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Electoral Bearer Bond Scheme

- The State Bank of India (SBI) has been authorised to issue and encash Electoral Bonds through its 29 Authorized Branches across the country w.e.f. July 01, 2021 to July 10, 2021.
- The Government of India notified the Electoral Bond Scheme in 2018.
- **Donor** - Under the Scheme, Electoral Bonds may be purchased by a person, who is a citizen of India or incorporated or established in India.
- A person being an individual can buy Electoral Bonds through cheque/digital payment, either singly or jointly with other individuals by approaching the banks.
- The donor donates these bonds to the political party.
- **Receiver** - Electoral Bonds shall be received only by the Political Parties registered under Section 29A of the Representation of People Act, 1951.
- Also, these Political Parties should have secured not less than 1% of the votes polled in the last General Election to the House of the People or the Legislative Assembly of the State.
- **Encash** - The Electoral Bonds shall be encashed by an eligible Political Party only through a Bank account with the Authorized Bank. E.g.: SBI.
- The political party has to encash into the account which is registered with the Election Commission of India.
- **Validity** - Electoral Bond shall be valid for 15 calendar days from the date of issue and no payment shall be made to any payee Political Party if the Electoral Bond is deposited after expiry of the validity period.
- The Electoral Bond deposited by an eligible Political Party in its account shall be credited on the same day.

Glacial Lake Atlas

- The Department of Water Resources, River Development and Ganga Rejuvenation (DoWR, RD & GR) under the Ministry of Jal Shakti have released the updated Glacial Lake Atlas of Ganga Basin.
- For the present study, glacial lakes with water spread area greater than 0.25 ha were mapped using Resourcesat-2 (RS-2) Linear Imaging Self Scanning Sensor-IV (LISS-IV) satellite data.
- Based on its process of lake formation, location, and type of damming

material, glacial lakes are identified in 9 types, grouped into 4 categories.
- The present glacial lake atlas is based on the inventoried glacial lakes in part of Ganga River basin from its origin to foothills of Himalayas. The study portion of the basin covers part of India and transboundary region.
- This Atlas is available on Bhuvan portal of National Remote Sensing Centre (NRSC), India WRIS Portal and National Hydrology Project (NHP) website.
- **Role of NRSC** - NRSC under the NHP is carrying out hydrological studies using satellite data and geospatial techniques.
- It is responsible for forming a detailed glacial lake inventory, prioritization for GLOF risk, and simulation of GLOF for selected lakes has been taken up for all the catchments of Indian Himalayan Rivers.
- Under this activity, an updated inventory of glacial lakes using high resolution satellite data was prepared for the Indus River basin in 2020.
- **Uses** - The Glacial Lake Atlas can be used for managing the glacial lakes, and to mitigate the possible impacts of Glacial Lake Outburst Floods (GLOF) and climate change.
- It provides database for regular or periodic monitoring changes in spatial extent (expansion/shrinkage), and formation of new lakes.
- Central and State Disaster Management Authorities can make use of the atlas for disaster mitigation planning and related program.

NHP-Bhuvan Portal

- The Secretary, Department of Space & Chairman of ISRO launched the National Hydrology Project or NHP–Bhuvan portal of NRSC.
- The NHP-Bhuvan Portal is a repository of information on the initiatives undertaken by NRSC under NHP with a facility to download the reports and knowledge products being developed by NRSC.
- This initiative under NHP is a step towards facilitating acquiring reliable information and putting the same in public domain which would pave the way for an effective water resource development and management.

National Hydrology Project

- National Hydrology Project is a Central Sector Scheme with 100% grant to implementing agencies on pan India basis that was started in 2016.
- It is implemented by the Department of Water Resources, River Development & Ganga Rejuvenation (DOWR, RD & GR). It is supported by the World Bank.
- **Objective** - To improve the extent, quality and accessibility of water resources information and to strengthen the capacity of targeted water resources management institutions in India.
- **Project Components** - Water Resource Monitoring System (WRMS), Water Resources Information System (WRIS), Water Resources Operation and

Planning System (WROPS) and Water Resources Institutions Capacity Enhancement (WRICE).

- **Groups of direct beneficiaries**
  - Central and state implementing agencies (IAs) responsible for surface and/or groundwater planning and management, including river basin organizations; and
  - Users of the Water Resources Information System (WRIS) across various sectors and around the World.

- **Key Results Indicators**
  - Improving the extent, quality, and accessibility of water resources data: Number of new or upgraded Water Resources monitoring stations providing validated data online.
  - Improving the accessibility of water resources information.
  - Strengthening the capacity: Number of Water Resources institutions achieving benchmark performance levels.

Link between Cloud Bursts and Forest Fires

- A recent study has found a connection between the formation of the tiny particles, the size of a cloud droplet on which water vapor condenses leading to the formation of clouds and forest fires.
- The quantity of such particles called the Cloud Condensation Nuclei (CCN) was found to have peaks associated with forest fire events.
- Cloud condensation nuclei (CCN), which can activate and grow into fog or cloud droplets in the presence of supersaturation (SS) was measured by a droplet measurement technology's (DMT) CCN Counter.
- This observation was carried out under a Climate Change Programme Division, Department of Science & Technology funded project, where the variation of CCN was reported on diurnal, seasonal, and monthly scale.
- This study showed that the highest concentration of CCN in the high altitude was found to be associated with excessive fire forest activities of the Indian subcontinent.
- There were other peaks also associated with a variety of events, such as long-range transportation and local residential emission.

US Heat Wave

- The Northwestern US and Pacific Canada are in the grips of a heat wave that the National Weather Service called "historic and dangerous".
- A weather anomaly called a "heat dome" is partially to blame.
- According to the US National Weather Service, in most parts of the country, temperatures must be above the historical average in an area for two or

more days before the label “heat wave” is applied to a hot spell.

- **Causes of heat wave** - Heat waves begin when high pressure in the atmosphere moves in and pushes warm air toward the ground.
- That air warms up further as it is compressed, and we begin to feel a lot hotter. The high-pressure system pressing down on the ground expands vertically, forcing other weather systems to change course.
- It even minimizes wind and cloud cover, making the air more stifling. This is why a heat wave parks itself over an area for several days.

Omega Block

- A dangerous 'Omega block' is trapping scorching hot air over the US and Canada.
- **Heat Dome** - Even though the average summer temperatures are steadily increasing every year due to global warming, a weather anomaly called ‘Heat dome’ is partly to blame for the Pacific Northwest heat.
- As the ground warms, it loses moisture, which makes it easier to heat even more. As that trapped heat continues to warm, the system acts like a lid on a pot - earning the name “heat dome.”
- Conflating high- pressure and low-pressure systems have trapped the region in a heat dome locked in place by undulations in the jet stream.
- [Jet Stream is a river of strong wind in the upper atmosphere.]
- In this case, the jet stream has trapped a ridge of high pressure (heat dome) over the Pacific Northwest, creating a block in the atmosphere that prevents the weather system from moving on.
- Instead, the hot air in the high-pressure system pushes down over the region, creating a suffocating blanket of heat.
- As the wind patterns swirl around the heat block in the shape of the Greek letter Omega, the systems like these got the name “Omega blocks”.

Collapse of Coastal Buildings

- The partial collapse of a building near the coast in Florida is a reminder of how vulnerable structures near the coast can be.
- The “marine urban sprawl” plays a major role in rising water levels and land subsidence because of excessive groundwater extraction.
- **Four checkpoints** - In India, any construction along the coast has four fundamental checkpoints. They are,
- Soil and foundation - Along coastal areas, there are sandy strata of considerable depth, and beneath this layer is hard rock or marine clay.
- Usually, buildings are done on a pile foundation in these areas. Concrete piles are driven to rest on a suitable stratum deep into the ground taking into consideration the effect of any compressive layer underneath.

- The life of the piles can be increased by choosing materials that withstand the hostile saline environment. This includes chemical additives that improve the sulphate-resistant cement's performance.
- Material interaction - In buildings close to the sea, a major concerns are,
    1. *Spalling* - Saltwater seeping into concrete, causing support beams to rust and weaken over time,
    2. *Corrosion* is common in coastal buildings, and erosion can happen depending on the cover of steel,
    3. *Carbonation* causing the cement slurry around the structure to lose its protective ability. Once this chemical reaction reaches the reinforcement, corrosion increases rapidly.
- Structural audits - These are a good way to maintain buildings close to large water bodies. A non-destructive test is usually recommended.
- Sea level - Besides global warming, the sea has its inherent way of getting back. When you start reclaiming the sea, and you encroach into its territory, the sea will take it back elsewhere.

Source: PIB, The Hindu, The Indian Express, Live Science

