



Daily Current Affairs



To The Point by Dhananjay Gautam

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1 Innovative Approach to Enhance Nitrogen Use Efficiency in Crops

Context: Recent research has unveiled a groundbreaking method to boost **Nitrogen Use Efficiency (NUE)** in crops such as rice and Arabidopsis. This is achieved by **reducing nitric oxide (NO) levels** in plants, paving the way for more sustainable agricultural practices.

Key Insights from the Study:

Role of Nitric Oxide (NO) in Nitrogen Uptake:

- **Nitric Oxide (NO)** plays a vital role in regulating nitrate uptake by controlling **nitrate transporters**.
- **Reduced NO levels** activate **high-affinity nitrate transporters (HATs)**, especially under nitrogen-deficient conditions.
- Overexpressing **phytoglobin**, a natural NO scavenger, significantly enhances the expression of transporters like **NRT2.1** and **NRT2.4**, leading to improved nitrogen absorption.

Protein Nitrosylation and NUE:

- **Protein Nitrosylation**, a chemical modification of proteins by NO, is crucial for nitrogen regulation.
- By targeting this biochemical process, researchers have demonstrated substantial improvements in **Nitrogen Use Efficiency**.

NO Scavenging Formulations:

- Development of **NO scavenging formulations** adaptable to diverse agroecosystems offers a practical solution to reduce nitrogen fertilizer usage.

Importance of Improving NUE:

Enhancing Nitrogen Use Efficiency is essential for:

1. **Reducing Overuse of Fertilizers:** Minimizing the reliance on nitrogen fertilizers can lower input costs for farmers.
2. **Mitigating Environmental Pollution:** Controls issues like **nitrate leaching** into groundwater and **greenhouse gas emissions** caused by excessive nitrogen application.
3. **Boosting Crop Yields:** Optimized nitrogen uptake directly contributes to higher productivity and food security.

Methods Employed:

1. Genetic Manipulation:

- Involves **altering plant genes** to regulate nitric oxide levels within cells.
- This approach enhances the plant's natural ability to efficiently absorb and utilize nitrogen.

2. Pharmacological Manipulation:

- Utilizes **chemical compounds** known as **NO scavengers** to lower nitric oxide concentration in plants.
- This method is adaptable to various agroecosystems and is practical for large-scale agricultural applications.

Significance of the Study:

The novel approach presented in this research can revolutionize farming by:

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- **Cutting down fertilizer dependency**, making agriculture more sustainable and cost-effective.
- **Protecting the environment** through reduced pollution and greenhouse gas emissions.
- Ensuring **food security** by increasing crop yields to meet the demands of a growing population.

Did You Know?

- **Nitrogen fertilizers** account for a significant portion of agricultural input costs globally, and their inefficient use leads to economic and environmental challenges.
- **High-Affinity Nitrate Transporters (HATs)** are specialized proteins that allow plants to absorb nitrogen more effectively under low-nitrogen conditions.

Conclusion and Way Forward:

The discovery of this **innovative method to enhance Nitrogen Use Efficiency (NUE)** marks a significant advancement in sustainable agriculture. By combining **genetic** and **pharmacological interventions**, researchers aim to create scalable solutions that benefit both farmers and the environment.

Further exploration of **NO scavenging formulations** and their implementation across various crops and ecosystems could transform modern agriculture, ensuring a **greener future** for farming.

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2 Bharatpol Portal: Transforming International Police Collaboration in India

Context: On **January 7, 2025**, Union Home Minister **Amit Shah** inaugurated the '**Bharatpol**' portal, developed by the **Central Bureau of Investigation (CBI)**. This initiative aims to enhance **international police cooperation**, providing a real-time platform to combat transnational crimes effectively.



The **Bharatpol portal** is designed to connect central and state law enforcement agencies with **Interpol**, enabling swift action against global criminal activities and expediting investigations.

What is Interpol?

Overview of Interpol:

- **Full Name:** International Criminal Police Organization
- **Code Name:** Interpol (used for radio-telegraph communication).
- **Established:** 1923
- **Headquarters:** Lyon, France
- **Member Countries:** 196
- **Special Status:** Permanent Observer at the **United Nations** since 1996.

Functions of Interpol:

- Interpol is not a conventional **police force**; its agents lack the authority to make arrests.
- It serves as a **global information-sharing network**, enabling national police forces to cooperate in combating international crimes like **human trafficking, terrorism, money laundering, and illegal art trade**.
- Interpol issues **colour-coded notices** in **English, French, Spanish, and Arabic** to disseminate criminal information.
- Maintains **centralized databases** with records of fingerprints, DNA, and stolen documents to aid global law enforcement.

What is Bharatpol?

Background: CBI as India's Interpol Liaison

The **Central Bureau of Investigation (CBI)** functions as India's **National Central Bureau (NCB-New Delhi)**, bridging Indian law enforcement with Interpol's 195 member countries. Previously, coordination relied on **letters, emails, and faxes**, leading to delays in criminal investigations.

About Bharatpol:

Bharatpol is a revolutionary platform developed to streamline **international police cooperation**, enabling **real-time assistance** for criminal investigations. It addresses challenges posed by **transnational crimes** like **cybercrime, drug trafficking, and human trafficking**, which demand instant global coordination.

Key Features of Bharatpol Portal:

1. **Unified Platform for Law Enforcement:** Connects the **CBI (NCB-New Delhi)** with all Indian law enforcement agencies, including **Superintendents of Police (SPs)** and **Commissioners of Police (CPs)**, ensuring seamless communication.

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2. **Simplified Request Mechanism:** Enables frontline officers to submit **international assistance requests** using **standardized templates**, reducing complexity and time delays.
3. **Rapid Information Dissemination:** Facilitates swift sharing of **criminal intelligence** and updates from Interpol member countries with Indian law enforcement.
4. **Streamlined Interpol Notices:** Simplifies the process of drafting requests for **Interpol Notices** like **Red Corner Notices**, aiding in the global tracking of criminals and illicit assets.
5. **Capacity Building:** Provides training resources, templates, and documentation to enhance the skills of officers in **international investigations**.

Key Modules of Bharatpol:

1. **Connect:** Allows Indian agencies to operate as extensions of Interpol's **NCB-New Delhi**, ensuring secure and structured transmission of requests.
2. **Interpol Notices:** Facilitates efficient requests for notices to aid in locating criminals worldwide.
3. **Broadcast:** Offers real-time access to international assistance requests, enhancing responsiveness.
4. **References:** Organizes references and archives for **international case investigations**.
5. **Resources:** Simplifies sharing and management of training materials and important documents.

Significance of Bharatpol:

1. **Faster Investigations:** Reduces time delays in communication and coordination.
2. **Tackling Transnational Crimes:** Strengthens India's capability to combat emerging crimes like **cyber-attacks** and **online radicalization**.
3. **Enhanced Collaboration:** Facilitates seamless interaction between Indian and global law enforcement agencies.
4. **Capacity Building:** Improves the skill set of Indian officers in handling complex international cases.

Conclusion:

The launch of the **Bharatpol portal** marks a transformative leap in India's efforts to address global crime challenges. With real-time connectivity, streamlined processes, and enhanced collaboration, Bharatpol ensures that India is better equipped to tackle transnational threats effectively.

This initiative is a significant stride toward achieving a **safe and secure global environment**, reinforcing India's position as a responsible partner in international law enforcement.

3 China's 7.1 Magnitude Earthquake: Unveiling Its Impact and Lessons

Context: On January 7, 2025, a devastating earthquake measuring **7.1 on the Richter scale** shook the Tibetan region of China and neighboring areas. The **epicenter** was located in **Tingry County**, Shigatse, just **80 km north of Mount Everest** and at a depth of **10 km**. This catastrophe resulted in **95 fatalities, 130 injuries**, and the destruction of hundreds of homes. Tremors were felt as far as **Kathmandu (Nepal), Thimphu (Bhutan), and Kolkata (India)**, highlighting the wide-reaching impact of this seismic event.



Significance of the Location:

1. Geographical and Cultural Context:

- **Epicenter:** Tingry County is situated in **Shigatse**, a high-altitude Tibetan region averaging **4,000-5,000 meters above sea level** with a population of over **800,000**.
- **Cultural Importance:** Shigatse houses the **Panchen Lama**, making it a pivotal center for **Tibetan Buddhism**.
- **Tourism:** Tingry acts as a key gateway to **Mount Everest**, and the earthquake led to an immediate halt in tourism activities, further affecting the local economy.

2. Proximity to Strategic Infrastructure:

- **Lhasa Terrane:** The earthquake occurred in a tectonic zone significant for **geophysical studies** and **development projects**.
- **Yarlung Tsangpo Dam:** This region hosts China's **mega-dam project** on the Yarlung Tsangpo River, capable of producing **300 billion kWh annually**, which has implications for water flow into India's **Brahmaputra River**.
- **Impact on India:** Any disruption in the Yarlung Tsangpo could affect **water availability** and **ecosystems** in India's northeastern states.

3. Environmental Sensitivity:

- The Himalayas, known as the **"third pole"**, hold vast **water reserves** vital for millions of lives.
- Earthquakes in this fragile ecosystem can cause:
 - **River course changes**, such as those observed with the **Ganga** after past earthquakes.
 - **Glacial instability**, potentially leading to catastrophic floods.

Causes of the Earthquake:

1. Tectonic Activity:

- The **Indian Plate** colliding with the **Eurasian Plate** at a speed of **60 mm/year** continues to generate immense geological stress.
- This tectonic interaction formed the **Himalayan range** and triggers periodic seismic events.

2. Historical Vulnerability:

- The **Lhasa Terrane** has experienced **21 earthquakes** of magnitude **6 or higher** since 1950.

- Notable events include the **6.9 magnitude earthquake** in Mainling (2017), underscoring the region's susceptibility to disasters.

3. Predictive Science:

- Geologists have identified fault lines prone to seismic activity, such as the ones that led to the **2015 Nepal earthquake**.
- Studies indicate that major quakes in the region occur approximately every **80 years**, providing valuable data for preparedness.

Implications of the Disaster:

1. Humanitarian Impact:

- Casualties:** The loss of life and injuries underscore the need for robust disaster management.
- Displacement:** Hundreds of families have been left homeless, requiring urgent **relief** and **rehabilitation**.

2. Environmental Consequences:

- River System Disruption:** Earthquakes can alter river courses, increasing flood risks.
- Glacial Risks:** Destabilized glaciers could accelerate **global warming effects** in the Himalayan region.

3. Regional Geopolitical Tensions:

- India-China Relations:** The earthquake's proximity to the **Yarlung Tsangpo-Brahmaputra basin** raises concerns about **water security** and the need for bilateral cooperation.
- Infrastructure Stability:** The safety of large-scale projects like the Yarlung Tsangpo dam is now under scrutiny.

Key Insights and Takeaways:

1. Geological Awareness:

- Understanding the **tectonic dynamics** of the Indian and Eurasian plates is critical to predicting and mitigating future earthquakes.

2. Infrastructure Resilience:

- Mega projects in seismically active zones, such as the Yarlung Tsangpo dam, must undergo **rigorous risk assessments** to ensure safety and sustainability.

3. Disaster Preparedness:

- Regional governments must prioritize **early warning systems**, **emergency response plans**, and **public awareness programs** to reduce casualties and economic losses.

Conclusion:

The **7.1 magnitude earthquake** in China's Tibetan region serves as a stark reminder of the intricate interplay between **geological forces**, **environmental sensitivity**, and **geopolitical considerations**. While immediate relief efforts focus on rescuing affected communities, a long-term strategy is essential. This includes **enhanced seismic research**, **sustainable development practices**, and **international cooperation**, particularly in regions as interconnected and fragile as the Himalayas.

By fostering resilience and collaboration, nations can better prepare for such natural calamities and safeguard the lives and livelihoods of millions.

4 India and Taliban Strengthen Ties: Key Insights from Dubai Meeting

Context: A significant **high-level meeting** took place in **Dubai** between **Indian Foreign Secretary Vikram Misri** and **Taliban Acting Foreign Minister Mawlawi Amir Khan Muttaqi**. This marks a major shift in **India-Taliban relations**, which had remained subdued since the Taliban's takeover in **2021**. The discussions focused on **security, humanitarian aid, and regional cooperation**, signaling India's strategic move toward enhanced engagement.



Historical Context of India-Taliban Relations:

1. India's Position on the Taliban Regime:

- India, like most nations, does **not officially recognize** the Taliban due to concerns over its lack of **inclusivity** and its **treatment of women and minorities**.
- Despite this, India has maintained **limited engagement** to assist the Afghan people and ensure **regional stability**.

2. Timeline of Engagement:

- 2021:** India initiated contact through its ambassador in Doha after the Taliban seized power.
- 2022:** Low-profile meetings were held, and a **technical team** was deployed to the Indian embassy in Kabul.
- 2025:** The Dubai meeting represents India's **first high-level interaction**, signaling an upgrade in its diplomatic approach.

Highlights of the Dubai Meeting:

1. Security Cooperation:

- India raised concerns about **anti-India terror groups** operating in Afghanistan, including **Lashkar-e-Taiba (LeT)** and **Jaish-e-Mohammed (JeM)**.
- The Taliban assured sensitivity to these concerns, emphasizing their intent to prevent the use of Afghan territory for such activities.

2. Humanitarian Assistance:

- India committed to enhancing **humanitarian aid** and **developmental support**, including ongoing shipments of:
 - 50,000 MT of wheat**
 - 300 tons of medicines**
 - 27 tons of earthquake relief materials**
 - Millions of vaccine doses**
- The two sides also discussed expanding healthcare and **refugee rehabilitation programs**.

3. Trade via Chabahar Port:

- Both nations agreed to use **Iran's Chabahar Port** to facilitate **trade** and **aid delivery**, bypassing geopolitical challenges.

4. Sports Diplomacy:

- India pledged to support **Afghan cricket**, offering training facilities and infrastructure development in **Noida**.

Strategic Motivations Behind India's Engagement:

1. Shifting Regional Dynamics:

- Pakistan-Taliban Strains:** Rising tensions between Pakistan and the Taliban have created an opening for India to strengthen ties.
- China's Influence:** China's growing presence in Afghanistan through the **Belt and Road Initiative** pushes India to secure its own foothold.
- Russia's Reorientation:** Russia's focus on Ukraine limits its involvement in Afghanistan, offering India an opportunity.
- Iran's Internal Struggles:** Iran's reduced regional influence has created a gap India seeks to fill.

2. Preemptive Strategy:

- With possible **US re-engagement** under a Trump administration, India aims to position itself as a key player in Afghanistan's future.

Challenges and Opportunities:

Challenges:

- Human Rights Issues:** The Taliban's stance on **women's rights** and **minority inclusion** remains a significant concern.
- Security Threats:** Groups like **ISIS-Khorasan** continue to pose risks to regional stability.

Opportunities:

- Stability and Development:** India's support can contribute to long-term stability in Afghanistan.
- Economic Leverage:** Strengthening trade ties and utilizing Chabahar Port enhances India's regional influence.
- Strategic Partnerships:** The Taliban's willingness to collaborate provides India an avenue to safeguard its interests.

Conclusion:

The **India-Taliban meeting in Dubai** reflects a **pragmatic shift** in India's foreign policy, emphasizing security, humanitarian aid, and regional stability. While India continues to withhold formal recognition of the Taliban regime, this engagement underscores its intent to **protect national interests** and **shape regional dynamics** amidst evolving geopolitical challenges.

India's proactive approach demonstrates its readiness to navigate complex relations in pursuit of **strategic stability**, ensuring a balanced response to both opportunities and risks in Afghanistan.

5 Decoding the National Anthem Controversy: A Detailed Insight

Context: The Tamil Nadu Raj Bhavan recently alleged that the **National Anthem** and the **Constitution of Bharat** were disrespected in the Tamil Nadu Assembly. Traditionally, the session begins with the **State Anthem** (*Tamil Thai Vazhthu*) and concludes with the **National Anthem**. The controversy has reignited discussions about the **protocols and legalities** surrounding the **National Anthem**.



About the National Anthem:

1. Composition:

- '**Jana Gana Mana**', India's National Anthem, was composed by **Rabindranath Tagore** in Bengali.
- It was first performed on **December 27, 1911**, at the **Indian National Congress session in Kolkata**.

2. Adoption:

- The National Anthem was officially adopted on **January 24, 1950**, by the **Constituent Assembly of India**.
- Only the **first stanza** of Tagore's five-stanza poem is included in the official version.
- When sung or played in full, the anthem lasts **52 seconds**.

Constitutional Provisions for the National Anthem:

Fundamental Duty (Article 51A(a))

- It is the **duty of every citizen** to respect the **Constitution**, the **National Flag**, and the **National Anthem**.
- While the Constitution does not specify the rules for singing or playing the anthem, these are detailed in **statutes and government guidelines**.

Occasion for Playing the National Anthem:

According to the **Ministry of Home Affairs**, the **full version** of the anthem is played during:

1. **Civil and Military Investitures.**
2. **National Salute:** During ceremonial events for the **President, Governor, or Lieutenant Governor**.
3. **Parades:** Irrespective of the presence of dignitaries.
4. **Arrival and Departure** of the President at **state functions**.
5. **Presidential Addresses** on **All India Radio**.
6. **Governor's Functions:** At state events for **Governors or Lieutenant Governors**.
7. **Naval Ceremonies:** During the **hoisting of colours** in the Navy.

Code of Conduct for Singing the National Anthem:

Standing at Attention:

- **All individuals must stand** at attention during the anthem, with exceptions for **persons with disabilities**.

Newsreels or Documentaries:



- The audience is **not required to stand** when the anthem is played as part of a **newsreel** or **documentary**.

Shortened Version:

- A shorter version, lasting about **20 seconds**, is permitted for **ceremonial purposes**.

Legal Protections for the National Anthem

Prevention of Insults to National Honour Act, 1971

- **Intentional disruption** or **refusal to participate** in the singing of the anthem is punishable by:
 - **Up to three years imprisonment**,
 - **A fine**, or both.

About Tamil Thai Vazhthu: Tamil Nadu's State Anthem:

1. Composition:

- The **Tamil Thai Vazhthu** (*Invocation to Mother Tamil*) was written by **Manonmaniam Sundaram Pillai**, a celebrated Tamil scholar.
- It is part of the **prologue** to his 1891 Tamil drama, **Manonmaniam**.

2. Official Recognition:

- In **2021**, the Tamil Nadu government officially declared **Tamil Thai Vazhthu** as the **State Anthem**.
- It mandates that **everyone must stand** during its performance, except for **persons with disabilities**.

Conclusion:

The **National Anthem controversy** sheds light on the importance of respecting national and state symbols while adhering to established **protocols**. Both the **Jana Gana Mana** and **Tamil Thai Vazhthu** hold deep cultural and constitutional significance, symbolizing the unity and identity of the nation and the state. Maintaining decorum and understanding the **legal safeguards** ensures these symbols continue to inspire patriotism and respect.

6 Yemen Embassy Clarifies No Sanction for Indian Nurse's Death Sentence

Context: The **Yemen Embassy in India** has recently addressed the confusion surrounding the **death sentence** of Indian nurse **Nimisha Priya**. According to the embassy's statement, **Rashad al-Alimi**, the Chairman of Yemen's **Presidential Leadership Council**, has **not ratified** the death sentence passed on Nimisha Priya. This clarification comes amidst ongoing political turmoil in Yemen and differing governance claims.



Background of the Case:

- **Nimisha Priya**, an Indian nurse, was **sentenced to death** in Yemen for the alleged **murder** of her business partner, **Talal Abdo Mahdi**, in 2017.
- The **Houthi militias**, who control the capital **Sanaa** and its surrounding areas, have been handling the entire case, with limited involvement from Yemen's internationally recognized government.
- The government, led by **Rashad al-Alimi**, has clarified that it has **not approved** the death sentence, highlighting the **divided governance** in Yemen.

Yemen's Civil War and Its Impact on the Case:

Yemen has been embroiled in a **civil war** since 2014, when the **Houthi movement**, a **Zaidi Shia** group from northern Yemen, seized the capital **Sanaa** and ousted President **Abdrabbuh Mansur Hadi**'s government. The ongoing conflict has evolved into a complex web of factions and alliances, including:

- **Houthi Militias (Ansar Allah):** A **Shia Muslim group** controlling **Sanaa** and much of northern Yemen, backed by **Iran**.
- **Internationally Recognized Government:** Supported by **Saudi Arabia**, this government controls parts of the southern and eastern regions of Yemen and is acknowledged globally as Yemen's legitimate government.
- **Southern Transitional Council (STC):** Backed by the **UAE**, this council controls parts of **southern Yemen** and is involved in the broader conflict.

The Role of the Yemen Embassy in India:

- The **Yemen Embassy in India** represents the **Saudi-backed government** of Yemen, not the **Houthi militias**, which control **Sanaa**.
- This distinction is crucial, as the **Houthi rebels** do not have official diplomatic representation in India, meaning their stance on the case is not formally communicated through official channels in the country.

The Complexities of Yemen's Political Landscape:

- **Competing Political Claims:** The **Houthi-led government** in **Sanaa** and the **Saudi-backed government** in **Aden** continue to compete for control, making **international diplomacy** regarding Yemen's internal affairs extremely complicated.
- **Humanitarian Crisis:** Yemen's civil war has led to one of the **worst humanitarian crises** in recent history, with over **230,000 deaths** and millions displaced. Both sides are accused of **human rights violations**, including **targeting civilians** and disrupting access to essential services like food, water, and healthcare.

Future Prospects for the Case:

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The situation surrounding Nimisha Priya's death sentence highlights the **complexities** of dealing with justice in a country marked by **political fragmentation** and **military occupation**. Navigating such cases requires careful diplomacy, given the divisions between the internationally recognized government and the Houthi authorities.

The **Indian government** continues to work diplomatically through various channels, including the **Yemen Embassy in India**, to ensure the safety and well-being of its citizens abroad.

Additional Facts and Context:

- **Yemen's Strategic Location:** Yemen sits on the **Bab-el-Mandeb Strait**, a key maritime chokepoint between the **Red Sea** and the **Gulf of Aden**, making the country's stability vital for international trade routes.
- **Houthi Influence:** The **Houthi** rebels have become increasingly aligned with **Iran**, further complicating the geopolitical dynamics in the region.
- **Humanitarian Efforts:** Yemen remains dependent on international **humanitarian aid**. Organizations such as the **UNICEF**, **Red Cross**, and various NGOs continue to provide critical support amidst the conflict.

Conclusion:

The case of **Nimisha Priya** is not only a legal matter but also a reflection of Yemen's **deep political divisions**. As the **Yemen Embassy** in India reiterates, the death sentence has **not been sanctioned** by the internationally recognized Yemeni government. However, the **competing factions** and **complex regional geopolitics** make resolving the issue a delicate and prolonged process. While diplomatic efforts are ongoing, the situation in Yemen underscores the broader challenges of conflict resolution and international engagement in a war-torn region.

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