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Scarborough Shoal

Philippine officials have vowed to remove a floating barrier placed by China's coast guard from entering a disputed lagoon at Scarborough Shoal in the South China Sea.

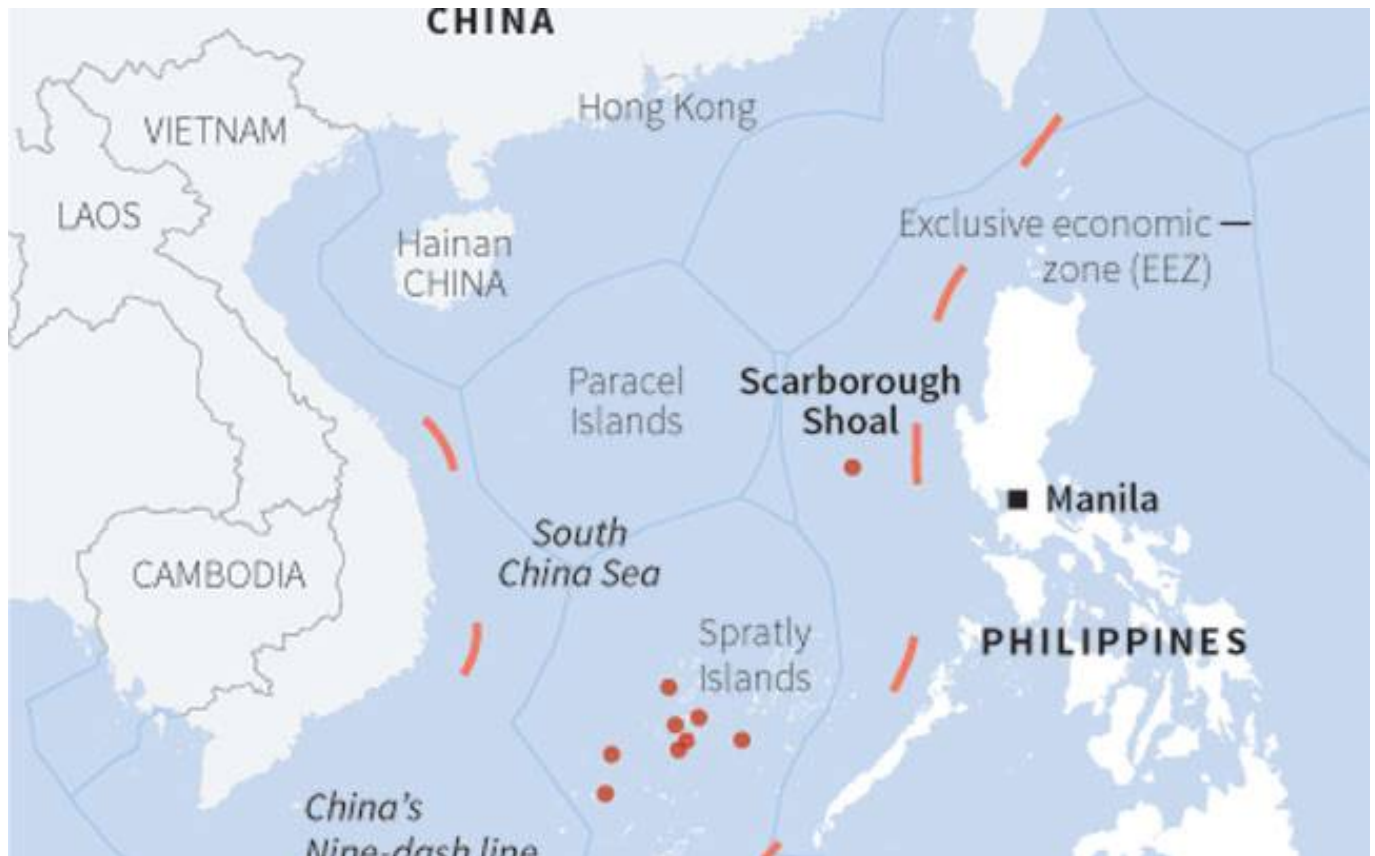
- **About** - Scarborough is the largest atoll in the South China Sea.

An atoll is a ring-shaped coral reef, island, or series of islets. An atoll surrounds a body of water called a lagoon.

- **Location** - It is situated approximately 120 nautical miles west of the Philippine island of Luzon.
- **The standoff** - The shoal is located inside the Exclusive Economic Zone of the Philippines.

An exclusive economic zone is an area of the ocean, generally extending 200 nautical miles beyond a nation's territorial sea, within which a coastal nation has jurisdiction over both living and nonliving resources.

- It was seized by China in 2012 as Huangyan Island and forced Filipino fishermen to travel farther for smaller catches.



Recent developments

- According to 2016 arbitration decision set up under the 1982 U.N. Convention on the Law of the Sea Philippines have exclusive rights to fish and other resources.
- China refused to participate in the arbitration sought by the Philippines in 2013, a year after a tense standoff between Chinese and Philippine ships at Scarborough.
- China refused to recognize the 2016 arbitration ruling and continues to defy it.
- Recently, the Chinese barrier denied Filipinos access to the rich fishing lagoon surrounded by underwater coral outcrops.
- The Philippines said it was weighing legal options over what it called China's destruction of coral in its EEZ, which could be another arbitration case.

References

1. [The Hindu | Philippines have vowed to remove a floating barrier](#)
2. [Aljazeera | Floating barrier installed by China](#)
3. [Reuters | Philippines removes Chinese barrier](#)

Green Hydrogen Bus

Union Minister flags-off 1st green hydrogen fuel cell bus from New Delhi recently.

- **Unveiled by** - IndianOil.
- **Fuel** - The fuel cell utilizes Hydrogen and air to generate electricity to power the bus and the only by-product from the bus is water.

Green hydrogen is produced using renewable energy sources, and is regarded as

a low-carbon fuel and an alternative to imported energy.

- **Advantages** - It is the most environmentally friendly mode of transportation as compared to conventional buses that run on diesel and petrol.
- The energy density is 3 times higher and the absence of harmful emissions, hydrogen shines as a cleaner, more efficient choice to meet the energy requirements.

Green Hydrogen Mission

- **Aim** - To make India a global hub for production, usage and export of Green Hydrogen and its derivatives.
- The expected outcomes by 2030, are as follows:
 1. India's Green Hydrogen production capacity is likely to reach 5 MMT per annum, contributing to reduction in dependence on import of fossil fuels.
 2. Achievement of Mission targets is expected to reduce a cumulative Rs. 1 lakh crore worth of fossil fuel imports by 2030.
- Nearly 50 MMT per annum of CO₂ emissions are expected to be averted through production and use of the targeted quantum of Green Hydrogen.

References

1. [The Hindu | India's first green hydrogen-run bus](#)
2. [The Hindustan Times | India's 1st green hydrogen fuel cell public bus](#)
3. [PIB | 1st Green Hydrogen Fuel Cell Bus](#)

Bharat Drone Shakti 2023 & C-295 aircraft

First ever drone exhibition cum display 'Bharat Drone Shakti 2023', was inaugurated by Raksha Mantri at Hindan Air Force Station.

- Bharat Drone Shakti 2023 hosted live aerial demonstrations of a variety of drone operations and applications by various drone companies.
- It features over 75 drone start-up companies from across the country.
- **Organized by** - Indian Air Force (IAF) and Drone Federation of India (DFI).
- **Kisan drones** - They can be transported using motorbikes across rural terrain to introduce modern agricultural practices.
- The drones with the capability to carry 50kg-100 kg payload & *Kamikaze drone* also witnessed.

Kamikaze drones

- It is also known as loitering munitions or suicide drones are similar to precision missiles and Unmanned Aerial Systems (UASs), but with some distinct differences.
- Unlike missiles, a kamikaze drone is capable of occupying an airspace known as loitering for a relatively long period before engaging a target.

C-295 MW transport aircraft

- **About** - It is a robust, reliable and highly versatile tactical transport.
- **Powered by** - Two Pratt & Whitney Canada PW127G turboprop engines.

- **Payload capacity** - It is capable of carrying up to 9 tonnes of payload or as many as 71 troops with a maximum cruise speed of 260 knots.
- It has the capability of being equipped for the air-to-air refueling of fixed-wing aircraft and helicopters.
- It has remarkable *short take-off & landing (STOL) performance* from unpaved, soft, and sandy/grass airstrips.
- **Uses** - Carrying troops and cargo, maritime patrol, airborne warning, surveillance, reconnaissance to signals intelligence, armed close air support, medical evacuation, VIP transport and airborne firefighting.

National Drone Policy

- With this policy flying drones or remotely-piloted aircraft have become legal in India.
- Ministry of Civil Aviation has kick-started the online registration of drones in line with this policy in India through its Digital Sky portal.
- **Categories** - The Directorate General of Civil Aviation (DGCA) has designed five different categories of drones as Nano, Micro, Small, Medium, and Large.
- Under the new policy, Nano drones which weigh less than 250 grams or equal does not need a registration or license.
- However, drones that belong to remaining categories will need to be registered on the Digital Sky portal.
- **Digital Sky portal** - It is an online platform as part of an enforcement system designated as No Permission No Takeoff (NPNT).

References

1. [PIB | Bharat Drone Shakti 2023](#)
2. [The Hindustan Times | Bharat Drone Shakti show at Hindan airbase](#)

CO2 on Jupiter's moon Europa

Scientists have revealed that carbon dioxide is being detected on Jupiter's moon Europa using the James Webb Space Telescope.

Jupiter's moon Europa

- Jupiter is the largest planet in the solar system.
- **Moons of Jupiter** - Jupiter has around 80 to 95 moons.
- Io, Europa, Ganymede and Callisto are 4 of Jupiter's moon which are relatively large, spherical complex worlds.
- **Europa** - Europa is about 90% the size of Earth's Moon.
- Europa's surface is made of water ice and so it reflects 5.5 times the sunlight than our Moon does.
- Europa orbits Jupiter at about 417,000 miles from the planet, which itself orbits the Sun at a distance of roughly 500 million miles or 5.2 astronomical units (AU).

One AU is the distance from Earth to the Sun.

- Because of the distance, sunlight is about 25 times fainter at Jupiter and Europa than at Earth.

Europa Clipper

- It is a mission by NASA to investigate Jupiter's moon.
- NASA is also planning to launch a robotic spacecraft named Europa Clipper to the Jovian moons in October 2024.
- Europa Clipper would arrive at Jupiter in 2030.
- It aims to study its Europa moon and will make dozens of close flybys of Europa.

Only 2 other spacecraft have ever examined Jupiter - Voyager 1 and Voyager 2.

Recent findings

- There is a huge ocean of saltwater, kilometres below Europa's ice-covered surface, making the moon a prime candidate for hosting extra-terrestrial life in our solar system.
- The most CO₂ was in a 1,800 kilometre-wide area called ***Tara Region***.

References

1. [WIO News | source of CO₂ on Jupiter's moon Europa](#)
2. [Science Alert | Source of Carbon on Jupiter's Moon Europa](#)

World Coffee Conference (WCC 2023)

The fifth edition of the World Coffee Conference to be held in Bengaluru.

WCC

- WCC is a property of the London-based International Coffee Organization (ICO), a body set up in 1963 under the auspices of the United Nations to boost the economic importance of coffee globally.
- The earlier editions of WCC were held in London (2001), Brazil (2005), Guatemala (2010), and Ethiopia (2016).

5th WCC

- It is the first time India is hosting the conference.
- **Aim** - To significantly increase India's access and acceptance in the global coffee markets.
- **Organized by** - The Coffee Board, the Ministry of Commerce and Industry and International Coffee Organization.
- **Theme of the Conference** - Sustainability through circular economy and regenerative agriculture.
- **Brand ambassador** - Coffee Board inducted tennis player, Arjuna awardee, and coffee planter Rohan Bopanna.

- The event will feature engaging sessions, coffee tastings, competitions, panel discussions, and an exhibition showcasing cutting-edge coffee products and services.
- **Significance of Bengaluru** - It is the coffee capital of India State, solely accounting for over 70% of the country's total coffee production.

India, the 7th largest producer of coffee, is the 5th largest exporter with its main destinations being European countries such as Italy and Germany and also Russia.

The Coffee Board of India

- It is an organisation managed by the Ministry of Commerce and Industry, Government of India to promote coffee production in India.
- **Headquarters** - Bengaluru.

International Coffee Organization (IOC)

- ICO is the main intergovernmental organization for coffee, bringing together exporting and importing Governments to tackle the challenges in the coffee sector.
- **Aim** - To strengthen the global coffee sector and promote its sustainable expansion in a market-based environment for the betterment of all participants in the coffee sector.
- **Members** - Its Member Governments represent 98% of world coffee production and 67% of world consumption and India is one among them.

References

1. [The Hindu | World Coffee Conference](#)
2. [WCC India | World Coffee Conference & Expo 2023](#)
3. [The Hindu Business line | World Coffee Conference 2023](#)



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