



TATHASTU
Institute of Civil Services

DAILY CURRENT AFFAIRS



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53/1, Upper Ground Floor, Bada Bazar Road, Old Rajinder Nagar, New Delhi -110060

www.tathastuics.com

9560300770, 9560300554

enquiry@tathastuics.com



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DEADLY EARTHQUAKE HITS TAIWAN

SOURCE: [THE HINDU](#)

TAG: GS Paper I- **Geography – Important Geophysical Phenomena – Earthquake.**

WHY IN NEWS?

- ❖ The largest earthquake to strike Taiwan in at least 25 years caused over 900 injuries and nine fatalities.
- ❖ The US Geological Survey (USGS) and Taiwan's earthquake monitoring agency reported varying magnitudes of 7.2 and 7.4, respectively.
- ❖ According to USGS, the epicenter was situated 18 kilometers southwest of Hualien County in eastern Taiwan. Several aftershocks followed, one of which had a magnitude of 6.5.

More about the news:

- ❖ **Geological Context of the Ring of Fire:**
 - ☛ Encompassing approximately 40,250 kilometers, the Ring of Fire is characterized by a vast array of volcanoes and regions prone to earthquakes along the periphery of the Pacific Ocean.
 - ☛ This curved expanse signifies the convergence of multiple tectonic plates, including but not limited to the Eurasian, North American, Juan de Fuca, Cocos, Caribbean, Nazca, Antarctic, Indian, Australian, and Philippine plates.
 - ☛ It traverses several Pacific coastal nations, rendering them highly susceptible to seismic disturbances.

What leads to frequent earthquakes in the Ring of Fire?

- ❖ The Ring of Fire encounters frequent earthquakes due to the perpetual interaction of tectonic plates.
 - ❖ These plates engage in movements such as sliding past each other, colliding, or one plate moving above or below another.
 - ❖ The rough edges of these plates often become stuck while the rest of the plate continues its motion. When these stuck edges abruptly release, it initiates an earthquake along one of the faults.
- ❖ **Susceptibility to Earthquakes:**
 - ☛ The Ring of Fire's vulnerability to earthquakes arises from the continuous movement of tectonic plates along its edges.
 - ☛ As these plates interact—sliding past, colliding, or subducting beneath each other—friction accumulates along their boundaries. When this stress surpasses the frictional resistance, earthquakes occur suddenly.
 - ☛ For instance, Taiwan experiences seismic activity due to interactions between the Philippine Sea Plate and the Eurasian Plate.
- ❖ **Volcanic Activity and Subduction Zones:**
 - ☛ The prevalence of volcanoes within the Ring of Fire is attributable to subduction zones, where one tectonic plate is forced below another through collision.



- ☛ As the descending plate reaches the mantle, high temperatures and pressure lead to the mixing of volatile elements, generating magma.
- ☛ This molten material rises through the overlying plate, resulting in volcanic eruptions. Subduction zones, abundant in the Ring of Fire, contribute significantly to global volcanic activity.
- ❖ **Implications and Conclusion:**
 - ☛ The recent earthquake in Taiwan highlights the ongoing threat posed by seismic events in Ring of Fire regions.
 - ☛ Comprehending the geological processes in this area is vital for evaluating risks and implementing effective mitigation strategies.
 - ☛ As one of the world's most seismically active regions, the Ring of Fire underscores the Earth's dynamic nature, necessitating continuous monitoring and preparedness to minimize the impact of natural disasters.





PRE-EMPTIVE MEASURES AGAINST GLACIAL LAKE OUTBURST FLOODS IN UTTARAKHAND

SOURCE: [THE HINDU](#)

TAG: GS Paper I- **Geography – Important Geophysical Phenomena.**
GS Paper III- **Disaster Management.**

WHY IN NEWS?

- ❖ The government of Uttarakhand has demonstrated initiative by forming teams of experts to assess the possible risks associated with five dangerous glacial lakes in the area vulnerable to Glacial Lake Outburst Floods (GLOFs).
- ❖ The objective of these endeavors is to reduce the likelihood of GLOF occurrences and improve readiness for rescue and retreat in the event of breaches.

MORE ABOUT THE NEWS:

- ❖ **Understanding Glacial Lake Outburst Floods (GLOFs):**
 - ☛ GLOFs represent catastrophic occurrences triggered by the sudden release of water from glacial lakes formed as glaciers retreat, leaving behind depressions filled with meltwater.
 - ☛ As glaciers recede further, these lakes expand in size and become increasingly precarious.
 - ☛ Destabilization of ice or sediment barriers surrounding these lakes can result in devastating floods downstream, posing significant dangers to human settlements and infrastructure.
- ❖ **Elevated Threats and Global Context:**
 - ☛ Escalating global temperatures, attributable to climate change, have heightened the risk of GLOFs worldwide, including in India.
 - ☛ Research indicates that around 15 million individuals face the imminent threat of flash flooding from the enlargement of glacial lakes, a phenomenon exacerbated by the rapid melting of glaciers.
- ❖ **Vulnerability in the Himalayan Region:**
 - ☛ The Himalayan region, encompassing areas like Uttarakhand, has experienced a surge in GLOF occurrences in recent years due to intensified glacier melt and rapid development of infrastructure in susceptible zones.
 - ☛ Studies emphasize the heightened frequency of GLOFs in the Himalayan region, posing risks to communities, infrastructure, and ecosystems.
- ❖ **Implications and Regional Consequences:**
 - ☛ The potential repercussions of GLOFs in Uttarakhand are severe, as evidenced by past events in 2013 and 2021, showcasing the devastation they can unleash.
 - ☛ The classification of glacial lakes into risk categories ('A', 'B', and 'C') underscores the urgency of addressing high-risk zones.
 - ☛ Projected increases in surface temperatures further compound the issue, heightening the threat of GLOFs in the state.
- ❖ **Global Research and Policy Implications:**
 - ☛ International studies underscore the global ramifications of GLOF hazards, with research spotlighting the vulnerability of millions of individuals in regions like India and Pakistan.
 - ☛ Collaborative efforts between international organizations and local authorities are imperative for formulating effective strategies to mitigate GLOF risks and bolster resilience against climate-induced disasters.



ALLIANCE BETWEEN THE US AND THE UK TO IMPROVE AI SAFETY TESTING AND COOPERATION

SOURCE: [THE HINDU](#)

TAG: GS Paper III- **Science and Technology.**

WHY IN NEWS?

- ❖ The UK and the US have formally committed to working together to create advanced artificial intelligence (AI) model tests.
- ❖ This agreement intends to improve AI safety and security and is a result of promises made at the **Bletchley Park AI Safety Summit**.

What is the Bletchley Declaration?

- ❖ The Bletchley Park Declaration stands as the inaugural worldwide agreement aimed at confronting emerging AI dangers head-on.
- ❖ It signifies a unified political stance and dedication among the prominent global players in AI.
- ❖ The declaration recognizes AI's potential to improve human welfare while acknowledging the associated risks, particularly from frontier AI, which could lead to significant harm, whether intentional or unintentional, notably in areas such as cybersecurity, biotechnology, and misinformation.
- ❖ It stresses the imperative for international collaboration in tackling AI-related risks, given their inherently global nature, and calls for cooperation among all stakeholders, including corporations, civil society, and academia.
- ❖ Furthermore, the declaration announces the establishment of a regular AI Safety Summit, serving as a forum for discussions and partnerships dedicated to addressing safety concerns posed by frontier AI.

MORE ABOUT THE NEWS:

- ❖ **Information Exchange:**
 - ☛ Mutual exchange of crucial information on AI capabilities and risks is paramount, alongside joint efforts in foundational technical AI safety and security research.
 - ☛ This partnership also entails harmonizing strategies for the secure implementation of AI systems.
- ❖ **Immediate Operationalization:**
 - ☛ The collaboration will be promptly put into action, facilitating seamless coordination between the two nations.
 - ☛ Given the rapid proliferation of AI systems, this collaboration is indispensable, given the array of opportunities and substantial risks they pose to societal structures.
- ❖ **Synchronized Scientific Approaches:**
 - ☛ The US and UK will closely collaborate to synchronize their scientific methodologies, expediting the development of robust evaluation frameworks for AI models, systems, and agents.
- ❖ **Unified Approach:**
 - ☛ Both countries aim to establish a unified approach to AI safety testing and leverage their capabilities to effectively manage associated risks.
 - ☛ This involves conducting joint testing exercises on publicly accessible models and exploring personnel exchanges between their respective AI Safety Institutes.



❖ **US Consultation on Open-Source AI Models:**

- **Impact of Executive Order:** Following the executive order on AI system deployment by the Biden administration, the National Telecommunications and Information Administration (NTIA) in the US has initiated consultations on risks, benefits, and potential policies concerning widely available foundation models.
- **Industry Insights:** Meta and Open AI, leading AI developers, have offered perspectives on open-source AI models. Meta underscores the significance of open-source innovation, while OpenAI emphasizes the advantages of releasing models through APIs and commercial products to enable ongoing study and risk mitigation.





SC TO LIST PLEAS ON VERIFYING COUNT IN EVMs

SOURCE: [THE HINDU](#)

TAG: Indian Polity – Judiciary.

WHY IN NEWS?

- ❖ The Supreme Court is looking at requests for the Election Commission to make sure all Electronic Voting Machines' vote counts match with Voter Verifiable Paper Audit Trail (VVPAT) slips.

MORE ABOUT THE NEWS:

- ❖ The Supreme Court has agreed to listen to requests asking the Election Commission to make sure that all votes counted by Electronic Voting Machines (EVMs) match with Voter Verifiable Paper Audit Trail (VVPAT) slips before the Lok Sabha elections.
- ❖ Currently, only votes from five polling stations per Assembly constituency are checked. These requests refer to a 2013 Supreme Court case, emphasizing the need for transparency and restoring voters' confidence.
- ❖ An activist named Arun Kumar Agrawal's request challenges the Election Commission's guideline of verifying VVPATs sequentially and suggests verifying them simultaneously instead.
- ❖ The government has spent ₹5,000 crore on nearly 24 lakh VVPATs, but only slips from about 20,000 VVPATs could be checked.
- ❖ The Election Commission argues that voters don't have a fundamental right to verify votes via VVPATs but assures the security of EVMs.
- ❖ They say EVMs cannot be hacked or tampered with, so there's no need to change the design of VVPATs.
- ❖ The Election Commission highlights the current role of VVPATs in allowing voters to check their chosen candidate and mentions that slips from five randomly selected polling stations per constituency are mandatorily verified.
- ❖ They defend the current VVPAT verification process, citing difficulties in verifying 100% of the slips.

What is cross-verification of Electronic Voting Machines (EVMs):

- ❖ **Definition:** Cross-verification of EVMs involves checking the electronic vote count stored in EVMs by comparing it with the Voter Verifiable Paper Audit Trail (VVPAT) slips.

Importance:

- ❖ Improves transparency and accountability in elections.
- ❖ Assures voters that their votes are accurately tallied.
- ❖ Helps in identifying and preventing potential malpractices or EVM tampering.
- ❖ Maintains the credibility and integrity of democratic elections, fostering public trust.
- ❖ Guards against electoral fraud, promoting fairness and freedom in the democratic process.

What is Voter Verifiable Paper Audit Trail (VVPAT):

- ❖ **Description:** VVPAT is a mechanism used in electronic voting systems to verify vote accuracy.

Process:

- ❖ After a voter electronically casts their vote using an Electronic Voting Machine (EVM), the VVPAT system generates a paper receipt.
 - ☞ This receipt displays the selected candidate's name, party symbol, and a verification code.
 - ☞ Voters can visually confirm the details on the paper receipt to ensure the accuracy of their vote.

Significance:

- ❖ VVPAT enhances transparency and trust in elections by providing a physical record of electronically cast votes.



BORROWING POWER OF STATES

SOURCE: [THE HINDU](#)

TAG: GS Paper II- **Indian Polity – Federal Structure.**

WHY IN NEWS?

- ❖ The news focuses on Kerala's legal dispute with the Centre over limitations imposed on its borrowing abilities, underscoring the vital importance of government expenditure in promoting economic and social progress, particularly in the context of federalism concerns.

MORE ABOUT THE NEWS:

- ❖ **Background of the Issue:**
 - ☛ Kerala has taken its borrowing powers dispute with the Centre to the Supreme Court, citing federalism concerns.
 - ☛ The Centre restricts state borrowing to 3% of State income or Gross State Domestic Product (GSDP), which Kerala contests.
- ❖ **State Government Spending vs Union Government:**
 - ☛ While the Union government prioritizes defense and other sectors, most spending affecting daily life is the responsibility of state governments.
 - ☛ State governments invest significantly more in social services, education, and health compared to the Union government.
- ❖ **Trends in Expenditure and Development:**
 - ☛ State governments have substantially increased developmental spending, particularly in social services, over the past two decades.
 - ☛ Kerala's consistent investment in social sectors showcases the positive impact of government expenditure.
- ❖ **Challenges and Spending Patterns in Kerala:**
 - ☛ Kerala allocates a large portion of its budget to social services and pensions, leaving limited funds for capital expenditure.
 - ☛ Increased spending in response to the COVID-19 pandemic has led to heightened borrowing, challenging the Centre's borrowing limits.
- ❖ **Supreme Court Intervention and Advocacy for More Spending:**
 - ☛ Kerala's request for additional borrowing has been referred to a Constitution Bench, highlighting the necessity for increased spending.
 - ☛ There is advocacy for increased spending, especially in higher education and research, to promote a knowledge-driven economy.
- ❖ **Addressing Concerns and Potential Solutions:**
 - ☛ Concerns about borrowing are often exaggerated; effective government spending can stimulate economic growth and job creation.
 - ☛ Collaboration between Union and State governments is crucial to address common challenges and utilize resources efficiently.
- ❖ **Conclusion:**
 - ☛ The borrowing dispute in Kerala underscores the significance of government spending in advancing economic and social development, necessitating collaborative approaches for sustainable progress.