Topics - MINDS MAPS included (Daily current affairs 3RD & 2nd APRIL 2025

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- *Euphaea wayanadensis*
- *North Sentinel island*
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- **U.S.-Greenland Relations**
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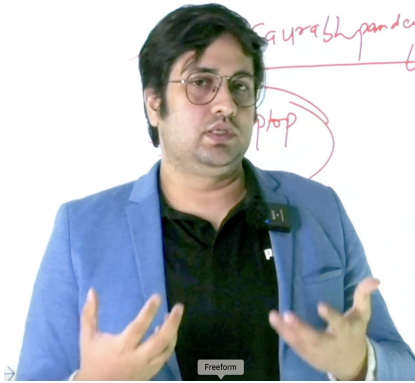


By saurabh Pandey

THE HINDU

- ***Jacaranda mimosifolia*** **is a sub-tropical tree native to south-central South America that has been widely planted elsewhere because of its attractive and long-lasting violet-colored flowers.**
- **In its native range in the wild, *J. mimosifolia* is listed as Vulnerable by the IUCN.**
- **The jacaranda is regarded as an invasive species in parts of South Africa and Queensland, Australia, where it can out-compete native species.**

New damselfly species found in Kerala

Sarath Babu George
THIRUVANANTHAPURAM

A group of researchers has discovered a new species of damselfly in the Wayanad landscape of the Western Ghats, Kerala.

Named *Euphaea wayanadensis*, this species marks Kerala's 191st recorded odonate species (including dragonflies and damselflies), and the 223rd one to be documented from the Ghats. The findings were recently published in the peer-reviewed journal *ENTOMON*.

Euphaea wayanadensis prefers streams with aquatic vegetation, along with trees on banks, say researchers. SPECIAL ARRANGEMENT

Research team

The research team comprised S.S. Anooj of Kerala Agricultural University; C. Susanth and Kalesh Sadasivan, representing conservation groups Warblers and Waders, and Travancore Nature History Society respectively; Vinayan P. Nair of Alphonsa College, Pala; and Dattaprasad Sawant and Milind Bhakare from Maharashtra.

The new species belongs to the family Euphaeidae and was identified using integrated taxonomy methods. The discovery is the result of several years of field surveys. The team first observed the distinct morphotype of *Euphaea wayanadensis* at the Kalindi River, Thirunelli, in Wayanad district in 2013.

The research found the species preferred fast-flowing streams with rocks and aquatic vegetation, with evergreen and semi-evergreen tree growth on the banks. They are observed throughout the year, except during the dry seasons of March and April.

Dr. Sadasivan, a member of the IUCN Dragonfly Specialist Group, emphasised the highly restricted distribution and habitat requirement of the new species calls for targeted surveys and steps to conserve aquatic invertebrates of ecologically vulnerable landscapes like Wayanad.

New species of damselfly

- A group of researchers has discovered a new species of damselfly in the Wayanad landscape of the Western Ghats, Kerala.
- Named *Euphaea wayanadensis*, this species marks Kerala's 191st recorded odonate species (including dragonflies and damselflies), and the 223rd one to be documented from the Ghats.
- The new species belongs to the family Euphaeidae

U.S. man arrested for entering restricted North Sentinel Island

Press Trust of India
PORT BLAIR

He left a coconut and a can of cola for the Sentinelese, and collected sand samples on island

A 24-year-old U.S. national, Mykhailo Viktorovych Polyakov, was arrested on the Andaman and Nicobar Islands for allegedly entering the prohibited tribal reserve area of the North Sentinel Island, the police said on Wednesday.

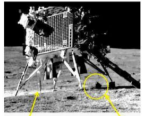
He arrived in Port Blair on March 26 and launched his inflatable boat from the Kurma Dera beach early on March 29, they said. He reached North Sentinel Island, left a coconut and a can of cola as "offerings for the Sentinelese", and collected sand samples, but did not encounter any inhabitants. He returned by evening, where he was spotted by local fishermen and subsequently arrested.

Director-General of Police H.S. Dhaliwal said, "We are getting more details about him and his intention to visit the reserved tribal area. We are also trying to find where else he had visited during his stay in the Andaman and Nicobar Islands. We are questioning the hotel staff where he was staying in Port Blair." Among the items seized from him were the boat and an outboard motor.

The police said he had planned his journey meticulously and used GPS navigation. Mr. Polyakov, whose father is of Ukrainian origin, was found in possession of a GoPro camera, and its footage showed him landing on North Sentinel Island, the police said.

He is at present in police custody. The police said he visited Port Blair last October and attempted reconnaissance of North Sentinel Island, but was stopped by hotel staff. He came in January and attempted to procure a motor for his boat. He went to Baratang Islands and allegedly videographed the Jarawa tribe, the police said.


BURMA
INDIA
Bay of Bengal
North Sentinel Island
Andaman Sea
SRI LANKA



This image shows the ChaSTE instrument. ISRO

Chandrayaan's ChaSTE takes the moon's temperature

Unnati Ashar

As the Vikram lander of Chandrayaan-3 touched down on the moon on August 23, 2023, a thermal probe tucked snugly in its panels slowly worked itself free and stretched its arms. Its motors started to whir, sending the little probe into the soil. Once the probe reached its intended depth, it clicked in place with a latch.

This is Chandra's Surface Thermophysical Experiment (ChaSTE) – the first instrument to measure temperatures *in situ* near the moon's south pole. Scientists used this data to report that water ice is more prevalent on the moon than expected.

ChaSTE also became the first mission to successfully penetrate the soil of a celestial body to deploy a thermal probe after two previous missions had fallen short. The ChaSTE probe features 10 temperature sensors spaced about 1 cm apart along its length, near the nose-tip. It uses a rotation-based deployment mechanism.

When its motor rotates, ChaSTE's probe needle pushes down until its tip touches the moon's surface. By monitoring the temperature from the sensor at the end of the probe, scientists can identify if it has touched the surface. As the probe continues to pierce, the soil offers more and more resistance. This requires the motor to exert greater force. That is how scientists confirm how far the probe has descended.

ChaSTE tunnelled into the soil to a final depth of 10 cm, then collected measurements throughout the Chandrayaan-3 mission until September 2, 2023.

ChaSTE became the first mission to successfully penetrate the soil of a celestial body to deploy a thermal probe after two previous missions had fallen short

On November 12, 2014, the European Space Agency's Philae lander, hitchhiking on the Rosetta spacecraft, landed on comet 67P/Churyumov-Gerasimenko. But it bounced – twice. Its Multi-Purpose Sensors for Surface and Subsurface Science (MUPUS) instrument onboard was designed to measure temperature by digging into the terrain. However, scientists couldn't deploy it due to the awkward landing. Philae found itself in on a desolate icy rock, 500 million km away.

The German-Polish team behind MUPUS got another chance when NASA's InSight robotic spacecraft landed on Mars on November 26, 2018. It carried a temperature-sensing instrument called the Heat Flow and Physical Properties Package (HP³). It consisted of a self-hammering nail, nicknamed "The Mole," designed to penetrate 5 m below Mars's surface.

But the friction between the probe and the sand was too low for the mole to hammer itself down more than a few centimetres. After more than a year's action-packed struggle, the 35-cm Mole had finally descended fully into the Martian sand. But scientists couldn't get any temperature data. This was because HP³'s temperature sensors were not on the mole. They were attached to a tether that was supposed to trail The Mole as it burrowed through the sand.

"While both the instruments [MUPUS and HP³] used a hammering device, the ChaSTE probe was pushed into the soil by a rotating device," Durga Prasad K., principal investigator of ChaSTE from the Physical Research Laboratory, Ahmedabad, said. It was the secret sauce that made all the difference.

(Unnati Ashar is a freelance science journalist. unnati ash@gmail.com)

Chandrayaan-3 & ChaSTE

On August 23, 2023, the Vikram lander of India's Chandrayaan-3 mission successfully landed on the moon.
This event marked a significant milestone in lunar exploration, particularly in the moon’s south pole region.

The Vikram Lander: A Marvel of Engineering

The Touchdown: A Moment of Triumph

The Vikram lander carried a thermal probe designed to gather crucial data from the moon's soil.
This achievement was celebrated by scientists and engineers worldwide.

Meet ChaSTE: Chandra’s Surface Thermophysical Experiment

The Role of ChaSTE in Lunar Research

ChaSTE was the first instrument to measure temperatures near the moon’s south pole.
It revealed that water ice is more prevalent than previously thought, supporting future lunar missions.

Measuring Temperatures Near the Moon’s South Pole

ChaSTE provided accurate temperature readings, essential for understanding the moon's environment.

The Technology Behind ChaSTE

The Deployment Mechanism Explained

ChaSTE features a sophisticated deployment mechanism with ten temperature sensors.
These sensors are spaced 1 cm apart, allowing for a comprehensive temperature profile.

How the Probe Works: A Step-by-Step Breakdown

The probe's motor rotates, pushing the needle into the lunar soil.
As it descends, the soil's resistance increases, providing feedback for accurate tracking.

The Significance of Water Ice Discovery

Implications for Future Lunar Missions

The discovery of water ice is crucial for future lunar bases, providing resources like oxygen and hydrogen.

A Look Back: Previous Missions and Their Challenges

The Philae Lander: A Lesson in Resilience

The Philae lander faced challenges in 2014, bouncing on comet 67P and failing to deploy its temperature-sensing instrument.

NASA’s InSight: The Quest for Martian Knowledge

NASA’s InSight mission struggled with soil resistance on Mars, highlighting extraterrestrial exploration complexities.

Conclusion: The Future of Lunar Exploration

Chandrayaan-3 and ChaSTE have set a new standard for lunar exploration.
The mission's success paves the way for future endeavors in space exploration.

The reciprocal tariff dilemma

Anirudh Shingal

Professor in the Finance & Economics faculty at the S.P. Jain Institute of Management & Research, Mumbai, and a Visiting Fellow at the Centre for Social and Economic Progress, New Delhi. The views expressed are personal

Under the 'Fair and Reciprocal Plan,' the Donald Trump administration is countering "non-reciprocal trading arrangements with trading partners by determining the equivalent of a reciprocal tariff with respect to each foreign trading partner". The non-reciprocal trading relationship is assessed based on tariffs, discriminatory taxes, non-tariff barriers (including subsidies and restrictive regulations), exchange rate manipulations, and any other practice deemed to limit U.S. market access or impede American firms from competing.

In 2010, countries across the world sent 12% of their total merchandise exports to American shores. By 2019, one year before the pandemic, the U.S. share of world exports had only risen to 13%. The share stood at 13.4% in 2022, the latest year for which internationally comparable data on merchandise exports are available for the largest sample of the world's trading economies. Thus, roughly 87% of global merchandise exports are currently traded among countries that do not include the U.S.

Of course, there are variations around this average. For instance, the Cayman Islands and Bermuda in the Caribbean export almost 85% of their goods to America. The U.S. also accounts for over 75% of Canadian and Mexican merchandise exports. At the opposite end of the spectrum, 81 out of 160 countries, for which data were available from UN Comtrade for 2022, exported less than 5% of their total goods to the U.S. For 26 of these 81 countries (many from Africa), the U.S. share was less than 1%. The average U.S. share across the 160 countries was 11.4%, while the median was much lower at 4.7%. Less than a fifth of Indian, Chinese, and EU merchandise exports (18%, 16%, and 19%, respectively, in 2022) were destined for the U.S.

Now, let us look at the tariff picture and compare U.S. tariffs on partner exports *vis-à-vis* partner tariffs on U.S. exports. The latest tariff data available for this comparison are from UNCTAD TRAINS for 157 trading partners of the U.S., mostly for the year 2022. The European Union is considered a single partner given its common external tariff.

The average import-weighted tariffs on U.S. exports in 27 partner countries are lower than the corresponding U.S. tariffs. Technically, the concept of reciprocal tariffs works as a threat and a bargaining tool only when U.S. tariffs are lower than those in the partner country.

Considering only tariffs, this simple analysis thus rules out almost a fifth of all countries for which comparable tariff data are available from the 'Fair and Reciprocal Plan.' These countries include Canada, the EU, Japan, and the U.K. – among America's largest trading partners, which together accounted for half of total U.S. merchandise exports in 2022. In fact, U.S. commercial interests could be harmed if these countries imposed reciprocal tariffs on American merchandise exports instead.

Of the remaining 130 countries where the Trump administration perceives a tariff disadvantage, the magnitude of the tariff increase needed to nullify the disadvantage is less than 5% in 57 countries, including China and India. Moreover, in 15 of these 57 countries, the U.S. needs to increase its import-weighted tariffs by less than 1% to restore parity with partner tariffs. Thus, the threat of reciprocal tariffs may be more credible in the remaining 73 countries worldwide, where U.S. bilateral tariffs need to be raised by more than 5%.

Interestingly, however, the magnitude of the tariff hikes in these cases is positively correlated with the U.S. export shares in the partner countries. Put simply, pursuing the policy of reciprocal tariffs against partners where there is a significant tariff differential results in raising average import duties on exports from countries for whom the U.S. is an important destination market. There is extensive commentary on how tariffs are a self-defeating policy. The correlation above only compounds the self-inflicted harm that a policy of reciprocal tariffs brings to the U.S.

This simple analysis is at the aggregate level, and more detailed product-level bilateral tariff and U.S. export share comparisons might be more revealing. However, based on this simple analysis, could partner countries be tempted to divert their exports to other countries in response to large reciprocal tariffs? After all, even today, 87% of global merchandise exports do not involve the U.S. While there are obvious costs to finding new export markets and trading partners, the experience during the pandemic has shown that firms adapt to external shocks quicker than governments.

Removing barriers

The best policy response to reciprocal tariffs is for impacted countries to remove barriers to doing business, both internally and with their non-U.S. trading partners. This is also the time to enhance regulatory cooperation and reduce regulatory bottlenecks to cross-border trade with the rest of the world, not just in goods but also in services.

The World Bank and World Trade Organization reports show that exports of digitally delivered services have grown faster than those of all other services and goods during the last decade. My own research also shows that preferential trade agreements, which include provisions on regulatory behind-the-border issues, have the most positive effect on digital services trade. Instead of wasting scarce resources on retaliatory tariffs, countries will be much better served if policymakers focus on issues that matter.

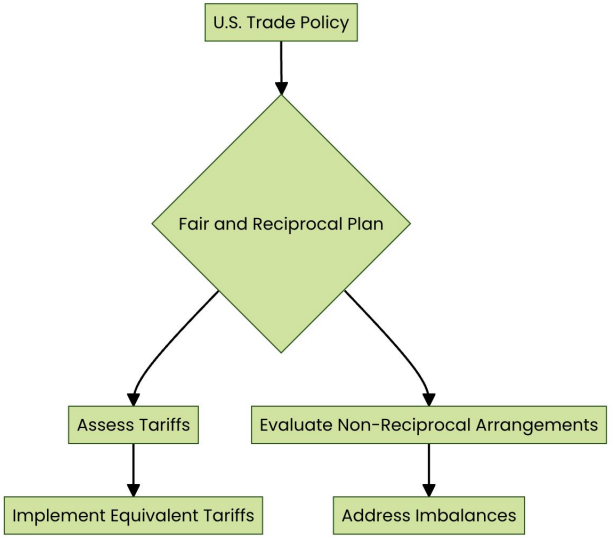
The best policy response to reciprocal tariffs would be for impacted countries to remove barriers to doing business, both internally and with their non-U.S. trading partners

Understanding the ‘Fair and Reciprocal Plan’ Under the Trump Administration.

What is the ‘Fair and Reciprocal Plan’?

Objective: Ensure fair trade practices by leveling the playing field with equivalent tariffs.

Mechanism: Respond to high tariffs or barriers imposed by other countries with similar measures.



The Concept of Non-Reciprocal Trading Arrangements

Definition: Occurs when one country imposes fewer trade barriers than another.
Impact: Creates an imbalance, making it difficult for American firms to compete.

Key Factors in Assessing Non-Reciprocal Relationships

Tariffs: Taxes on imports.
Discriminatory Taxes: Unfairly target U.S. products.
Non-Tariff Barriers: Include subsidies and restrictive regulations.
Exchange Rate Manipulations: Artificially alter currency values for trade advantages.

The State of U.S. Merchandise Exports

Historical Context: U.S. share of global exports increased slightly from 12% in 2010 to 13.4% in 2022.
Current Dynamics: Some countries export a large portion to the U.S., while many export less than 5%

Analyzing Tariff Structures

U.S. vs. Partner Tariffs: U.S. tariffs are often higher than those of partner countries.
Role of the EU: Major trading partners like the EU could retaliate, affecting U.S. interests.

The Implications of Reciprocal Tariffs

Countries Affected: Around 130 countries identified with tariff disadvantages.
Impact on U.S. Interests: Reciprocal tariffs could harm U.S. commercial interests

The Credibility of Tariff Threats

Understanding Disadvantages: Significant tariff increases needed to restore parity.
Correlation with Exports: High tariffs could reduce U.S. export shares.

The Future of Global Trade Relations

Potential Shifts: Changes in tariff policies may lead to new trading partnerships.
Removing Barriers: Focus on reducing trade barriers and enhancing cooperation.

Conclusion

The ‘Fair and Reciprocal Plan’ aims to create fair trade but may have unintended consequences. Removing trade barriers is crucial for future global trade relations.

How did the Myanmar earthquake occur?

Has there been a history of earthquakes along the Sagaing fault? Has the earthquake caused damage in Bangkok as well? How did neighbouring eastern parts of India avoid any damage from the earthquake? Why is the plate boundary in Southeast Asia an active tectonic feature?

EXPLAINER

C. P. Rajendran

The story so far:

The powerful earthquake in Myanmar on March 28 had its source in central Myanmar, about 20 km from Mandalay, the country's second-largest city. Mandalay, located on the east bank of the Irrawaddy river, is close to one of the most seismically active faults in the region, called the Sagaing fault, named after a town not far from Mandalay on the river's opposite side. The earthquake of magnitude 7.7 struck around 12:50 pm local time, followed by several strong aftershocks, including one of magnitude 6.4, which occurred 11 minutes after the major event.

What effect did the quakes have?

The quakes were very devastating: they affected the entire region, left thousands of people dead, and destroyed many homes. The damage zone extended to Bangkok, the capital of neighbouring Thailand, which is about 1,000 km from the earthquake's epicentre.

However, the damage in Bangkok was minimal, confined to the complete collapse of a 33-storey high-rise under construction, and causing water from a swimming pool on the top of another high-rise building to overflow. However, these incidents were given much hype because of the city's place on the global tourism circuit. The outpouring of water from the rooftop pool was due to seismic seiches – oscillations in the water triggered by the passage of seismic waves through the area. Even though the building was located far from the earthquake's source, slower, long-period seismic waves can cause the top floors to sway more and amplify the seiches, as observed in this case.

The damage prediction models of the U.S. Geological Survey estimated that the total death toll in the region could reach well over 10,000. Mandalay itself is home to over 1.5 million people and was hit the hardest, with many buildings, including pagodas, mosques, and bridges, either partially damaged or completely collapsed. A review of the damage pattern reveals that much of the devastation was concentrated in the southern areas of the Sagaing fault because this region is sitting on a thicker pile of alluvium, deposited by the Irrawaddy, which amplifies the seismic energy, as compared to the northern parts of the fault. This also explains why China's southwest Yunnan Province, which is north of the fault, escaped earthquake-induced damage. The depth to the source of the 2025 earthquake on the Sagaing fault was only 10 km, which is another contributing factor for the heavy damage and a large felt area (area where the earthquake's shaking is felt).

The neighbouring eastern parts of India also escaped damage because the energy released by the earthquake dispersed in a north-south direction, following the trend of the fault.

Are quakes common in South Asia?

South Asia, including Myanmar, is highly prone to earthquakes due to its proximity to the complex assemblage of some of the largest tectonic features on earth, including the Himalayas, the Shillong Plateau, the Southern Indo-Burman Range, and the Andaman-Nicobar subduction zone. Originating from the collision of the Indian and the Eurasian Plates some 40 million years ago, the plate boundary in Southeast Asia is an active tectonic feature that generated one of the largest earthquakes in history, of magnitude 9.2, and a transcontinental tsunami in 2004.

Mass destruction: A damaged pagoda in the aftermath of the earthquake in Amarapura township, Mandalay, Myanmar, on April 2. AP

The tectonic stress accumulating on these plate boundaries is the cause of frequent seismic activity in the region. The earthquake of 1792 was also a great 'megathrust' earthquake of magnitude 8.5, with its epicentre located somewhere along the Arakan coast of Myanmar. This seismic event generated a tsunami in the northern Bay of Bengal and caused widespread soil liquefaction in the Chittagong areas of Bangladesh. The large thrust fault extends further north onto the Chittagong-Tripura fold belt, where several moderate earthquakes continue to occur. It is still not clear whether this part of the deformation front can generate future great earthquakes.

Southeast Asia is a tectonic museum that exhibits structures that host earthquakes of varying faulting mechanisms, occurring at depths ranging from as shallow as 5 km to 200-400 km. The deeper ones occur in the southern regions closer to Indonesia or the Indo-Burmese regions in the north, bordering the subduction front along the Indo-Eurasian plates. The 2025 Mandalay earthquake in Central Myanmar was sourced from within the continental part of the mountain range. In the tectonics of mountain building, such features develop when sediment piles up and rocks are scraped off from the subducting Indian plate, which get plastered onto the overriding Asian plate.

What is the geodynamic context of the Sagaing fault?

Because of the complex interplay of plate motions and the resulting geodynamics in the eastern margin of the Indian Ocean, the northeast-directed convergence of the India and Eurasia plates takes place in a slanted fashion rather than happening head-on. This oblique convergence of the plates causes the overall strain to become partitioned, with part of the deformation being perpendicular to the plate boundary and the other part occurring parallel within the interiors. The north-south running Sagaing fault forms the tectonic boundary between the Central Myanmar Lowlands and the Indo-Burman Range. An elongated micro-tectonic block that exists between the Indian plate and the Sagaing fault is commonly called the Burma plate or the Burma sliver. It owes its origin to the strain partitioning occurring at the subduction front.

Studies have revealed that this fault, with its subsidiary parallel structures, accommodates much of the strike-slip part of the oblique convergence, with a slip rate of 15-25 mm a year and an accumulated slippage of 100-700 km. The Sagaing fault accommodates about 50-55% of the overall plate motion in the region. Unlike the vertical motions of fault blocks along the frontal part of the convergence zone, where one tectonic block is pushed up on the other, the movement is horizontal on the Sagaing fault, with the blocks sliding past each other. The San Andreas fault in the western U.S. is another such example. Unlike thrust faults, where earthquakes originate at either shallow or deeper sources, earthquakes on strike-slip faults are almost always shallower (10-15 km).

Classified as a typical ridge-trench transform fault, the Sagaing fault system runs 1,400 km between the spreading centre under the Andaman Sea in the south to the eastern Himalayan bend in the north. It has a long history of earthquakes. Moderate and occasional strong earthquakes of magnitudes 7 and above are common in central Myanmar, where six strong quakes of 7.0 magnitude or more struck between 1930 and 1956 along the Sagaing fault or on adjacent structures. Analyses of historical earthquakes have revealed that about half of the Sagaing fault has ruptured in the last few decades. Thus, the 2025 earthquake is not a surprise event but a part of the earthquakes occurring sequentially on this structure to release the accumulating stresses from the ongoing active plate interactions.

What does the Mandalay earthquake portend?

Historical records support the occurrence of an earthquake in 1839, called the Ava earthquake, that killed more than 500 people in central Myanmar. This event may have originated on one of the segments of the Sagaing fault with a hypothesised magnitude of 7.8. Equally interesting is the earthquake of 1927, reportedly felt strongly north of Yangon, Myanmar's largest city with a current population of more than four million people. Records also indicate that an earthquake occurred in 1946, possibly on the Sagaing fault north of Mandalay and with a magnitude of 7.7, like that of the 2025 temblor.

The historic city of Bagan in Central Myanmar, densely packed with religious monuments, has also been subjected to several damaging earthquakes. The latest one to hit this town was in 2016.

Science helps us understand the processes behind earthquakes and provides approximate locations of future earthquakes and their possible magnitudes. The Sagaing fault is not merely a scientific curiosity: it has a tragic impact on the millions who live with the restless fault beneath their feet. Myanmar is struggling to cope with the aftermath of the latest earthquake, with a rising death toll and extensive damage to infrastructure, both complicated by the ongoing civil war.

The 2025 Mandalay earthquake should serve as a warning to India. As the country most prone to earthquakes in South Asia, India should introduce scientifically tested safety measures and procedures to mitigate the impact of earthquakes.

C.P. Rajendran is an adjunct professor at the National Institute of Advanced Studies, Bengaluru. This article benefited from the paper by Yu Wang et al., published in JGR Solid Earth on March 15, 2014.

THE GIST

- The Myanmar quakes were very devastating: they affected the entire region, left thousands of people dead, and destroyed many homes. The damage zone extended to Bangkok, the capital of neighbouring Thailand, which is about 1,000 km from the earthquake's epicentre.
- Classified as a typical ridge-trench transform fault, the Sagaing fault system runs 1,400 km between the spreading centre under the Andaman Sea in the south to the eastern Himalayan bend in the north. It has a long history of earthquakes.
- The historic city of Bagan in Central Myanmar, densely packed with religious monuments, has also been subjected to several damaging earthquakes. The latest one to hit this town was in 2016.

Topic - Why South Asia is prone to earthquake ???

The Tectonic Landscape of South Asia

South Asia is like a giant puzzle made up of some of the largest tectonic features on Earth. These features are not just pretty to look at; they are the reason for the frequent earthquakes in the region.

Major Tectonic Features

The Himalayas

First up, we have the majestic Himalayas. These towering mountains were formed from the collision of the Indian and Eurasian plates about 40 million years ago. This collision is still happening today, creating a lot of tectonic stress that leads to earthquakes.

The Shillong Plateau

Next, we have the Shillong Plateau, which is another significant geological feature. It’s like a giant rock sitting on top of the Earth’s crust, and it’s not immune to the shaking that comes from below.

The Indo-Burman Range

Then there’s the Indo-Burman Range, which adds to the complexity of the tectonic landscape. This range is a hotspot for seismic activity, making it a critical area to monitor.

The Andaman-Nicobar Subduction Zone

Finally, we have the Andaman-Nicobar subduction zone. This is where one tectonic plate is sliding under another, creating a lot of pressure and, you guessed it, earthquakes!

Historical Earthquakes in the Region

Now that we know about the tectonic features, let’s look at some historical earthquakes that have rocked this region.

The 2004 Tsunami and Its Impact

One of the most devastating events was the 2004 tsunami, which was triggered by a massive earthquake of magnitude 9.2. This earthquake not only shook the ground but also caused a transcontinental tsunami that affected millions.

The 1792 Megathrust Earthquake

Another significant event was the 1792 megathrust earthquake, which had a magnitude of 8.5. It generated a tsunami in the northern Bay of Bengal and caused widespread destruction in Bangladesh. Talk about a wake-up call!

Understanding the Sagaing Fault

Now, let’s zoom in on a specific fault line: the Sagaing fault. This fault is crucial for understanding the seismic activity in Myanmar.

Geodynamics of the Sagaing Fault

The Sagaing fault is where the action happens. It’s not just a straight line; it’s a complex system that accommodates a lot of the tectonic movement in the region.

Strain Partitioning

What’s fascinating is how the strain is partitioned. Some of it happens perpendicular to the plate boundary, while the rest occurs parallel within the interiors. It’s like a dance of tectonic plates!

Slip Rates and Earthquake History

Studies show that the Sagaing fault has a slip rate of 15-25 mm a year. That’s a lot of movement! Historical records indicate that this fault has a long history of earthquakes, with several strong quakes occurring in the past.

The Mandalay Earthquake of 2025

Fast forward to the future, and we have the 2025 Mandalay earthquake. This event serves as a reminder of the ongoing seismic activity in the region.

Conclusion

In conclusion, earthquakes are indeed common in South Asia, particularly in Myanmar. The region's complex tectonic landscape, historical events, and ongoing seismic activity make it a hotspot for quakes. As we continue to study these phenomena, it’s crucial for countries like India and Myanmar to implement safety measures to protect their citizens.

TOPIC -> painted lady.

- *Vanessa cardui* is the most widespread of all butterfly species. It is commonly called the painted lady.
- *V. cardui* occurs in any temperate zone, including mountains in the tropics.
- The species is resident only in warmer areas, but migrates in spring, and sometimes again in autumn.
- It migrates from North Africa and the Mediterranean to Britain and Europe in May and June, occasionally reaching Iceland,and from the Red Sea basin, via Israel and Cyprus, to Turkey in March and April

Behavior

Groups of two to eight painted lady butterflies have been observed to fly in circles around each other for about one to five seconds before separating, symbolizing courtship. Groups of butterflies usually will not fly more than 4.5 m (15 ft) away from the starting point

Topic → Vice President J.D. Vance’s Visit to Greenland: A New Chapter in U.S.-Greenland Relations

Introduction

Vice President J.D. Vance's recent trip to Greenland is a significant move in U.S. foreign policy.
The visit underscores American ambitions and reaffirms President Trump's controversial plans regarding Greenland.
Local leaders and the Danish government, which holds sovereignty over Greenland, have expressed concerns.

The Significance of Greenland

Strategic Territory: Greenland's location and resources make it crucial in Arctic geopolitics.

Population and Culture: Rich cultural history and a strong sense of community identity

Greenland is rich in mineral and oil deposits

PRIME REAL ESTATE

Greenland is a key strategic location along Arctic trade routes

Vance’s Visit: A Show of Power

Pituffik Space Base Inspection: Highlights U.S. military interests in the Arctic.
Trump’s Bold Statements: Emphasizes U.S. intentions to assert control, raising international concerns.

Historical Context of U.S. Interest in Greenland

Past Attempts: U.S. has previously tried to acquire Greenland, notably in 1867 and 1946.
Cold War Era: Military presence established during WWII, with continued strategic interest.

Greenland’s Modern Political Landscape

Autonomy and National Sentiment: Gained autonomy in 1979; strong nationalist sentiment.
Public Opinion: Majority oppose U.S. control, preferring independence.

Geopolitical Implications of U.S. Control

Climate Change and Resources: Melting ice increases access to resources, enhancing geopolitical stakes.
Arctic Seabed Competition: U.S. aims to expand Arctic claims amidst global competition.

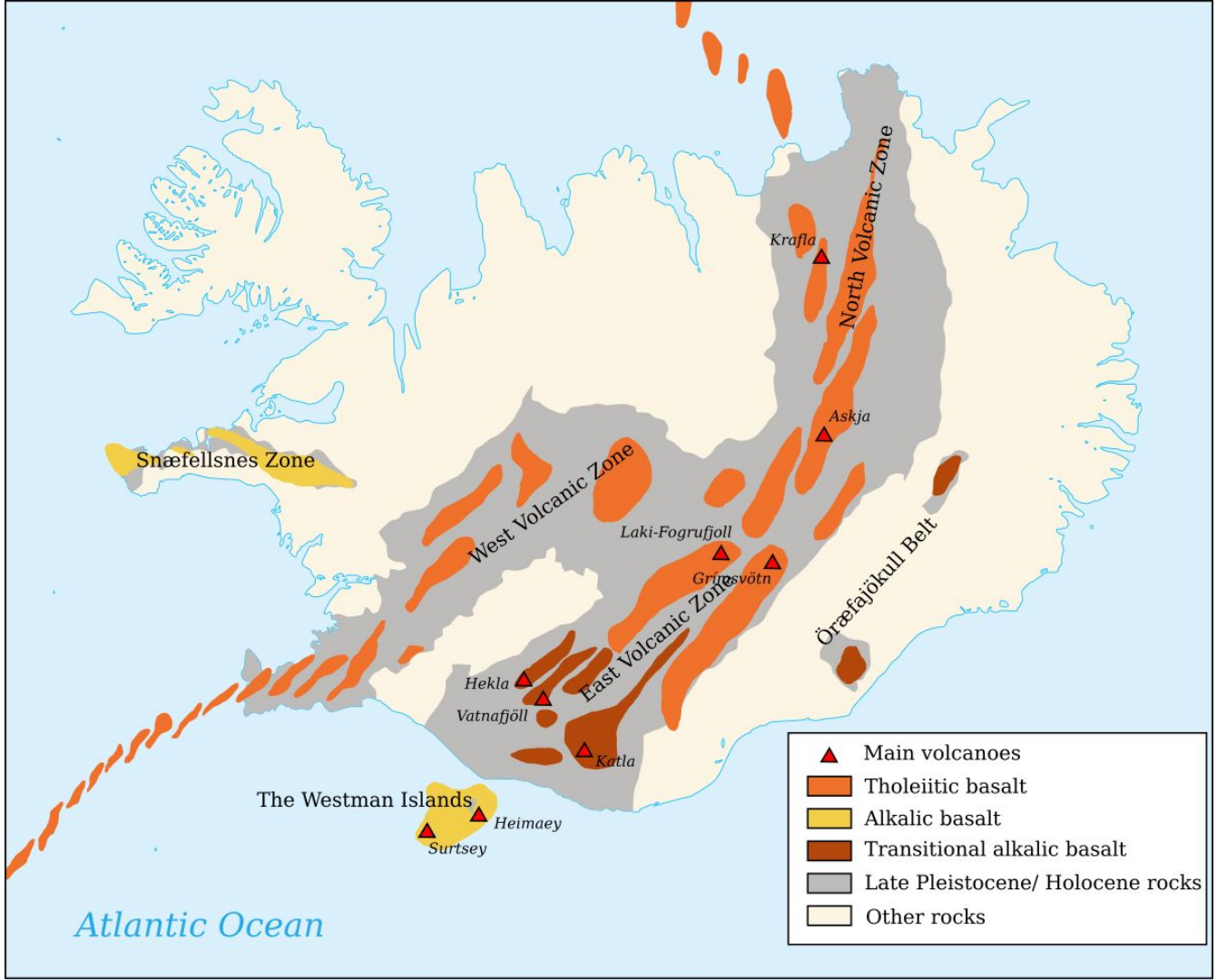
The Risks of Expansionism

Undermining International Order: Expansionist policies could destabilize global norms.
Importance of Sovereignty: Respect for Greenland's democratic choices is crucial.

Conclusion

Vance’s visit reflects U.S. ambitions but must consider Greenland's sovereignty and aspirations.
Future relations depend on mutual respect and understanding.

Why Earthquake in iceland ??


North Volcanic Zone
Krafla
Askja
Snæfellsnes Zone
West Volcanic Zone
Laki-Fogrufjoll
Grimsvötn
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Hekla
Vatnafjöll
Katla
The Westman Islands
Heimaey
Surtsey
Atlantic Ocean
Main volcanoes
Tholeiitic basalt
Alkalic basalt
Transitional alkalic basalt
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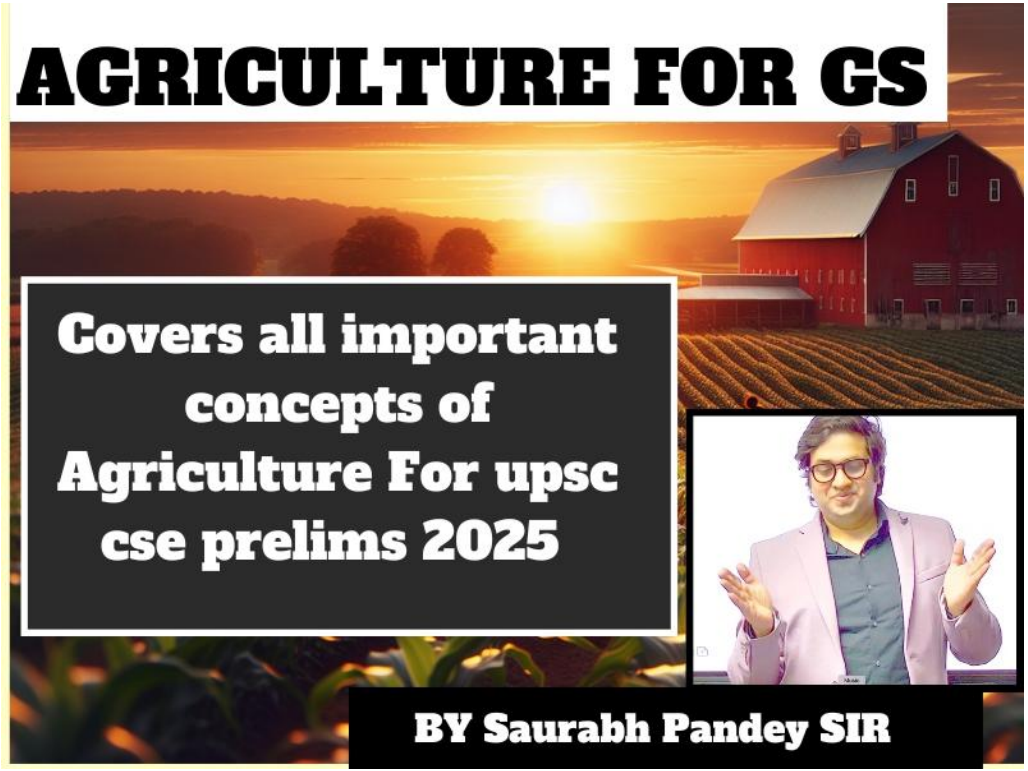
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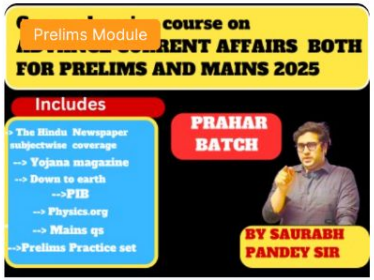

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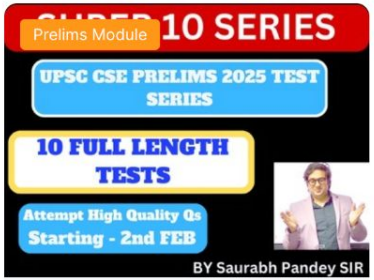

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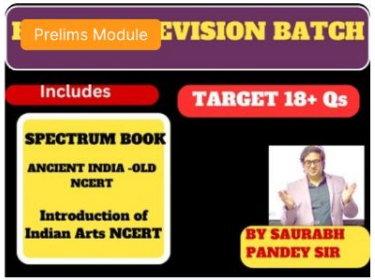

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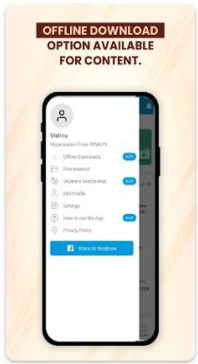

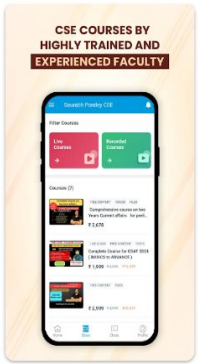

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