmosphere phenomenon**, similar to ENSO but in the **equatorial Indian Ocean**.
- It is thought that the **IOD has a link with ENSO events** through an extension of the Walker Circulation to the west and associated Indonesian throughflow, the flow of warm tropical ocean water from the Pacific into the Indian Ocean.
- The IOD **affects the climate of Australia and other countries** that surround the Indian Ocean Basin and is a significant contributor to rainfall variability in this region.



Positive IOD linked to:	Negative IOD linked to:
• Warmer sea surface temperatures in the western Indian Ocean relative to the east. • Easterly wind anomalies across the Indian Ocean and less cloudiness to Australia's northwest. • Less rainfall over southern Australia and the Top end.	• Cooler sea surface temperatures in the western Indian Ocean relative to the east. • Winds become more westerly, bringing increased cloudiness to Australia's northwest. • More rainfall in the Top end and southern Australia.

DVORAK TECHNIQUE

News: American meteorologist Vernon Dvorak passed away, on whom Dvorak Technique was named to forecast Weather.

About:

- **Statistical method for estimating the intensity of tropical cyclones** – hurricanes, cyclones and typhoons, from the interpretation of satellite imagery is termed the **Dvorak Technique**.
- It uses **regular Infrared and Visible imagery**.
- It is based on a “**measurement**” of the cyclone's convective cloud pattern and a set of rules.

Benefits:	• It helps forecasters to do pattern recognition from the observed structure of the storm, locate its eye and estimate the intensity of the storm, • It gives the best estimates of the cyclone intensity — a vital component while issuing weather warnings.
Advancements:	• The Dvorak technique, said to be one of the greatest meteorological innovations, has undergone several advancements since its inception. • The technique has been upgraded multiple times since then, and after a recent software update, it has been named the advanced Dvorak Technique (ADT), coined by the National Hurricane Centre of the National Oceanic and Atmospheric Administration (NOAA). • The updated technique would improve tropical storm forecasts by many folds as they would have access to sharper and more detailed images than ever before.



BRINGING INNOVATIVE DISRUPTION IN UPSC PREPARATION

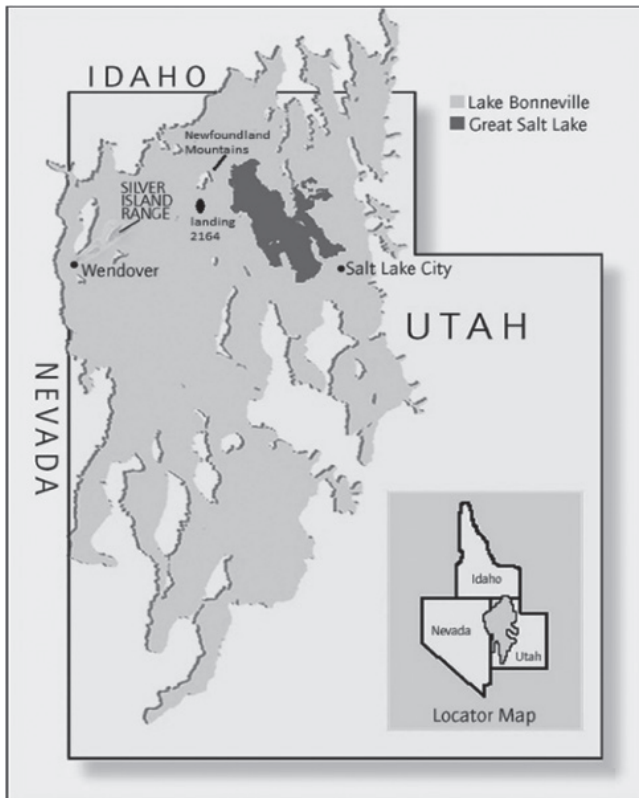


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2

RIVERS, LAKES, ISLANDS, WETLANDS

UTAH SALT FLATS



News: The glistening white salt of the world-famous Bonneville Salt Flats is shrinking near the Utah-Nevada line.

About:

- The Bonneville Salt Flat is found west of the Great Salt Lake, in Western Utah, **western North America**.
- Both the **Bonneville Salt Flats** and the **Great Salt Lake** are remnants of the prehistoric lake - **Lake Bonneville**.
- The Salt Flat, stretching over 30,000 acres, is located near the Utah-Nevada border.

- The salt surface contains **potassium, magnesium lithium and sodium chloride** (common table salt).
- The vegetation is sparse owing to the salty soil. Ponds and marshy areas can be found in spots near the edges of the flats and they provide critical habitat for plants and animals.

VANUATU

News: Climate change is an existential threat in the islands of the Pacific says Vanuatu led group of small Pacific islands.

About:



- **Vanuatu**, officially the Republic of Vanuatu, is a Melanesian island nation located in the South Pacific Ocean.

- The **capital** of the Republic of Vanuatu is **Port Vila**.
- Vanuatu is a **Y-shaped archipelago of 83 islands** and is north-east of Australia.
- Vanuatu is recognized as a distinct terrestrial **ecoregion, known as the Vanuatu rain forests**.
- Vanuatu is part of the **Australasia Ecozone**.

Threat:

- Vanuatu is under existential threat affecting livelihoods, security and well-being due to climate change.
- Its **sea level is rising at twice the average global rate**, and will continue to rise through the 21st century.
- But it contributes less than 0.0018% of global greenhouse gas emissions and is a carbon-negative country.

Melanesia:

- Melanesia has about 2,000 islands in the **South Pacific Ocean**.
- Melanesia is a **biodiversity hotspot** and the **climate of Melanesia is tropical humid**.
- Bismarck Archipelago, Fiji, Maluku Islands, New Caledonia, New Guinea, Solomon Islands, Torres Strait Islands and Vanuatu are traditionally considered as part of Melanesia.

THE RIVER NILE

News: The Nile River is currently facing grave threats from climate change, pollution, and human exploitation.

About:

- The Nile River flows over **6,600 km south-north from Lake Victoria** as White Nile which is joined by Blue Nile at Khartoum, Sudan and empties into the Mediterranean Sea.



- The Nile River is the **longest in Africa** and **runs from Uganda to Egypt**.
- The river's water basin **covers 10% of the continent (almost 11 countries)**.
- The 3 main tributaries of the Nile: The White Nile, The Blue Nile and The Atbara.
- Just before reaching the Mediterranean Sea, the river splits into two main branches:
 - To the West: **Rosetta Branch**
 - To the East: **Damietta Branch**
- **Threats:** The life of millions of Africans depends on the Nile but global warming and being overused by humans is putting the river under strain.
- According to the Intergovernmental Panel on Climate Change (IPCC), the **Nile Delta is one of the three regions in the world that are most vulnerable to global warming**.

SOUTH CHINA SEA

News: The U.S. State Department says that China's claims in the South China Sea are inconsistent with international law as reflected in the UN Convention on the Law of the Sea 1982.

About:



- The South China Sea is an arm of the western Pacific Ocean, connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea.
- It is bounded by the Taiwan Strait, Taiwan, the Philippines, Borneo, the Gulf of Thailand, the Malay Peninsula, and the Asian mainland.
- **Contesting Claims Over Islands:**
 - The Paracel Islands are claimed by China, Taiwan, and Vietnam.
 - The Spratly Islands are claimed by China, Taiwan, Vietnam, Brunei, and the Philippines.
 - The Scarborough Shoal is claimed by the Philippines, China, and Taiwan.
- Since 2010, China has been converting uninhabited islets into artificial islets to bring them under UNCLOS. For example, Haven Reef, Johnson South Reef and Fiery Cross Reef.
- This sea holds tremendous strategic importance

for its location, as it is the connecting link between the Indian Ocean and the Pacific Ocean through Strait of Malacca.

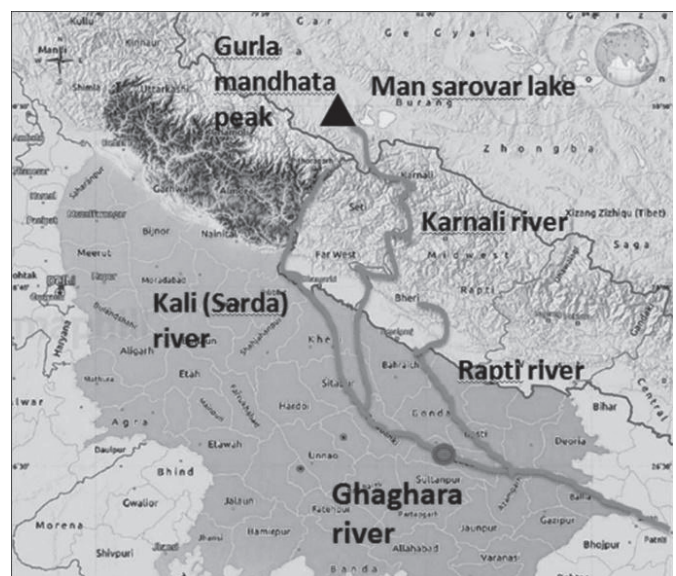
- According to the United Nations Conference on Trade and Development (UNCTAD) **one-third of global shipping passes through it**, carrying trillions of trades which makes it a significant geopolitical water body.

UN Convention on the Law of the Sea (UNCLOS) 1982:

- It lays down a comprehensive regime of law and order in the world's oceans and seas establishing rules governing all uses of the oceans and their resources.
- **Members:** 167 countries and the European Union.
- **India has been a party to the convention since 1995.**

MAHAKALI RIVER

News: The Union Cabinet of India has approved the MoU between India and Nepal for the construction of a bridge over the Mahakali River at Dharchula (India) - Dharchula (Nepal).



About:

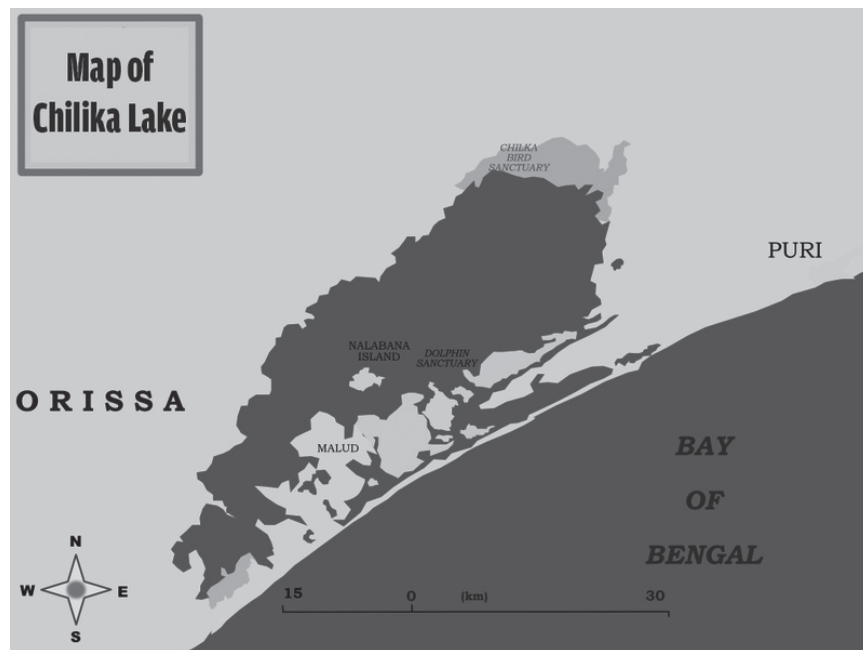
- River Mahakali is a **transboundary river** between India and Nepal.
- Also known as Kali, Sarda along its course, River Mahakali is a **Himalayan catchment of the Ghagra sub-basin of the large Ganga Basin**.
- Originating at **Kalapani in the Trans Himalayan region**, this River ultimately drains the region through the **Terai plains of Uttar Pradesh**.
- The large part of the catchment area of Mahakali lies in **Uttarakhand** and the rest **lies in Nepal**. It **joins the Ghaghra River**, a tributary of the Ganges.
- River Mahakali offers **potential for hydroelectric power generation**.
- The river is also proposed as a source **for one of the many projects** in the Himalayan component of the Indian Rivers Inter-link project.

CHILIKA LAKE

News: As per the Water Bird Status Survey 2022 conducted in Chilika lake, nearly 11 lakh water birds and wetland-dependent species visited the lake.

About:

- Chilika Lake is a **brackish water lagoon**. It spreads over the Puri, Khurda and Ganjam districts of **Odisha**.
- The lake is located **at the mouth of the Daya River flowing into the Bay of Bengal**.



Significance:

- It is **Asia's largest** and the **world's second-largest lagoon** after The New Caledonian barrier reef.
- In **1981**, Chilika Lake became the **first Indian wetland of international importance** under the Ramsar Convention.
- Kalijai Temple is located on an island in Chilika Lake. It is considered to be the **abode of the Goddess Kalijai**.

Bird Sanctuary:	• The Nalabana Island (Forest of Reeds) covering about 16 sq. km of the Chilika lake was declared a bird sanctuary in 1987. • The major attraction at Chilika lake is the Irrawaddy dolphins.
Migratory Birds:	• Chilika lake hosts birds migrating from thousands of miles away from the Caspian Sea, Lake Baikal, Aral Sea, remote parts of Russia, Kirghiz steppes of Mongolia, Central and Southeast Asia, Ladakh and the Himalayas. • The important among these include Amur Falcons, Bar-headed Geese, Black-necked cranes, Marine turtles, Dugongs, Humpback Whales, etc.

Water Bird Status Survey-2022:

- Conducted in **Chilika Lake**.
- It was undertaken jointly by the **Odisha State Wildlife Organization**, the **Chilika Development Authority (CDA)** and the **Bombay Natural History Society**.
- Around **10.7 lakh birds** belonging to the **107 bird species** were counted in Chilika Lake. (Last year, the number of birds counted was over 12 lakhs).
- The lake reported a rare **sighting of the uncommon Mongolian gull**.

SARASWATI RIVER

News: Recently, the Haryana government corrected the Saraswati river's name in revenue records.



About:

- The Saraswati River **originated in the Himalayas** and **met the gulf at the western sea**.
- The river passed through **Haryana, Rajasthan** and **North Gujarat**, the land texture of which was studied by the panel.
- The river passed **through Pakistan** before meeting the Western Sea through the Rann of Kutch. One-third of the river stretch **fell in present-day Pakistan**.
- The river had **two branches**: western and eastern.
- The Himalayan-born **Satluj “of the PAST”**, which flowed through the channels of present-day **Ghaggar-Patiala Wali Rivulets** represents the western branch of the ancient river.
- Eastern Branch **Markanda** and **Sarsuti** (the corruption of Saraswati) represented the eastern branch of Saraswati, known as **Tons-Yamuna**.
- The **confluence of these branches was near Shatrana**, 25 km south of Patial and suddenly, it flows crossing the desert (Rann of Kutch) and meets the Gulf of the western sea.

Historical evidence of the Saraswati River:

- The Sarasvati River is one of the main Rigvedic rivers mentioned in the scripture Rig Veda and later Vedic and post-Vedic texts.
- Book 6 of the Rig Veda includes a hymn called the 'Nadistuti Sukta', which sings praises of the Saraswati as being a "perfect mother, unsurpassed river, supreme goddess".

KATCHATHEEVU ISLAND



News: Recently, eight fishermen from Tamil Nadu were arrested by the Sri Lankan Navy near Katchatheevu Island for crossing the International Maritime Boundary Line (IMBL).

About:

- Katchatheevu is an uninhabited islet in the Palk Strait that was formed due to volcanic eruption in the 14th century.
- This 285-acre land was owned by the Raja of Ramanathapuram.
- Later, it became part of the Madras Presidency after the delimitation of the Gulf of Mannar and Palk Strait during British rule between the then governments of Madras and Ceylon.
- During British rule, it was administered jointly by India and Sri Lanka.
- This island is strategically important for fishing

activities.

- In 1921, both Sri Lanka and India claimed this piece of land for fishing and the dispute remained unsettled.
- In 1974, then Prime Minister of India, Indira Gandhi ceded Katchatheevu to Sri Lanka under the "Indo-Sri Lanka Maritime agreement".
- Another agreement signed in 1976 restricted both the countries' fishermen from fishing in the other's exclusive economic zones.

THE KURIL ISLANDS/ NORTHERN TERRITORIES



News: Japan described the Kuril Islands (which Japan calls the Northern Territories and Russia as the South Kurils) as being under Russia's "illegal occupation".

About:

- These are a set of four islands situated between the Sea of Okhotsk and the Pacific Ocean near the north of Japan's northernmost prefecture, Hokkaido.
- Both Moscow and Tokyo claim sovereignty over them though the islands have been under Russian control since the end of World War II.
- The Soviet Union had seized the islands at the end of World War II and by 1949 had expelled its Japanese residents.
- Tokyo Claims that the disputed islands have been part of Japan since the early 19th century.
- The gulf roughly spans the coast from Sfax to Djerba.
- At the head of the gulf is the city of Gabes (Ghannouchi) where the tides have a large range of up to 2.1 m at spring tides.
- Both Gabes and Sfax are major ports on the gulf, supporting sponge and tuna fisheries, with Gabes being the economic and administrative centre.
- It is 60 miles (100 km) long and 60 miles wide and is bounded by the Qarqannah (Kerkena) Islands on the northeast and by Jarbah (Djerba) Island on the southeast.

GULF OF GABES

News: A Fuel Ship with 750 tons of diesel sinks off the Gulf Of Gabes in Tunisia.



About:

- The Gulf of Gabes, also known as Lesser Syrtis contrasting with the Greater Syrtis in Libya, is a gulf on Tunisia's east coast in the Mediterranean Sea, off North Africa.

BLACK SEA

News: The sinking of the warship Moskva, the 600-foot, 12,500-tonne flagship of the Russian Black Sea Fleet — whether due to a Ukrainian missile strike or, as Russia claims, a fire on board — is a serious setback for Russia.



About:

- The Black Sea, also known as the Euxine Sea, is one of the major water bodies and a famous inland sea of the world.
- This marginal sea of the Atlantic Ocean is

located between Eastern Europe and Western Asia.

- It is surrounded by the **Pontic, Caucasus, and Crimean Mountains** in the south, east and north respectively.
- The **Turkish straits' system** – the **Dardanelles, Bosphorus, and the Marmara Sea** – forms a transitional zone between the Mediterranean and the Black Sea.
- The Black Sea is also **connected to the Sea of Azov by the Strait of Kerch**.
- **Bordering countries of the Black Sea:** Russia, Ukraine, Georgia, Turkey, Bulgaria and Romania.

PRANAHITA RIVER

News: The mega river festival dedicated to worshipping the Pranahita river drew to a close on a grand note with hordes of devotees swarming Kaleshwaram.

About:

- Pranahita River is the **largest tributary of the Godavari**.
- This river acts as the **border between Telangana and Maharashtra**.
- Originates at **Thumbidihatti, asifabad, Telangana** as the confluence of 2 rivers **Wardha and Wainganga**
- Outflow in Godavari River near **Kaleshwaram**.
- **States:** Maharashtra, Telangana.
- Kaleshwaram irrigation project, one of the two components of the redesigned Pranahita- Chevella project, was proposed across the Godavari after the tributaries - Pranahita and Indravati.



Godavari River

FALKLAND ISLANDS

News: “The Commission for Dialogue” with the United Kingdom on the Falkland Islands was recently inaugurated by India and Argentina.



About:

- Falkland Islands are an overseas **territory of the United Kingdom** located in the southwest Atlantic Ocean at the **southernmost point of South America**.
- Positioned both in the **southern and western hemispheres** of the earth.
- They are also called **Malvinas Islands**.
- The **capital and major town** are **Stanley**, on east Falkland, there are also **several scattered small settlements** as well as a Royal Air Force base that is located at Mount Pleasant.
- The two main islands, **East Falkland** and **West Falkland**, and about 200 smaller islands.

PANGONG LAKE

News: India is closely monitoring the construction of a bridge by China on the Pangong Tso (lake) in eastern Ladakh.

About:

- Pangong Tso translates into a “**conclave lake**”. **Pangong** means **conclave** in **Ladakhi** and **Tso** means **lake** in the **Tibetan** language.
- Situated at **over 14,000 feet**, the Lake is about 135 km long.
- It is formed from **Tethys geosyncline**.

- The **Karakoram Mountain range**, which crosses Tajikistan, Afghanistan, Pakistan, China and India, with heights of over 6,000 meters including K2, the world’s second-highest peak, **ends at the north bank of Pangong Tso**.
- Its southern bank has **high broken mountains** sloping towards Spangur Lake in the south.
- The **lake’s water**, while crystal clear, is **brackish**, making it undrinkable.

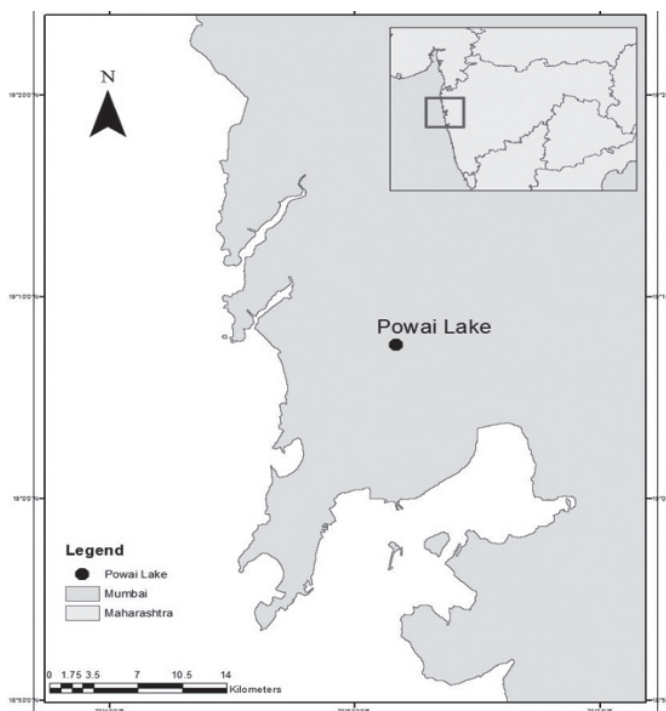


Reasons for dispute:

- The **Line of Actual Control (LAC)** – the line that separates Indian and Chinese troops since 1962 – generally runs along the land, except for the width of Pangong Tso. Here, it **runs through the water**.
- Both sides have **marked their areas**, announcing which side belongs to which country.
- **India controls about a 45 km stretch** of the Pangong Tso and China the rest.

POWAI LAKE

News: In a setback to the Brihanmumbai Municipal Corporation (BMC), the Bombay High Court allowed PILs to challenge the construction of a cycling and jogging track around Powai Lake and said the cycle track was illegal.



About:

- **Recognised as a wetland**, Powai Lake is located in the **north-eastern suburbs of Mumbai, Maharashtra**.
- The Powai Lake is an **artificial man-made lake** located to the north of Mumbai and southwest of Thane.
- It was formed as a result of **two dams built on the Mithi River in 1891**.
- The purpose was to create a reservoir for **providing water supply in Mumbai**.
- However, water quality degraded within a few years, and it was declared **unfit for drinking**. It is being used for **industrial purposes**.
- **The Maharashtra State angling association** (then called the Bombay Presidency angling association), formed in 1936, currently controls and manages the lake.
- In **1995**, the **National Lake Conservation Plan (NLCP)** included Powai Lake among India's 10 main lakes to be revived and improved.
- This program, launched in **2002**, was **implemented by BMC**. As a result of this move,

the condition of the lake has considerably improved.

ANDAMAN AND NICOBAR ISLANDS

News: The Ministry of Environment, Forest, and Climate Change has approved an exemption to the laws governing the regulation of coastal zones and has paved the way for gas-powered plants to be set up in Andaman and Nicobar islands.

About:

- The Andaman Islands are divided into three main islands i.e. **North, Middle, and South**.
- **Duncan Passage** separates Little Andaman from South Andaman.
- The Great Andaman group of islands in the north is separated by the **Ten Degree Channel** from the Nicobar group in the south.
- **Port Blair**, the capital of Andaman Nicobar Islands lies in South Andaman.
- Among the Nicobar Islands, the **Great Nicobar is the largest**. It is the southernmost island and is **very close to the Sumatra Island of Indonesia**. The Car Nicobar is the northernmost.
- Most of these islands are **made of tertiary sandstone, limestone and shale resting on basic and ultrabasic volcanoes** (Similar to the Himalayas).
- **The Barren And Narcondam Islands**, north of Port Blair, are volcanic islands. These are the **only active volcanoes** in India. There are **no active volcanoes in mainland India**.
- Some islands are **fringed with coral reefs**. Many of them are covered with thick forests. Most of the islands are mountainous.
- **Saddle peak (737m)** in North Andaman is the **highest peak**.



DAL LAKE

News: To combat the increasing pollution and rejuvenate Dal Lake, a unique initiative known as 'Athwas' has been launched by Lieutenant Governor Manoj Sinha.

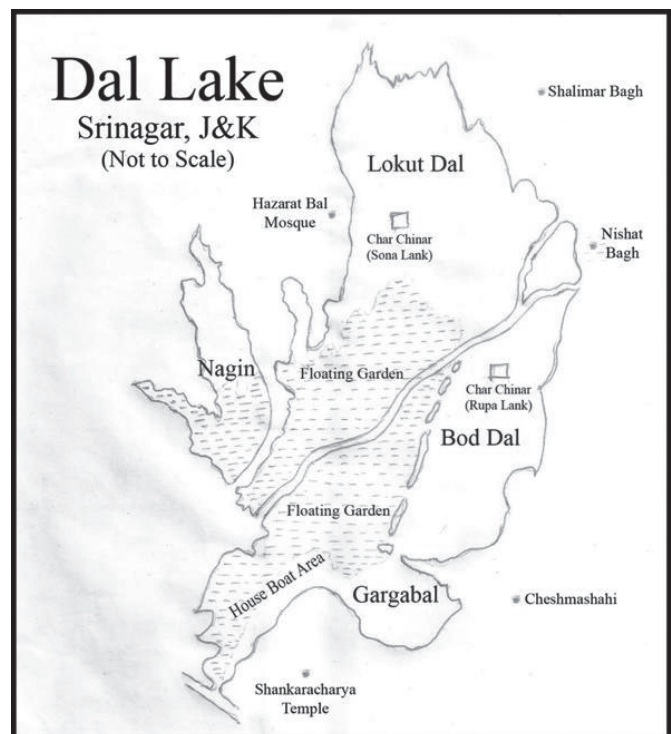
About:

- 'Athwas' is a **unique partnership** between citizens and authorities for the rejuvenation of the Lake. It involves **community participation**.
- Under the initiative, the **de-weeding and dredging** will be conducted in collaboration with the citizens.

Dal Lake:

- It was known as the **summer capital of Jammu and Kashmir**.
- It is named the **"Jewel in the crown of Kashmir"** or **"Srinagar's Jewel"**.
- The lake is also an **important source for commercial operations in fishing and water plant harvesting**.

- The lake is located in the **Zabarwan mountain valley**, in the foothills of the Shankaracharya hills, which surround it on three sides.
- The lake has four main interconnected basins namely, **Hazratbal, Bod dal, Gagribal and Nagin**.
- The floating gardens here, known as **"Raad"** in Kashmiri, blossom with **lotus flowers** during July and August.



ZMIINYI ISLAND

News: Ukraine has caused "significant losses" to the Russian military in airstrikes on the Zmiinyi Island in the Black Sea.

About Zmiinyi Island:

- Located in the **Black Sea**, Zmiinyi Island is also known as **Snake Island or Serpent Island**.
- It is a small piece of rock less than 700 meters from end to end. **It belongs to Ukraine**.

- The island has been known since ancient times and is marked on the map by the village of Bile that is located on it.
- Snake Island lies close to the mouth of the River Danube, which delineates Romania's border with Ukraine.
- It is also roughly to the southwest of the port city of Odessa.



AEGEAN SEA

News: The Turkish President warned Greece—which has been building a military presence in violation of treaties that guarantee the unarmed status of the Aegean islands—to demilitarize islands in the Aegean Sea.



About:

- The ancient name of the Aegean Sea, **archipelago**, was later applied to the islands it contains and is now used to refer to any island group.
- The Aegean Sea, **an arm of the Mediterranean Sea**, is located between the Greek peninsula on the west and Asia Minor on the east.
- It is **located between the southern Balkan and the Anatolian peninsulas**, between the mainland of Greece and Turkey, respectively.
- It is **connected through the straits of the Dardanelles, the Sea of Marmara, and the Bosphorus to the Black Sea**.
- It also has a good connection to the **Ionian Sea to the west**, through the strait lying between the Peloponnese peninsula of Greece and Crete.
- The **island of Crete** can be taken as marking its boundary on the south.

Significance:

- The **Aegean Sea is the cradle of the two great early civilizations**, those of **Crete and Greece**, from which much of modern Western culture is derived.

YANKTI KUTI VALLEY

News: Multiple events of glacial advances have been witnessed from the Yankti Kuti valley situated in the extreme eastern part of Pithoragarh district, Uttarakhand, since 52 thousand years (MIS 3) that synchronizes with climate variability, according to a new study.

About:

- Located in **Uttarakhand**.
- It is the **last valley before the border with Tibet**.
- It runs **along an NW to SE axis**, formed by the river Kuti Yankti, which is one of the headwaters of the Kali River that forms the boundary between India and Nepal in this region.

- This valley is mainly **dominated by Byansis**, one of the four **Bhotiya** communities of Kumaon, with the others being **Johar, Darmiya** and **Chaudansi**.

KALI BEIN

News: Punjab Chief Minister got hospitalized days after he had drunk a glass of water directly from the Kali Bein, a holy rivulet in Sultanpur Lodhi.

About:	• The Kali Bein river is 165 Kms long. • It starts from Dhanao Village in Hoshiarpur and meets the confluence of the rivers Beas and Sutlej in Kapurthala. • The name of the river is due to the seepage of minerals. Wastewater from the villages and towns and industrial wastes turn their water black. This led to the name Kali Bein (black rivulet).
Significance of Kali Bein to the Sikh religion:	• The Kali Bein is of great significance to Sikh religion and history because the first Guru, Nanak Dev, is said to have got enlightenment here. • When Guru Nanak Dev was staying at Sultanpur Lodhi with his sister Bebe Nanki, he would bathe in the Kali Bein. He is said to have disappeared into the waters one day, before emerging on the third day. The first thing he recited was the “Mool Mantra” of the Sikh religion.

ANANG TAL LAKE

News: Center orders restoration of historic 1000-year-old Anang Tal lake in Delhi's Mehrauli.

About:

- It is located in **South Delhi**. The lake is situated to the **north of the Jog Maya temple** and approximately 500 meters to the northwest of the Qutub Complex.
- The lake is claimed to have been **built by a Tomar King, Anangpal II in 1060 AD**.
- The lake is said to have been a **place of a general resort**, but now it is dried up and used for cultivation.
- It is also said **Alauddin Khalji**, in 1296-1316 AD, **utilised the water of this tank** when he built (Qutub) minar and extended the Qutub-ul-Islam mosque.

Anangpal Tomar:

- Anangpal II was popularly known as **Anangpal Tomar**. He belonged to the **Tomar dynasty**. He was the founder of **Dhillika Puri**, which eventually became Delhi.
- This is revealed by the **stone inscriptions excavated by Lord Cunningham**. The inscriptions and coins suggest that Anangpal Tomar was the ruler of present-day **Delhi and Haryana** between the 8th-12th centuries.
- He was succeeded by his **grandson Prithviraj Chauhan**.

LAKE GARDA

News: Italy's worst drought in decades has reduced Lake Garda to near its lowest level ever recorded.



Why has Lake Garda reached its lowest level?

- Lake Garda is also known as **Benaco**. It is the **largest lake in Italy**.
- Northern Italy saw **significantly lower rainfall** for months and snowfall in 2022 was also down 70%, **drying up important rivers** like the Po, which flows across Italy's agricultural and industrial heartland.
- The parched condition of the **Po, Italy's longest river**, caused billions of euros in losses to farmers who normally rely on it to irrigate fields and rice paddies.
- To **compensate for the loss**, authorities allowed more water from Lake Garda to flow out to local rivers.
- But in late July 2022, they **reduced the amount to protect the lake** and the financially significant tourism tied to it.



GODAVARI RIVER

News: Officials issued the second warning with the flood level crossing 50 feet in the Godavari River at Bhadrachalam, Telangana, and the flow in the river crossing the 13-lakh cusecs mark.

About:

- Origin of the Godavari River rises from **Trimbakeshwar near Nasik in Maharashtra** and flows for a length of About 1465 km before falling into the Bay of Bengal.
- The Godavari is the **largest Peninsular River system**. It is also called the **Dakshin Ganga**.
- The basin is bounded on the north by the **Satmala hills**, on the south by the **Ajanta range and the Mahadeo hills**, on the east by the **Eastern Ghats** and on the west by the **Western Ghats**.
- The Godavari basin extends over the states of **Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha** in addition to smaller parts in Madhya Pradesh, Karnataka and the Union territory of Puducherry.
- Tributaries **Pravara, Purna, Manjra, Penganga, Wardha, Wainganga, Pranhita** (combined flow of Wainganga, Penganga, Wardha), **Indravati, Maner and the Sabri**.
 - The Pravara, Manjira and Maner are **right-bank tributaries**.
 - The Purna, Pranhita, Indravathi and Sabari are important **left-bank tributaries**
- **Cultural Significance:** Kumbh Mela also takes place on the banks of the Godavari River in Nashik.
- **Urban Centers:** Includes Nagpur, Aurangabad, Nashik, Rajahmundry.
- **Important Projects on Godavari:** Polavaram, Kaleshwaram, Sadarmat anicut, Inchampalli project, Sriram Sagar Project (SRSP).



RHINE RIVER



News: Water levels on the Rhine river are very low because of unusually hot and dry weather, preventing many vessels from navigating the critical European shipping route fully loaded.

About:

- It is a **waterway of Western Europe** culturally and historically one of the great rivers of the continent and among the **most important arteries of industrial transport in the world**.

- It rises in two headstreams high in the Swiss alps.
- It flows from two small headways in the **alps of east-central Switzerland north and west to the North Sea**, into which it drains through the Netherlands.
- It is a **major route** for products ranging from grains to chemicals and coal.
- It is an **important link between industrial producers and global export terminals** in North Sea ports such as Rotterdam and Amsterdam, while canals and other rivers link the Rhine to the Danube, making it possible to ship to the Black Sea as well.

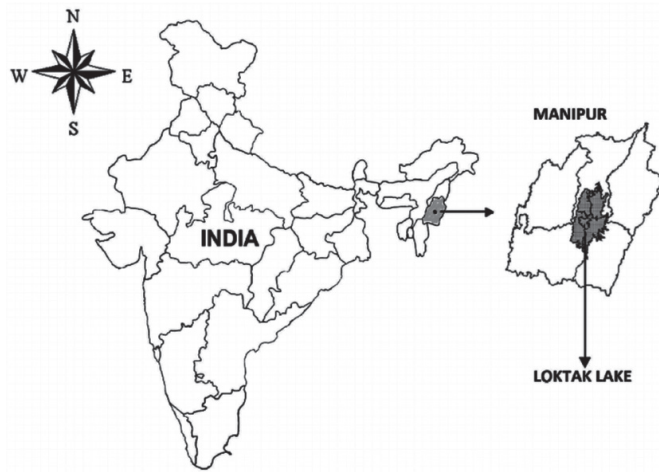
LOKTAK LAKE

News: Recently, the Central Bureau of Communication under its Integrated Communication & Outreach Programme (ICOP) organized the first-ever floating photo exhibition at the Loktak Lake in Manipur.

About:

- Loktak Lake is a **freshwater lake in the Manipur state of Northeast India**.
- It hosts hundreds of floating islands called “Phumdis” with multiple plant species and Keibul Lamjao National Park, the only floating national park in the world.
- The park is the **last natural refuge of the endangered Sangai Deer**.
 - The sangai is an **endemic and endangered subspecies of Eld’s deer found only in Manipur, India**. It is also the **state animal of Manipur**.
- The lake is designated as a **wetland of international importance** under the Ramsar Convention on 23 March 1990.
- It was also listed under the **Montreux Record in 1993**, “a record of Ramsar sites where changes in ecological character have occurred, are occurring or are likely to occur”.

- Loktak Day is observed every year on the 15th of October at the periphery of the Loktak lake.



THAMIRABARANI RIVER

News: District administration of Tirunelveli in Tamil Nadu along with Bengaluru-based non-profit TRee are using a ‘hyper local’ approach to restore one of south Asia’s oldest rivers, the Thamirabarani.

About:

- It is a **district-level initiative**, which aims to **restore the Social-ecological Systems of the Tamiraparani river**.
- From head-waters to the estuary to enable conditions for native biodiversity to thrive and maintain and enhance multiple ecosystem services to local stakeholders.
- **Five social-ecological observatories** will be set up as part of the first phase of the project.
- These will **serve as pilots** to scale up from the learnings from these sites.
- The **idea is to rejuvenate not just the Thamirabarani but all the water bodies** in the riverscape of Tirunelveli.

Thamirabarani River:

- The Thamirabarani is the **only perennial** (continuous flow of water) river in Tamil Nadu.

- This is the **shortest river** in the state, the Thamirabarani starts in Pothigai hills of the Western Ghats in the Ambasamudram taluk.
- Flows through Tirunelveli and Thoothukudi districts and empties at Korkai (Tirunelveli district) into the Gulf of Mannar (Bay of Bengal).
- It thus **originates and ends in the same state**.
- The river **supports wildlife** such as the Nilgiri marten, slender loris, lion-tailed macaque, white spotted bush frog, galaxy frog, Sri Lankan atlas moth and the great hornbill.
- Besides the **ecosystem services it provides**, the river also has a **historical value** for the people of the state. It is mentioned extensively in **Sangam-era literature**.



SUKA PAKAI RIVER

News: NGT has directed the state government of Odisha to revive the Suka Pakai River within 6 months.

About:

- Sukapaika is **one of the several distributaries of the mighty Mahanadi river in Odisha**.
- It branches away from the Mahanadi at **Ayatpur village in Cuttack district** and flows for about 40 kilometers (km) before **rejoining its parent river at Tarapur** in the same district.

- It covers three blocks such as **Cuttack Sadar**, **Raghunathpur** and **Nischintakoili Cuttack**.
- Suka Pakai river is an **important system of the Mahanadi** to control floodwater and maintain the flow in the river as well as the Bay of Bengal.

Mahanadi River:

- The **Mahanadi River system** is the **third largest in peninsular India** after Godavari and Krishna, and the **largest river in Odisha state**.
- **Catchment area of the river:** Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand, and Maharashtra.
- Its basin is bounded by the **Central India hills** on the north, by the **Eastern Ghats** on the south and east, and by the **Maikala range** on the west.
- It rises from a place **near Sihawa**, in the **Dhamtari district of Chhattisgarh**.
- **Major Tributaries:** The Seonath, the Hasdeo, the Mand and the Ib join Mahanadi from the left whereas the Ong, the Tel and the Jonk join it from the right.



Major Dams/Projects on Mahanadi:

- **Hirakud Dam:** This is the **longest dam** in India.
- **Ravishankar Sagar**, **Dudhawa Reservoir**, **Sondur Reservoir**, **Hasdeo Bango** and **Tandula** are other major projects.

SEMBANAD LAKE

News: Vembanad Lake is shrinking and its unique biodiversity is under threat of ecological decay.

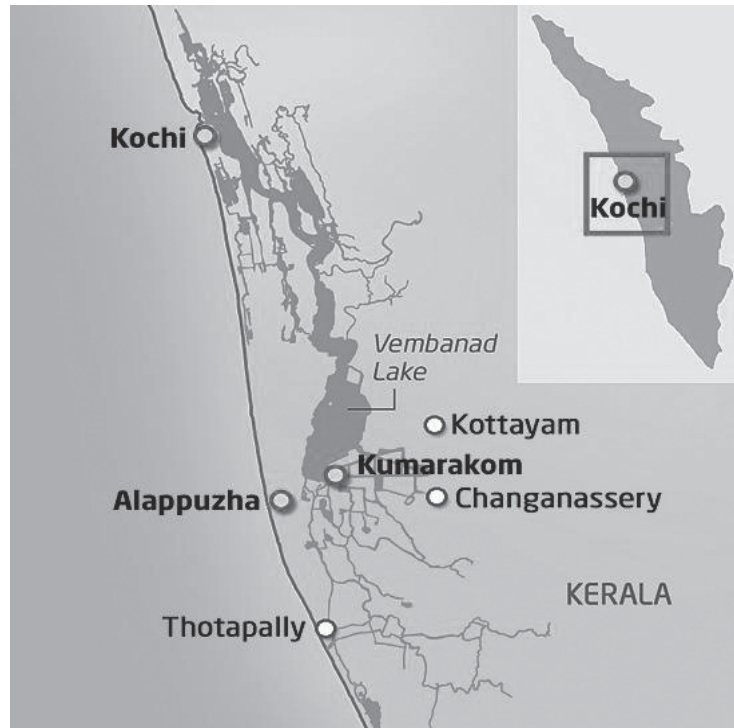
About:

- Vembanad Lake is also known as **Punnamada Lake**, **Kochi Lake**, **Vembanad Kayal** and **Vembanad Kol**.
- It is **one of the largest lakes in Kerala** and the **longest lake in the country**.
- It is the **second-largest wetland system in India** after the Sunderbans in West Bengal.
- The lake has its source in four rivers, **Meenachil**, **Achankovil**, **Pampa** and **Manimala**.
- The lake lies **right by the Arabian Sea**, with a narrow reef separating it from the sea.

Geographical Features in the Lake:

- The **Pathiramanal island** or the **Midnight sands** is a **small beautiful island** in the Lake.
- The **Kumarakom Bird Sanctuary** is located on the east coast of the lake.
- In 2019, **Willingdon Island**, a seaport located in the city of Kochi, was carved out of Vembanad Lake.
- The **1252m long saltwater barrier**, **Thanneermukkom**, was built to stop saltwater intrusion into Kuttanad.
- The **Nehru Trophy Boat Race (Vallam Kali)** is a **Snake Boat Race** hosted in the lake every year in

the month of August.



Recognition:

- The government of India has **recognised the wetland** under the National Wetlands Conservation Programme.
- In **2002**, it was included in the list of wetlands of international importance, as defined by the Ramsar Convention.



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ODESSA PORT

News: Russian drone strikes leave 1.5 million without power in the Ukrainian port of Odessa.

About:

- Odessa Sea Port (UAODS Port) is the **largest Ukrainian seaport** and **one of the largest ports in the Black Sea basin**.
- The types of vessels regularly calling at Odessa are Bulk carriers (100%).
- Along with its younger satellite ports of Chornomorsk (1958) and Yuzhne (1973), the port of Odessa is a **major freight and passenger transportation hub of Ukraine**.
- Odessa is the **base of a fishing fleet**, as well as the chief operational hub of the Ukrainian Navy.
- Odessa is also an **important cultural and educational center**.



MAHESHWAR DAM: NARMADA RIVER

News: Recently, The Madhya Pradesh government cancelled all contracts with Maheshwar Hydroelectric Project almost three decades after it agreed to purchase power from it.

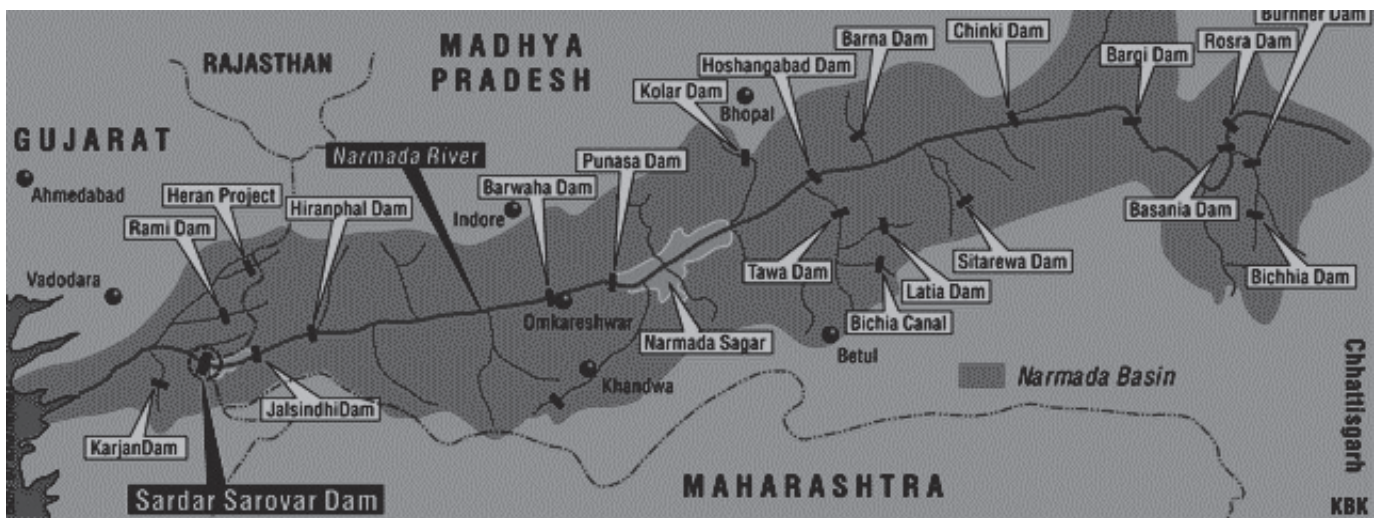
About Narmada River:

- Narmada is the **largest west-flowing river of the peninsular region**, flowing through the **rift valley** between the Vindhya Range on the north and the Satpura Range on the south.
- Narmada is flowing through the area where the land is not sloping towards the west from central India, but it is **flowing west because of the rift valleys only**.
- It rises from the **Maikala range near Amarkantak** in Madhya Pradesh.
- It drains through states of **Madhya Pradesh, Maharashtra, and Gujarat**.
- It forms **Dhuandhar Falls** near Jabalpur, Madhya Pradesh.
- There are **several islands** in the estuary of Narmada of which **Aliabet is the largest**.
- **Major Tributaries:** Hiran, Orsang, the Barna and the Kolar.
- **Hydro Power Projects:** Indira Sagar, Sardar Sarova, Maheshwar etc.



Narmada Bachao Andolan:

- It is an **Indian social movement** spearheaded by native tribes (Adivasis), farmers, environmentalists, and human rights activists **against several large dam projects across the Narmada River.**
- **Sardar Sarovar Dam in Gujarat** is one of the biggest dams on the river and was one of the first focal points.



ATAL BRIDGE

News: The Prime Minister has inaugurated the **pedestrian-only 'Atal Bridge'** on the Sabarmati River in Gujarat's Ahmedabad city.



About:

- Atal Bridge is a **Foot-Over Bridge (FOB)** on the **Sabarmati River** in **Ahmedabad, Gujarat**.
- Apart from being used by pedestrians, the bridge can also be **used by cyclists** to cross the river.
- The bridge is designed in such a way that it can be **used by people from both the upper and lower levels of the river**.

Sabarmati River:

- The Sabarmati River is one of the major **west-flowing** rivers in India.
- Sabarmati River is a **combination of two streams** the **Sabar** and **Hathmati**.
- It **originates in the Aravalli Range** of the **Udaipur District of Rajasthan** and meets the

Gulf of Khambhat of the Arabian Sea after traveling 371 km in a **south-westerly direction** across **Rajasthan and Gujarat**.

- The **River Wakal, the Hathmati, the Vatrak, and the Sei** are the major tributaries of Sabarmati River.

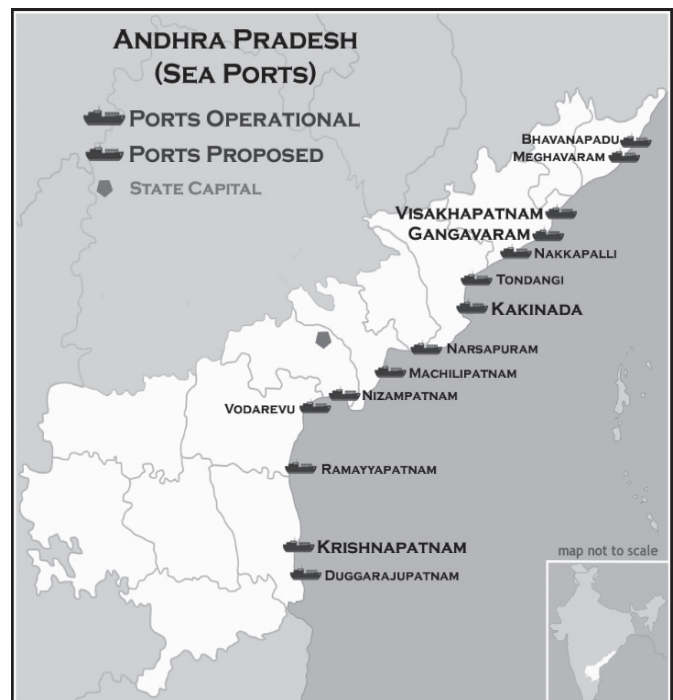


MACHILIPATNAM SEAPORT

News: The seaport proposed at Machilipatnam in Krishna district got Coastal Regulation Zone (CRZ) clearance from the National Centre for Sustainable Coastal Management recently.

About:

- Machilipatnam or Masulipatnam or Bandar is located in **Krishna district, Andhra Pradesh**.
- The ancient port town served as the **settlement of European traders from the 16th century**, and it was a major trading port for the Portuguese, British, Dutch and French in the 17th century.
- The foundation for the Machilipatnam Seaport was **laid in 2008**.
- It is a proposed **deep-sea port** on the **coast of the Bay of Bengal**.
- It is located **65 km** from the trading hub of **Vijayawada**.
- The **Andhra Pradesh Maritime Board (APMB)** has planned to build the Port in two phases.



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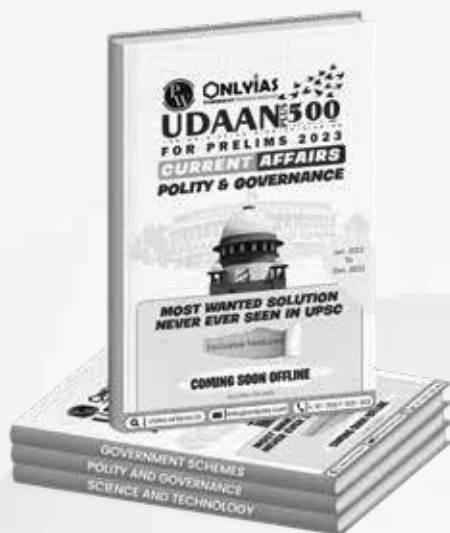
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MOUNTAIN AND MOUNTAIN PASSES

MINING IN ARAVALLIS

News: Report of a joint committee, formed by NGT to ascertain the **extent of illegal mining in Aravalli** has reported mining activity at several locations in the region despite prohibitory orders.

About:

- Mining of major and minor minerals in Aravalli hills in Faridabad, Gurugram and Mewat was banned by the Supreme Court, first in 2002 and then in 2009.
- This was banned to restore the traditional ecological value of the hills.
- Earlier, CAG had also highlighted the alarming level of Ecological degradation in Aravallis.

Aravalli Ranges:

- The Aravalli Range, **formed by folding, an orogenic process, is one of the oldest mountain ranges of the world** and predates the formation of the Himalayan ranges. The fold mountains are formed by the movement of convergent plate boundaries and subsequent folding.
- It is an **almost 700 km-long mountain range that starts from Gujarat, travels through Rajasthan and Haryana before finishing at Raisina hill, Delhi.**

- The mountains are divided into two, main ranges – the **Sambhar Sirohi Range and the Sambhar Khetri Range** in Rajasthan, where their extension is about 560 km.
- They have been denuded over the past four decades owing to mining, deforestation and over-exploitation of its fragile and ancient water channels.
- **Several water streams originate from Aravalli.** Also, with their natural cracks and fissures, they function as NCR's most critical water recharge zone.
- The **drainage of Ganga and Indus is divided by one extension of the Aravalli**, from Delhi to Haridwar.
- The earliest evidence of mining of Copper is found as far as the 5th Century BC in the **Khetri region.**
- Rivers such as **Luni and Sabarmati originate from the Aravalli range.** Seasonal streams along with their tributaries control the water budget in the arid regions of Rajasthan.
- The Aravalli range is considered the **“lungs” for the world's most polluted air of Delhi–National Capital Region (NCR).**
- **Guru Shikhar Peak on Mount Abu is the highest peak in the Aravalli Range (1,722 m).**



- **Climate:**
 - During monsoons, the mountain range guides the attenuated monsoon clouds eastwards, thus helping nurture the **sub-Himalayan** rivers and feeding the north Indian plains.
 - In the winter months, it protects the **fertile alluvial river valleys** (the para-Indus and Gangetic) from the cold westerly winds from Central Asia.
- **Wildlife:**
 - The first-ever 2017 wildlife survey of a 200 square kilometre area crossing five districts (Gurgaon, Faridabad, Mewat, Rewari and Mahendergarh) of Haryana by the Wildlife Institute of India (WII) found 14 species, including leopards, striped hyena, golden jackal (with 92% occupancy across the survey area), nilgai, palm civet, wild pig, rhesus macaque, peafowl and Indian crested porcupine.

The Great Green wall of India

- The Great Green Wall of Aravalli is a about 1,600 km long and a5 km wide green ecological corridor along Aravalli mountain range spanning **from Gujarat to Delhi**.
- It will be **connected to the Shivalik hill range**.
- Around 1.35 billion (135 crore) new native trees will be planted over 10 years to rehabilitate the forest cover in this area.
- To be implemented on a concept similar to the **Great Green Wall of Sahara in Africa**, it will **act as a buffer against pollution**.

ZOJI LA

News: Zoji la Pass has been opened for Civilian Traffic over Ladakh from Sonamarg.

About:

- **Zoji La** is a high mountain pass located in the **Kargil district of Ladakh**.
- The pass **links Leh and Srinagar** and provides an important link between the Union Territories of Ladakh and Kashmir.
- Zoji la is known as the “**Mountain Pass of Blizzards**”.
- It remains **closed during winter** due to heavy snowfall, cutting off the Ladakh region from Kashmir.
- The **Zoji la tunnel project** was launched in 2018. The tunnel is **Asia’s longest and most strategic bi-directional tunnel**, which will provide all-weather connectivity between Srinagar, Kargil and Leh.

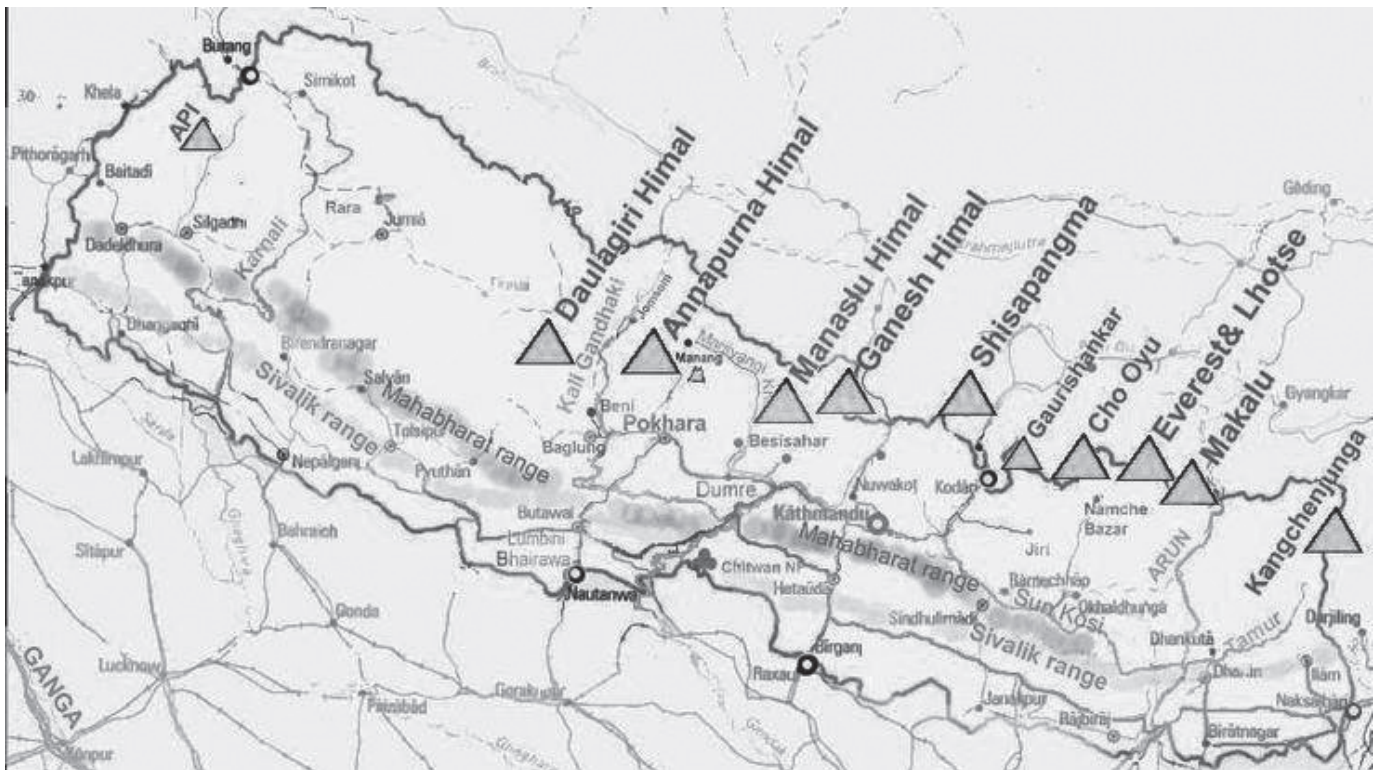


MOUNT ANNAPURNA

News: Skalzang Rigzin, the first Indian Mountaineer to climb Mount Annapurna peak without supplemental Oxygen, received a warm welcome in Leh.

About:

- Mount Annapurna peak is situated in the Annapurna Mountain range of Gandaki Province, north-central Nepal.
- It is the **tenth-highest mountain in the world** at 8,091 meters above sea level.
- Mt Annapurna is one of the most difficult among 8000 meters height peaks in the world.
- It is infamous as the “**Killer Mountain**” due to its fatality-to-summit rate.



ALPS MOUNTAINS

News: In 2022, glaciers in the Swiss alps melted more than any other year on record.

About:

- The alps **emerged during the alpine orogeny**, an event that began about **65 million years ago** as the Mesozoic era was drawing to a close.
- The alps are **young fold mountains with rugged relief and high conical peaks**. They are the most prominent of Western Europe's physiographic regions.
- **Countries covered:** The alps form part of France, Italy, Switzerland, Germany, Austria, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Serbia, and Albania. But **only Switzerland and Austria** can be considered **true alpine countries**.

- Mont Blanc is the highest peak in the alps and Europe, reaching a lofty 4,804 meters above sea level.
- It is located in the Graian Alps and lies within France, Switzerland, and Italy.



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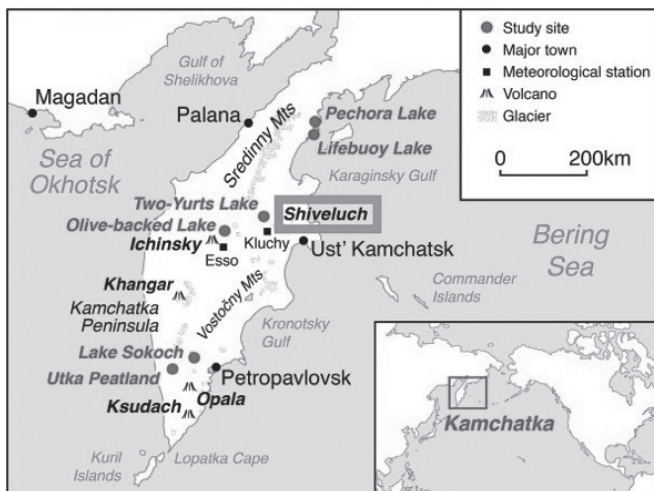


SHIVELUCH VOLCANO

News: The Shiveluch volcano on the **Kamchatka Peninsula** in the Russian Far East has increased its activity and is now in danger of erupting violently.

About:

- Shiveluch is one of the largest and most active volcanoes in Kamchatka, having erupted at least 60 times in the past 10,000 years.
- Kamchatka is home to 29 active volcanoes, and it is a part of the “**Ring of Fire**” which circles the Pacific Ocean and is prone to eruptions and frequent earthquakes.



- It has two main parts:
 - Old Shiveluch, which tops 3,283 metres (10,771 ft),

- Young Shiveluch – a smaller, 2,800-metre peak protruding from its side.

- Young Shiveluch lies within an ancient caldera – a large crater-like basin that likely formed when the older part underwent a catastrophic eruption at least 10,000 years ago.
- It is this part that has become extremely active; the lava dome continues to grow and that stronger “fumarole activity” has been observed.

AHIY SEAMOUNT

News: The U.S. Geological Survey found that the Ahyi Seamount began erupting in mid-October 2022.

About:

- Ahyi seamount is a large conical submarine volcano, which is an undersea volcanic source.
- It lies deep beneath the Pacific Ocean in the U.S. Commonwealth of the Northern Mariana Islands, which are 6,115 km west of Honolulu.
- Its highest point is 79 m below the surface of the ocean.
- It is located about 18 km southeast of the island of Farallon de Pajaros, also known as Uracas.
- The seamount is part of the Mariana Volcanic Arc, which is a chain of over 60 active volcanoes stretching over 600 miles west of and parallel to the Mariana Trench, the world’s deepest point.



- Mauna Loa last erupted 38 years ago.



MAUNA LOA

News: The recent incidents of ground shaking and swelling at Mauna Loa indicate that the **largest active volcano in the world could erupt.**

About:

- Mauna Loa is **one of five volcanoes that together make up the Big Island of Hawaii**, which is the southernmost island in the Hawaiian archipelago.
- Though it is **not the tallest** however, **it's the largest** and makes up about half of the island's land mass.
- **Tallest** among the islands of Hawaii is Mauna Kea.
- It sits immediately north of Kilauea volcano, which is currently erupting from its summit crater.
- Kilauea is well-known for a 2018 eruption that **destroyed 700 homes and sent rivers of lava spreading across farms and into the ocean.**

HUNGA TONGA

News: Tonga, the Pacific country, experienced a large volcanic eruption followed by a tsunami that flooded parts of the capital, Nuku'alofa, which lies just 65 km north of the volcano.

About:

- The eruption of the Hunga Tonga-Hunga Ha'apai volcano sent **shockwaves across the South Pacific.**
- Hunga Tonga-Hunga Ha'apai is a **volcanic island in Tonga**, located about 30 km south of the submarine volcano of Fonuafo'ou and 65 km north of Tongatapu, the country's main island.
- The initial tsunami wave created by Tonga's underwater **Hunga Tonga volcano eruption in 2022** was 90 meters high.
- The volcano is **part of the highly active Tonga-Kermadec Islands volcanic arc**, a subduction zone extending from New Zealand north-northeast to Fiji.

- The island arc is **formed at the convergent boundary** where the Pacific Plate subducts under the Indo-Australian Plate.

Tonga:

- It is a **Polynesian country** and also an archipelago consisting of 171 islands, of which 45 are inhabited.
- **Located in Oceania**, Tonga is an archipelago in the **South Pacific Ocean**.
- **Boundaries:** It is surrounded by Fiji and Wallis and Futuna (France) to the northwest; Samoa to the northeast; New Caledonia (France) and Vanuatu to the west; Niue (the nearest foreign territory) to the east; and Kermadec (New Zealand) to the southwest.
- Tonga has a **tropical rainforest climate**.

SAKURAJIMA VOLCANO

News: The Sakurajima Volcano erupted on Japan's major western island of Kyushu.

About:

- Sakurajima is an active **stratovolcano**, **one of Japan's most active volcanoes**, and eruptions of

varying levels take place regularly.

- The largest historical eruptions of Sakurajima took place **during 1471-76 and in 1914**.
- Its eruption has been **recorded since the 8th Century**.
- Due to its frequent deposition of ash on Kagoshima, and due to its explosive potential, it is considered **one of the very dangerous volcanoes**.



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(HISTORY)

- > MOST LOVED FACULTY FOR HISTORY OPTIONAL
- > 20+ YEARS OF EXPERIENCE AT RENOWNED INSTITUTES
- > MENTORED MORE THAN 2,00,000 UPSC CSE ASPIRANTS
- > MORE THAN 2000 SELECTIONS IN UPSC
- > POST GRADUATE FROM DLHI UNIVERSITY



AMIT KUMAR SINGH

(ETHICS)

- > 15+ YEARS OF EXPERIENCE AT RENOWNED INSTITUTES
- > MENTOR MORE THAN 1,00,000+ STUDENTS & 1000+ SELECTION
- > TAUGHT ETHICS & PHILOSOPHY IN DELHI UNIVERSITY FOR 3 YEARS
- > GRADUATE FROM ALLAHABAD UNIVERSITY IN PHILOSOPHY & POST GRADUATE FROM DELHI UNIVERSITY



DR. ADARSH KUMAR

(POLITY, GOVERNANCE AND IR)

- > EDUCATIONAL & LEGAL CONSULTANT
- > PHD IN ROLE OF BUREAUCRACY, UGC-NET QUALIFIED
- > 23+ YEARS OF EXPERIENCE IN TEACHING, MENTORING 3,00,000+ STUDENTS FOR CIVIL SERVICE EXAM
- > AUTHORED BOOKS ON INDIAN POLITY, CONSTITUTION & PUBLIC ADMINISTRATION FOR UPSC ASPIRANTS



RAJESH MISHRA

(GEOGRAPHY)

- > 10+ YEARS OF UPSC TEACHING EXPERIENCE WITH MENTORING OF 1 LAKH+ ASPIRANTS
- > UGC-NET QUALIFIED
- > EX. FACULTY FOR MULTIPLE RENOWNED INSTITUTES



DEEPAK KUMAR SINGH

(ETHICS & IR)

- > 18 YEARS+ EXPERIENCE IN BOTH ONLINE AND OFFLINE PLATFORM
- > RENOWNED FACULTY FOR ETHICS, PSIR & POLITY.
- > EX-EDUCATOR OF TOP PROMINENT INSTITUTES.
- > MENTORED MORE THAN 100000+ STUDENTS IN UPSC



RITESH R JAISWAL

(SCIENCE & TECHNOLOGY & ENVIRONMENT)

- > 15+ YEARS OF UPSC TEACHING EXPERIENCE WITH RENOWNED INSTITUTES ACROSS INDIA
- > MOCK INTERVIEW PANELIST & INTERVIEW EXPERT
- > SPECIALIZED IN TEACHING SCIENCE & TECHNOLOGY AND ENVIRONMENT



PRATIK GUPTA

(ECONOMY)

- > POST GRADUATE FROM DU & IGNOU
- > MENTORED MORE THAN 1,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 10+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



KAPIL SIKKA

(POLITY & GOVERNANCE)

- > MENTORING, GUIDING AND TEACHING UPSC STUDENTS SINCE 9 YEARS
- > SPECIALIZED IN TEACHING INDIAN POLITY, INDIAN ECONOMY, ESSAY, INTERNAL SECURITY & POST INDEPENDENCE INDIA WITH AN EXPERIENCE OF TEACHING IN LEADING INSTITUTES



DR. MOHD. ZIA

(ECONOMY & HISTORY)

- > FACULTY, COACH AND MENTOR- GS-HISTORY, GS-ECONOMY AND HISTORY OPTIONAL
- > TEACHING EXPERIENCE OF 8+ YEARS WHICH INCLUDES SERVICE AS ASSISTANT PROFESSOR AT RIE, NCERT, BHOPAL
- > MA IN HISTORY FROM IGNOU, PHD FROM A.M.U.



ABHISHEK SRIVASTAV

(HISTORY)

- > EXPERIENCED FACULTY FOR INDIAN HISTORY & CULTURE AT RENOWNED INSTITUTES
- > 7+ YEARS OF EXPERIENCE IN TEACHING AND MENTORING 45000+ STUDENTS FOR CIVIL SERVICE EXAM
- > GRADUATE FROM INDIAN MARITIME UNIVERSITY, KOLKATA



LOKESH TRIPATHI

(ECONOMY)

- > MA (ECONOMICS), UGC NET QUALIFIED
- > APPEARED FOR 3 UPSC INTERVIEWS
- > 10+ YEARS OF EXPERIENCE IN TEACHING, MENTORING 60000+ STUDENTS FOR CIVIL SERVICE EXAM
- > FACULTY, COACH AND MENTOR- GS- INDIAN ECONOMY AND GOVERNMENT SCHEMES.



MANJU CHOUDHARY

(POLITY, NCERTS, CA)

- > M.COM (GOLD MEDALIST), MA (PUBLIC ADMINISTRATION), UGC NET QUALIFIED
- > 6+ YEARS OF EXPERIENCE IN TEACHING, MENTORING 50000+ STUDENTS FOR CIVIL SERVICE EXAM
- > FACULTY, COACH AND MENTOR- GS- INDIAN POLITY AND NCERT BASICS, CURRENT AFFAIRS.

MEET OUR GS FACULTIES



DR. MOHD SALEEM

(SCIENCE & TECHNOLOGY)

- > RENOWNED SCIENCE & TECH FACULTY
- > 12+ YEARS OF EXPERIENCE IN TEACHING
- > MENTORED MORE THAN 100000+ STUDENTS FOR CIVIL SERVICE EXAM
- > ALUMNI OF JAMIA MILLIA ISLAMIA RESIDENTIAL COACHING
- > EX-EDUCATOR OF PROMINENT INSTITUTES



ANANT TRIPATHI

(HISTORY, CSAT)

- > MBA FROM IIFT, NET QUALIFIED IN HISTORY, MANAGEMENT & PUBLIC ADMINISTRATION.
- > MENTORED MORE THAN 1,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 10+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



BARUN

(ECONOMICS & CURRENT AFFAIRS)

- > B. TECH FROM WEST BENGAL UNIVERSITY OF TECHNOLOGY IN ELECTRICAL ENGINEERING
- > MENTORED MORE THAN 5,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 5+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



NANKI BAWEJA

(ECONOMY)

- > EX. EDUCATOR AT RENOWNED INSTITUTES WITH AN EXPERIENCE OF MENTORING 5000+ STUDENTS IN THEIR UPSC JOURNEY
- > QUALIFIED COMPANY SECRETARY AND HOLDS AN MBA IN FINANCE



DEEPAK SINGH

(HISTORY, ECONOMY & ETHICS)

- > B.COM ACCOUNTS HONORS GRADUATE
- > MENTORED MORE THAN 1,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 8+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



SHASHANK SHEKHAR ROY

(ETHICS & IR)

- > TRAINED THOUSANDS OF STUDENTS FOR UPSC AND OTHER STATE SERVICES
- > DECADES OF EXPERIENCE IN TEACHING, TRAINING AND MENTORING
- > CERTIFIED COMMUNICATION COACH, MOTIVATIONAL SPEAKER AND MENTOR



AKSHAT DWIVEDI

(POLITY & IR)

- > B.TECH IN BIOMEDICAL ENGINEERING & POST GRADUATION IN M. A. POLITICAL SCIENCE
- > 5+ YEARS OF EXPERIENCE AT RENOWNED INSTITUTE
- > MENTORED MORE THAN 20,000 UPSC CSE ASPIRANTS.
- > INVOLVED IN RESEARCH FIELD OF INTERNATIONAL RELATIONS



SNEHIL TRIPATHI

(POLITY)

- > PUBLISHED AUTHOR WITH MCGRAW HILL EDUCATION AND OXFORD UNIVERSITY PRESS
- > 7+ YEARS OF TEACHING EXPERIENCE WITH VARIOUS INSTITUTES ACROSS THE COUNTRY
- > EX. ACADEMIC HEAD AND TOP FACULTY WITH RENOWNED ED-TECH ORGANIZATION



SONIYA AHUJA

(INTERNATIONAL RELATIONS)

- > 7+ YEARS OF TEACHING EXPERIENCE IN POLITICAL SCIENCE AND PSYCHOLOGY
- > MA POLITICS WITH SPECIALIZATION IN INTERNATIONAL RELATIONS, JNU DELHI
- > SPECIALIZED IN LEARNING PEDAGOGY AND CURRICULUM DESIGN
- > BA IN SOCIAL SCIENCE, TISS MUMBAI



ADITYA TIWARI

(HISTORY, ECONOMY AND ETHICS)

- > BIOCHEMICAL ENGINEER, HBTI, KANPUR
- > G.T.E. DESIGN, INDIAN OIL CORPORATION
- > UPSC INTERVIEW APPEARED

CYCLONE KARIM

News: Recent satellite photographs have shown twin cyclones in the Indian Ocean region, one in the northern hemisphere and one in the southern hemisphere, dubbed cyclones Asani and Karim.

About:

- The name **Karim** was given by the South African country Seychelles.
- Both were formed in the **Indian Ocean region**.
- Both cyclones originate at the **same longitude** and are now **drifting apart**.
- Cyclone Karim has created a **path in the open seas west of Australia**.

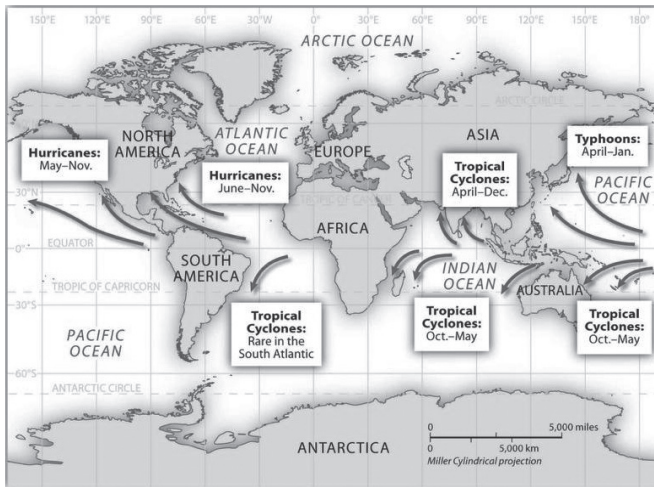


Fig: Distribution of cyclones in tropical regions.

Twin Cyclones:

- These **synchronous cyclones** are produced by the interaction of the wind and monsoon systems with the Earth system.
- The twin tropical cyclones are the **result of equatorial Rossby waves**.
- Rossby waves are massive ocean waves with wavelengths of 4,000-5,000 kilometres. Rossby waves are named after **Carl-Gustaf Rossby**, a notable meteorologist who was the first to explain how these waves formed owing to the rotation of the Earth.
- This system has **two vortexes**, one in the northern and one in the southern hemispheres, and each is a **mirror reflection** of the other.
- The vortex in the northern hemisphere spins **counter clockwise** and has a positive spin, whereas the one in the southern hemisphere spins **clockwise** and has a negative spin.

Cyclone Asani:

- Cyclone Asani is brewing in the **southern Andaman Sea**.
- The name Cyclone Asani has been given by **Sri Lanka**. It means 'wrath' in Sinhalese.
- Cyclones that Hit India in 2020-21: Tauktae, Yaas, Nisarga, Amphan.

Difference between a cyclone and an anticyclone:

	Cyclone	Anticyclone
Definition	A cyclone is an area of low pressure where air masses meet and rise.	An anticyclone is an area of high pressure where air moves apart and sinks.
Indicates	Bad weather, like rain and clouds	Fair weather
Wind System	Winds in a cyclone blow counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.	Winds in an anticyclone blow clockwise in the Northern Hemisphere and counter-clockwise in the Southern Hemisphere.
	In a cyclone, air near the ground is pushed toward the low-pressure centre of the cyclone and then rises upward, expanding and cooling as it moves.	Air at the centre of an anticyclone is forced away from its area of high pressure and replaced by a downward blast of air from higher altitudes.
	As it cools, the rising air becomes more humid, leading to cloudiness and high humidity within the cyclone.	The air compresses and heats up as it moves downward, reducing its humidity and leading to fewer clouds within the anticyclone.

DERECHO

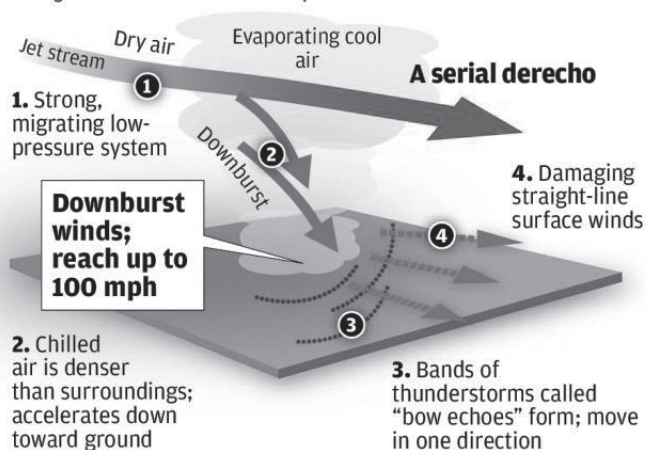
News: States of Nebraska, Minnesota and Illinois in the United States of America were hit by a 'Derecho' storm system. As the storm hit, it turned the skies green.

About:

- Derecho is a widespread, long-lived, straight-line wind storm that is associated with a **"band of rapidly moving showers or thunderstorms"**.
- Derecho or straight-line storms are those in which **thunderstorm winds have no rotation, unlike a tornado or hurricane.**

Coming straight at you

A derecho is a widespread and fast moving line of severe straight-line winds and bands of violent thunderstorms.



Characteristics:

- For a storm to be classified as a Derecho, it must have wind gusts of at least 93 km per hour; wind damage swaths extending more than 400 km.
- The time gap between successive wind damage events should not be more than 3 hours.

Occurrence:	- Being a warm-weather phenomenon, a Derecho generally - not always - occurs during summer beginning in May, with most hitting in June and July. - However, they rarely occur as compared to other storm systems. - The Derecho mostly occurs across central and eastern parts of the USA. - Derecho has also been documented in Russia, Germany, Finland, Bulgaria and Poland. - Sky turned green, severe thunderstorms result in a 'greensky' due to light interacting with the huge amount of water they hold. - The big raindrops and hail scatter away all but the blue wavelengths, due to which primarily blue light penetrates below the storm cloud. - This blue then combines with the red-yellow of the afternoon or the evening sun to produce green, the report said.
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Three types of Derecho:

Progressive Derecho	A Progressive Derecho is associated with a short line of thunderstorms that may travel for hundreds of miles along a relatively narrow path. It is a summer phenomenon.
Serial Derecho	A Serial Derecho, on the other hand, has an extensive squall line - wide and long - sweeping across a large area. It usually occurs during spring or fall.
Hybrid Derecho	Hybrid Ones have the features of both progressive and serial Derecho.

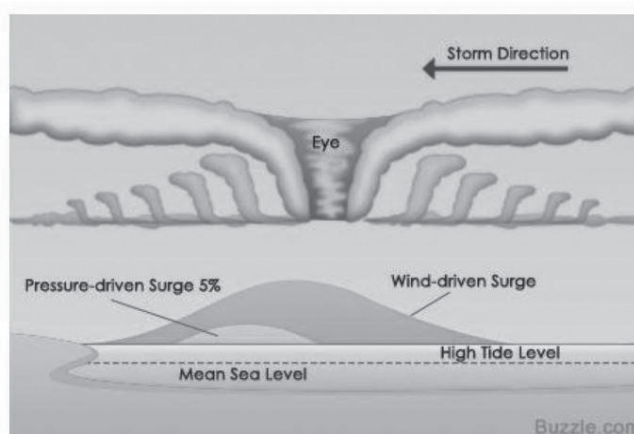
HURRICANE STORM SURGE

News: Hurricane Ian, one of the worst storms ever to hit the United States, brought a “**500-year flood event**” to Florida, devastating coastal cities, inundating homes and businesses and leaving island communities cut off.

About Storm Surge:

- Storm surge is an **abnormal rise of water generated by a storm**, over and above the predicted astronomical tides.
- As a hurricane reaches the coast, it **pushes a huge volume of ocean water ashore**. This is called **storm surge**.
- This surge appears as a **gradual rise in the water level** as the storm approaches.
- Water level heights during a hurricane can **reach 20 feet or more above normal sea level**.

- With powerful waves on top of it, a hurricane's storm surge **can cause catastrophic damage**.



Factors determining the height of storm surge:

- Storm surge begins over the **open ocean**.
- The **strong winds** of a hurricane push the ocean waters around and cause water to pile up under the storm.

- The **low air pressure** of the storm also plays a small role in lifting the water level.
- The height and extent of this pile of water depend on the **strength and size of the hurricane**.
- As this pile of water moves toward the coast, **other factors can change** its height and extent.
- The **depth of the seafloor** is a factor. If a coastal area has a **sea floor that gently slopes** away from the coastline, it's more likely to see a higher storm surge than an area with a steeper drop-off.
- The **shape of the coastline** can also shape the surge. When a storm surge enters a bay or river, the geography of the land can act as a **funnel**, sending the water even higher.
- **Ocean Tides** can also strengthen or weaken the impact of storm surges. At high tide, the water is already at an elevated height. If landfall happens at high tide, the storm surge will **cause even higher water levels and bring more water further inland**.
- **Sea level rise** is another growing concern that influences storm surges.
- When a hurricane arrives, the higher ocean means storm surge **can bring water further inland, to a more dangerous widespread effect**.

CYCLONE SITRANG

News: The first Tropical Cyclone of the post-monsoon season of 2022 is likely to form in the Bay of Bengal on October 24 and will be called Strang.

About:

- The **name Sitrang** (read Si-Trang) has been **given by Thailand**, and features in the list of tropical cyclone names prepared by the **Regional Specialized Meteorological Centre (RSMC)** have been followed since April 2020.

Impact of Cyclone Sitrang:	• The prevailing low-pressure system will strengthen and move towards India's east coast in the coming four days. • Gale winds and enhanced rainfall are expected mainly over Andaman and Nicobar Islands, Odisha, West Bengal and Bangladesh particularly the coastal districts.
Cyclone storms in October:	• The months of October-November and May-June see storms of such severe intensity develop in the North Indian Ocean — comprising the Bay of Bengal and the Arabian Sea — with an average of five developing in a calendar year. • In the past 131 years, October saw 61 storms develop in the Bay of Bengal. In comparison with the Bay of Bengal, only 32 storms have developed in the Arabian Sea in October since 1891.

Reason for the cyclonic storm in the Bay of Bengal in October:

- After the withdrawal of the Southwest monsoon, there is a **rise in ocean heating**, which leads to a **rise in sea surface temperature over the Bay of Bengal**. The atmospheric moisture availability over the ocean region, too, is higher.
- So, when remnant systems from the South China Sea reach the Bay of Bengal, they **get conducive conditions, aiding the formation and intensification of cyclones in October**.

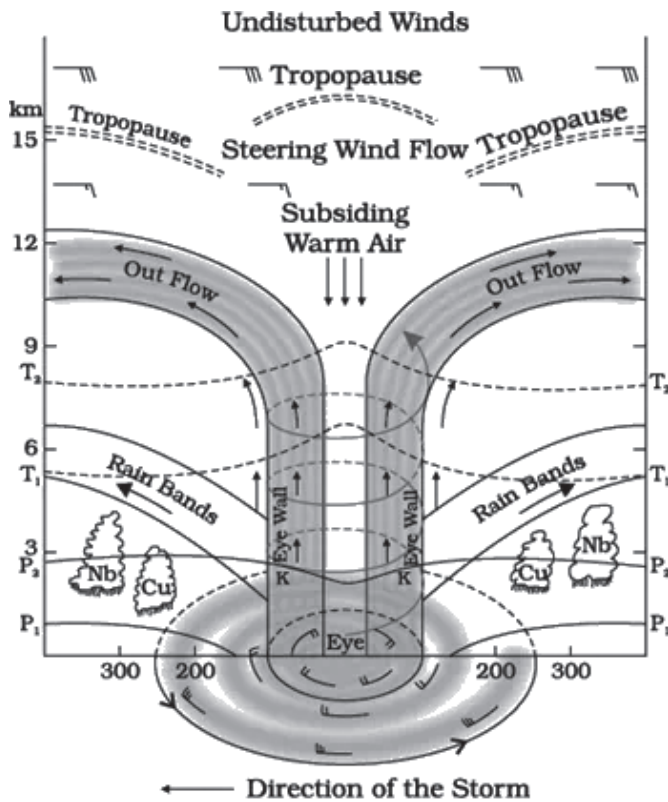
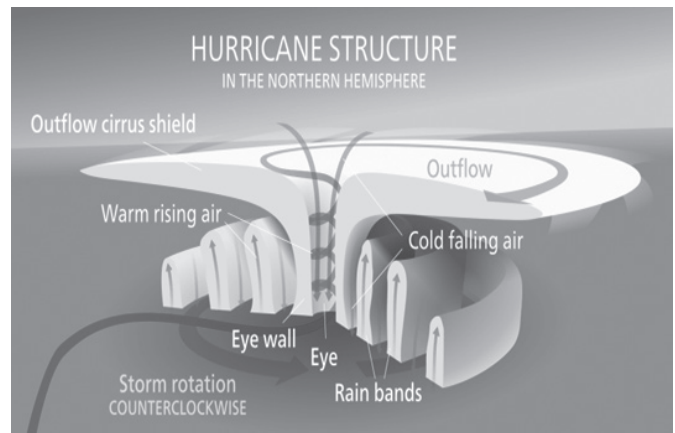


Fig: Vertical section of the tropical cyclone

- It is a **category 5 typhoon** - the highest classification on the scale.
- As it inches towards the Japanese islands, the typhoon is expected to develop further.
- The storm is expected to move towards parts of Southwestern Japan, eastern China and South Korea over the next few days.
- While the effects of the typhoon aren't expected to be felt as intensely in China and Taiwan, heavy rains have been predicted across South Korea.



SUPER TYPHOON HINNAMNOR

News: Super Typhoon Hinnamnor has been barreling across the western Pacific Ocean and is presently hurtling back towards the islands of Japan and South Korea, packing wind speeds of up to 241 kmph.

About:

- Super Typhoon 'Hinnamnor' is the **strongest tropical storm of 2022**.



Reason for the typhoon intensifying:

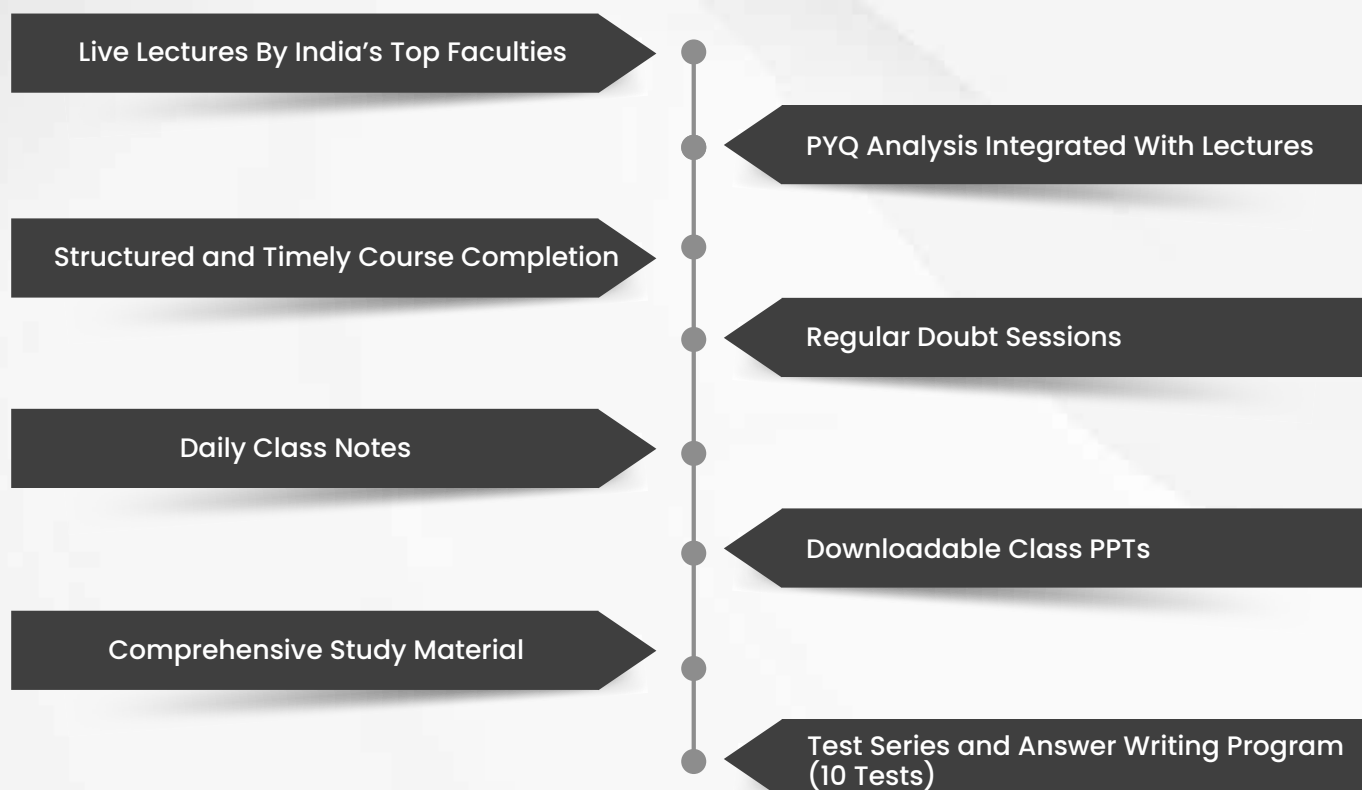
- One of the factors contributing to the Super Typhoon **rapidly intensifying and expanding** is the fact that **it has started absorbing other local meteorological systems**.
- **Warm tropical waters and other pre-existing meteorological disturbances** have led to the system's escalation.

OPTIONAL SUBJECTS OFFERED

- | | |
|-------------------------|--|
| ● History | ● इतिहास |
| ● Sociology | ● समाजशास्त्र |
| ● Geography | ● भूगोल |
| ● PSIR | ● राजनीति विज्ञान एवं अंतराष्ट्रीय संबंध |
| ● Anthropology | ● हिंदी साहित्य |
| ● Public Administration | |



OPTIONAL BATCH OFFERINGS



DHANUSHKODI

News: A family of five from Killinochi district, Sri Lanka, reached the Indian waters at the first islet of Dhanushkodi.

About:

- The **southernmost tip of Pamban Island** is called Dhanushkodi.
- It is **one of the smallest towns in the world**, with a length of just 50 yards.
- Dhanushkodi is the **land border between Sri Lanka and India** and is around 15 km away from Sri Lanka.
- The town of Dhanushkodi is surrounded by the **Bay of Bengal on one side and the Indian Ocean on another side.**

**Ghost Town:**

- The town has been **declared a ghost town after**

the Rameswaram cyclone hit the town in 1964.

- The town was completely washed away by the cyclone **except for the Kothandaramaswamy Temple.**
- The town is mostly uninhabited ever since the cyclone and only a few fishermen families live here.
- The ghost town is a famous tourist spot known for the cyclone ruins and the vast stretch of beach.
- **The Gulf of Mannar Marine National Park is located between Tuticorin and Dhanushkodi.**

SIACHEN GLACIER

News: We are “**not averse**” to the demilitarization of the Siachen glacier but the precondition is that Pakistan has to accept the Actual Ground Position Line (AGPL), army chief General Manoj Naravane said.

About:

- The Siachen Glacier is a **glacier located in the eastern Karakoram range in the Himalayas**, just northeast of the point NJ9842 where the Line of Control between India and Pakistan ends.
- The glacier **lies between the Saltoro Ridge immediately to the west and the main Karakoram range to the east.**
- The **Saltoro Ridge originates in the north from the Sia Kangri peak on the China border in the Karakoram range.**



- The entire Siachen Glacier, with all major passes, has been **under the administration of India since 1984 (Operation Meghdoot)**. Pakistan controls the region west of Saltoro Ridge, far away from the glacier.
- The glacier's melting waters are the **main source of the Nubra River** in the Indian region of Ladakh, which drains into the Shyok River. The Shyok in turn joins the 3000-kilometre-long Indus River which flows through Pakistan. Thus, the glacier is a major source of the Indus.
- At 76 km long, it is the **longest glacier in Karakoram** and the **second-longest in the world's non-polar areas**.
- The Siachen Glacier is the **world's highest battlefield**.
- Siachen and Sir Creek have long been termed "**low-hanging fruits**" in the past for resolution between India and Pakistan and the two countries have held **13 rounds of Defence Secretary-level talks on Siachen**, the last one in June 2012.

RAM SETU

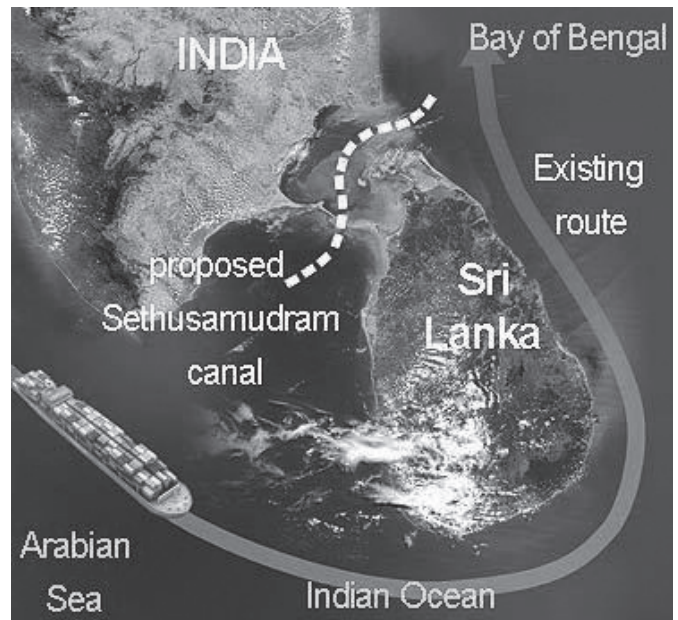
News: The teaser of Akshay Kumar's new film, Ram Setu has once again generated buzz around the **Ram Setu or Adam Bridge** which many believe is the bridge to Lanka mentioned in the Ramayana.

About:

- It is also known as **Adam's Bridge**.
- It is a **48-km chain of limestone shoals** between Rameswaram on India's southeast coast and Mannar Island near Sri Lanka's northwest coast.
- The structure has significance in both **Hindu and Muslim mythology**:
 - While **Hindus Believe** this is the bridge (setu) built by Lord Ram and his army to cross to Lanka and fight Ravan.
 - As per **Islamic legend**, Adam used this bridge to reach Adam's Peak in Sri Lanka, where he stood on one foot for 1,000 years in repentance.
- Scientists believe Ram Setu is a **natural structure formed due to tectonic movements and sand getting trapped in corals**.

Sethusamudram Shipping Canal project:

- The project aims to create a **shipping route between India and Sri Lanka** by building an 83-km-long deep water channel which would also reduce travel time between the eastern and western coasts of India.



- As ships would no longer have to circle Sri Lanka to travel between the Bay of Bengal and

the Arabian Sea.

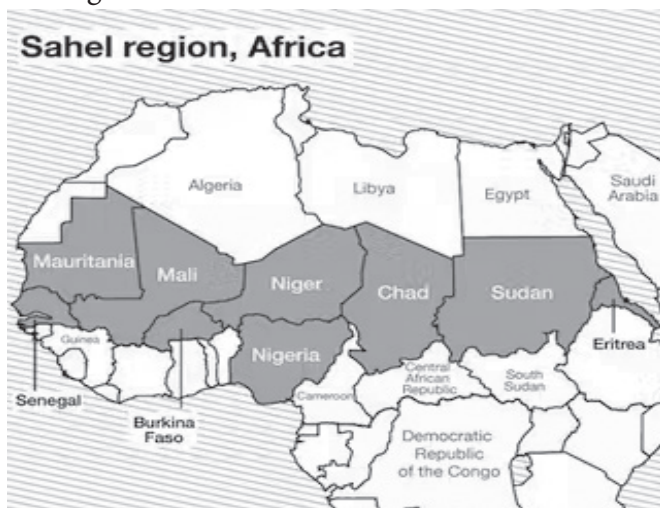
- However, the project has been opposed on religious and environmental grounds.
- In 2018, the Government of India told the Supreme Court that the Ram Setu will not be affected by the execution of the Sethusamudram Shipping Canal project.

SAHEL REGION

News: French President Emmanuel Macron announced the end of the decade-long Operation Barkhane in Africa's Sahel Region.

About:

- The Sahel is the **eco-climatic and biogeographic realm of transition in Africa between the Sahara to the north and the Sudanian savanna to the south.**
- Having a **semi-arid climate**, it stretches across the southcentral latitudes of Northern Africa between the Atlantic Ocean and the Red Sea.
- The name is derived from the Arabic term for “**coast, shore**”; this is explained as being used in a figurative sense in reference to the southern edge of the vast Sahara.



- The Sahel part includes from **west to east parts of northern Senegal, southern Mauritania, central Mali, northern Burkina Faso, the extreme south**

of Algeria, Niger, the extreme north of Nigeria, the extreme north of Cameroon.

Operation Barkhane:

- France began its military operations in Sahel in January 2013.
- **Titled Operation Serval**, it was limited to targeting Islamic extremists linked to al-Qaeda who took control of northern Mali.
- However, in 2014, the mission was scaled up, renamed Operation Barkhane and was aimed at counter-terrorism.
- **The objective** was to assist local armed forces to prevent the resurgence of non-state armed groups across the Sahel region.
- **Around 4,500 French personnel were deployed with the local joint counter-terrorism force.**

MACHCHHU RIVER AND MORBI BRIDGE

News: The newly-restored colonial-era suspension bridge over Machchhu River collapsed **after 5 days of reopening.**

About:

- Locally known as the **Julto Pool**, it is one of the tourist attractions of Morbi district in Gujarat.
- It had been closed for renovation for 6 months and reopened on the Gujarati New Year day. The bridge was 1.25 metres wide and spanned 233 metres.
- The bridge was **originally built by the erstwhile princely state of Morbi** and was considered a marvel of British engineering.
- **Sir Waghji Thakor**, who ruled Morbi till 1922, was inspired by the colonial influence and decided to construct the bridge.
- The bridge was built in 1880 to **connect Darbargadh Palace with Nazarbag Palace.**

- Morbi is an **industrial town in Gujarat** with thousands of factories making ceramic tiles and bathroom products and wall clocks.



Machchhu River:

- The Machchhu River **originates from Madla hills (Jasdan)** and meets in little Rann of Kachchh.
- It is a north flowing river of Saurashtra in Gujarat state.
- The total length of this river from its origin to its outfall is 140 km.
- There are 2 dams located on river Machchhu River:
 - Machchhu-I &
 - Machchhu-II.

SERBIA

News: The Serbia government has revoked the licenses for lithium mining to Rio Tinto, an Anglo-Australian multinational mining organization, following protests for nearly two months.

About:

- A **landlocked country** situated at the crossroads **between Central and Southern Europe**, Serbia is located in the Balkan peninsula and the Pannonian Plain.

- Its total border length amounts to 2,027 km (1,260 mi) **Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary, North Macedonia, Montenegro and Romania.**
- **Capital:** Belgrade.
- **Currency:** Serbian dinar.



NUSANTARA

News: Indonesia's parliament passed a law approving the relocation of its capital from slowly sinking Jakarta to a site 2,000 kilometres away on the jungle-clad Borneo island that will be named "Nusantara".

About:

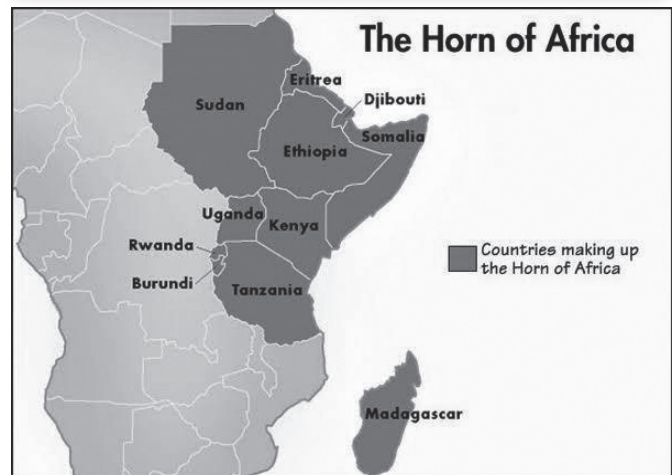
- Home to more than 30 million people in its greater metro area, **Jakarta has long been plagued by serious infrastructure problems and flooding exacerbated by climate change.**
- The new capital will cover about 56,180 hectares in east Kalimantan province on the Indonesian part of Borneo.

- **Indonesia is not the first country in the region to relocate from an overpopulated capital.**
- **Malaysia moved its government to Putrajaya from Kuala Lumpur in 2003, while Myanmar moved its capital to Naypyidaw from Rangoon in 2006.**



HORN OF AFRICA

News: China is set to name an envoy to the Horn of Africa.



About:

- Horn of Africa is the **easternmost extension of African land** and includes the region that is home to the countries of **Djibouti, Eritrea, Ethiopia, and Somalia, (Note: Remember as SEED)** whose cultures have been linked throughout their long history.

- part of Russia. Moscow's forces restored Russian federal control in the Second Chechen War of 1999–2009.

BELARUS

News: Belarus, the largest landlocked European country bordering the two warring nations has found itself in a precarious position amid its political proximity with Russia.

About:

- Belarus is a **landlocked country** in **Eastern Europe**.
- It is bordered by **Russia** to the northeast, **Ukraine** to the south, **Poland** to the west, and **Lithuania** and **Latvia** to the northwest.
- Capital of Belarus is **Minsk**.
- After the **disintegration of the Soviet Union in 1991**, Belarus became a **sovereign nation**, and its first presidential elections were held in 1994.



- **Alexandr Lukashenko** has served as the country's **first president since 1994**. Belarus has been labelled “**Europe's last dictatorship**” by some Western journalists, on account of the country's poor human rights record and

Lukashenko's self-described authoritarian style of government.

TANZANIA

News: Prime Minister Narendra Modi has paid tributes to the great leader, former Tanzania President and friend of India, **Mwalimu Nyerere** on his 100th Birth anniversary.



About:

- It was formed as a **sovereign state in 1964** through the union of the separate states of Tanganyika and Zanzibar.
- **Dodoma is the official capital** and **Dar es Salaam** is the seat of most government administrations as well as is the largest city and port in the country.
- It is located in East Africa just south of the equator.
- It is bounded by **Uganda, Lake Victoria and Kenya** to the north, by the **Indian Ocean** to the east, by **Mozambique, Lake Nyasa, Malawi and Zambia** to the south and southwest and by **Lake Tanganyika, Burundi and Rwanda** to the west.
- **Africa's highest mountain, Kilimanjaro (5,895 meters)** and the **world's second deepest lake, Lake Tanganyika (1,436 meters deep)** are located in Tanzania.

GILGIT-BALTISTAN

News: Valleys of Gilgit-Baltistan are resonating with loud protests by local communities against Pakistan for forcibly usurping village lands and plundering their natural wealth.

About:

- It borders **China in the North, Afghanistan in the west and Kashmir in the southeast.**
- It shares a **geographical boundary with Pakistan-occupied Kashmir.**
- The region was a **part of the erstwhile princely state of Jammu and Kashmir** but has been under Pakistan's control since 4th November 1947, following the invasion of Kashmir by tribal militias and the Pakistan army.
- The **China-Pakistan Economic Corridor (CPEC)** passes through this region.



Present Status of Gilgit-Baltistan:

- It is an **autonomous region now** and with this elevation, it will become the 5th province of the country.
- **Currently, Pakistan has four provinces** namely - Balochistan, Khyber Pakhtunkhwa, Punjab, and Sindh.

- **India's position:** India has conveyed to Pakistan that the **entire Union Territories of Jammu and Kashmir and Ladakh**.
- Including the areas of Gilgit and Baltistan, are an **integral part of the country** by their fully legal and irrevocable accession.

KRAMATORSK

News: Ukraine is preparing for “**important battles**” against Moscow’s forces in the east of the country, especially in Kramatorsk.

About:

- Kramatorsk is a city and the administrative centre of Kramatorsk Raion in the **northern portion of Donetsk Oblast, in eastern Ukraine**.
- Since October 11, 2014, Kramatorsk has been the **provisional seat of Donetsk Oblast**, following the events surrounding the war in Donbas. **Sievierodonetsk** has a similar status for Luhansk Oblast.
- The city is located on the **banks of the Kaseniy Turrets River** which is a right tributary of the Seversky Donets. It is an important industrial and mechanical engineering centre in Ukraine.



CHILE

News: The Union Cabinet of India approved the signing of the MoU between India and Chile for cooperation in the Disability Sector.



About:

- **Location:** Chile is a country in the **Western part of South America**.
- It occupies a **long, narrow strip of land between the Andes to the east and the Pacific Ocean to the west**.
- It shares land borders with **Peru** to the north, **Bolivia** to the northeast, **Argentina** to the east, and the **Drake Passage** in the far south.
- It is the **world's southernmost country**, the closest to Antarctica, that is geographically on the mainland. The country's capital and largest city are **Santiago**.

EAST TIMOR

News: East Timor, Asia's Youngest Democracy, held the second and final round of its presidential election.

About:

- East Timor is **bounded by the Timor Sea** to the southeast, the **Wetar Strait** to the north, the **Ombai Strait** to the northwest, and **western Timor** (part of the Indonesian province of east Nusa Tenggara) to the southwest.
- East Timor comprises the **eastern half of Timor island**, the western half of which is **part of Indonesia**.
- It spans a **15,000 square km land area** – slightly smaller than Israel – and its 1.3 million people are **predominantly Roman Catholic**.



BUCHA

News: India condemned the killing of civilians in Bucha, Ukraine, at the United Nations Security Council (UNSC), calling for an independent U.N. inquiry.

About:

- Bucha is a **city in Ukraine's Kyiv Oblast**.
- During World War II, before the liberation of Kyiv from Nazi forces in December 1943, Bucha was the location of the headquarters of

the 1st Ukrainian Front commanded by General Vatutin.

ECUADOR

News: Ecuador, a South American country, has become the first country in the world to give legal rights to wild animals.



About:

- Ecuador is a country in the **north-western part of South America**.
- It is bordered by **Colombia on the north, Peru on the east and south, and the Pacific Ocean on the west**.
- Ecuador also **includes the Galapagos Islands in the Pacific** which is about 1,000 kilometres west of the mainland.
- Ecuador is a **part of the Pacific Rim's "Ring of Fire" region**. It has eight volcanoes in its territory.
- **Capital: Quito**.

GABON AND SENEGAL

News: Vice President M. Venkaiah Naidu embarked on a three-nation tour to Gabon, Senegal and Qatar. This is the first-ever visit from India at the level of Vice-President to all three countries.

About Gabon:

- Gabon is a **country on the west coast of Central Africa**.
- **Located on the Equator**, Gabon is bordered by Equatorial Guinea to the northwest, Cameroon to the north, the Republic of the Congo to the east and south, and the Gulf of Guinea to the west.
- Gabon's capital is **Libreville**.



Senegal:

- Senegal is a country in **West Africa**.
- Senegal is bordered by **Mauritania** in the north, **Mali** to the east, **Guinea** to the southeast, and

Guinea-Bissau to the southwest.

- Senegal's capital is **Dakar**.

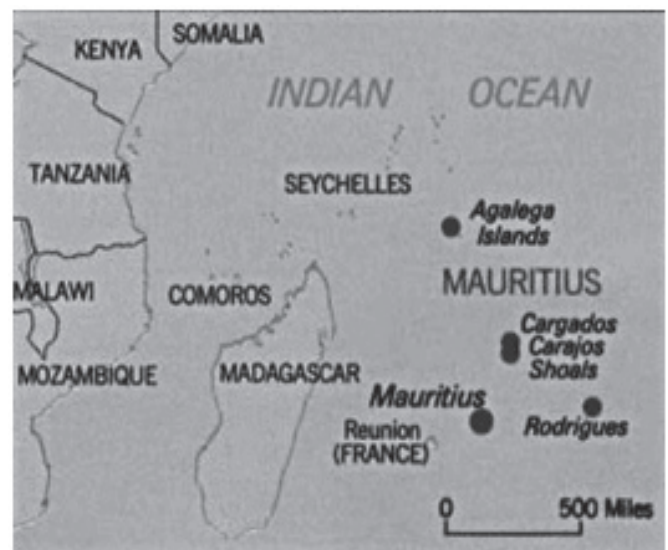


LA REUNION

News: The navies of India and France recently conducted their second joint patrol on the French island of La Reunion in the South-Western Indian Ocean.

About:

- Reunion is a **French overseas department and overseas region in the western Indian Ocean**.
- It is located approximately **950 km east of the island of Madagascar** and **175 km southwest of the island of Mauritius**.



- Reunion is an **outermost region of the European Union** and is **part of the eurozone**.
- Reunion and the fellow French overseas department of Mayotte are the **only eurozone regions located in the Southern Hemisphere**.

SAINT VINCENT AND GRENADINES

News: After completing the state visit to Jamaica, President Ram Nath Kovind arrived in Kingstown, the capital city of Saint Vincent and Grenadines.

About:

- Saint Vincent and the Grenadines is an **island country in the Caribbean**.
- It is located in the southeast Windward Islands of the **Lesser Antilles**.
- **Kingstown** is the capital and main port.

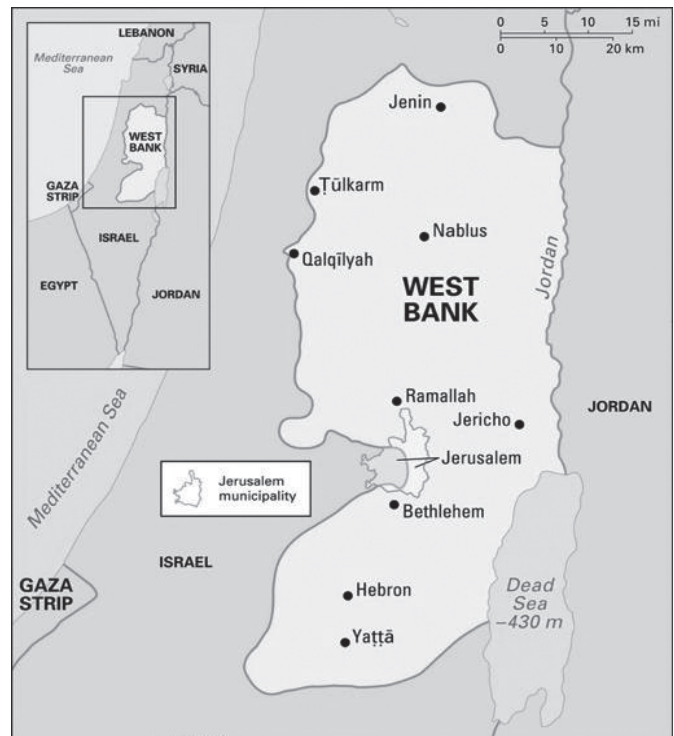
WEST BANK

News: Israel's Supreme Court has rejected a petition against the eviction of more than 1,000 Palestinian inhabitants of a rural part of the occupied West Bank in an area which Israel has designated for military exercises.

About:

- West Bank is a **landlocked territory** in West Asia. It also contains a significant section of the western Dead Sea.
- It was **captured by Jordan after the Arab-Israeli War (1948)** but Israel snatched it back during the **Six-Day War of 1967** and has occupied it ever since.
- The West Bank is **sandwiched between Israel and Jordan**.
- One of its major cities is **Ramallah**, the **de facto administrative capital of Palestine**.

- At present, there are around **130 formal Israeli settlements** along with 26 lakh Palestinians in the West Bank.
- **Masafer Yatta** is in 60% of the territory where the Palestinian Authority is prohibited from operating.
- The Palestinians want the **West Bank to form the main part of their future state**.



TRANSNISTRIA

News: Transnistria, the tiny breakaway region of Moldova, risks being dragged into the Russia-Ukraine war because of reports of a series of explosions in its territory.

About:

- The **de facto state** lies between Moldova to its west and Ukraine towards its east.
- Often described as a “**remnant of the Soviet Union**”, Transnistria declared independence like Moldova did soon after the break-up of the Soviet Union.



- When Moldovan troops attempted to take over the territory in 1990-1992, Transnistria was able to resist them because of Russian soldiers based in Transnistria.
- Since then, it has remained free of Moldovan control. However, most countries continue to see Transnistria as part of Moldova.
- **Transnistria is not recognised as independent** even by Russia and its economy is dependent on Russia for subsidies and free gas. Most Transnistrians have dual citizenship of Russia and Transnistria or triple citizenship of Moldova, Transnistria, and Russia.

LITHIUM

News: Recently, High-grade Lithium has been discovered in Nigeria.

About:

- Lithium is an element and in nature tends to concentrate sufficiently in the two minerals, **spodumene** and **lepidolite**.
- They are usually found in specialized rocks called **Rare and Greisens**.
- The Geological agency described lithium as **high-grade** because it is **found with 1-13% oxide content**. Normally, the exploration begins at levels as low as 0.4%.

Applications:

- It is widely used as a **dental ceramic** due to its strength, machinability, and translucency.

- Lithium metal is used to **make useful alloys**.
- Lithium is **used in rechargeable batteries** for mobile phones, laptops, digital cameras and electric vehicles.
- Lithium is also used in some non-rechargeable batteries for things like heart pacemakers, toys and clocks.



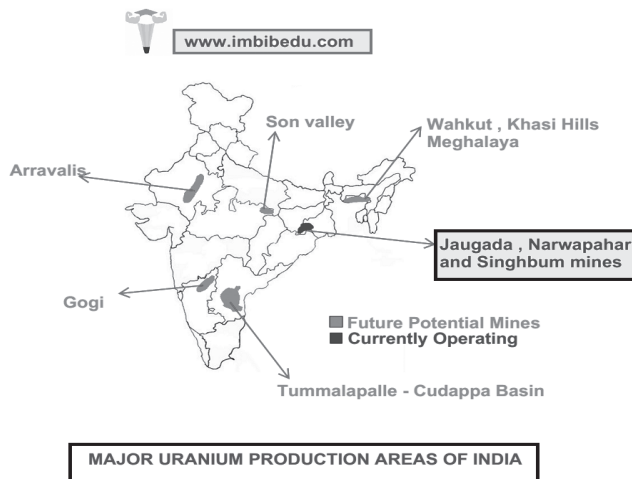
URANIUM

News: Huge reserves of uranium were found at Rohil (Khandela Tehsil) in Sikar district, which is over 120 km from the state capital Jaipur.

About:

- Uranium is a **silvery-white metallic chemical element**.

- **Uranium-235** (its isotope) is the only naturally occurring isotope, capable of sustaining nuclear fission.
- Uranium is mainly used for generating electricity and also for nuclear energy, medicines, defence equipment and photography.



- After Jharkhand and Andhra Pradesh, Rajasthan is the third state where uranium — which is considered one of the rare minerals in the world — has been found.
- The largest producers of uranium in the world are Kazakhstan, Canada and Australia.
- India Imports uranium mostly from Kazakhstan and Canada.
- The Rajasthan government has forayed into the field of uranium mining by issuing a Letter of Intent (LoI) to the Uranium Corporation of India.

KALININGRAD

News: As the Russia-Ukraine conflict continues, the spotlight is on Kaliningrad, Russia's westernmost region. The region is at the centre of a row after Lithuania decided to ban goods part of EU sanctions from moving through its territory to reach Kaliningrad.

About:

- Kaliningrad is located on the Baltic Sea. It is Russia's westernmost federal entity. It is situated almost 300 km away from mainland Russia and shares no borders with it.
- Kaliningrad borders NATO members Poland and Lithuania. Essentially, Kaliningrad is Russian territory surrounded by NATO.



Why does Kaliningrad belong to Russia?

- The present-day Kaliningrad used to be part of the Kingdom of Prussia And had a mixed Polish, Lithuanian and German-speaking population.
- After the defeat of Nazi Germany at the end of World War II, the territory was ceded to Soviet Russia. Its main city, known in German times as Königsberg, was renamed Kaliningrad — the same name given to the entire area.
- After the collapse and disintegration of the Soviet Union, Kaliningrad became part of Russia.

COLOMBIA

News: Ex-guerrilla Gustavo Petro was elected the first ever left-wing president of Colombia, after beating millionaire businessman Rodolfo Hernandez in a tense run-off election.

About:

- Colombia is a country in South America

bordered by the Caribbean Sea to the north, Venezuela to the east, Brazil to the southeast, Ecuador and Peru to the south, the Pacific Ocean to the west and Panama to the northwest.

- It is the only country in South America with coastlines and islands along both the Atlantic and Pacific oceans.
- Its capital is **Bogota**. Colombia is one of the world's seventeen megadiverse countries.



ISLE OF WIGHT

News: Palaeontologists have found the skeletal remains of Europe's largest meat-eating dinosaur on the Isle of Wight. This dinosaur belonged to the Spinosaurus group of dinosaurs. It is considered the longest-known dinosaur predator. It lived during the Cretaceous Period.

About:

- Isle of Wight is a county and the largest and second-most populous island of England.
- It is part of the historic county of Hampshire.
- The island lies off the south coast of England in the English Channel.
- It is separated from the mainland by a deep strait known as **The Solent**.
- The administrative center of the unitary authority of the Isle of Wight is **Newport**.
- The backbone of the island is formed by a chalk ridge that extends across the entire breadth of

the island, from Culver Cliff in the east to the Needles in the west.

- It is designated a **UNESCO Biosphere Reserve**.

VALE DO JAVARI

News: A British journalist went missing from Vale do Javari in Brazil.

About:

- Vale do Javari is the western section of the **Brazilian Amazon rainforest**.
- It is named after the **Javari River**, which forms the country's border with Peru.
- The region is home to the **greatest concentration of isolated tribal groups** in the Amazon and the world.
- The area is home to **14 indigenous tribes** with nearly 6,000 inhabitants, who are known to reject contact with the outside world.
- The communities living in the Vale do Javari have been **granted exclusive territorial rights in Brazil's 1988 constitution** and then in 2001 under the demarcation of indigenous territory.
- Vale do Javari forms **part of an international cocaine trafficking route**, with gold being exchanged for drugs and arms, consequently making it a hotspot for violent crimes.

SIEVIERODONETSK

News: The Battle of Severodonetsk is an ongoing military engagement during the 2022 Russian invasion of Ukraine, as part of the Battle of Donbas of the eastern Ukraine offensive.

About:

- Administratively, **Sievierodonetsk falls under Ukraine's Luhansk oblast**.
- Sievierodonetsk is **one of the largest cities of the Donbas region**.

- It is located nearly 140 km south of the Russian border.
- It is located near the left bank of the Seversky Donets River, and has a population of over a lakh.
- Sievierodonetsk is a big industrial hub known for chemical works and machine-building factories.
- If the city of Sievierodonetsk falls, then it allows Russia to control the entire Luhansk region.



TURKIYE

News: Turkey will now be known as **Türkiye** at the United Nations after the intergovernmental body agreed to a formal request for the name change from Ankara.

About:

- The **Turkish peninsula** is surrounded by four seas: the **Mediterranean** to the south, the **Aegean** to the west, the **Sea of Marmara** between the European and Asian landmasses, and the **Black Sea** to the north.
- Turkey lies **partly in Asia and partly in Europe**.
- **Capital:** Ankara
- **Currency:** Turkish lira



Have other countries changed their names?

- The **Netherlands**, which was changed from **Holland**;
- **Macedonia**, which changed its name to **North Macedonia** due to political disputes with **Greece**;
- **Iran**, which changed its name from **Persia** in 1935;
- **Siam**, which changed its name to **Thailand**; and
- **Rhodesia**, which changed to **Zimbabwe** to drop its colonial legacy.

MICRONESIA

News: The Federated States of Micronesia is one of the latest places on earth to experience an outbreak of Covid-19, after two and a half years of successfully protecting itself from the virus.

About:

- Micronesia is a **small island country** in the **western Pacific Ocean**.
- It is located in the **Micronesia sub-region of Oceania of the Pacific**.
- It is composed of **more than 600 islands and islets** in the **Caroline Islands archipelago**.

- It is divided roughly along cultural and linguistic lines into the four island states of Yap, Chuuk, Pohnpei (where the capital Palikir is located), and Kosrae
- The Federated States of Micronesia (FSM) is

an independent, sovereign nation made up of these four island states.

- Also known as the **Carolines**, it is a scattered archipelago of small islands that are divided between Micronesia and the Republic of Palau.



NORTH MACEDONIA

News: Nightly protests in North Macedonia over the past week have left dozens injured. At the heart of the turmoil is the small Balkan country's long-running quest to join the **European Union**, a process that has faced one hurdle after the other.

About:

- North Macedonia is a **country in Southeast Europe**. It gained independence in 1991 as one of the **successor states of Yugoslavia**.
- It is a **landlocked country** bordering **Kosovo** to the northwest, **Serbia** to the north, **Bulgaria** to the east, **Greece** to the south, and **Albania** to the west.



- North Macedonia has been an **EU candidate for 17 years**. The country emerged from the breakup of Yugoslavia in the 1990s and sought to forge a **strong national identity**.
- The most recent obstacle is a **veto by EU member Bulgaria**.

- **Bulgaria Blocked** the renamed nation's attempts to join the EU, accusing Skopje of disrespecting shared cultural and historic ties.
- Among Bulgaria's key demands were an acknowledgement that the **language of North Macedonia derived from Bulgarian** and the recognition of a Bulgarian minority.

O'VALLEY

News: There were 3 human deaths in O'Valley in Gudalur over the last 2 months caused by 3 different elephants.

About:

- O'Valley is a shortened name for **James Ouchterlony**, the man behind tea plantations in the region.
- O' Valley is a **place in the Nilgiris District of Tamil Nadu** in India.
- It is the **Union place of Tamil Nadu, Kerala and Karnataka Boundary**.



- It is located **between Mudumalai National Park and the New Amarambalam Reserved forest**.
- **Tea is the main crop cultivated**, other than this Coffee, Cardamom, Clove, Pepper, Ginger, and Plantain are the major cash crops cultivated here.
- The **Santhana Malai (sandalwood hill)** is the main attraction of O'Valley.
- **It got its name from sandalwood trees** as this region, years ago, was replete with sandalwood trees.

KARAKALPAKSTAN

News: At least 18 people were killed and 243 wounded during last week's government crackdown on protests in **Uzbekistan's autonomous province of Karakalpakstan**. The protests had broken out in response to the government's plan to restrict the region's long-held autonomy.

About:

- The name **Karakalpakstan is derived from the Karakalpak people**, an ethnic minority group of around 2 million.
- Karakalpak translates to '**blackhat**', referring to their traditional headgear.
- The Karakalpaks consider themselves to be a **distinct cultural group in Uzbekistan**.
- Their **Turkic language – Karakalpak – is closely related to Kazak**. Their **separate language** is a crucial aspect of their cultural identity.
- In their genealogical narrative, the Karakalpaks claim to **share a common point of origin** with the neighbouring **Kazakhs, Uzbeks, and Turkmen**.
- But believe that over time they diverged from the others. This narrative marks the **Karakalpaks as culturally separate** from their neighbouring groups.



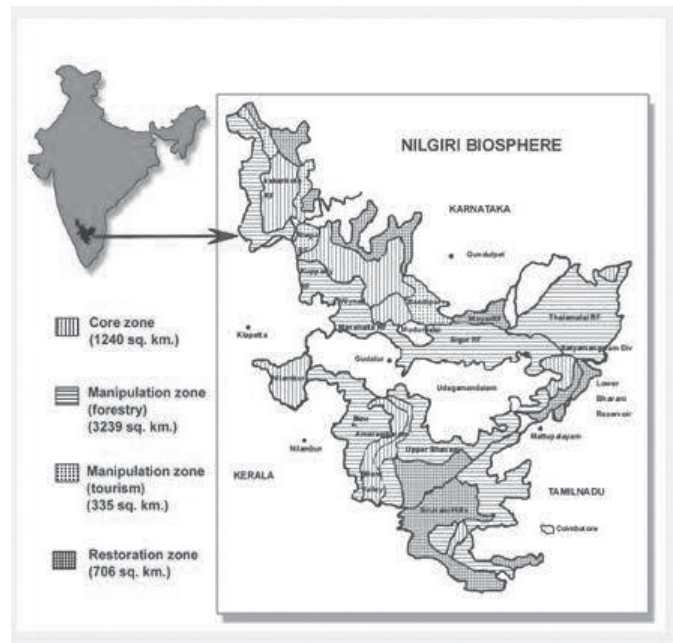
- When Uzbekistan declared its independence from the Soviet Union in August 1991, Karakalpakstan was formally recognized as an **autonomous republic** in Uzbekistan's constitution of 1992 and had the right to secede based on a nationwide referendum.

SIGUR PLATEAU

News: Following the Supreme Court verdict (2018), upholding the notification of the **elephant corridor** in the Sigur plateau, there has been a surge in resorts and commercial establishments mushrooming in the areas.

About:

- Sigur Plateau is located in the Nilgiri Hills of Tamil Nadu.
- It connects the Western and Eastern Ghats.
- It has the Nilgiri Hills on its south-western side and the Moyar River Valley on its north-eastern side.
- It sustains **elephant populations** and their genetic diversity.
- The elephants cross the plateau in search of food and water.
- The Nilgiri Biosphere Reserve, which includes Sigur Plateau and the Nilgiri Hills, is **part of the UNESCO World Network Of Biosphere Reserves**.



PUGA VALLEY

News: The magistrate of Nyoma subdivision in **Ladakh** ordered Oil and Natural Gas Corporation (ONGC) to practice the highest standards of precaution at the geothermal energy plant in Puga Valley.

About:

- Puga Valley is situated in the Changthang Valley in the southeastern part of Ladakh, about 22 km away from the Salt Lake Valley.
- The region is known as a hub for generating **geothermal energy**, which is notably in the form of sulfur and borax deposits.
- It has shown an **immense amount of mud pools and hot sulphur springs**.
- These mud pools and springs are said to have **medicinal properties** and can cure skin diseases and even rheumatism.
- One can also spot sheep, yak, bar-headed geese, brahminy ducks, black-necked cranes and more wildlife here.
- The Puga Valley Geothermal Project will be India's first geothermal energy project and

will be the world's highest geothermal energy project.



TIGRAY

News: The Director-General of the World Health Organisation has said that racism is the reason behind a lack of international interest in Ethiopia's war-stricken northern Tigray region, where the civilians are living in dire conditions.



About:

- Tigray is Ethiopia's northernmost region.
- Bordering Eritrea, it is home to most of the country's estimated 7 million ethnic Tigrayans.
- The ethnic group, which accounts for about 6% of Ethiopia's population, have had an outsized influence on national affairs.

PARAGUAY

News: External affairs Minister Dr S. Jaishankar has unveiled a bust of Mahatma Gandhi in Asuncion, Paraguay. The Minister also visited the historic **Casa de la Independencia**, from where Paraguay's Independence movement started more than two centuries ago.



About:

- Paraguay is a **landlocked country in South America**.
- It is bordered by **Argentina** to the south and southwest, **Brazil** to the east and northeast, and **Bolivia** to the northwest.
- It is a **founding member of Mercosur**, the United Nations, the Organization of American States, the Non-aligned Movement and the Lima Group.

- Asunción is the capital and the largest city of Paraguay.

NICARAGUA

News: Earlier this Month Nicaragua shuttered seven radio stations belonging to the Catholic Church and launched an investigation into the bishop of Matagalpa, **Monsignor Rolando Alvarez**, accusing him of inciting violent actors “to carry out acts of hate against the population.”

About:

- Nicaragua is the **largest country in the Central American isthmus**, bordered by Honduras to the northwest, the Caribbean to the east, Costa Rica to the south, and the Pacific Ocean to the southwest.
- **Managua** is the country’s capital and largest city.
- As of 2015, it was estimated to be the **second-largest city in Central America**.



BOSNIA

News: Bosnia’s presidential and parliamentary elections were held recently amid its worst political crisis since the end of the 1992-95 war.



About:

- Bosnia and Herzegovina is a country situated in the **western Balkan Peninsula of Europe**.
- The capital of the country is **Sarajevo**.
- It has borders with **Croatia** (in the Southwest and the largest part of the North), **Serbia** (in the Northeast) and **Montenegro** (in the Southeast).

BURKINA FASO

- Burkina Faso is a **landlocked country in West Africa**, bordered by Mali to the northwest, Niger to the northeast, **Benin** to the southeast, **Togo** and **Ghana** to the south, and the **Ivory Coast** to the southwest.



- It was previously called the Republic of **Upper Volta**.
- Its **capital and largest city is Ouagadougou**.
- The country owes its former name of **Upper Volta to three rivers** which cross it: the **Black Volta** (or Mouhoun), the **White Volta** (Nakambe) and the **Red Volta** (Nazinon).
- The islands contain **aquatic species** such as **manta rays and sharks** which have been endangered by commercial fishing.
- Galapagos is **home to the critically endangered** — **Galapagos penguin, Galapagos fur seal and Galapagos sea lion**.
- Also, the **giant tortoises** found here – ‘Galapagos’ in old Spanish – give the islands their name.

GALAPAGOS ISLANDS

News: According to a new study, the cold, eastward equatorial ocean current has been gaining strength for decades. This is of great significance because the Galapagos Islands are protected from global warming in the Pacific Ocean Region by this cold, eastward equatorial ocean current.

About:

- The **Galapagos Islands are a part of Ecuador**. These are **located in the Pacific Ocean** around 1,000 km away from the South American continent.
- In **1978**, the islands became **UNESCO’s first World Heritage Site**. It is described by the UNESCO World Heritage Convention as a “**living museum and showcase of evolution**.”



SENTOSA ISLAND

News: Sentosa Island is celebrating its golden jubilee year (1972-2022).

About:

- Sentosa Island is a **tiny island off the coast of Singapore**.
- It is best known for its **largely man-made beaches, scarce natural beauty and unexpected water sports**.
- Its location **between China and India** turned the island into a haunt for merchant sailors and pirates.
- The island was **then known as Pulau Blankang Mati**, which means “**island of death behind**” in Malay because of its bloody reputation.
- During World War II, Sentosa Island was transformed into a **Japanese prisoner-of-war camp** when the British colonial forces surrendered.
- The island was **renamed Syonan-to**, which means “**light of the south**”.
- The Sentosa Development Corporation has given **space to local artisans to display their craft**, which draws a steady flow of visitors during weekends.
- It has a **Museum of ice cream**, where you can learn about the world’s most loved summer treat, and play in a cheery “**sprinkle pool**”.



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- > 12+ YEARS OF EXPERIENCE AT RENOWNED INSTITUTE
- > MENTORED MORE THAN 1,00,000 UPSC CSE ASPIRANTS
- > GRADUATE FROM DU IN POLITICAL SCIENCE & POST GRADUATE FROM PUNE UNIVERSITY



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- > AUTHORED BOOKS ON INDIAN POLITY, CONSTITUTION & PUBLIC ADMINISTRATION FOR UPSC ASPIRANTS



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- > B.TECH IN COMPUTER SCIENCE.
- > MENTORED MORE THAN 1,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 6+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



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- > FACULTY, COACH AND MENTOR- GS- INDIAN SOCIETY, SOCIAL JUSTICE, SOCIAL ISSUE, IR AND SOCIOLOGY OPTIONAL
- > EX. FACULTY FOR MULTIPLE RENOWNED INSTITUTES.



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- > FACULTY, COACH AND MENTOR
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- > GRADUATE IN BSC AND POST GRADUATE IN PUBLIC ADMINISTRATION FOR IGNOU
- > APPEARED TWICE IN UPSC CSE INTERVIEW
- > MENTORED MORE THAN 1,00,000 STUDENTS FOR CIVIL SERVICE EXAM
- > 14+ YEARS OF EXPERIENCE IN TEACHING WITH VARIOUS RENOWNED INSTITUTES



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8

INITIATIVES, PROJECTS, AND ISSUES IN NEWS

DEEP OCEAN MISSION

News: Recently, the Ministry of Earth Sciences launched the Deep Ocean Mission (DOM).

About:

- The Deep Ocean Mission **aims to explore the deep ocean for resources**. Also, for sustainable use of ocean resources, it aims to develop **deep-sea technologies**.
- **The Ministry of Earth Sciences(MoES)** will be the nodal Ministry for implementing this mission.

Components of DOM:

Development of Manned Submersible Vehicle:	• A manned submersible will be developed to carry three people to a depth of 6,000 meters in the ocean with a suite of scientific sensors and tools. • NIOT & ISRO is jointly developing a Manned Submersible Vehicle. • National Institute of Ocean Technology (NIOT), an autonomous institute under the Ministry of Earth Sciences.
Development of Technologies for Deep Sea Mining:	• An Integrated Mining System will also be developed for mining Poly metallic nodules at those depths in the central Indian Ocean. • Poly metallic nodules are rocks scattered on the seabed containing iron, manganese, nickel and cobalt. • The exploration studies of minerals will pave the way for commercial exploitation shortly, as and when a commercial exploitation code is evolved by the International Seabed Authority, a United Nations (UN) organization.
Development of Ocean Climate Change advisory Services:	• It entails developing a suite of observations and models to understand and provide future projections of important climate variables on seasonal to decadal time scales. • Bio-prospecting of deep-sea flora and fauna including microbes and studies on sustainable utilisation of deep-sea bio-resources will be the main focus.
Deep Ocean Survey and exploration:	• It will explore and identify potential sites of multi-metal Hydrothermal Sulphides mineralization along the Indian Ocean mid-oceanic ridges.

Energy and Freshwater from the Ocean:	- Studies and detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plants are envisaged in this proof of concept proposal. - OTEC is a technology that uses ocean temperature differences from the surface to depths lower than 1,000 meters, to extract energy.
Advanced Marine Station for Ocean Biology:	- It is aimed at the development of human capacity and enterprise in ocean biology and engineering. - It will translate research into industrial application and product development through on-site business incubator facilities.

KOLAR FIELDS

News: Centre has decided to revive gold mining at the Kolar fields in Karnataka.

About:

- Mining was shelved earlier because the extraction had become unviable.
- According to an official estimate, the extracts from Kolar Gold Fields (KGF) mining (gold and minerals like palladium and rhodium) are likely to fetch a value worth ₹30,000 crores.
- Operated by Bharat Gold Mines Limited (BGML), a public sector undertaking, KGF was one of the world's deepest gold mines at a depth of 3,000 metres.

POLAVARAM PROJECT

News: December-end is fixed as the deadline to rehabilitate Polavaram-displaced families.

About:

- The Polavaram project implements the Godavari-Krishna link under the Interlinking of rivers project.
- The project aims to transfer the surplus water from Godavari to the Krishna river basin.
- Under the Andhra Pradesh Reorganisation Act, 2014, Polavaram Irrigation Project has been declared a National Project.

- Polavaram Project Authority (PPA)** was constituted under this act to carry out this project.
- Project Details:** The Polavaram Irrigation Project (PIP) is a multipurpose project on the River Godavari located around West Godavari and East Godavari Districts in Andhra Pradesh.
- Under this project, a **gravity dam** is under construction across the Godavari River in Polavaram Mandal in the West Godavari district.
- The backwaters of the reservoir spreads in parts of **Chhattisgarh and Orissa States**.
- The project aims for the **development of Irrigation, Hydropower and drinking water facilities** in East Godavari, Visakhapatnam, West Godavari and Krishna districts.



PAR-TAPI-NARMADA LINK PROJECT

News: On March 21, 2022, the tribals in Gujarat will hold a public meeting in Kaprada in Valsad district to protest against the Centre's Par Tapi Narmada river-linking project.

About:

- Envisioned under the 1980 National Perspective Plan (NPP) under the former Union Ministry of Irrigation and the Central Water Commission (CWC).
- The project proposes to transfer river water from the surplus regions of the Western Ghats to the deficit regions of Saurashtra and Kutch.
- The excess water in the interlinked Par, Tapi and Narmada rivers which flow into the sea in the monsoon would be diverted to Saurashtra and Kutch for irrigation.



- It proposes to link three rivers:
 - Par River, originating from Nashik in Maharashtra and flowing through Valsad
 - Tapi from Saputara flows through Maharashtra and Surat in Gujarat
 - Narmada originates in Madhya Pradesh and flows through Maharashtra and Bharuch and Narmada districts in Gujarat.
- The link mainly includes the construction of:
 - Sevendams (Jheri, Mohankavchali, Paikhed, Chasmandva, Chikkar, Dandar and Kelwan),
 - Three diversion weirs (Paikhed, Chasmandva, and Chikkar dams),
 - Two tunnels (5.0 kilometres and 0.5 kilometres length),
 - The 395-kilometre long canal (205 kilometres in Par-Tapi portion including the length of feeder canals and 190 km in Tapi-Narmada portion), and
 - Six powerhouses - Of these, the Jheri dam falls in Nashik, while the remaining dams are in the Valsad and Dang districts of South Gujarat.

KWAR HYDROELECTRIC PROJECT

News: The Cabinet Committee on economic affairs (CCEA) has approved the investment of Rs.4526.12 crore for the 540 Megawatt (MW) Kwar Hydroelectric Project.

About:

- Located on river Chenab, in Kishtwar district of Union Territory of Jammu and Kashmir.
- Implemented by Chenab Valley Power Projects Private Ltd., a joint venture between the NHPC and the Jammu and Kashmir State Power Development Corporation, with equity contributions of 51% and 49%.
- The project, to be commissioned within 54

months, is **expected to generate 1975.54 million units** in a 90% dependable year.

- This is **part of the Indus basin** and would be one of at least four projects coming up in the district, including the 1,000 MWs Pakal Dul hydroelectric project and 624 MWs run-of-the-river Kiru hydroelectric project.



Indus Water Treaty (IWT), 1960:

- Under the 1960 vintage Indus Water Treaty (IWT) between India and Pakistan, the two countries **share the waters of six rivers** in the Indus basin that flow through India towards Pakistan.
- Of these, **India has complete rights** over three eastern rivers - Sutlej, Beas and Ravi, while **Pakistan has rights** over the western rivers - Chenab, Jhelum, and Indus.
- India can, however, **build run-of-the-river projects** on the western rivers.

NANAR OIL REFINERY

News: Union Minister Dharmendra Pradhan has indicated that the Nanar oil refinery project in the Konkan region may be revived as the Maharashtra government was reconsidering its decision about stalling the project.

About:

- The project, Ratnagiri Refinery and Petrochemical Limited was going to be Asia's '**biggest oil refinery**' and was proposed to be built at **Nanar village in Ratnagiri district** in coastal Konkan region.
- It was supposed to be a **joint venture** between Indian Oil, Bharat Petroleum and Hindustan Petroleum, and Saudi Arabia-owned Aramco and United Arab Emirates National Oil Company.



SHINKU-LA TUNNEL

News: India will soon be home to the world's longest highway tunnel beneath Shinku-La Pass.

About:

- Built by **Border Roads Organization (BRO)** under **Project Yojak by 2025**.
- The Shinku-La tunnel will be **built at Shinku La Pass** at an altitude of 16,580ft.
- The tunnel will be **4.25 km** in length. It will provide **all-weather connectivity** between **Ladakh and Himachal**.
- Once constructed, it will be the **world's longest and highest tunnel** at this altitude.

Shinku-La Pass:

- Shinku-La Pass is a mountain pass between Zaskar Valley in Ladakh and Lahaul Valley in Himachal Pradesh.
- This pass may be considered an entry point to Lughnak Valley in Zaskar.



Border Roads Organisation (BRO):

- BRO was conceived and raised in 1960 by Pandit Jawaharlal Nehru for coordinating the speedy development of a network of roads in the North and the North-eastern border regions of the country.
- It works under the administrative control of the Ministry of Defence.
- It has diversified into a large spectrum of construction and development works comprising airfields, building projects, defence works and tunnelling and has endeared itself to the people.

RAMBAN TUNNEL

News: The Centre has constituted a committee of three independent experts to investigate the reasons for the recent collapse of a part of the under-construction tunnel in Ramban on the Jammu-Srinagar highway and suggest remedial measures.



About:

- Ramban is a town in the Ramban district of Jammu and Kashmir.
- It lies on the banks of the Chenab river in Chenab Valley on the National Highway-1a (now NH-44) at about 150 km from Jammu and about 150 km from Srinagar.
- Its location makes it almost the central point on the Jammu-Srinagar National Highway.

SELA -TUNNEL

News: The strategically-significant Sela Tunnel project in Arunachal Pradesh is nearing completion well before the deadline.

About:

- The Sela Tunnel is the longest bi-lane road tunnel in the world.
- The total length of the project, including the tunnels, the approach, and the link roads, will be around 12 km.
- The tunnel is being constructed by the Border Roads Organisation at an altitude of 13,800ft near the Indo-China border.
- It is being built on the 317 km long Balipara-Chariduar-Tawang (BCT) road which connects West Kameng, East Kameng and Tawang districts of Arunachal Pradesh to the rest of the country.



deployment of weapons and soldiers to forward areas in the Tawang sector.

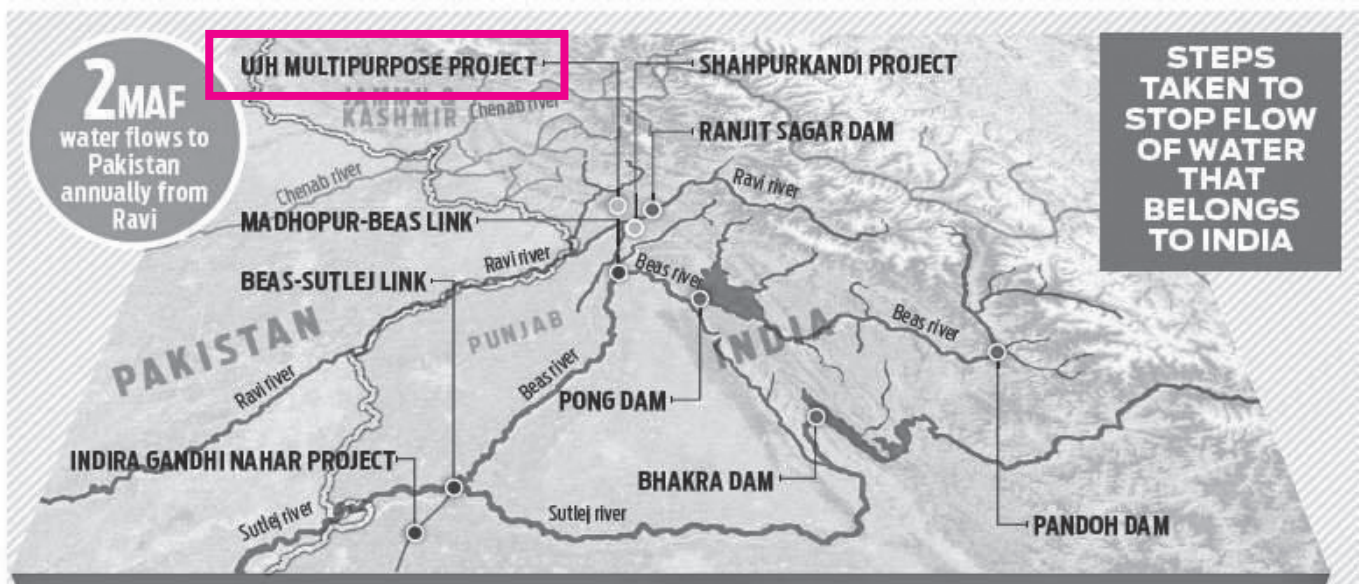
UJH MULTIPURPOSE PROJECT

News: A high-level meeting was held by the Jal Shakti Ministry to review the progress of work at the Ujh Multipurpose (National) Project in the Kathua region of Jammu & Kashmir.

About:

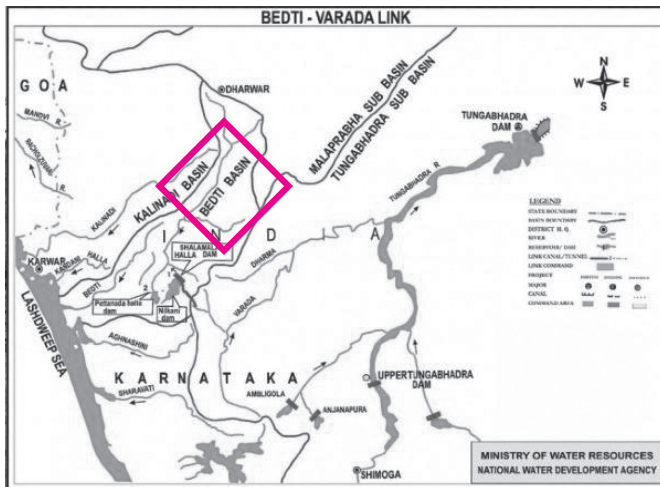
Significance:

- Once completed, the tunnel will be the longest twin-lane tunnel above 13,000 feet in the world and will provide all-weather connectivity to Tawang.
- Moreover, the project will also allow faster
- Ujh is a tributary of the Ravi river. The Ujh Multipurpose Project is planned to **enhance the utilization of India's rights** under the Indus Waters Treaty.
- The project will **increase the utilization** of waters of eastern Rivers shared with India as per the **Indus Water Treaty**.
- It will be **constructed on the River Ujh** in the Kathua District of Jammu & Kashmir.



BEDTI-VARADA RIVER INTERLINKING PROJECT

News: Environmental groups in Karnataka have criticized the project to link the Bedti and Varada rivers in Karnataka, calling it unscientific and a waste of public money.



About:

- The Bedti-Varda project was envisaged in 1992 to supply drinking water.
- The plan aims to link the Bedti, a river flowing west into the Arabian Sea, with the Varada, a tributary of the Tungabhadra River, which flows into the Krishna, which in turn flows into the Bay of Bengal.
- A massive dam will be erected at Hirevadatti in the Gadag district.
- A second dam will be built on the Pattanahalla river at Menasagoda in Sirsi, Uttara Kannada district.
- Both dams will take water to the Varada via tunnels.
- The water will reach Kangra and will then go

down a 6.88 km tunnel to Hakkalumane, where it will join the Varada.

- The project envisages taking water from the water surplus Sirsi-Yellapur region of Uttara Kannada district to the arid Raichur, Gadag and Koppal districts.
- A total of 302 million cubic meters of water will be drawn from the Pattanahalla and Shalmalahalla tributaries of the Bedti and Varada rivers, while 222 million cubic meters of water will be drawn from the barrage at Suremane built against the Bedti river.
- The Project would need 61 megawatts of power to pull the water to Gadag. Even after this, it is unknown whether the water would reach Gadag.

LANDLORD PORT MODEL

News: Jawaharlal Nehru Port (JNP) has become the first major landlord port in India following the awarding of a private tender to expand Jawaharlal Nehru Port Container Terminal (JNPCT).

About:

- In the landlord port model, the publicly governed port authority acts as a regulatory body and as a landlord while private companies carry out port operations—mainly cargo-handling activities.
- Here, the port authority maintains ownership of the port while the infrastructure is leased to private firms that provide and maintain their superstructure and install their equipment to handle cargo.
- In return, the landlord port gets a share of the revenue from the private entity.



Ports in India:

About:	India has 13 major seaports (12 Government-owned and one private) and 205 notified minor and intermediate ports situated in the 9 coastal states of India i.e Kerala, Karnataka, Maharashtra, Goa, Gujarat, West Bengal, Odisha, Andhra Pradesh, and Tamil Nadu.
On West coast:	Ports of Mumbai, Kandla (Deendayal Port Trust), Mangalore, JNPT (known as Nhava Sheva), Vadhavan (will be 13th major port in India), Mormugao, and Cochin.
On East coast:	Ports at Chennai (formerly known as Madras Port), Tuticorin (renamed as V. O. Chidambaranar Port), Visakhapatnam, Paradip, Kolkata (Shyam Prasad Mukherjee Port Trust), and Ennore (Kamarajar Port Ltd.).
Administration	Major Ports: central government's shipping ministry administers the major ports, Minor and intermediate ports: administered by the relevant departments or ministries in the nine coastal states – Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Tamil Nadu and West Bengal.
Facts:	Ennore Port (Kamarajar Port Ltd.): first port in India which is a public company is a registered public company with the government owning a 68% stake. - In Andaman and Nicobar Islands, there is Port Blair. Mumbai: largest natural port in India. Chennai port: largest one in the Bay of Bengal. It is also the second-largest container port of India, behind JNPT. Kolkata Port: also known as Diamond Harbour, (officially known as Shyam Prasad Mukherjee Port Trust) is the only riverine major port of India. It is also oldest operating port in India. It was constructed by the British East India Company. Paradip Port: first major port commissioned after Independence. Visakhapatnam Port: deepest port of India.

Jawaharlal Nehru Port Authority (JNPA):

- Jawaharlal Nehru Port Authority (JNPA) is located in **Navi Mumbai** and was **commissioned in 1989**.
- It is the **premier container handling port in India** accounting for around 50% of the total containerized cargo volume across the major ports of India.
- It is **ranked 26th** among the top 100 global ports (as per Lloyd's List Top 100 Ports 2021 Report).

HASDEO-ARANYA REGION

News: Chhattisgarh Legislative assembly has unanimously passed a private member resolution urging the Centre to cancel the allocation of all coal mining blocks in the ecologically sensitive Hasdeo Aranya Area.

About:

- The Hasdeo Aranya forests are called the **lungs of Chhattisgarh**.
- The Hasdeo Aranya (Aranya means forest) lies

in the **catchment area of the Hasdeo river in North-Central Chhattisgarh.**

- The **Hasdeo river is a tributary of the Mahanadi river**, which originates in Chhattisgarh and flows through Odisha into the Bay of Bengal.
- The Hasdeo forests are also the catchment area for the **Hasdeo Bango Dam built across the Hasdeo river** which irrigates six lakh acres of land, crucial to a State with paddy as its main crop.
- Besides, the forests are **ecologically sensitive due to the rich biodiversity they offer** and due to the presence of a large migratory corridor for elephants.



NORD STREAM PIPELINE

News: The two Nord Stream gas pipelines linking Russia and Europe have been hit by unexplained leaks. There have been four cases of leaks in the pipelines.

About:

- Nord Stream is the **1,200 km subsea export gas pipeline** that runs under the Baltic Sea, **carrying gas from Russia to Europe.**
- Bovanenkovo oil and gas condensate deposit in Western Siberia.

- The Nord Stream twin pipeline system **through the Baltic Sea runs from Vyborg, Russia to Lubmin near Greifswald, Germany.**
- The pipelines were **built and operated by Nord Stream.**
- The Nord Stream **route crosses the exclusive economic Zones of Russia, Finland, Sweden, Denmark and Germany**, as well as the territorial waters of Russia, Denmark, and Germany.
- **Nord Stream 1**, completed in 2011 (From Vyborg in Leningrad to Lubmin near Greifswald, Germany).
- **Nord Stream 2**, completed in September 2021 (From Ust-Luga in Leningrad to Lubmin).



KERCH BRIDGE

News: The road-and-rail bridge linking Russia and the Crimean Peninsula was damaged in a powerful blast recently, hitting a crucial supply route for Russian forces in Ukraine.

About:

- The 19-km (12-mile) **Crimea Bridge over the**

Kerch Strait is the only direct link between the transport network of Russia and the Crimean Peninsula, which Moscow annexed from Ukraine in 2014.

- The bridge is crucial for the supply of fuel, food and other products to Crimea, where the port of Sevastopol is the historic home base of Russia's Black Sea Fleet.
- The Kerch Strait is a crucial part of the regional grain trade connecting the Azov Sea with the Black Sea.



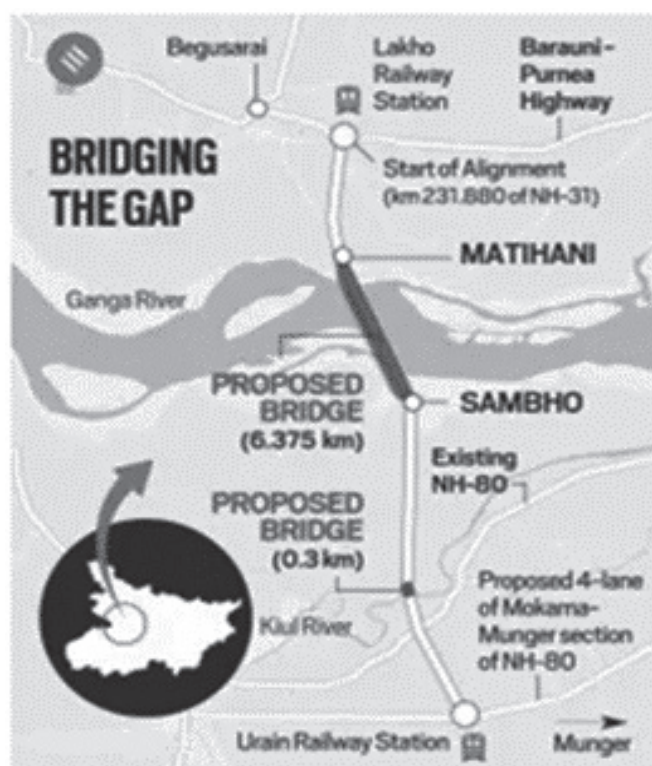
MATIHANI-SAMBHO BRIDGE

News: The Government of India has cleared a crucial bridge project on the River Ganga in Begusarai.

About:

- The bridge is being built on the River Ganga in Begusarai (Bihar).
- It will link the riverine areas of Matihani and Sambho in Begusarai and would also connect NH-31 (Patna-Mokama) and NH-80 (Begusarai-Purnea).
- The National Highway Authority of India (NHAI) has made a rare exception to clear the feasibility report of the bridge.

- In this case, the shortening of travel distance, potential benefits to the rural economy and upcoming assembly polls seem to have worked in the project's favour.
- **Benefits of the bridge:** The bridge would shorten the travel route from North Bihar to South Bihar, Orissa, Jharkhand and Nepal by at least 70 km.
- It would also hold greater importance in terms of the safety of 13 industrial units in Begusarai and Barauni by providing a base and easy access to NDRF teams in times of any industrial disaster.



GRONINGEN GAS FIELD

News: The gas field in Groningen, the Netherlands, has again come under the spotlight amid concerns over energy supplies. The Dutch government announced that the field would be shut down by the end of 2024 due to the stress and suffering caused by earthquakes.

About:

- The Groningen gas field is a **natural gas field** in Groningen province in the **north-eastern part of the Netherlands**.
- It is the **largest natural gas field in Europe**.
- The region saw **multiple earthquakes** throughout the 1980s. The Dutch government said it would **close the area in response to protests by locals**. The closing date was moved up from 2030 to 2022.
- However, the **unsure geopolitical developments** have prompted the Dutch government to refrain from permanently closing any wells this year.
- **Significance of the field:** Bloomberg reported earlier this month that if allowed, the **additional supply from the gas field could go up** to a level that would make up for what Germany imported from Russia.



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GEOGRAPHICAL INDICATION (GI)

- GI is a sign used on items that have a specific geographical origin and have traits or a reputation that are related to that origin.
- Pertaining to the attributes are determined by the geographical location of production, there is a clear relationship between the product and its original location of production.
- **International obligation:** The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) establishes basic standards of GI protection that WTO countries must offer.

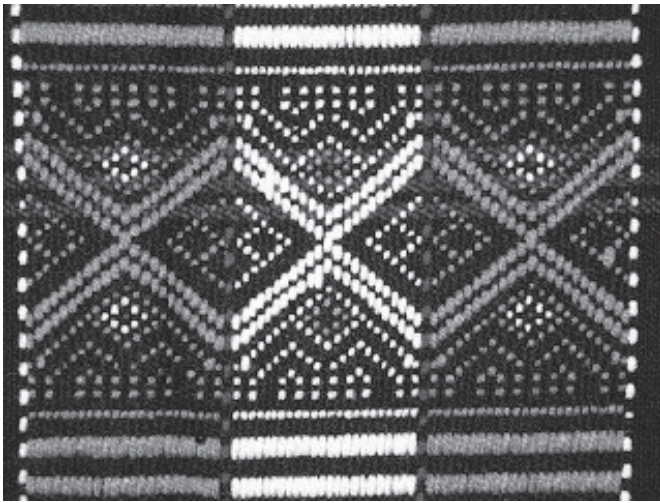
Legal regime in India:	• To comply with its TRIPS obligations, India enacted the Geographical Indications of Goods (Registration and Protection) Act, 1999, and the Geographical Indications of Goods (Regulation and Protection) Rules, 2002. • According to the Act, the ‘Registrar of Geographical Indications’ is the Controller-General of Patents, Designs, and Trade Marks under the Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry, who oversees the operation of the Geographical Indications Registry (GIR). • The GIR is based in Chennai and has jurisdiction across India.
Protection:	• A GI right allows individuals who have the right to use the indication to prevent a third party from using it if their product does not meet the appropriate criteria. • A protected GI, on the other hand, does not allow the holder to restrict someone from creating a product using the same processes as those specified in the standards for that indication.
Duration of Protection:	• A GI is registered for a term of ten years, and the registration can be renewed for another ten years at a time.
Penalty for GI infringement:	• Falsification of a GI carries a penalty of imprisonment for a term not less than six months but not less than three years and a fine not less than Rs 50,000 but not less than Rs 200,000.

APATANI TEXTILE

News: Zeet Zeero Producer Company Limited has applied for a Geographical Indication (GI) **marking for the Arunachal Pradesh Apatani textile product.**

About:

- The Apatani fabric is made by the **Apatani tribe of Arunachal Pradesh**, who live in Ziro, the district seat of Lower Subansiri.



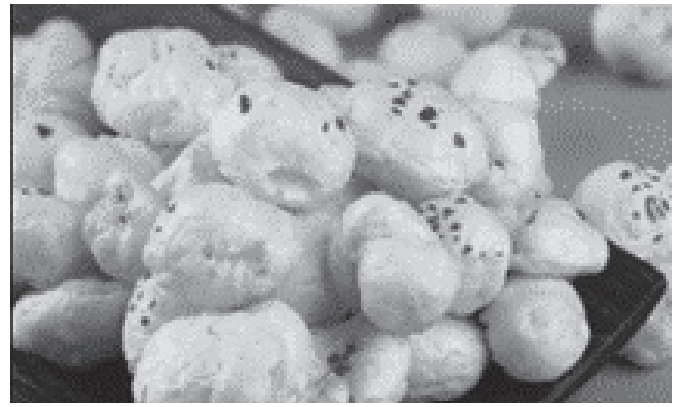
- This tribe's woven cloth is notable for its geometric and zig-zag patterns, as well as its angular motifs.
- The Apatani people create their textiles for special events such as ceremonies and cultural festivals.
- The tribe mostly produces shawls known as **jig-Jiro** and **jilan**, as well as jackets known as **supuntarii**.
- This tribe's traditional handloom is a form of loin loom known as **Chichin**, which is related to the Nyishi tribe's traditional handloom.
- It is portable, simple to set up, and may be managed by a single weaver, preferably a female member of the community.

MITHILA MAKHANA

News: Mithila Makhana has recently received the Geographical Indication (GI) label from the government.

About:

- **Mithila Makhana or Makhan** (botanical name: *Euryale ferox* Salisb.) is a peculiar species of aquatic fox nut grown in Bihar and Nepal's Mithila area.



- Makhana is **one of Mithila's three prominent cultural identities**.
- Mithila's three renowned cultural identities are **Pan, Makhan, and Machh (fish)**.
- It is also well-known in the **Kojagara celebration of Maithil Brahmins**, which is held for newlywed couples.
- Makhana is **high in protein and fibre**, as well as minerals like **calcium, magnesium, iron, and phosphorus**.

NARASINGHAPETTAI NAGASWARAM

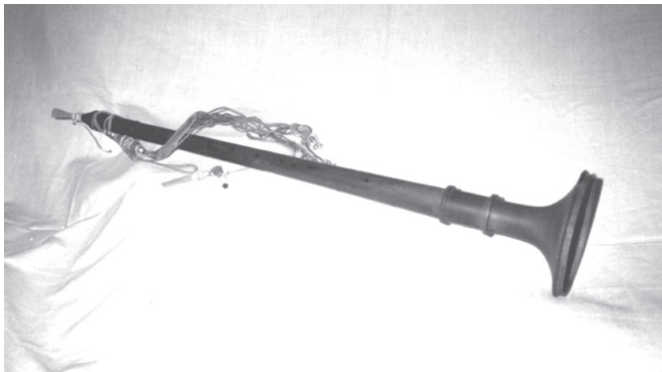
News: Narasinghapettai nagaswaram, a wind musical instrument of Tamil Nadu, has been granted the Geographical Indication tag.

About:

- The nagaswaram is a wind instrument that is an integral part of Carnatic concerts, weddings, festivals and temple ceremonies.
- The unique feature of the nagaswaram is its production process - it is handmade in Narasingapettai village in Thanjavur, unlike the other machine-made ones.
- Artisans of the nagaswaram choose the wood wisely, a type of ebony, ensuring it is 200 years old and does not absorb moisture.
- The top portion has a metal staple into which a small metallic cylinder is inserted to hold the

mouthpiece made of reed.

- The reeds are made from the leaves of a locally grown plant called 'naanal' (a variety of bamboo).
- The GI tag will now honour the Nagaswaram artisans.



GI-TAGGED KASHMIR CARPETS

News: First ever Geographical Indication (GI) tagged Kashmir carpets flagged off to Germany.

About:



- Although the Department of Industry Promotion and Internal Trade gave GI tags to Kashmiri hand-knotted carpets in 2016, the registered carpets were only certified this year.
- The history of Kashmiri carpets dates back to the time of Persia's famous Sufi Saint and scholar, Hazrat Mir Syed Ali Hamdani (1341-1385 AD).
- Kashmiri carpets are very similar to Iranian carpets, but weavers in Kashmiri carpets use a written set of codes and symbols for design patterns and colours, known as Taleem.
- Taleem, a colour-coded chart reveals the number of knots to be weaved in each colour.

WHITE ONION

News: White onion from Alibag (Maharashtra) gets a Geographical Indication (GI) tag.

About:

- White onions are grown in Alibaug only with traditional methods and genuine seeds.
- Geoclimatic conditions of the region are the reason for the unique taste, flavour, and shape as well, say, farmers.



- Alibag taluka's soil has a low sulphur concentration.
- The onions have a low pungency, a pleasant flavour, a "no-tear" characteristic, a low

pyruvic acid content, a high protein, fat, and fibre content, and a high antioxidant chemical content (quercetin).

- It promotes immunity and aids in the treatment of sleeplessness, blood cleansing, high blood pressure, and heat-related diseases.

PANRUTI CASHEWS

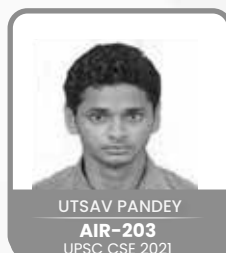
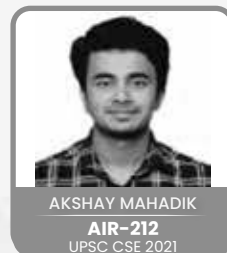
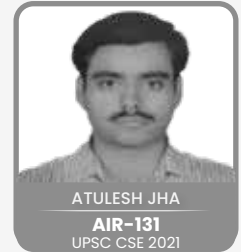
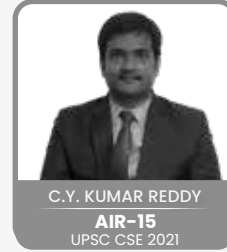
News: Cashew Processors and Exporters in Tamil Nadu have applied for GI status for Panruti Cashews.

About:

- **Panruti cashew is found mostly in Tamil Nadu.** This is distinctive because of its flavour and high quality.
- Despite their diminutive size, these cashew nuts have a particular market value. In **Tamil Nadu**, it is **regarded as the 'gold mine' of Cuddalore.**
- It is **typically grown on laterite and red soils**, as well as coastal sands. It is worth mentioning that, in addition to Panruti Cashew, '**Panruti Jackfruit**' and '**Panruti Cashew Apple**' are both **extremely rare.**



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SUBARCTIC BOREAL FOREST

News: The Subarctic Boreal Forest is burning, drifting and falling victim to insects. They are shrinking.

About:	• The boreal forest or taiga is a forest of the cold, subarctic region. • It is the deep, verdant green ring that encircles the Arctic. • It stretches across Canada, Scandinavia, Russia and Alaska. • The forest - named for Boreas, the Greek god of the north wind - covers 10% of the world's land surface. • The soil beneath the taiga often contains permafrost - a layer of permanently frozen soil. • The boreal forest is second only to the Amazon in terms of its vital role in ensuring the future of the planet. • It is in as much danger from climate change as the Amazon rainforest.
Significance:	• The boreal forest has a decisive impact on the globe's northern oceans and overall climate. • Its 1.2 billion hectares, which account for nearly a third of all forested land in the world, help slow global warming by absorbing a significant amount of carbon emissions. • The boreal forest holds twice as much carbon as all tropical forests combined, and also helps purify a massive amount of freshwater. • There have always been natural changes to its makeup, but scientists are now concerned that those changes are happening more often, and are even becoming the norm.
Threats:	• The boreal forest has been weakened by increasing forest fires, the melting of permafrost, intensifying insect infestations and warming temperatures.

LIQUEFACTION OF SAND

News: Scientists have found that the shape of sand grains influences the liquefaction of sand which is one of the significant factors behind the collapse of structures during earthquakes.

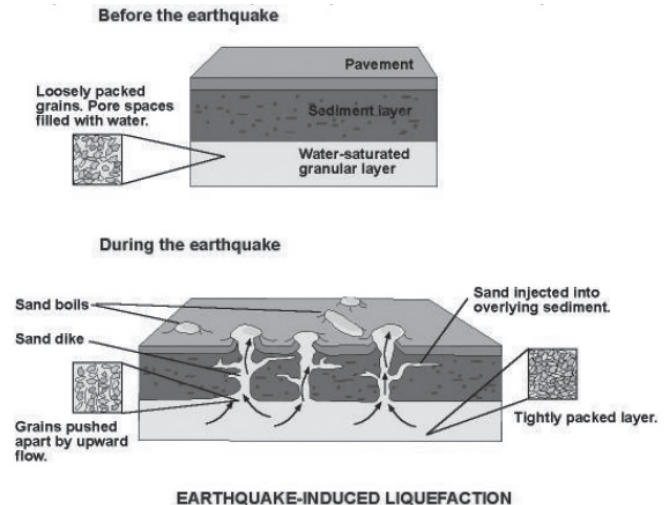
About:

- Liquefaction of sand is a phenomenon in which the **strength and stiffness of soil are reduced by earthquake shaking or other rapid loading and lead to the collapse of structures resting on the liquefied ground.**

What have the scientists found in this study?

- Scientists have found that sand grains' shape influences sand's liquefaction. For instance, natural sand with a regular shape liquefies easily compared to sand with an irregular shape.
- This is because the **shear force** (unaligned forces pushing one part of a body in one specific direction and another part of the body in the opposite direction) **required to break the inter-particle locking** is more for the grains with relatively irregular shapes.

- Hence, the scientists concluded that natural sand used in structures like **slopes and retaining walls** could be replaced with **irregularly manufactured sand** to improve stability and sustainability.



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JUTE

News: West Bengal is experiencing a crisis that has led to the closure of several Jute Mills.

About:

- **Suitable climate:**
 - **Temperature:** Between 25-35 °C
 - **Rainfall:** around 150-250 cm
 - **Soil Type:** Well drained alluvial soil.
- **Uses:** It is known as the **golden fibre**. It is used in making **gunny bags, mats, ropes, yarn, carpets and other artefacts**.
- **Production:**
 - **India is the largest producer** of jute, followed by **Bangladesh and China**.
 - However, in terms of acreage and trade, **Bangladesh takes the lead, accounting for three-fourths** of the global jute exports in comparison to India's 7%.
 - It is **mainly concentrated in Eastern India** because of the **rich alluvial soil of the Ganga-Brahmaputra delta**.

- **Major jute-producing states:** West Bengal, Bihar, Odisha, Assam, Andhra Pradesh, Meghalaya, and Tripura.

Initiatives for the Jute Sector:

- **Jute Packaging Materials act, 1987:** The act provides for the **compulsory use of jute packaging material** in the supply and distribution of **certain commodities** in the interests of production of raw jute and jute packaging material. Persons engaged in the production thereof, and for matters connected therewith.
- **Jute Geo-Textiles (JGT):** The Cabinet Committee on economic affairs (CCEA) has approved a Technical Textiles Mission, which includes Jute Geo-Textiles. **JGT is one of the most important diversified jute products**. It can be **applied in many fields** like civil engineering, soil erosion control, road pavement construction and protection of river banks.
- **Jute SMART:** It is an **e-government initiative** which was launched in December 2016 to promote transparency in the jute sector. It provides an **integrated platform** for procurement of sacking by Government agencies.



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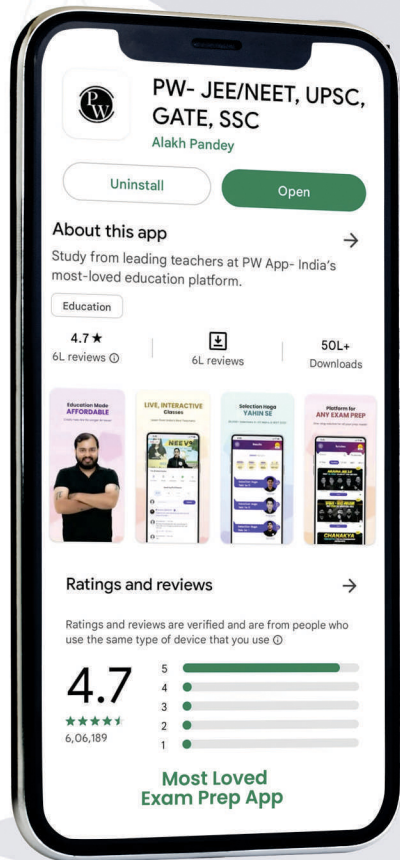


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