

MAY

25

CRUX 10

10 News. 10 Sources. One Place



 **The Indian EXPRESS** live **mint** **पॉइंट**

DownToEarth
FORTNIGHTLY ON POLITICS OF DEVELOPMENT,
ENVIRONMENT AND HEALTH

**Science
Reporter**



विज्ञान एवं
प्रौद्योगिकी मंत्रालय
MINISTRY OF
SCIENCE AND
TECHNOLOGY



MK Yadav Sir

Table of Contents

- 1 Global Minimum Tax
- 2 AI Agent & LLM
- 3 World Health Statistics Report
- 4 FCA Act 2023
- 5 International Court of Justice
- 6 BRSR Initiative
- 7 Mount Ibu
- 8 Project Udbhav
- 9 Gliese 12 b
- 10 Cyclone Remal

Global minimum tax deal on multinationals may fail

US, India, China have reservations over the terms of the deal: Italy economy minister

REUTERS
Stresa, 24 May

An accord over a global minimum tax on multinationals will not be finalised by June as previously planned. Italy's Economy Minister Giancarlo Giorgetti said ahead of a G7 finance summit starting on Friday.

Giorgetti, who chairs the gathering as Italy hosts the G7 presidency this year, said that the United States, India and China all have reservations over the terms of the deal.

The tax is aimed mainly at US-based digital giants, with a so-called "first pillar" aimed at real-locating taxing rights on about \$300 billion of corporate profits to the countries where the companies do business.

Speaking to reporters in Stresa, northern Italy, Giorgetti said on Thursday the deal would not be ratified by all countries that were due to participate in a multilateral signing convention next month. "That work will not be completed, this is not a good thing," the minister said.

Italy said last week it would

promote last-ditch talks to prevent the failure of plans.

The first pillar would have made it possible to overcome a dispute that has seen the United States threaten retaliatory tariffs against European countries, such as Italy, which have announced or adopted domestic digital taxes.

US trade authorities have threatened 25 per cent tariffs on more than \$2 billion worth of imports from Italy, Austria, Britain, France, Spain and Turkey, from cosmetics to handbags. Italy wants to negotiate an agreement with Washington that would stop these tariffs, which are temporarily frozen until June, while also keeping its levy in place, an official told Reuters on Friday.

The government wants to draw other European countries into the negotiations with Washington, as Rome believes that a common approach at the EU level would be more effective, the official added.

Italy introduced a 3 per cent levy in 2019 on revenue from internet transactions for digital companies with sales of at least 750 million euros.



(From left) Bank of Italy Governor Fabio Panetta with French and Italian ministers for economy and finance, Bruno Le Maire and Giancarlo Giorgetti, respectively, at the G7 Finance summit in Stresa, Italy, on Friday

US pushes for Ukraine aid, united front against China's trade practices

The US sought to build support for squeezing more money for Ukraine out of frozen Russian assets and for uniting against China's aggressive trade practices as finance ministers from the Group of Seven rich democracies opened a two-day meeting on Friday on the shores

of northern Italy's scenic Lago Maggiore. US Treasury Secretary Janet Yellen is pushing at the meeting in Stresa for "more ambitious options" to unlock money from some USD 260 billion in Russian central bank reserves frozen in Europe and the US after the February 24, 2022, invasion. REUTERS

Context: Italy's Economy Minister announced that the previously planned June deadline for finalizing an agreement on a global minimum tax for multinationals will not be met, ahead of the G7 finance summit.

Global Minimum Tax

- **About:** A GMT imposes a universally standardized minimum tax rate on a specified corporate income base across the world.
- **GMCT (Global Minimum Corporate Tax Rate):** The GMCT, or GMCTR, represents an international agreement among national leaders.
- **Aim:** To mitigate tax competition and prevent the evasion of corporate taxes by establishing a universal minimum corporate tax rate across the globe.
- **Tax Competition:** The global minimum tax seeks to alleviate tax competition by instituting a consistent global baseline.
- This ensures that the impact of low tax rates or fiscal policies aimed at reducing tax burdens is significantly reduced.
- **OECD's Landmark Reform:** The OECD has played a pivotal role by publishing detailed rules for the implementation of a groundbreaking reform in the international tax system.
 - This reform mandates that Multinational Enterprises (MNEs) will be subject to a minimum 15% tax rate starting in 2023.

Two Pillars of the Plan

- **Pillar 1:** A quarter (25%) of the profits exceeding a defined profit margin for the largest and most profitable MNEs will be redistributed to the market jurisdictions where the MNE's users and customers are situated.
- **Pillar 2:**
 - **Minimum 15% Corporate Tax Rate:** The provision mandates a minimum 15% tax on corporate profits, establishing a baseline to curb tax competition.
 - **Scope of Application:** This requirement is applicable to multinational groups with annual global revenues exceeding 750 million euros.

Organisation for Economic Co-operation and Development (OECD)

- **About:** OECD is an association of 38 member countries, most being rich developed nations that attract migrant workers and students.
 - India is not a member of OECD.
- **Founded:** 1961, by 18 European nations, plus the United States and Canada.
- **Headquarters:** Paris, France.
- **Aim:** Fostering economic development and cooperation and fighting poverty through the promotion of economic stability.

WHAT ARE AI AGENTS AND HOW ARE THEY DIFFERENT FROM LLMs?

BIJIN JOSE
NEW DELHI, MAY 24

THE newly-launched GPT-4o by OpenAI and Google's Project Astra have one thing in common: both can process the real world through audio and visual inputs, and provide intelligent responses. Simply put, they can have instant real-time conversations with a user.

Known as 'AI agents', GPT-4o and Project Astra have been billed as far superior to conventional voice assistants such as Alexa, Siri, and Google Assistant.

What are AI agents?

AI agents are sophisticated AI systems that can engage in real-time, multi-modal (text, image, or voice) interactions with humans. Unlike conventional language models, which solely work on text-based inputs and outputs, AI agents can process and respond to a wide variety of inputs including voice, images, and even input from their surroundings.

"You're not typing into a text box, waiting for a response, and then reading the output. You're actually interacting with the AI through voice just as you would with a human," Google CEO Sundar Pichai said during the launch of Project Astra.

AI agents perceive their environment via sensors, then process the information using algorithms or AI models, and subsequently take actions. Currently, they are being used in fields such as gaming, robotics, virtual assistants, autonomous vehicles, etc.

How are they different from LLMs?

While large language models (LLMs) like GPT-3 and GPT-4 can only generate human-like text, AI agents make interactions more natural and immersive with the help of voice, vision, and environmental sensors. Unlike LLMs, AI agents are designed for instantaneous, real-time conversations with responses that are similar to humans.

AI agents can also understand and learn from the context of interactions, allowing them to provide more relevant



Human-like chats are possible with an AI agent. *Representational image*

and personalised responses. They can perform complex tasks autonomously such as coding, data analysis, etc. When integrated with robotic systems, AI agents can even perform physical actions.

What are their potential uses?

AI agents can serve as intelligent and capable assistants. They can handle an array of tasks, from offering personalised recommendations to scheduling appointments. Reports suggest that AI agents can be ideal for customer service as they can offer seamless natural interactions, and resolve queries instantly without actually the need for human interventions.

In the field of education and training, AI agents can act as personal tutors, customise themselves based on a student's learning styles, and may even offer a tailored set of instructions. In healthcare, they can assist medical professionals by providing real-time analysis, diagnostic support, and even monitoring patients.

What are the risks and challenges?

Privacy and security are a key area of concern as AI agents gain access to more personal data and environmental information. Just like any AI model, AI agents can carry forward biases from their training data or algorithms, leading to harmful outcomes. As these systems become more common, appropriate regulations and governance frameworks need to be laid out to ensure their responsible deployment.

AI AGENT & LLM (Syllabus GS Paper 3 – Sci and Tech)

Context: The recently launched GPT-4o by OpenAI and Project Astra by Google have one thing in common: both are capable of processing the real world through audio and visual inputs and provide intelligent responses and assistance.

AI Agent

- **About:** These are sophisticated AI systems that can engage in real-time, multi-modal (text, image, or voice) interactions with humans.
- **Multi-Modal Interaction:** Unlike conventional language models, which solely work on text-based inputs and outputs, AI agents can process and respond to a wide variety of inputs including voice, images, and even input from their surroundings.
- **Environmental Perception:** AI agents perceive their environment via sensors, then process the information using algorithms or AI models, and subsequently, take actions.
- **Applications:** Currently, they are used in fields such as gaming, robotics, virtual assistants, autonomous vehicles, etc.

Difference Between AI Agent and Large Language Model

Interaction Capabilities

- **LLMs:** Only generate human-like text.
- **AI Agents:** Make interactions more natural and immersive with voice, vision, and environmental sensors.

Real-time Conversations

- **LLMs:** Not designed for instantaneous, real-time conversations.
- **AI Agents:** Provide real-time, human-like responses.

Contextual Awareness

- **LLMs:** Lack contextual awareness.
- **AI Agents:** Understand and learn from the context of interactions for more relevant and personalized responses.

Autonomy

- **LLMs:** Do not have autonomy; only generate text output.
- **AI Agents:** Can perform complex tasks autonomously, such as coding and data analysis.

COVID-19 pandemic erased decade of gains in life expectancy, NCDs deaths on the rise: World Health Statistics Report

Context: The annual World Health Statistics Report recently revealed that by 2019, non-communicable diseases (NCDs) accounted for 73.9% of global deaths, while communicable diseases fell to 18.2%.

Noncommunicable Diseases (NCDs)

- **About:** also known as chronic diseases, tend to be of long duration and are the result of a combination of genetic, physiological, environmental and behavioural factors.
- **Main types of NCD:** cardiovascular diseases (such as heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes.
- **Affected people:** These conditions are often associated with older age groups, but evidence shows that 17 million NCD deaths occur before the age of 70 years.
- **Primarily four major risk factors:** Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets which contributes to:
 - Raised blood pressure (hypertension),
 - Raised blood sugar (diabetes),
 - Raised and abnormal blood lipids (dyslipidemia).
 - Air pollution is also a leading risk factor for NCDs.
- **Transmission:** Non-communicable diseases are not passed from person to person.
 - They can be passed down genetically, but they are not contagious.
- **Treatment:** NCDs are largely preventable and treatable.
 - There are **no treatment options** that lead to curing a non-communicable disease from the body.

World Health Statistics Report

- **About:** It is a yearly publication of the WHO, presents the most recent health statistics of its 194 Member States.
- **9 Areas:** Life expectancy and mortality, Cause-specific mortality and morbidity, Selected, infectious diseases, Health service coverage, Risk factors, Health systems, Health expenditures, Health inequities and Demographic and socioeconomic statistics.

Key Finding of Report

- **COVID-19:** The estimates showed that 13 million people died of COVID-19 between 2020 and 2021.
- **Communicable Diseases:** With the emergence of COVID-19, communicable diseases surged, accounting for 23.0% of all deaths in 2020 and 28.1% in 2021, returning to 2005 levels.
- **NCD Deaths:** As a result, the share of NCD deaths declined to 70.0% in 2020 and 65.3% in 2021, according to the WHO.
- **Global Life Expectancy:** It increased by 7.8 years from 1990 to 2019, according to a Lancet study.
- **Antimicrobial Resistance:** AMR to third-generation cephalosporins in *E. coli* and methicillin resistance in *Staphylococcus aureus* increased to 41% and 32% respectively in 2021, compared to 26.9% and 13.4% in 2016.

Assam official served notice over diversion of forest land

Jayashree Nandi

letters@hindustantimes.com

NEW DELHI: The Union environment ministry has issued a show cause notice to a top Assam official for allegedly diverting forest land without proper clearance to build a police commando battalion camp, according to documents seen by HT.

The ministry's regional office in Shillong sent the notice to MK Yadava, special additional chief secretary of Assam, on May 14 under the Forest Conservation Amendment Act 2023. It alleges Yadava illegally diverted around 44 hectares inside the Inner Line Reserve Forest in Hailakandi district.

Yadava, deemed "guilty of the said offence," has 60 days to respond and explain why a complaint should not be filed in court. Failure to respond will result in legal proceedings, the notice warned.

The law, the Van (samrakshan evam samvardhan), which loosely translates to Forest (conservation) Act lays down in Section 2 the illegality in diverting forest land for non-forest purpose.

Section 3A of the Forest Con-

MK YADAVA HAS 60 DAYS TO RESPOND AND EXPLAIN WHY A COMPLAINT SHOULD NOT BE FILED IN COURT, THE NOTICE SAID

servation Act states that violating or abetting the violation of Section 2 is punishable by up to 15 days of simple imprisonment. Section 3B(1) says that if a government department or authority commits an offense, the head of the department or those directly in charge and responsible for the authority's conduct at the time of the offense shall be deemed guilty and liable for prosecution. Rule 15(3) of the Van (Samrakshan Evam Samvardhan) Rules 2023, which allows the central government to authorise an Assistant Inspector General or higher-ranking officer to initiate legal proceedings and file complaints against offenses committed under the Act.

The National Green Tribunal launched an investigation based on news reports about the unauthorised forest land use.

Documents show Yadava approved the commando battalion camp in September 2023, claiming it qualified as a forest conservation activity under the Forest Conservation Act.

The letter states that the National Green Tribunal registered a suo moto application on the basis of a news report on diversion of forests for the commando battalion.

"As per the ministry's and this office's request seeking details from the state government for the alleged violation for setting of second commando battalion camp at Damchera within the Inner Line Reserve Forest the same has accordingly been submitted and on scrutiny of the said documents, it is observed that vide your letter No FG 40/14/Mizoram Border/Pt II dated September 28, 2023, you had given approval for the second commando battalion within the ILRF by referring to section 2 (b) of the forest (conservation) act 1980 that it qualifies as an activity relating to conservation of forests."

However, a March 2024 site visit by the ministry found large-scale, permanent construction covering 11.5 hectares (28 acres), which did not align

with permissible conservation activities.

Yadava declined to comment on the notice, saying he would respond directly to authorities. Ministry officials in Shillong confirmed providing information under RTI but were not authorised to discuss the notice's contents.

HT reported on April 10 that a forest official in Assam allowed construction of a commando battalion unit in a protected forest to purportedly stop encroachments by Mizo people from the neighbouring state of Mizoram.

The move created a furor among local conservationists, compelling the Union ministry to take note and direct the state government, in March, to halt construction immediately.

"It's unfortunate that a person who was in service for 35 years in Assam Forest Department has no knowledge of The Van (Samrakshan Evam Samvardhan). When the government itself starts violating the law, what moral authority it has got to take action against others for similar violations?," said Rohit Choudhury, wildlife and RTI activist.

Context: Recently, the Union environment ministry's Shillong regional office sent a notice to the special additional chief secretary of Assam, alleging diversion of forest land without proper clearance under the Forest Conservation Amendment Act 2023 for constructing a police commando battalion camp.

Forest Conservation Amendment Act 2023

- **Exempted Categories of Land:** The Act exempts some types of land from the Act, including forest land along a railway line or a public road maintained by the government.
- **Assignment/Leasing of Foreign Land:** The Act extends the prior approval requirement for assigning forest land to all entities, including government-owned ones. The approval must be subject to terms and conditions prescribed by the central government.
- **Land Under the Purview of the Act:** It defines forest land as either land that is notified as a forest under the IFA, 1927 or any other law, or land that is notified as a forest on or after Oct 25, 1980, in a government record.
- **Permitted Activities in Forest Land:** The Act restricts de-reservation of forests or use of forest land for non-forest purposes, but the central government may approve such use with conditions.

Important Sections

- **Section 3A of the Forest Conservation Act:** It states that violating or abetting the violation of Section 2 is punishable by up to 15 days of simple imprisonment.
- **Section 3B(1):** It says that if a government department or authority commits an offense, the head of the department or those directly in charge and responsible for the authority's conduct at the time of the offense shall be deemed guilty and liable for prosecution.
- **Rule 15(3) of the Van (Samrakshan Evam Samvardhan) Rules 2023:** It allows the central government to authorise an Assistant Inspector General or higher-ranking officer to initiate legal proceedings and file complaints against offenses committed under the Act.
- **Section 2 (b) of the forest (conservation) act 1980:** It qualifies as an activity relating to conservation of forests."

ICJ orders Israel to halt Rafah offensive

STEPHANIE VAN DEN BERG
& ANTHONY DEUTSCH
The Hague, May 24



JUDGES AT THE top United Nations court ordered Israel on Friday to halt its military assault on the southern Gaza city of Rafah, in a landmark emergency ruling on South Africa's case accusing Israel of genocide.

Reading out the ruling by the International Court of Justice (ICJ) or World Court, the body's president Nawaf Salam said the situation in the Palestinian enclave had deteriorated since the court last ordered Israel to take steps to improve it. Conditions had been met for a new emergency order.

"The state of Israel shall (...) immediately halt its military offensive, and any other action in the Rafah governorate, which may inflict on the Palestinian group in Gaza conditions of life that could bring about its physical destruction in whole or in part," he said.

The court also ordered Israel to open the Rafah crossing between Egypt and Gaza to allow humanitarian aid, and said it must provide access to the besieged enclave for inves-

People protest in support of Palestinians in Gaza outside the ICJ, on the day of ruling on South Africa's request to order a halt to Israel's Rafah offensive in Gaza as part of a larger case brought before the Hague-based court by South Africa accusing Israel of genocide, in The Hague on Friday. REUTERS

tigators and report back on its progress within one month.

The order was adopted by the panel of 15 judges from around the world in a 13-2 vote, opposed only by judges from Uganda and from Israel itself. It was handed down a week after it was requested by South Africa as part of a case accusing Israel of genocide.

The ICJ is the highest UN body for hearing disputes between states. Its rulings are final and binding but have

been ignored in the past. The court has no enforcement powers. Outside, a small group of pro-Palestinian demonstrators waved flags and played a rap on a boom box calling for a free Palestine.

Israel has repeatedly dismissed the case's accusations of genocide as baseless, arguing in court that its operations in Gaza are self-defence and targeted at Hamas militants who attacked Israel on October 7. —REUTERS

International Court of Justice

- **About:** Also called the World Court, is the only international court that adjudicates general disputes between nations, and gives advisory opinions on international legal issues.
- **United Nation:** Principal judicial organ of the United Nations.
- **Established:** In 1945 by United Nations charter and began work in 1946.
- **Location:** The Hague, The Netherlands.
- **Official language:** Its official working languages are English and French.
- **Enforcement:** While decisions are legally binding, the lack of an enforcement mechanism results in defiance. UNSC is authorized to enforce decisions, but compliance is influenced by power politics, and the U.S.'s veto power may impact enforcement.
- **Judges:**
 - Consists of panel of 15 judges, elected for nine years by UN General Assembly and Security Council.
 - No single member state may have more than one representative on the court.
 - Judges collectively must reflect the principal civilizations and legal systems of the world.
- **Function:**
 - To settle in accordance with international law the legal disputes submitted by States.
 - To give advisory opinions on legal questions referred by duly authorised international organs/agencies.

Context: In a landmark emergency ruling, the International Court of Justice recently ordered Israel to immediately halt its military assault on Rafah, following South Africa's accusation of genocide.

SEBI's green reporting mechanism vital but needs to be more consistent, rigorous: CSE suggests steps to enhance system

Context: Delhi-based think tank Centre for Science and Environment (CSE) welcomed the Business Responsibility and Sustainability Reporting (BRSR) initiative to increase corporate transparency but identified significant gaps in the current reporting practices.

Business Responsibility and Sustainability Reporting (BRSR) Initiative

- **About:** BRSR mandates the top 1000 listed companies to disclose their performance on Environmental, social, and corporate governance (ESG) parameters, showcasing their dedication to responsible business practices.
- **Developed by:** Securities and Exchange Board in India (SEBI)
- **Objective:** To mandate Indian companies to provide quantifiable metrics on sustainability-related factors, such as respect for human rights or environmental protection.
- **Evolution to BRSR:** The new BRSR, in effect since 2023, is more closely aligned with globally accepted reporting frameworks like the GRI and TCFD.
- **Core Categories:**
 - **Environmental Protection:** Key performance indicators cover electricity consumption, water usage, and air emissions.
 - **Human Rights:** Focus on human rights violations and minimum and fair wages.
 - **Integrity:** Performance indicators include anti-corruption, anti-bribery, and conflicts of interest policies.
 - **Employee Well-being:** Metrics focused on parental benefits, employee accessibility, and the percentage of unionized workers.
 - **Inclusive Growth:** Policies favoring vulnerable and marginalized groups.
 - **Sustainable Goods and Services:** Information on investments in social and environmental impacts.
 - **Responsible Consumer Engagement:** KPIs encompass handling consumer complaints and feedback, product recall procedures, and cybersecurity and data privacy policies.
 - **Stakeholder Responsiveness:** Describing engagement with vulnerable and marginalized groups.
 - **Responsible Public Policy Engagement:** Listing trade and industry affiliations and detailing issues relating to anticompetitive conduct.

Ash soars 4 km into sky as Indonesian volcano erupts with dramatic purple lightning



MOUNT IBU (Syllabus: GS Paper 1 – Geography)

Context: Recently, Mount Ibu erupted again, sending ash 4 km high, as streaks of purple lightning flashed around its crater.

Mount Ibu

- **Location:** Mount Ibu is situated on **Halmahera Island in North Maluku province, eastern Indonesia.**
- **Eruption History:** It is one of Indonesia's most active volcanoes, with frequent eruptions recorded over the years.
- **Recent volcanic eruption in Indonesia:**
 - Recently **Sulawesi's Ruang volcano has erupted.**
 - **Marapi volcano**, one of Sumatra's most active volcanoes has also erupted recently.
- **Mountain Semeru:** Active volcano in East Java, Indonesia.
 - It is located in a subduction zone, where the Indo-Australian plate subducts under the Eurasian plate.
- **Reason:** Indonesia, a vast archipelago nation, experiences frequent seismic and volcanic activity **due to its position on the Pacific "Ring of Fire".**

Indonesia

- **About:** Indonesia is a country located off the coast of mainland Southeast Asia in the Indian and Pacific oceans.
 - It is an archipelago that lies across the Equator and spans a distance equivalent to one-eighth of Earth's circumference.
- **Archipelagic Nature and Size:** Indonesia is the world's largest island country with more than 17,000 islands. Its vast expanse covers a significant portion of the Earth's surface.
- **Land boundaries:** Papua New Guinea, East Timor and Malaysia
- **Maritime boundaries with:** Singapore, Philippines, Vietnam, Palau and Australia.

Project Udbhav: Indian Army to learn war tactics from vedas, puranas, and Mahabharata

Context: The Indian Army, under its initiative Project Udbhav, is delving into the epic battles of the Mahabharata and the strategic brilliance of past Indian dynasties, shaping India's rich military heritage.

Project Udbhav

- **About:** It is a project to rediscover the profound Indic heritage of statecraft and strategic thought, drawing insights from ancient Indian texts on statecraft, warfare, diplomacy, and grand strategy.
- **Initiative by:** The Indian Army and The United Service Institution of India.
- **Meaning:** 'Udbhav', which translates to 'origin' or 'genesis', acknowledges the vintage scriptures and writings of our Nation, that span centuries in the past and contain profound knowledge that can benefit modern military strategies.
- **Inspiration from:** The project draws inspiration from revered texts like Chanakya's Arthashastra, which emphasizes the importance of strategic partnerships and diplomacy, aligning with contemporary practices.
 - Similarly, Thirukkural, the classical Tamil text, champions ethical conduct in all endeavors, including warfare, aligning with modern codes of ethics and principles of the Geneva Convention.
- **Objective:**
 - Synthesize ancient wisdom with contemporary military practices to address modern security challenges through a holistic approach.
 - To integrate age-old wisdom with modern military pedagogy.
 - Utilizes interdisciplinary research, workshops, and leadership seminars to effectively blend ancient wisdom with modern military practices.
 - Focuses on previously under-explored thoughts and theories related to strategic thinking, statecraft, and warfare, enriching military training curricula.
 - To sustain knowledge creation of Indian heritage in grand strategy, strategic thinking, and discussions on statecraft, fostering deeper understanding.

Earth-Sized World With Potential For Life Discovered Just 40 Light-Years Away



Context: Astronomers have discovered a potentially habitable exoplanet, Gliese 12 b, located 40 light-years away in the constellation Pisces.

Gliese 12 b

- **About:** Gliese 12 b offers a prime opportunity to investigate whether Earth-sized planets orbiting cool stars can maintain their atmospheres, a pivotal inquiry in our quest to understand habitability beyond our solar system.
- **Size and Temperature:** Slightly smaller than Earth and akin in size to Venus, Gliese 12 b maintains an estimated surface temperature of 42°C (107°F), warmer than Earth's average yet cooler than many other exoplanets.
- **Host Star Characteristics:** Orbiting a host star just 27% the size of our Sun, with a surface temperature around 60% of our star's, Gliese 12 b resides in a unique stellar environment.
- **Proximity to Host Star:** Despite its size, Gliese 12 b orbits its star at only 7% of the Earth-Sun distance, receiving 1.6 times more energy than Earth and approximately 85% of what Venus experiences.
- **Impact of Solar Radiation on Temperature:** The close proximity to its star means Gliese 12 b's surface temperature is significantly influenced by its atmosphere, leading to a higher estimated surface temperature compared to Earth's.

Severe cyclone to impact Bengal, make landfall Sunday night: Met

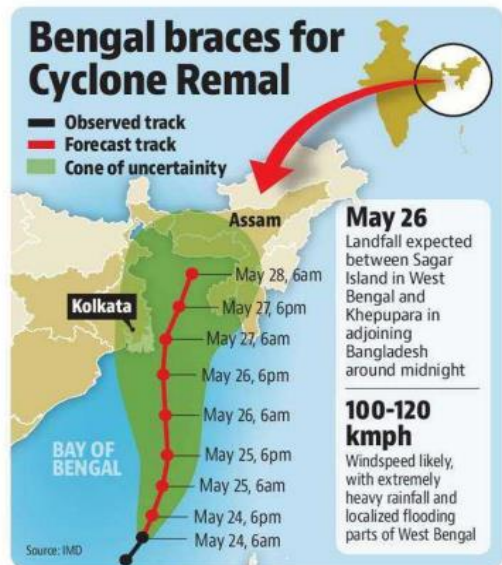
Jayashree Nandi

letters@hindustantimes.com

NEW DELHI: Severe cyclone Remal is expected to make landfall between Sagar Island in West Bengal and Khepupara in Bangladesh around the midnight of May 26 with winds reaching 100-120kmph, the India Meteorological Department (IMD) said on Friday, warning of extremely heavy rainfall and localised flooding in some parts of the eastern state.

On Friday, the system lay centred over central Bay of Bengal as a depression, having strengthened from a well-marked low-pressure area in the last 12 hours, when it moved northeastwards. The depression lay "about 700km south-southwest of Khepupara (Bangladesh), about 660km south-southeast of Sagar Islands (West Bengal) and 710km south of Canning (West Bengal)" at 11.30am, IMD said.

continued on →17



Context: The India Meteorological Department (IMD) has issued an alert for a severe cyclonic storm, Cyclone Remal, expected to affect the coastal areas of West Bengal and Bangladesh.

Cyclone Remal

- **Naming:** The name 'Remal' in the list of tropical cyclones is given by Oman.
 - It will be the first cyclone to hit the region this 2024 pre-monsoon season.
- **Meaning:** 'Remal,' meaning 'sand' in Arabic.
- **Origin:** Bay of Bengal (BoB).
- **Factors Contributing to the Formation:** A depression has formed over the central Bay of Bengal, serving as the genesis for Cyclone Remal.
 - The Bay of Bengal experiences water temperatures 2–3°C warmer than average, providing the energy needed for cyclones to form and intensify.
 - The Madden Julian Oscillation, along with warm ocean waters, is currently moving south of the Bay of Bengal, playing a role in initiating cyclones due to their rotational effect.
- **Potential Impact:**
 - The cyclone may impact the Sundarbans region if the landfall happens on the Indian coast and coincides with high tide, potentially causing partial damage to the fragile ecosystem.
 - The shallow bathymetry and the funnel-shaped geography of the northern Bay of Bengal can amplify the intensity of the cyclone as it approaches the coast, increasing the risk of storm surges and flooding.

Bay of Bengal

- **About:** It is the biggest bay in the world, covering more than 2,172,000 square kilometres.
- **Geographical Location:** This part of the Indian Ocean is in the northeast. India, Bangladesh, Myanmar, and Sri Lanka are all on its edges.
- **Biodiversity Hotspot:** It is home to the very rare Olive Ridley turtle and the Sundarbans, which is the world's biggest mangrove forest.

FREE



Download PDF



Login to theiashub.com



**Aaj Ka
Quality Enrichment**
(Toppers' Favourite PDF)



News-CRUX-10
(10 News. 10 Sources. One Place)



Monthly Editorials
(The Hindu & Indian Express)



Daily Quiz (Prelims)



**Government Schemes &
Ministry Wise Year End
Review**



Free Enrichment PDFs
(Tailor Made Crisp Study Material)

FREE

**India's Best Answer Writing Sessions
with**



Ritika Jindal



Simi Karan



Gaurav Budania



Mridul Shivhare

IAS OFFICERS

Log On To Our Unique
Free Answer Writing Sessions with Toppers (FAST) Portal
& Start Practicing!



**SCAN
HERE**



9560082909



t.me/theiashub



www.theiashub.com



/mkyadav



www.theiashub.com