

Development of Buffer Zones in Tiger Reserves

With big cat count rising, M.P. to develop buffer zones around its 9 tiger reserves

The Hindu Bureau
BHOPAL

The Madhya Pradesh Cabinet on Tuesday approved a scheme for developing buffer zones in the State's nine tiger reserves, the government said.

The approval for the new scheme, 'Development of Buffer Zones in Tiger Reserves', with a total outlay of ₹145 crore for the financial years 2025-26 and 2027-28, was given at a Cabinet meeting chaired by Chief Minister Mohan Yadav.

As part of the scheme, chain-link fencing will be installed in the ecologically sensitive buffer areas, apart from developing grasslands and water resources.

"Key activities under the



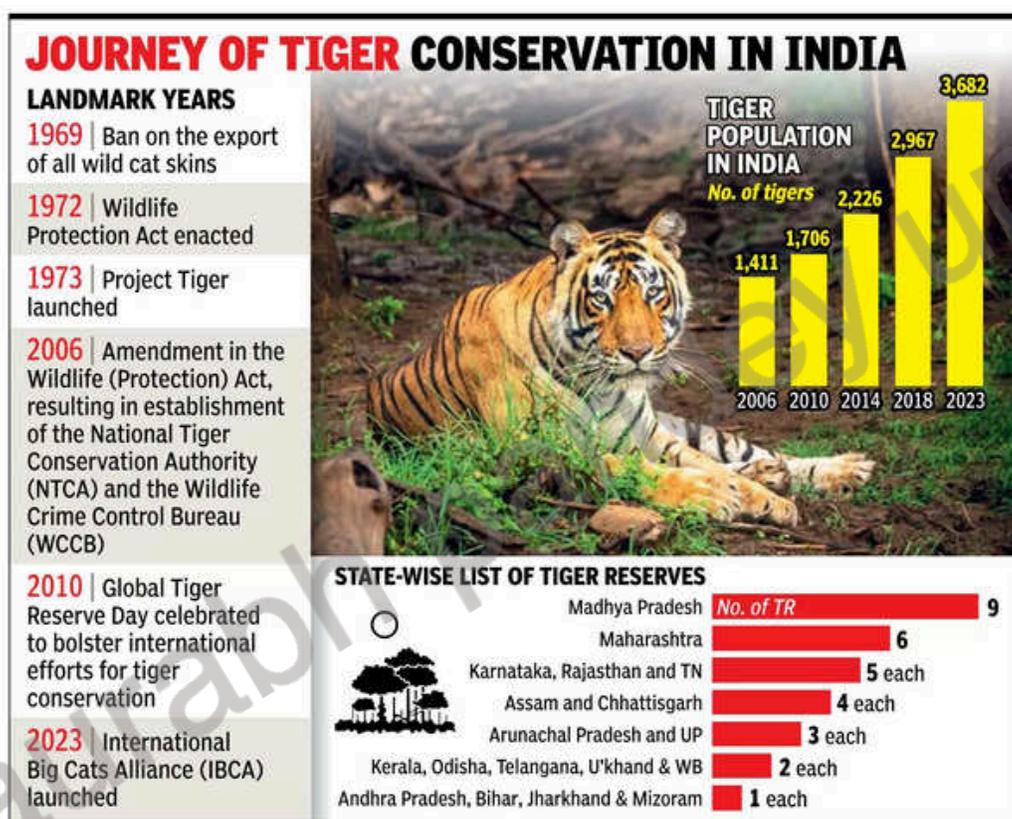
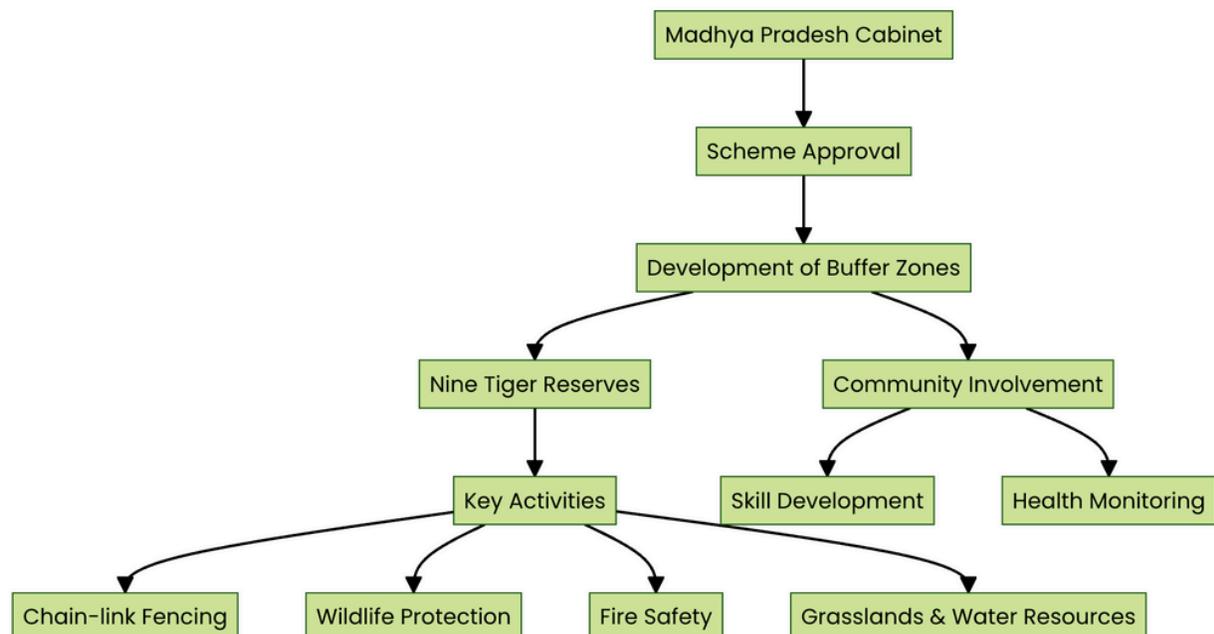
Tracing the pug marks: A big cat spotted near the Barhathagari Tiger Reserve. The tiger population in Madhya Pradesh has increased from 526 to 785 over the past four years. FILE PHOTO

mals, and skill development training programmes for local communities," the State government said in a statement.

Conservation efforts
Inaugurated on March 10, Madhav National Park became the ninth tiger reserve in the State, the highest among all States. Three tigers, including two females, were introduced to the park in 2023 as part of the tiger reintroduction project in the State.

"Notably, the tiger population in buffer zones surrounding Madhya Pradesh's nine tiger reserves has increased from 526 to 785 over the past four years, underlining the importance of continued conservation efforts," the government said.

- 🐅 The Madhya Pradesh Cabinet has approved a scheme for developing buffer zones in nine tiger reserves.
- 💰 The scheme, titled 'Development of Buffer Zones in Tiger Reserves,' has a total budget of ₹145 crore for the financial years 2025-26 and 2027-28.
- 🛡️ Key activities include:
 - Installing chain-link fencing
 - Implementing wildlife protection measures
 - Enhancing fire safety
 - Developing grasslands and water resources
- 🌱 The scheme also focuses on:
 - Health monitoring and treatment of wild animals
 - Skill development training for local communities
- 🌳 Madhav National Park, inaugurated on March 10, is the ninth tiger reserve in Madhya Pradesh, which has the highest number of tiger reserves in India.
- 🐾 The tiger population in buffer zones has increased from 526 to 785 over the past four years, highlighting successful conservation efforts.
- 👥 The scheme aims to enhance local community involvement in conservation and wildlife protection



Kanha Tiger Reserve: Located in Mandla and Balaghat districts.

Pench Tiger Reserve: Situated in Seoni district.

Bandhavgarh Tiger Reserve: Located in Umaria district.

Satpura Tiger Reserve: Located in Narmadapuram district.

Panna Tiger Reserve: Located in Panna district.

Sanjay-Dubri Tiger Reserve: Located in Anuppur district.

Veerangana Durgavati Tiger Reserve: Located in Sagar, Damoh, and Narsinghpur districts.

Ratapani Tiger Reserve: Located in Raisen district.

Madhav National Park (now Madhav Tiger Reserve): Located in Shivpuri district.

Parliament is supreme, Constitution does not visualise any authority above it: Dhankhar

The Hindu Bureau
NEW DELHI

Digging in his heels in the face of criticism, Vice-President Jagdeep Dhankhar on Tuesday asserted that the Constitution did not visualise any authority above Parliament.

The Chairman of the Upper House also sought to counter those criticising him for his remarks on a recent Supreme Court order by saying that every word spoken by a constitutional authority was guided by supreme national interest.

Mr. Dhankhar was addressing a Delhi University event.

SC judgment
Mr. Dhankhar had alleged judicial incursion into the Executive in response to the Supreme Court's April



Jagdeep Dhankhar

8 directions to the President to act within three months on Bills passed by the Assemblies and referred by the Governor. The court had also ruled that a Governor cannot withhold assent indefinitely.

Referring to the judgment, Mr. Dhankhar had last week said that India "cannot have a situation where the Judiciary directs the President". He had also

criticised the courts for acting as a "super Parliament".

"I find it conceivably intriguing that some have recently reflected that constitutional offices can be ceremonial, ornamental. Nothing can be far distanced from a wrong understanding of the role of everyone in this country – constitutional functionary or a citizen," said the Vice-President.

"There is no visualisation above Parliament. Parliament is supreme and that being the situation, let me tell you, it is as supreme as every individual in the country. Part of 'we the people' is an atom in democracy and that atom has atomic power. That atomic power is reflected during elections and that is why we are a democratic nation," he said.

Opposition slams Vice-President's view

The Hindu Bureau
NEW DELHI

Opposition members on Tuesday reacted sharply to Vice-President Jagdeep Dhankhar's remark.

In an post on X, Rajya Sabha member Kapil Sibal said, "The law: Neither Parliament nor the Executive is supreme, the Constitution is supreme, the provisions of the Constitution are interpreted by the Supreme Court. That's how this country has understood the law so far!"

RJD leader and Rajya Sabha member Manoj K. Jha said, "I would urge Vice-President to revisit the Constituent Assembly

debates where the importance of balance between the Judiciary and the Legislature was discussed."

Congress spokesperson Supriya Shrinete said there was a strict division of powers in the Constitution between the Legislature, the Executive, and the Judiciary.

"The Judiciary in this country is meant to do judicial review. Yes, Parliament makes the law but the Supreme Court of India is the supreme authority to review those laws. Should the Judiciary be shut down? Is judicial review wrong? So what is the Vice-President talking about?" she said.

Understanding Parliamentary Sovereignty

Parliamentary sovereignty is a fascinating doctrine that has shaped the legal landscape of several countries, most notably the United Kingdom. But what exactly does it mean? In simple terms, parliamentary sovereignty asserts that Parliament is the supreme law-making authority. This means it can create, amend, or repeal any law without interference from any other body, including the judiciary. Sounds powerful, right? Let's dive deeper into this concept.

What is Parliamentary Sovereignty?

At its core, parliamentary sovereignty is about the supremacy of the legislative body. It holds that the legislature has the final say over the creation, modification, and repeal of laws. This principle is often referred to as "the will of the people," emphasizing that elected officials in Parliament are accountable to the citizens they represent.

Historical Context

The roots of parliamentary sovereignty can be traced back to the UK, where it has been a fundamental principle of the constitution. The evolution of this doctrine reflects the historical struggles between the monarchy and Parliament, ultimately leading to the establishment of a system where elected representatives hold the power to legislate.

Key Features of Parliamentary Sovereignty

Understanding the key features of parliamentary sovereignty helps clarify its implications:

Power of Enactment

One of the primary responsibilities of Parliament is to enact laws. This process, known as enactment, allows Parliament to create rules and regulations that govern the nation. In countries like India, this power is enshrined in Articles 107 and 108 of the Constitution, highlighting the importance of legislative authority.

Power of Removal of Judges

Another significant aspect of parliamentary sovereignty is the power to remove judges. For instance, Article 124 of the Indian Constitution outlines the process for impeaching a sitting Supreme Court judge. This power underscores Parliament's supremacy over the judiciary, reinforcing the idea that no branch of government is above the legislative authority.

Countries Embracing Parliamentary Sovereignty

While the UK is the most notable example, several other countries also embrace parliamentary sovereignty.

The United Kingdom

In the UK, parliamentary sovereignty is a cornerstone of the constitution. It allows Parliament to legislate without constraints, ensuring that elected officials remain accountable to the electorate.

India

India, influenced by British legal traditions, also recognizes parliamentary sovereignty. The Indian Parliament has the authority to enact laws that reflect the will of the people, although it must also navigate the complexities of a diverse society.

Advantages of Parliamentary Sovereignty

Parliamentary sovereignty comes with several advantages that contribute to its appeal:

Representation of the People

One of the most significant benefits is that Parliament can enact laws that reflect popular opinion. This responsiveness to the electorate fosters a sense of democracy and accountability.

Flexibility and Responsiveness

Parliamentary sovereignty allows for quick legislative action in response to societal changes. This adaptability is crucial in a rapidly evolving world where laws must keep pace with new challenges.

Hierarchy of Laws

With Parliament at the top of the legal hierarchy, it simplifies the legal framework. This clarity helps citizens understand the laws that govern them and ensures that there is a clear authority in law-making.

Disadvantages of Parliamentary Sovereignty

However, parliamentary sovereignty is not without its drawbacks:

Potential for Abuse of Power

One of the most significant concerns is the potential for abuse of power by the legislature. Without checks and balances, there is a risk that Parliament could enact laws that infringe on individual rights or freedoms.

Lack of Judicial Oversight

Another downside is the absence of judicial scrutiny. This lack of oversight can lead to laws that do not align with human rights norms or constitutional principles, raising ethical concerns.

Inconsistency in Laws

Finally, because there is no overarching legal framework, laws can vary significantly across different regions. This inconsistency can create confusion and undermine the rule of law.

Conclusion

In conclusion, parliamentary sovereignty is a powerful doctrine that shapes the legal landscape in countries like the UK and India. While it offers significant advantages, such as representation and flexibility, it also poses risks, including potential abuses of power and a lack of judicial oversight. As societies evolve, the debate over the merits and drawbacks of parliamentary sovereignty will continue, highlighting the delicate balance between legislative authority and individual rights.

Judicial Supremacy

What is Judicial Supremacy?

Judicial supremacy refers to the doctrine that the judiciary holds the ultimate authority in interpreting the law within a constitutional framework. This principle asserts that when a court determines that a statute or governmental action contravenes the Constitution, it has the power to invalidate that law or action. This is pivotal for maintaining the integrity of the Constitution and protecting individual liberties.

Historical Context:

The concept of judicial supremacy emerged prominently in the United States, particularly through landmark cases such as *Marbury v. Madison* (1803) which established the principle of judicial review.

Countries like India, Canada, and South Africa have adopted similar frameworks, granting their judiciaries substantial interpretive power.

The Role of the Judiciary

The judiciary's primary function is to interpret laws and ensure they align with the Constitution. This role is crucial for maintaining the rule of law and protecting civil liberties.

Interpretation of Laws:

Courts evaluate the constitutionality of legislative actions and executive orders.

The judiciary must remain impartial, ensuring that its interpretations are based solely on constitutional principles rather than political motivations.

Examples from Various Countries:

In the **U.S.**, the Supreme Court is often viewed as the highest arbiter of constitutional interpretation.

In **India**, the Supreme Court has frequently exercised its power of judicial review to uphold fundamental rights against legislative interference.

Benefits and Challenges of Judicial Supremacy

While judicial supremacy plays a vital role in upholding constitutional governance, it also presents several challenges.

Benefits:

Protection of Individual Rights: Judicial supremacy ensures that laws infringing on fundamental rights can be challenged and overturned.

Checks on Legislative Power: The judiciary can invalidate laws that exceed legislative authority or conflict with constitutional provisions.

Challenges:

Potential for Judicial Overreach: Critics argue that unelected judges may overstep their bounds and influence political outcomes.

Imbalance of Power: The concentration of interpretative power within the judiciary may disrupt the balance intended by the separation of powers.

Judicial Review in India

In India, judicial review is enshrined in the Constitution, allowing the judiciary to assess the legality of legislative and executive actions.

Constitutional Provisions:

Article 13 empowers the judiciary to declare laws that conflict with the Constitution as void.

Other significant articles include Article 32, which allows individuals to approach the Supreme Court for the enforcement of fundamental rights.

Types of Judicial Review:

Strict Judicial Review: The judiciary engages in rigorous scrutiny of legislative actions.

Flexible Judicial Review: Allows for broader interpretations, taking into account the socio-political context.

Importance and Implications:

Ensures the supremacy of the Constitution.

Protects fundamental rights from arbitrary governmental actions.



AI can supercharge forecasting if it can weather some challenges

The important challenge is using AI to predict accurately, create weather forecasts that are reliable, and provide human resources with scientific data to make such forecasts more accurate and useful.

S. Datta
The weather is a complex system, and it is difficult to predict accurately. However, artificial intelligence (AI) has the potential to revolutionize weather forecasting. AI can process vast amounts of data from various sources, including satellites, weather stations, and ocean buoys, to identify patterns and trends that are difficult for humans to detect. This can lead to more accurate and timely forecasts, which are crucial for disaster preparedness, agriculture, and other sectors. However, there are several challenges that must be overcome for AI to fully realize its potential in weather forecasting. One of the most significant challenges is the availability of high-quality data. AI models require large amounts of accurate and consistent data to learn from and make predictions. In many regions, particularly in developing countries, data collection is often limited or unreliable. Another challenge is the complexity of the weather system itself. Weather is a highly non-linear and chaotic system, meaning that small changes in initial conditions can lead to large differences in the outcome. This makes it difficult for AI models to capture the full range of possible weather scenarios. Additionally, there is a need for greater transparency and explainability in AI models. While AI can provide accurate forecasts, it is often a "black box" system, meaning that the underlying logic and reasoning behind the predictions are not clear. This can be a problem for decision-makers who need to understand the basis of the forecasts to make informed choices. Finally, there is a need for greater collaboration between AI researchers and meteorologists. AI is a rapidly evolving field, and it is essential that meteorologists stay up-to-date on the latest developments and work closely with AI experts to develop models that are tailored to their specific needs. By addressing these challenges, AI has the potential to become a powerful tool for weather forecasting, helping to protect lives and property and improve our understanding of the world around us.

India and AI in Weather Forecasting

India faces extreme weather: The country experiences intense heat waves and heavy rainfall annually, prompting the need for advanced forecasting methods.

 **AI in weather forecasting:** India is leveraging artificial intelligence (AI) to improve weather modeling and early warning systems, moving beyond traditional numerical weather prediction models.

 **Mission Mausam:** Launched in September 2024, this initiative allocates ₹2,000 crore over two years to enhance weather observations and develop AI-driven forecasting methods.

 **AI model success:** A machine learning model developed by researchers has achieved a 61.9% forecast success rate for monsoon rainfall from 2002-2022, outperforming traditional models.

 **Challenges in AI implementation:** Key challenges include the need for high-quality data, the complexity of AI outputs, and a shortage of professionals skilled in both meteorology and machine learning.

 **Need for collaboration:** Experts emphasize the importance of collaboration between climate scientists and AI specialists to develop effective models tailored to India's diverse climate.

 **Future of AI in climate science:** While AI shows promise in predicting extreme weather events, concerns about model trustworthiness and the need for rigorous verification processes remain.

Summary: India is increasingly using AI to enhance weather forecasting amid challenges posed by extreme weather, with initiatives like Mission Mausam aiming to improve data-driven models and collaboration between scientists.

NASA's Quantum Gravity Gradiometer Initiative



NASA scientists propose using this technique to measure how the earth's water and ice mass is shifting as climate change worsens. GOOGLE EARTH

Cold atoms in space can weigh the Himalayas

Yasudevan Mukunth

The amount of gravitational force you experience on the earth's surface is uneven because it depends on the amount of mass nearby. If there is more mass in one area, for example due to a mountain range, the force you'll experience there will be higher than, say, in the middle of a city.

The difference between one place and the next is too small for anything other than the most sensitive instruments to notice. One such instrument is the gravity gradiometer. Say you drop a ball from the top of a building. Newton's second law states that the force acting on a body is equal to its mass multiplied by its acceleration ($F = m \cdot a$). As the ball drops, its acceleration can be calculated by dividing the force acting on the ball – which depends on the mass nearby – by its mass.

Similarly, a gravity gradiometer

NASA Quantum Gravity Gradiometer Earth Science Gravitational Measurements Cold Atom Interferometry

NASA Initiative

2024 Launch: NASA initiated the development of a **Quantum Gravity Gradiometer (QGG)** pathfinder instrument.

Goal: On-orbit testing is planned by **2030**.

Project Management

Leadership: Managed by **NASA ESTO**.

Collaboration: Led by the **Jet Propulsion Laboratory** with contributions from **NASA Goddard, University of Texas Austin, and U.S. industry partners**.

Measurement Precision

Technology: Utilizes **cold atom interferometry**.

By using finely controlled lasers and magnetic fields, scientists of the Cold Atoms group are able to cool small ensembles of atoms down to the lowest temperatures in the universe

– just a few billionths of a degree above absolute zero – and thus to access the realm of fully quantum mechanical motion

Advantage: Offers more precise measurements of Earth's gravitational field than current methods like **Satellite-to-Satellite Tracking (SST)**.

Technology Demonstration

Objective: The pathfinder will demonstrate critical technologies and observation techniques.

Outcome: Potential development of a **science-grade instrument** to improve **GRACE-class measurement resolution**.

Scientific Importance

Monitoring: Helps track changes in Earth's mass distribution, including **water** and **ice**.

Significance: Essential for understanding **large-scale planetary dynamics**.

Applications

Impact Areas: Gravity measurements will assist in monitoring **ice sheets, underground aquifers, ocean levels, and water bodies**.

Relevance: Influences **agriculture, industry, and security**.

Long-term Monitoring

Duration: Measures gravitational changes over **days to years**.

Insights: Provides data on **drought, water management, and flood potential**.

Summary: NASA's Quantum Gravity Gradiometer pathfinder is set to revolutionize gravitational measurements for both scientific and practical applications by 2030.

Facts

Matters that count

Attempts to intimidate the judiciary pose a threat to democracy

The Supreme Court of India has been subjected to unfounded criticism by sections of the ruling BJP, and Vice-President Jagdeep Dhankhar, with regard to the separation of powers between the various branches of the government, and the principle of checks and balances. Not surprisingly, a Supreme Court bench took note of the charge that it was intruding into executive and legislative functions. In one petition, the Court was urged to direct the Centre to act under Articles 355 and 356 to deal with the situation of violence in West Bengal. In another, the Court's intervention was sought to curtail obscene content on online platforms. The Calcutta High Court had earlier ordered the deployment of Central forces to stem violence in Murshidabad in West Bengal. Judicial review of legislative and executive decisions is an integral part of India's constitutional democracy. Decisions of the executive and the legislature can be examined by the judiciary to determine whether they are consistent with the Constitution, and even constitutional amendments are subject to the 'basic structure' test. There are multiple constitutional avenues for judicial intervention in the making and enforcement of law. Article 13 gives the judiciary the power to strike down laws that are violating fundamental rights. Articles 32 and 226 give the Supreme Court and High Courts, respectively, the power to issue writs for the enforcement of fundamental rights, and beyond.

- the Court was urged to direct the Centre to act under Articles 355 and 356 to deal with the situation of violence in West Bengal.

- Article 355 of the Indian Constitution outlines the duty of the Union (central government) to protect every state against external aggression and internal disturbance, and to ensure that state governments operate according to the Constitution.
- Article 356 empowers the President to declare President's Rule in a state if the President is satisfied that the state government cannot be carried on in accordance with the Constitution
- Article 13 gives the judiciary the power to strike down laws that are violating fundamental rights. Articles 32 and 226 give the Supreme Court and High Courts, respectively, the power to issue writs for the enforcement of fundamental rights, and beyond.

Exploring India's potential in the Arctic region

Global trade is swinging like a pendulum, with potential headwinds from the U.S. nudging each nation to start doubling down on alternate trade strategies. In such a scenario, partnerships around supply chains and trade routes are expanding based not only on the current fracturing of regional blocs, but also on climate change.

The frozen frontier of the Arctic serves as a canary in the coal mines for the impending climate catastrophe. It also serves as the source of great geopolitical leverage as sea levels continue to rise and new trade routes emerge. The Arctic reflects a critical energy source for the Global South in the years to come. While not recklessly exploiting the Arctic reserves, India should also get a say in the commercial opportunity for the unseen future.

The dying canary signals new trade routes
The September Arctic sea ice is now shrinking at a rate of 12.2% per decade compared to its average extent during the period from 1981 to 2000 (NASA). This melting ice is also opening up access to a new trade route called the Northern Sea Route (NSR) in the Arctic, linking the Atlantic and the Pacific. This will exponentially transform global trade by shifting the flow of cargo and saving time and freight costs. The NSR is being hailed as the shortest route between Europe and Asia. India's long-term approach to exploring new mega ports and new routes – not just from an economic lens, but also from a strategic and geopolitical lens – makes the NSR crucial.

The number of Observers in the Arctic Council outnumbered the number of Arctic states. This indicates the growing recognition of the vulnerability of existing trade routes to geopolitical tensions.

India began its engagement with the Arctic early by signing the Svalbard Treaty in 1920 and is the only developing nation besides China that has an Arctic research base (Itanagar). Last year, the Institute for Governance and Sustainable



Manash K. Neog
Managing Director of Chase AFPC, a public policy and research consulting firm



Swati Sathakaram
Senior Manager at Chase

While not recklessly exploiting the Arctic reserves, India should also get a say in the commercial opportunity for the unseen future

Development and the National Council of Applied Economic Research partnered to model how changes in the Arctic, specifically the loss of sea ice, could influence India's monsoon patterns and agricultural outputs.

But to begin a timely action plan for the NSR, India's Arctic policy released in 2022 needs to be streamlined towards achieving its goals. India will need shipbuilding muscle to sail through the NSR's turbulent waters. The 2025-26 Budget set up a \$3 billion Maritime Development Fund for the Shipping Ministry along with promoting shipbuilding clusters to increase the range, categories, and capacity of ships. Shipbuilding suited to Arctic requirements is key given that travel conditions would be quite harsh in the short term. This means India needs to make adequate investments in ice-breaking fleets and other structural upgrades.

There is an urgent need for India to engage in multilateral dialogue on capacity building, training requisites, and knowledge-sharing. Could 2025 be the year of action?

This year, the Arctic Circle India Forum is taking place on May 3 and 4 in New Delhi. This should help contextualise the dialogue from an Asia- and India-focused lens. The forum should serve as an impetus to move the needle forward on India's well-thought-out Arctic policy with stakeholder consultations, the forging of partnerships, and perhaps the appointment of a 'polar ambassador' to present India's case internationally.

As international cargo shipment on the NSR increased exponentially from 41,000 tonnes in 2010 to almost 37.9 million tonnes in 2024, India also needs to be cognisant of studies surfacing, such as in the scientific journal *Nature Climate Change*, showing that global temperatures in 2024 breached the 1.5°C mark above pre-industrial levels. This suggests that even a single month or year at 1.5°C global warming may signify that Earth is entering a long-term breach of the vital Paris Agreement threshold. How close

to the sun should we fly so that we do not lose our commercial vantage point but also do not call for an expedited disaster in one of the most fragile ecosystems on the planet? This presents a pressing policy issue for India and echoes the need for the minded allies.

Playing with ice and fire
With its vast Arctic coastline, extensive experience in Arctic navigation, and training of personnel, Russia is an obvious partner for India to explore the NSR. The decision to establish a working group on the NSR under the bilateral intergovernmental commission on trade, economic, scientific, technical, and cultural cooperation was made during Prime Minister Narendra Modi's summit meeting with Russian President Vladimir Putin in Moscow in July last year. Also, the Chennai-Vladivostok Maritime Corridor emerges as a potential bridge to the NSR ports such as Pevek, Tiksi, and Sabetta.

However, if India inclines towards the Russian bloc, then it would be implying support to Chinese efforts, such as the Polar Silk Road which China is building as a northern extension of its Belt and Road Initiative. Not only would the NSR help China bypass the Malacca Strait chokepoint completely, but it would also give it much more control over the Arctic route.

If India supports the Western bloc and partners with the U.S., it could lose its perceived potential stake in the massive resources that currently fall under Russian control in the area. The ideal but obviously challenging solution would be to find a way to work with both the U.S. and Russia. Other partners should include Japan and South Korea. Both countries share India's concerns about the growing cooperation between China and Russia in the Arctic and about their businesses losing out on Arctic opportunities to Chinese competitors. The trio should advocate the rectification of disparities within the Arctic Council and promote a more inclusive and equitable Council.

The Arctic: A Geopolitical and Economic Frontier

1. The Melting Ice: A Double-Edged Sword

Current Trends in Arctic Sea Ice Melting

The Arctic is experiencing unprecedented warming, leading to significant ice melt. Over the past few decades, satellite data has shown a dramatic reduction in sea ice extent, fundamentally altering ecosystems and shipping routes.

Implications for Global Trade and Shipping

New shipping routes shorten travel times but increase environmental risks. The opening of the Northern Sea Route (NSR) promises a reduction in transit time between Europe and Asia, but it also raises concerns about oil spills and disturbances to wildlife.

2. The Northern Sea Route (NSR)

Definition and Significance of the NSR

The NSR provides a shortcut from Europe to Asia, promising reduced transit times of up to 30%. This route is becoming increasingly viable as ice melts, making it a focal point for international shipping.

Comparison with Traditional Trade Routes

The NSR is more efficient than the Suez Canal, but it has its own challenges, including harsh weather conditions and limited infrastructure.

Economic Benefits of the NSR for Global Trade

Cost savings and increased trade volume could benefit global economies, with estimates suggesting that the NSR could reduce shipping costs by up to 20%.

3. The Arctic as a Resource Hub

Overview of Arctic Natural Resources

Resources like oil and gas are abundant, but exploitation raises ethical questions. The Arctic holds approximately 13% of the world's undiscovered oil and 30% of its natural gas reserves.

The Energy Potential for the Global South

Arctic resources could fuel energy needs for developing nations, presenting an opportunity for energy security but also potential for conflict.

Sustainable vs. Unsustainable Exploitation of Resources

Balancing economic gain with environmental stewardship is critical. Sustainable practices must be prioritized to protect fragile Arctic ecosystems.

India's Arctic Engagement

4. Historical Context of India's Arctic Policy

India's Early Involvement: The Svalbard Treaty

India has a history of engagement in Arctic affairs, dating back to the Svalbard Treaty, which allowed for scientific research and resource exploration.

Establishment of the Himadri Research Base

This base marks India's commitment to Arctic research, facilitating various scientific expeditions and collaborations.

5. Current Arctic Policy Framework

Overview of India's Arctic Policy (2022)

India's Arctic policy emphasizes scientific research and sustainable development. The policy aims to enhance India's presence and influence in Arctic governance.

Key Goals and Objectives of the Policy

Strengthening international cooperation and promoting sustainable practices are central to India's Arctic aspirations.

6. The Role of the Arctic Circle India Forum

Purpose and Significance of the Forum

The forum facilitates discussions on Arctic issues among stakeholders, fostering collaboration on research and policy development.

Expected Outcomes and Stakeholder Engagement

Collaborative efforts aim to bolster India's Arctic strategy while addressing shared concerns with other polar nations.

7. India and Russia: A Natural Alliance

Historical Ties and Current Collaborations

India and Russia share a mutual interest in Arctic development, particularly in energy resources and trade routes.

The Chennai-Vladivostok Maritime Corridor

This corridor could enhance trade between the two nations, providing a direct maritime link that strengthens economic ties.

8. Navigating the U.S.-Russia Divide

The Dilemma of Aligning with Global Powers

India must balance its relationships with both the U.S. and Russia, navigating complex geopolitical landscapes.

Potential Risks and Rewards of Each Alignment

Diplomatic strategies will shape India's Arctic engagement, weighing the benefits of cooperation against potential geopolitical fallout.

9. Engaging with Other Regional Players

The Role of Japan and South Korea

These nations are also interested in Arctic resources and trade, emphasizing the need for multilateral cooperation.

Building a Coalition Against Chinese Dominance

Collaborative efforts are necessary to counterbalance China's influence in Arctic affairs.

The Environmental Imperative

10. Climate Change and Its Impact on Trade

The Urgency of Addressing Climate Change

Climate change poses existential threats to trade and ecology, necessitating immediate action to mitigate its effects.

The Role of the Arctic as a Climate Indicator

The Arctic reflects global climate patterns, making its study essential for understanding broader environmental changes.

11. Balancing Economic Interests with Environmental Concerns

The Need for Sustainable Practices in the Arctic

Sustainable development must guide Arctic exploitation to ensure long-term viability.

Policy Recommendations for Responsible Resource Management

Implementing strict guidelines can mitigate environmental impacts and promote responsible use of Arctic resources.

Future Prospects and Challenges

12. The Need for Shipbuilding and Infrastructure Development

India's Investment in Maritime Capabilities

Investment in maritime infrastructure is crucial for Arctic engagement, ensuring that India can effectively participate in Arctic trade.

Challenges in Developing Arctic-Suitable Vessels

Engineering challenges remain in creating vessels capable of navigating icy waters, requiring innovation and investment.

13. Capacity Building and Knowledge Sharing

Importance of Multilateral Dialogue

International cooperation is vital for effective Arctic governance, fostering partnerships that enhance knowledge sharing.

Training and Development for Arctic Navigation

Skill development programs can enhance operational efficiency, preparing personnel for the unique challenges of Arctic navigation.

14. The Role of Technology in Arctic Exploration

Innovations in Ice-Breaking Technology

Technological advancements are key to navigating Arctic waters, improving safety and efficiency in shipping operations.

The Future of Autonomous Shipping in the Arctic

Autonomous vessels could revolutionize Arctic shipping, offering new solutions to traditional challenges.

Conclusion

The Arctic presents both unprecedented opportunities and formidable challenges for global trade. Strategic planning and international collaboration will be essential as nations like India navigate this new frontier.



Infodemic vs Misinformation

Infodemic refers to a large increase in the volume of information associated with a specific topic and whose growth can occur exponentially in a short period of time due to a specific incident, such as the current pandemic.

What is Misinformation?

Misinformation is false or inaccurate information deliberately intended to deceive.

How does the Infodemic contribute to Misinformation?

Increased global access to cell phones with an Internet connection, as well as social media, has led to the exponential production of information and the number of possible paths for getting it, creating an information epidemic or infodemic.

Europe can ride LNG wave to build strategic gas reserves

Ron Bosso
LONDON

European governments may have a rare window of opportunity to build up strategic gas stockpiles in the coming years to help manage supply shocks that could become more common if geopolitical tensions keep rising.

Europe has long been dependent on energy imports, particularly natural gas. North Sea production, primarily in Norway, is the main regional source but accounts for only around a third of consumption.

The dangers of this acute dependency were laid bare when Moscow started reducing its huge volume of supplies to Europe in the lead up to its 2022 invasion of Ukraine,

plunging the region into its biggest energy crisis in decades. Europe has successfully reduced Russian pipeline imports to near zero since then, but it has consequently become highly dependent on liquefied natural gas imports, at a huge cost to businesses, consumers and governments.

LNG today makes up over a third of European supplies, with 45% coming from the United States and another 19% from Russia in 2024. Beyond LNG, Europe imports gas from Norway, North Africa and Turkey via pipeline. This

might seem like a relatively diversified supply matrix. But it isn't hard to imagine scenarios that could severely disrupt supplies: physical or cyberattacks



Too costly: Beyond LNG, Europe imports gas from Norway, North Africa and Turkey via pipeline. REUTERS

on North Sea infrastructure, civil war in Algeria or Libya, Gulf Coast hurricanes, or war with Iran and subsequent disruption in the Straits of Hormuz, a

choke point for 20% of the world's oil and gas. In another scenario, which might have seemed far-fetched only a few months ago, the United States

could restrict exports of oil and gas in order to lower domestic prices under the 1950 Defense Production Act, which grants the President control over supply of

critical materials and services.

Strategic thinking

Given the growing list of potential risks, Europe would be wise to create a comprehensive plan for storing and managing natural gas to avoid a repeat of the 2022 shock. Several major economies, including the United States, Britain, EU members, China and Australia, today hold strategic oil reserves, typically equivalent to 90 days of their fuel consumption.

These strategic petroleum reserves, created following the 1973 Arab oil embargo, have been tapped several times to help with severe disruptions, including in the wake of the Ukraine war, the 2011 civil war in Libya

and Hurricane Katrina in 2005.

Europe already has huge gas storage facilities in underground salt caverns and aquifers that have capacity to hold around a quarter of Europe's annual consumption of about 400 billion cubic metre, when combined with the EU and Britain. These inventories are regularly filled during the summer months to be drawn on in winter. LNG import terminals also offer a modest amount of additional storage capacity.

These are commercial inventories that are mostly governed by market forces. The European Union has tried to centrally manage reserves since 2022, introducing rules that require countries to fill 90% of

storage capacity by November 1. But the requirements led to rising prices, complicating traders' effort to refill storage. The EU also tried to jointly buy LNG in large volumes to reduce costs, but had little traction in the market.

Therefore, a government-run storage system that buys and sells gas independently and with State financing appears to be more viable solution to prepare for emergencies.

But a wave of new LNG supply is set to come on stream in the next few years, mostly in the United States and Qatar, which should help keep gas prices relatively low and steady compared with the recent volatility.

(The author is a columnist for Reuters)

Strategic Energy Management in Europe

- Strategic Opportunity:** European governments have a chance to build strategic gas stockpiles to manage potential supply shocks due to rising geopolitical tensions.
- Energy Dependency:** Europe relies heavily on energy imports, with North Sea production from Norway supplying only about one-third of its gas consumption.
- Energy Crisis:** The reduction of Russian gas supplies before the 2022 Ukraine invasion exposed Europe's vulnerability, leading to a significant energy crisis.
- LNG Imports:** Liquefied natural gas (LNG) now constitutes over a third of European gas supplies, with 45% sourced from the U.S. and 19% from Russia in 2024.
- Supply Disruption Risks:** Potential threats to gas supply include physical or cyberattacks, civil unrest in North Africa, Gulf Coast hurricanes, and geopolitical conflicts.
- Storage Capacity:** Europe has substantial gas storage facilities capable of holding about 25% of its annual consumption, but current inventories are influenced by market forces.
- Government Intervention:** A government-run gas storage system may be necessary to effectively manage reserves and prepare for emergencies, as current EU strategies have faced challenges.

Summary: European governments have a critical opportunity to enhance gas storage and management strategies to mitigate future supply shocks amid rising geopolitical tensions

What Happens When a Pope Dies? Understanding Papal Transition

- The death of a sitting pope initiates a well-defined canonical procedure established by Church law (canon law) and tradition.
- The specific norms governing this process are primarily found in the Code of Canon Law (1983) and the Apostolic Constitution *Universi Dominici Gregis*, issued by Pope John Paul II in 1996.

1.Immediate Reaction and Notification of Death

Verification of Death:

Upon the passing of the pope, the papal physician must confirm the death. This confirmation is necessary to formally acknowledge the event.

Notification:

The cardinal chamberlain (the highest-ranking official in the Vatican during the interregnum) is immediately informed. The death is communicated to the College of Cardinals and then made public.

Public Announcement:

The Vatican's press office releases an official announcement. The news of the pope's death is also communicated to world leaders and official church representatives.

2. Mourning Period: Sede Vacante

Sede Vacante Declaration:

The period after a pope's death is known as Sede Vacante, which means "the seat being vacant." This period officially begins with the pope's death and lasts until a new pope is elected.

Governance:

During Sede Vacante, the governance of the Church is assumed by the College of Cardinals. The cardinal chamberlain has specific responsibilities, including overseeing the administration of the Vatican and managing the affairs of the Church until a new pope is elected.

3. Preparation for the Conclave

Conclave Organization:

The College of Cardinals prepares for the conclave, where a new pope will be elected. This includes determining the number of cardinals eligible to vote and setting the date for the conclave.

Eligibility:

Only cardinals who are under the age of 80 at the time of the pope's death are eligible to participate in the conclave, with a limit of approximately 120 voting members.

4. Funeral Arrangements

Funeral Rites:

The papal funeral is organized during the mourning period. It typically occurs within a week after the pope's death and includes a Requiem Mass.

5. The Conclave

Conclave Procedures:

The conclave consists of a series of secret ballots during which the cardinals vote to elect a new pope.

Voting Process:

- The cardinals gather in the Sistine Chapel and begin with a Mass.
- They then enter a series of voting rounds. After each round, the ballots are burned.
- If no candidate receives the required two-thirds majority, additional rounds of voting are held until a new pope is elected.

6. Inauguration of the New Pope

Papal Installation:

The new pope's inauguration takes place shortly after the conclave. This Mass (often referred to as the "Inauguration Mass") is a solemn ceremony marking the beginning of the new papacy.

Saurabh pandey upsc