

The Nilgiri tahr

- The Nilgiri tahr is a sure-footed ungulate that inhabits the open montane grassland habitats at elevations from 1200 to 2600 m of the South Western Ghats. Currently, the Nilgiri tahr's distribution is along a narrow stretch of approximately 400 km in the Western Ghats, between the Nilgiris in the north and the Kanyakumari hills in the south of the region.

- Though there are smaller populations found in the Palani hills, Srivilliputtur, the Meghamalai and Agasthiyar ranges, only two well-protected, large populations are documented one from the Nilgiris and the other from the Anamalais, including the high ranges of Kerala. The Eravikulam National Park in Anamalai hills, Kerala, is home to the largest population of the Nilgiri tahr, with more than 700 individuals.

- This endemic species of the Western Ghats is listed as Endangered in the IUCN Red List of Threatened Species and is protected under Schedule I of the Wildlife (Protection) Act of India, 1972. **The Arctic Carbon Sink: A Tipping Point** (The Arctic Boreal Zone (ABZ))

- A carbon sink is a natural system that absorbs more carbon dioxide than it releases, similar to a sponge soaking up excess water.

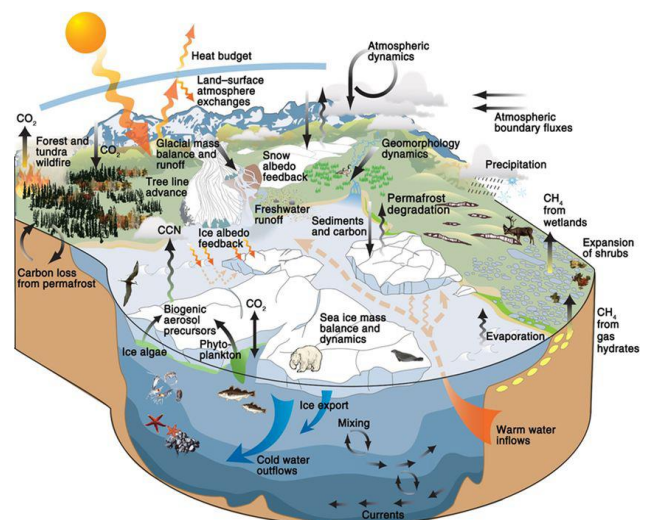
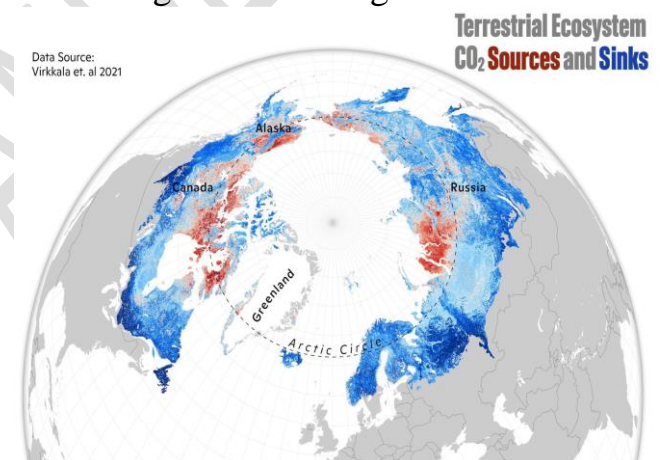
- Notable carbon sinks include oceans, forests, and soils.

- The Arctic Boreal Zone (ABZ) is a significant carbon sink.

Importance of Carbon Sinks

- Carbon sinks are crucial for regulating Earth's climate.

- They help offset greenhouse gas emissions, playing a key role in combating climate change.



Understanding Carbon Sinks

What is a Carbon Sink?

The Arctic Boreal Zone (ABZ)

● Overview of the ABZ

- Encompasses vast areas of tundra, coniferous forests, and wetlands around the Arctic Circle.
- Known as the world's largest land-based biome, historically a powerhouse for carbon absorption.

● The Role of Permafrost

- Permafrost is a permanently frozen layer beneath the surface, crucial for carbon sequestration.
- It traps carbon in the form of organic matter, preventing it from entering the atmosphere.

Recent Findings on the ABZ

● The Shift from Sink to Source

- A study in *Nature Climate Change* reveals over 30% of the ABZ has stopped capturing carbon, now releasing it.
- This shift is primarily due to the increasing frequency and intensity of wildfires.

● The Impact of Wildfires

- Wildfires are becoming more common, disrupting the carbon balance.
- From 2001 to 2020, the ABZ absorbed carbon, but a significant portion has since turned into a carbon source.

● Key Statistics from the Study

- Data from 200 monitoring sites show Alaska accounts for 44% of new emissions.
- Northern Europe and Siberia contribute 25% and 13%, respectively.

The Thawing Permafrost Dilemma

● How Global Warming Affects Permafrost

- Rising global temperatures cause permafrost to thaw, leading to the decomposition of organic materials and carbon dioxide release.
- This process is accelerated by changing vegetation and drier soils.

● The Feedback Loop Explained

- A dangerous cycle: wildfires release carbon, fueling global warming, leading to more wildfires.
- It's a runaway train that requires immediate intervention

Implications for Climate Change

The Bigger Picture

- Findings from the ABZ have global implications, affecting ecosystems and weather patterns worldwide.

Future Projections

- If current trends continue, significant carbon emissions from the ABZ could exacerbate climate change.

Conclusion

- The Arctic carbon sink is at a critical juncture, shifting from a carbon sink to a carbon source.
- Urgent action is needed to address climate change and protect these vital ecosystems.

The Science Behind Water Droplets and Their Splashing Phenomenon **Understanding the Basics of Splashing**

What Happens When a Drop Hits a Surface?

A water droplet's momentum shifts from downward to horizontal upon impact, initiating a splash.

The Role of Momentum in Splashing
Momentum transfer causes the formation of a **lamella**, a liquid sheet that lifts due to trapped gas and pressure differences.

The Formation of Lamella

The lamella breaks into smaller droplets, creating the splash effect



The Importance of Splashing in Various Fields

Splashing in Ink-Jet Printing

Disorderly splashes can cause smudges, affecting print quality.

The Role of Splashing in Combustion

Excessive splashing leads to inefficient fuel burning.

Surface Coating and Its Challenges

Uneven splashes result in poor coating quality

The Dual Nature of Splashing: Beneficial vs. Detrimental

Unwanted Effects of Splashing

Can cause inefficiencies and defects in various processes.

Beneficial Uses of Splashing in Industry

In coal power plants, splashing helps remove dissolved CO₂ from feed water.

Recent Research on Controlling Splashing

The Experiment: Electrically Charged Drops

Charging droplets before impact can prevent splashing.

Findings and Implications

Charged droplets form a stable lamella, reducing splash size, with potential industrial applications

Conclusion

Splashing is a complex phenomenon with significant implications across various industries.

Understanding and controlling it can lead to improved efficiency and reduced unwanted effects

The Supreme Court's Judgment on Tamil Nadu Governor R.N. Ravi

Introduction

- The Supreme Court's recent judgment on Tamil Nadu Governor R.N. Ravi is a landmark decision.

- It emphasizes the importance of federal principles and the need for accountability in constitutional offices.

- This verdict is a significant step towards enhancing the administrative autonomy of States

Context of the Judgment

● Overview of the Case:

- Governor R.N. Ravi's handling of ten bills passed by the Tamil Nadu State

Assembly was central to the case.

- The bills aimed to transfer the authority of appointing Vice-Chancellors from the Governor to the State government.

- The Supreme Court's intervention highlights tensions between governors and state governments, especially those not aligned with the ruling BJP.

- **The Role of Governors in India:**

- Governors serve as constitutional heads of state, but their role can be contentious.

- The ruling reminds that these offices must operate within the law, not as political tools.

Key Aspects of the Judgment

Censure of Governor R.N. Ravi:

The Court described Mr. Ravi's actions as “not bona fide” and “arbitrary.” Such strong language indicates the seriousness of the situation.

Timelines for Legislative Action:

The judgment establishes clear timelines for governors to act on bills, preventing indefinite delays.

Implications for State Autonomy:

The ruling enhances state autonomy, allowing states to function more independently from the Centre.

The Political Landscape

Tensions Between Centre and States:

- The relationship is fraught with tension, especially when states are governed by parties opposed to the BJP.

- The judgment underscores the need for a cooperative approach to governance.

The DMK and BJP Dynamics:

- The ruling is seen as a pushback against the Centre's control over state matters

The Impact on Higher Education

Appointment of Vice-Chancellors:

The Tamil Nadu government now has the authority to appoint V-Cs, ensuring appointments based on merit and integrity.

Transparency and Accountability in Governance:

The ruling emphasizes the need for transparency and accountability in Raj Bhavans.

Broader Implications of the Verdict

- **Cooperative Federalism:**

- The judgment is a call for cooperative federalism, encouraging collaboration between the Centre and states.

- **Restoration of Dignity to the Governor's Office:**

- The ruling aims to restore dignity to the office of the Governor, emphasizing their role as friends and guides to the state cabinet

Conclusion

- The Supreme Court's judgment on Governor R.N. Ravi is pivotal in India's political landscape.

- It reinforces federalism, enhances state autonomy, and calls for greater accountability in governance.

- Moving forward, a spirit of cooperation between the Centre and

states is crucial for maintaining the democratic fabric of the nation

The Transformation Under Xi Jinping (India-China relationship)

Leadership Shift: Departure from open policies to a nationalistic approach.

Historical Narratives: Use of historical claims to justify territorial ambitions.

Qing Dynasty's Influence: Revival of old grievances related to the Qing Dynasty's frontiers.

Border Skirmishes: A Timeline

Sino-Indian Tensions: Series of border skirmishes reflecting territorial disputes.

Key Incidents:

Depsang (2013): Highlighted fragile Sino-Indian relations.

Demchok (2016): Escalation and diplomatic strain.

Doklam (2017): Potential conflict over territorial disputes.

Galwan (2020): Brutal clash with casualties, marking a low in relations.

Recent Developments in India-China Relations

Dialogue Attempts: Efforts to de-escalate tensions.

BRICS Summit: Discussions on border tension reduction.

Patrolling Agreement: A step forward but lacks depth in addressing core issues.

The Reality of Military Build-Up

Defense Budget Increase: China's 7.2% increase in defense spending in 2025.

Implications for India: Concerns over military capability disparity.

The Technological Edge

AI and Cyber Warfare: China's advancements pose new challenges for India.

Modern Military Strategy: Technology's role in redefining warfare.

China's Expanding Influence in the Region

Regional Influence: China's growing presence in South Asia.

Bangladesh Relations: Warming ties with Bangladesh signal regional alliance shifts.

Conclusion

Complex Relations: Navigating the challenges in Sino-Indian relations.

Future Prospects: Importance of managing differences and finding common ground.

The Protection of Interests in Aircraft Objects Bill, 2025: A Game Changer for India's Aviation Sector

Introduction to the Bill

Last week, the Indian Parliament took a significant step forward by passing the Protection of Interests in Aircraft Objects Bill, 2025. This legislation is designed to create a robust legal framework for resolving disputes between airlines and lessors regarding high-value aviation assets, including

aircraft, helicopters, and engines. With the rapid expansion of fleets by major players like IndiGo and Air India, this bill aims to align India's aviation laws With international standards, ultimately boosting investor confidence.

What Does the Bill Entail?

The bill is not just a piece of legislation; it's a lifeline for the aviation industry. It implements the Cape Town Convention and Protocol, an international treaty that standardizes transactions involving aviation assets. This means that if an airline defaults on payments, lessors will have clearer legal avenues to reclaim their assets without getting bogged down in lengthy court battles.

Key Provisions of the Bill

One of the standout features of the bill is its provision for the Directorate General of Civil

Aviation (DGCA) to act as the Registry Authority. This authority will oversee the registration and deregistration of aircraft, ensuring that all transactions are transparent and legally sound. Additionally, the bill outlines the obligations of airlines, including the requirement to submit a record of dues to the DGCA. If an airline defaults, lessors can reclaim their assets within two months, streamlining the repossession process

The Cape Town Convention: A Global Perspective

Why India Signed the Convention

India signed the Cape Town Convention in 2008, recognizing the need for a standardized approach to aviation asset transactions. However, the lack of implementing legislation has led to inconsistencies between domestic laws and international standards, creating a murky legal landscape for lessors.

The Need for the Bill

Historical Context: Past Airline Failures

The necessity for this bill became glaringly evident during the closures of Kingfisher Airlines and GoFirst. These incidents highlighted the legal uncertainties that plagued lessors, making it difficult for them to reclaim their assets during insolvency proceedings

The GoFirst Shutdown: A Case Study

Take the GoFirst shutdown in 2023, for example. The airline sought voluntary insolvency, and the court granted it protection from adverse actions by lessors. This meant that lessors couldn't de-register their aircraft, leading to significant financial losses.

Industry Reactions to the Bill

Positive Feedback from Lessors

The bill has been largely welcomed by the leasing industry, which sees it as a much-needed solution to the challenges of asset repossession. Many industry experts believe that this

legislation could reduce leasing costs by 8-10%, which could eventually lead to lower airfares for passengers.

Concerns Over Implementation

However, not everyone is convinced. Some industry insiders argue that the claims of reduced leasing costs are overly optimistic. They point out that the financial health of airlines and their Credit worthiness is the real factors that influence leasing rates.

The Role of the Directorate General of Civil Aviation (DGCA)

Responsibilities of the DGCA

The DGCA will play a crucial role in implementing the provisions of the bill. It will be responsible for ensuring that all transactions comply with the Cape Town Convention, thereby providing a layer of legal protection for lessors.

Potential Economic Impact

Effects on Leasing Costs and Airfares

While the bill is expected to lower leasing costs, the impact on airfares remains a topic of debate. Airline executives argue that ticket prices are primarily driven by market demand and supply, rather than leasing costs.

Challenges Ahead for the Aviation Sector

Taxation Issues and Regulatory Concerns

Despite the positive outlook, the aviation industry is still grappling with complicated tax

laws. Many lessors have expressed concerns about the Indian taxation regime, which

they describe as inconsistent and unpredictable. This has led to a lukewarm response

from the leasing industry regarding the establishment of a local arm at GIFT City.

Conclusion

The Protection of Interests in Aircraft Objects Bill, 2025, represents a significant milestone for India's aviation sector. By aligning domestic laws with international standards, it aims to create a more favorable environment for lessors and airlines alike. However, challenges remain, particularly concerning taxation and regulatory issues. As

If the industry adapts to this new legal framework, it will be interesting to see how these Changes impact the future of aviation in India.

"Dash for cash"

"Dash for cash" refers to a situation where investors, fearing economic instability or Market downturns, lead to a rush to sell off assets to convert them into cash, which often results in market disruptions.

Causes

- **Economic uncertainty:** Fear of recession, inflation, or other economic shocks can trigger a dash for cash.
- **Market volatility:** Rapid price declines or high volatility in financial

markets can prompt investors to seek the safety of cash.

- **Geopolitical events:** Major political or economic events can also lead to a dash for cash as investors seek to protect their capital.

Mapping

Pakistan's massive copper and gold deposits are located in Reko Diq, a district in restive Balochistan, which has witnessed a surge in attacks by Baloch.