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सत्यमेव जयते



MK Yadav Sir

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ECONOMIC TIMES

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SUNFLOWER OIL TRADE

(Syllabus: GS Paper 3 - Economy)

Sunflower Oil Prices Fall as Ukraine Ships Stock to India

Wheat prices may also cool off as Kyiv starts offloading stock in the global market

Sutanuka.Ghosal
@timesgroup.com

Kolkata: Fast-moving consumer goods (FMCG) companies such as Adani Wilmar, Gemini Edibles & Fats India and Tirupati Agritrade said prices of sunflower oil have fallen more than 10% below soybean oil prices as Ukraine is pushing a lot of sunflower oils into the Indian market.

Ukraine is also offloading a lot of wheat in the global market, they said, adding this may impact wheat prices in India, which have shot up 10-11% in the past two months.

While wheat prices may cool off, they said, rice prices have increased 15% in the past fortnight as the rabi rice crop in Bihar, Uttar Pradesh, Madhya Pradesh and Odisha has not been satisfactory.

"Prices of sunflower oil are now hovering around ₹110-120 for one litre pouch at the retail end, while soybean oil is at ₹130 per litre," said Angshu Mallick, managing director, Adani Wilmar. "Ukraine is pushing a lot of sunflower oil into India to offload its stock. We are expecting healthy demand for sunflower oil as prices are on the lower side."

India annually imports 2-2.5 million tonnes of sunflower oil to meet its domestic demand.

Pradeep Chowdhry, managing director of Gemini Edibles & Fats India, said prices of all oils are on the lower side and, therefore, the demand remains strong. "International supply of all oils is in a comfortable position," he said.

Mallick said wheat prices have gone up 10% in the past two months. "But if Ukraine starts offloading wheat in the world market, then prices globally will come down. This will have an impact on domestic wheat prices as well," he said.

Wheat is trading at ₹2,500 per quintal in Delhi. Despite a larger wheat crop as compared to the previous year, wheat arrivals were low during the peak harvest season which fuelled the prices. According to the agriculture ministry's third advance estimate, wheat production is estimated at a record 112.7 million tonnes, 4.6% higher year-on-year.

Suraj Agarwal, CEO, Tirupati Agritrade, which sells rice under the brand name RiceVilla, said the production of the common variety of non-basmati thick rice has been less during this year's rabi season. "Prices of this variety have gone up 20% in the last fortnight. This has also put an upward pressure on other varieties of rice, the prices of which have gone up 15%," he said.

Imports Surge

Sunflower oil prices fall below soybean oil

India imports **2-2.5 million tonnes** of sunflower oil annually

Healthy demand expected for affordable sunflower oil

Ukraine's wheat offloading may impact prices in India

Rice prices rise due to unsatisfactory crop production



Prices of all oils are on the lower side and, therefore, the demand remains strong. International supply of all oils is in a comfortable position

PRADEEP CHOWDHRY, MD, Gemini Edibles & Fats India

India annually imports 2-2.5 million tonnes of sunflower oil to meet domestic demand

Context: Prices of sunflower oil have fallen more than 10% below soybean oil prices as Ukraine is pushing a lot of sunflower oils into the Indian market.

- **India annually imports 2-2. 5 million tonnes** of sunflower oil to meet its domestic demand.
- **Domestic production of sunflower** oil has significantly declined over the past decade, unlike soybean oil, which has expanded its cultivated area.

Production of Sunflower Oil

- **India's Status**: Sunflower oil is the **fourth most consumed edible oil in India**, following mustard, soybean, and palm oil.
  - **Major producing states**: **Karnataka (highest producer** in India); Telangana and Maharashtra.
- **Global Status: Ukraine** is the highest producer in the world.
  - **Ukraine and Russia** account for 60% of the world's sunflower oil production.

Sunflower

- It is an annual flowering plant, **native to North and Central America** but is now cultivated worldwide for its versatile uses.
- It is relatively **easy to grow and are adaptable** to different climates and soil types.
- They require full **sun exposure and well-drained soil.**
- They are known for their **ability to extract heavy metals from the soil,** making them useful in phytoremediation efforts to clean up polluted areas.

LIVE MINT Page 13

LINE OF CREDIT

(Syllabus: GS Paper 3 - Economy)

India extends credit line to aid Egypt



Egyptian president Abdel Fattah El-Sisi with PM Narendra Modi (file pic) REUTERS

India is providing Egypt with a credit line of unspecified value, Egyptian supply minister Ali El-Moselhy said, in the latest support from an ally for the North African nation's troubled economy.

The minister, speaking to *Bloomberg News*, didn't give further details on the facility. The Middle East's most populous nation is racing to turn around an economy that was heavily exposed to the shock waves of Russia's invasion of Ukraine and is a major importer of wheat and other commodities. Egypt has agreed on a $3 billion deal with the International Monetary Fund, while its Gulf Arab allies have pledged billions of dollars in investment.

Such credit lines are typically used to import key commodities, including food. The facility could ease pressures on the economy, just as signs of progress in Egypt's plan to sell state assets and a tourism rebound lead Citigroup Inc. to predict authorities will hold off a devaluation of the currency until at least September. India and Egypt have built ever-closer ties in recent years, with Egyptian president Abdel Fattah El-Sisi a special guest at India's Republic Day parade in January. BLOOMBERG

Context: India is providing Egypt with a **credit line** worth an unspecified value.

Key Points

- Egypt is **trying to stabilize its economy** after the Russian invasion of Ukraine last year rocked its tourism industry, raised commodity prices and prompted foreign investors to pull about $20 billion out of its financial markets.
- The country's state grains buyer had deferred opening **letters of credit** to pay for wheat imports to alleviate financial pressures caused by a foreign currency shortage.

Line of credit

- It is a **flexible loan with a specific amount of money** that the business can access as needed and pay back either over time or immediately.
- Line of credits are **used to cover financial gaps** or for projects with unpredictable costs and are helpful for those avoiding traditional small business loans that often have more restrictions on usage.

Letter of credit

- It is a **document issued by the bank to the seller** at the request of the buyer, and it guarantees that the buyer will make the payment on time to the seller within the terms outlined in the letter.
- If the buyer does not make the payment, the bank or financial institution that issued the letter will pay the seller.
- When issuing a letter of credit, a **bank may take a percentage** of the size of the letter of credit as a fee.
- A letter of credit **ensures the buyer or buyers** will pay on time and in full.

INDIAN EXPRESS

Page 17

NECROPHILIA

(Syllabus: GS Paper 2 - Polity & Governance)

Man acquitted of 'rape' of dead woman: What IPC says on necrophilia

KHADIJA KHAN
NEW DELHI, JUNE 12

THE KARNATAKA High Court recently held that having sexual intercourse with a woman's dead body would not attract the offence of rape, punishable under Section 376 of the Indian Penal Code (IPC), as there is no provision in the IPC for it.

Partially allowing the convict's appeal in a rape and murder case, a bench of Justices B Veerappa and Venkatesh Naik recommended that the Centre should amend the IPC to protect the dignity of the dead.

What was the case?

On June 25, 2015, a 21-year-old woman was returning home from computer classes when she was attacked and killed by the convict Rangaraju, who then "raped" her body.

After the police filed a chargesheet, the sessions judge formed charges for offences of murder and rape under Sections 302 and 376 IPC.

The session's judge found that the prosecution had proved beyond reasonable doubt that the accused committed murder and subsequently "raped" the victim's body. The accused was sentenced to rigorous life imprisonment and asked to pay a fine of Rs 50,000 for murder.

For raping the victim's body, he was sentenced to another 10 years of rigorous imprisonment and a fine of Rs 25,000. Consequently, an appeal was filed before the Karnataka High Court.

What did the High Court hold?

"A careful reading of the provisions of Sections 375 and 377 of the Indian Penal Code makes it clear that the dead body cannot be called as human or person. Thereby, the provisions of Section 375 or 377 of the Indian Penal Code would not attract," the court said.

EXPLAINED LAW

Adding that no offence punishable under Section 376 (punishment for rape) had taken place, the court clarified that "sexual intercourse on a dead body is nothing but necrophilia".

Under Section 46 of the IPC, the court said that "death" denotes the "death of a human being". Therefore, the court opined that rape must be "accomplished with a person, not a dead body". "A dead body cannot consent to or protest a rape, nor can it be in fear of immediate and unlawful bodily injury," the court said while adding that it also doesn't have any feelings of outrage.

Additionally, the court relied on the 1989 SC ruling in *Pt Parmanand Katara, Advocate vs Union of India*, which said that the dignity of a dead body must be maintained and respected while establishing a duty on the state to ensure decent cremation.

Besides this, the court invoked the 2021 National Human Rights Commission's advisory on "Upholding the Dignity and Protecting the Rights of the Dead," which states that there cannot be any physical exploitation or discrimination in the treatment of the body and also mentions the right to a decent and timely burial.

What is necrophilia?

The Karnataka High Court in *Rangaraju @Vajapeyi vs State of Karnataka* observed that "necrophilia" is a morbid fascination with death and the dead and more particularly, an erotic attraction to corpses. A psychosexual disorder, necrophilia "could be the result of rage, experimentation, or lust rather than sexual necessity or habit," the court noted.

Is necrophilia an offence in India?

As of date, the IPC does not list "necrophilia" as a specific offence, but the court mentioned that it could be brought under Section 297 as causing "indignity to any human corpse".

However, Section 297 requires the act of causing indignity to be accompanied by an intention to wound the feelings or insult the religion of any person, and the court observed that in the present case, this was not met.

Speaking to *The Indian Express*, Delhi-based criminal lawyer Aditya Wadhwa said, "Undoubtedly, the act of necrophilia needs to be within the ambit of the criminal justice framework. There exists a strong argument for giving Section 377 a purposive interpretation. The stated intention of Section 377 is to punish carnal intercourse against the 'order of nature'. Necrophilia, in all its unnaturalness, certainly fits the description."

Longer version on
indianexpress.com/explained

Context: While hearing a petition filed by a man convicted of murder and rape, the Karnataka HC recently ruled that **having sexual intercourse with a woman's dead body** will not attract the offence of rape, punishable under Section 376 of the Indian Penal Code, as there is no provision in the IPC for it.

Key Points

- The Karnataka High Court observed that "**necrophilia**" is a morbid fascination with death and the dead and more particularly, an erotic attraction to corpses.
- A **psychosexual disorder, classified under the DSM-IV**, among a group of disorders, called "paraphilias," including paedophilia, exhibitionism, and sexual masochism, necrophilia "could be the result of rage, experimentation, or lust rather than sexual necessity or habit.
- The I**PC does not list "necrophilia" as a specific offence** under sexual offences mentioned in the code, but the court mentioned that it could be brought under **Section 297** as causing "indignity to any human corpse" if someone trespasses into a place for performing funeral rites or a depository for the remains of the dead.
- However, **Section 297 requires the act of causing indignity** to be accompanied by an intention to wound the feelings or insult the religion of any person.
- Moreover, the knowledge that **any person's feelings are likely to be wounded or their religion** is likely to be insulted by such an act will make it an offence under Section 297.
- While **India does not have any specific provision** punishing necrophilia, the **United Kingdom's Sexual Offences Act, 2003, includes necrophilia as an offence** under Section 70, which makes "sexual penetration of a corpse" an offence punishable with six months to two years imprisonment.
- Besides this, **Canada, New Zealand, and South Africa**, too, prohibit necrophilia under different laws.

PIB June 13

PM MATRU VANDANA YOJANA

(Syllabus: GS Paper 2 - Health)

PM lauds new initiative of celebrating 'Pradhan Mantri Matru Vandana Yojana' as 'God Bharai' ceremony in Dausa, Rajasthan

Context: The Prime Minister has lauded the new initiative of celebrating **'Pradhan Mantri Matru Vandana Yojana' as 'God Bharai'** ceremony in Dausa, Rajasthan.

- In **Dausa, Rajasthan** Member of Parliament celebrate Pradhan Mantri Matru Vandana Yojana scheme as 'God Bharai' ceremony where all the pregnant women come together and they give them 'Poshan Kit' for the health of their babies.
- About **3.5 lakh women have been benefited** from this scheme in 2022-23 in Rajasthan alone.

Pradhan Mantri Matru Vandana Yojana (PMMVY)

- **About**: Launched in 2017, it is a **Centrally Sponsored DBT scheme** with the cash incentive of ₹ 5000/- (in three instalments) being provided directly in the bank/post office account of Pregnant Women and Lactating Mothers.
- **Key benefits:**
  - **Monetary benefit of Rs. 5,000** to the expecting mothers from the time of initial stage of pregnancy till the time the child is born.
  - **Additional benefit of Rs. 1,000** is provided under the Janani Suraksha Yojana post the institutional delivery.
  - The benefit of Rs. 5,000 is **provided in three installments** at predefined stages according to the guidelines of the scheme.
  - Credit of the benefit under the scheme is **credited directly to the bank account** of the pregnant mother.
  - The first installment of **Rs. 1,000 is paid at the time of registration** of the pregnancy at the nearest Anganwadi Center or Approved Health Facility
  - The second installment of Rs. 2,000 is paid **at the time of completing 6 months of pregnancy** and receiving at least one antenatal check up
  - The third and last installment of R**s. 2,000 is received after the birth** and registration of birth of such child and after such child receives the first cycle of immunization for BCG, OPV, DPT and Hepatitis-B.
- **Eligibility**:
  - The woman should be a **citizen of India.**
  - All expecting women and lactating mothers whose **pregnancies fall on or after 1st of January 2017.**
  - The scheme is applicable **only for the first child of the family.**
  - The scheme **excludes expecting and lactating mothers** in following cases
    - Women who are in regular **employment of the Central Government.**
    - Women who are in regular **employment of the State Government.**
    - Women who are **already eligible to receive similar benefits** under any other existing scheme of Central or State Government.
  - For determining the date and stage of pregnancy, the Last Menstrual Period (LMP) of the pregnant woman is considered as per the records of **Mother and Child Protection (MCP) Card.**
    - **MCP (Mother and Child Protection) card** is the tool that is provided jointly by the Ministry of Women and Child Development and Ministry of Health and Family Welfare which is used to inform and educate the mothers and family with different aspects of child care and maternal care.

PIB June 13

EXERCISE EKUVERIN

(Syllabus: GS Paper 2 - International relations)

INDO-MALDIVES JOINT MILITARY EXERCISE "EKUVERIN" COMMENCED AT CHAUBATIA, UTTARAKHAND

Context: The 12th edition of **joint military exercise "Ex Ekuverin"** between the Indian Army & the Maldives National Defence Force has commenced at Chaubatia, Uttarakhand from 11 to 24 June 2023.

- Ekuverin meaning 'Friends' is a **bilateral annual exercise** conducted alternatively in **India and Maldives.**

Key Points

- The exercise is aimed at **enhancing interoperability in Counter Insurgency/ Counter Terrorism Operations** under the UN mandate and carry out joint Humanitarian Assistance and Disaster Relief operations.
- The focus is to **share best practices, enhance coordination and cooperation** between both the forces at tactical level.
- The **11th edition of the exercise** was held in Maldives in December 2021.
- The defence cooperation between the two countries extends from j**oint exercises to assisting Maldives** with defence training and equipment requirements.
- Both the nations have very close and friendly relations in **economic, cultural and military cooperation.**

BUSINESS STANDARD

Page 4

COWIN PORTAL

(Syllabus: GS Paper 3 - Security)

CoWin data leak alleged; Centre says portal 'safe'

Govt terms breach reports on Telegram 'mischievous'

SOURABH LELE
New Delhi, 12 June

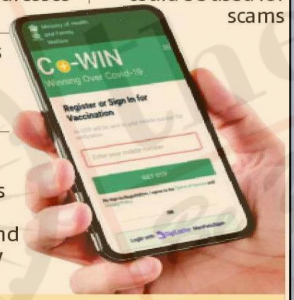
In a brief but evidently sizeable data breach, the information of hundreds of thousands of Indians who received the Covid vaccine was allegedly leaked on a Telegram channel. According to several reports, crucial information like a person's phone number registered on the CoWin portal of the Union Ministry of Health, gender, ID card information, and date of birth were leaked on Telegram. It could be retrieved from a Telegram bot by entering a person's name.

According to media reports, the Telegram bot could throw up personal information of significant personalities, including Telangana's Minister of Information and Communication Technology Kalvakuntla Taraka Rama Rao (popularly known as KTR), Dravida Munnetra Kazhagam Member of Parliament (MP) Kanimozhi Karunanidhi, Bharatiya Janata Party (BJP) Tamil Nadu President K Annamalai, Congress MP Karti Chidambaram and former Union Minister of Health Harsh Vardhan of the BJP.

Turn to Page 6

DATA ON TAP

- Sensitive data, including govt ID numbers, addresses leaked
- Experts warn the leaked elements could be used for scams
- CERT-IN has initiated inquiry into the matter
- The leak underlines need for laws on data protection and cybersecurity



Scarred by cyberattack, AIIMS devises IT infra revamp plan

Struck twice by cyberattack in the last eight months, the All India Institute of Medical Sciences (AIIMS) in New Delhi is speeding up an IT infrastructure overhaul plan with special emphasis on "improving legacy network and security operations centre", according to official documents reviewed by *Business Standard*.

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CoWIN DATA BREACH A WAKE-UP CALL, SAYS PAVAN DUGGAL P20

Context: According to several reports, crucial information like a person's phone number registered on the **CoWin portal** of the Union Ministry of Health, gender, ID card information, and date of birth were leaked on Telegram.

CoWIN (Covid Vaccine Intelligence Network) Portal

- It is an Indian government web **portal for COVID-19 vaccination registration**, owned and operated by India's Ministry of Health and Family Welfare.
- It **displays booking slots of COVID-19 vaccine** available in the nearby areas and can be booked on the website.
- The site also **provides vaccination certificates** to the beneficiaries, which act as Vaccine Passports during the COVID-19 pandemic for the beneficiaries and can be stored in Digilocker.
- Users can access the platform via **desktop, tablet, and mobile phones.**
- CoWIN serves the function of **registration, appointment scheduling, identity verification, vaccination and certification** of each vaccinated member.
- The platform has also been integrated in the **Aarogya Setu and UMANG Apps.**

TIMES OF INDIA

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FCRA

(Syllabus: GS Paper 3 - Security)

MHA suspends FCRA licence of CARE India over violations

Bharti.Jain@timesgroup.com

New Delhi: The home ministry has suspended the foreign funding licence of CARE India over alleged violations of the Foreign Contribution (Regulation) Act, 2010. The NGO is part of CARE International Confederation and has been working in India for the past 70 years with declared objectives like ending poverty and social exclusion.

Government sources told **TOI** that notice has been served on the NGO suspending its FCRA registration — last renewed with effect from October 1, 2022, for a period of 5 years — for 180 days.

CARE India, which works with partners like Bill & Melinda Gates Foundation, World Bank, Malala Fund and USAID, confirmed receipt of the suspension notice in an email response to **TOI**. "CARE India Solutions for Sustainable Development (CISSD) has received a notice from the ministry of home affairs, as per which CISSD's FCRA registration has been suspended temporarily for a period of 180 days. We are working on the clarifications for the government and are confident the temporary suspension will be revoked," CARE India said.

Getty images



The NGO received Rs 377.5 crore between 2021 and 2022 as foreign contributions

The NGO said it has been "serving the country with unwavering commitment and has always complied with regulations to bring holistic and sustainable changes in the areas of health, education, livelihood and disaster response management".

As per the auditor's certificate for CARE India for 2021-22, the NGO, which received Rs 377.5 crore during 2021-22 as foreign contributions, was subjected to a tax 'survey' under Section 133A of the Income Tax Act, 1961, on September 7, 2022, along with other prominent NGOs like Oxfam India and Centre for Policy Research (CPR). While Oxfam's request for renewal of FCRA licence was rejected late last year over alleged FCRA violations, CPR's FCRA registration was suspended in February on similar grounds.

As per the auditor, CISSD had, in 2012-13, received foreign contributions of Rs 28.3 crore without obtaining prior permission from MHA. These funds were received in a bank account meant for local funds and the foreign inward remittance certificates indicate these funds were received for business and management consultancy and public relations. This, as per the auditor, violates Section 17(1) of FCRA, though a condonation plea was later filed with MHA and Rs 5.6 crore penalty provided for in the company's accounts in 2018.

CARE India claims to have impacted the lives of more than 84.2 million people through 90 projects across 21 Indian states in 2021-22.

While a source indicated that CARE India may be looking at scaling down its operations in India in the days ahead, the NGO was silent on **TOI**'s query in this regard.

CARE International has been working in India for the past seven decades. CARE India started functioning as an independent entity in 2013 and became a member of the Care International Confederation that has a presence in 111 countries.

Context: The home ministry has suspended the foreign funding licence of CARE India over alleged violations of the **Foreign Contribution (Regulation) Act, 2010.**

- The NGO is part of CARE International Confederation and has been working in India for the past 70 years with declared objectives like ending poverty and social exclusion.
- Notice has been served on the **NGO suspending its FCRA registration** - last renewed with effect from October 1, 2022, for a period of 5 years - for 180 days.

Foreign Contribution (Regulation) Act, 2010

- **About**: An act passed for **regulating and prohibiting the acceptance and utilization of foreign contribution or foreign hospitality** by companies, associations or individuals for such activities that could prove to be detrimental to the national interest and for matters connected therewith or incidental thereto.
    - The law was **amended again by the current government in 2020,** giving the government tighter control and scrutiny over the receipt and utilisation of foreign funds by NGOs.
- **Nodal Ministry**: Since the Act is internal security legislation, despite being a law related to financial legislation, it **falls into the purview of the Home Ministry** and not the Reserve Bank of India (RBI).
- **Key provisions of Amendment 2020:**
    - **Prohibits the public servants** from receiving foreign contributions.
    - **Prohibits the transfer of foreign contribution** to any other person.
    - **Mandatory Aadhaar number** for registration for all office bearers, directors or key functionaries of a person receiving foreign contribution, as an identification document.
    - Foreign contribution must be received only in an account **designated by the bank as FCRA account** in such branches of the **State Bank of India, New Delhi.**
    - Allowed the government to **restrict usage of unutilised foreign contribution.**
    - Organisations receiving foreign funds will not be able to use more than **20 % of such funds for administrative purposes.** This limit was 50 % before 2020.

THE HINDU Page 6

SVALBARD MISSION

(Syllabus: GS Paper 3 - Sci & Tech)

ISRO, Norway and the 'Svalbard mission'

Tiki Rajwi
THIRUVANANTHAPURAM

On November 20, 1997, a Rohini RH-300 Mk-II sounding rocket rose to the skies from Svalbard, Norway, operationalising a new rocket launching range there. The solid propellant-powered rocket was shipped from India for the launch, while four senior hands of the Indian Space Research Organisation (ISRO) were specially flown to Norway to make sure everything went off all right.

The resolve to deepen space sector ties between India and Norway following Norwegian Ambassador Hans Jacob Frydenlund's visit to the ISRO headquarters last week offers an occasion to recall this challenging mission which took place 26 years ago at Ny-Alesund, Svalbard.

"The RH-300 Mk-II was given a new name by the NSC (Norwegian Space Centre): Isbjorn-1, which translates literally as 'Polar Bear-I.' If we love our royal Bengal tigers, they love their polar bears!", ISRO veterans P.V. Manoranjan Rao and P. Radhakrishnan have recalled in their 2012 book, *'A Brief History of Rocketry in ISRO.'*

On the technical side, the Norway mission presented unique challenges for ISRO. The Rohini rockets had till then flown only in the tropical hot and humid conditions in India. "The Svalbard archipelago, on the other hand, sits in the Arctic Ocean and temperatures were on the extremely low side," says Mr. Dathan, who was managing the solid propellant plant at VSSC back then. (Mr. Dathan later became Director, VSSC. He is presently Mentor (Science) to Kerala Chief Minister Pinarayi Vijayan).

The Norway mission in 1997 presented unique challenges for ISRO as the Rohini rockets had till then flown only in India

ISRO had shipped the RH-300 Mk-II to Norway after qualifying it for arctic weather conditions. Renamed Isbjorn-I, it lifted off at 11:07 p.m. IST on November 20, 1997. The rocket, unfortunately, did not achieve the predicted height, rising only up to 71 km. The reason was a strange one. To keep the ambient temperature at 18 degrees celsius, it was kept covered with a velostat shroud. The idea was that it would pierce through the cover during launch. Instead, the rocket dragged it along, and the increased drag resulted in a lower altitude.

Nevertheless, the Norwegian scientists seemed quite happy with the launch, for the data collected during the flight led to some new findings. "Well that is space science," notes *'A Brief History of Rocketry in ISRO,'* adding that the launch marked a new era of cooperation between the two countries in space research.



Context: On November 20, 1997, a Rohini RH-300 Mk-II sounding rocket rose to the skies from **Svalbard, Norway, operationalizing a new rocket launching range** there.

- The resolve to deepen space sector ties between India and Norway **recall this challenging mission** which took place 26 years ago at Ny-Alesund, Svalbard.

Key Points

- The **solid propellant-powered rocket** was shipped from India for the launch.
- The **RH-300 Mk-II** was given a new name by the NSC (Norwegian Space Centre): Isbjorn-1, which translates literally as 'Polar Bear-I.
- Ever since a **US-made Nike-Apache** sounding rocket lifted off from Thumba in 1963, effectively launching the Indian space programme, Indian space scientists had been flying sounding rockets for upper atmospheric studies.
- The **RH-300 Mk-II was part of the Rohini family** of sounding rockets developed by ISRO's Vikram Sarabhai Space Centre (VSSC) in Thiruvananthapuram.
- **ISRO bagged the Norway mission** after its commercial arm Antrix Corporation won a global tender floated by the Norwegian space agency.
- On the technical side, the Norway mission presented unique **challenges for ISRO.**
- The Rohini rockets had till then flown **only in the tropical hot and humid conditions in India**.
- The **Svalbard archipelago** sits in the Arctic Ocean and temperatures were on the extremely low side.

DST

June 13

PEPTIC ULCER DISEASE

(Syllabus: GS Paper 3 - Sci & Tech)

Doctors may soon diagnose peptic ulcer & disease stage by recognising breath patterns

Context: A newly developed non-invasive method of recognising breath patterns can help rapid, one-step diagnosis and classification of various gastric disorders like dyspepsia, gastritis, and **gastroesophageal reflux disease (GERD).**

- Doctors used a pattern-recognition based clustering approach that can selectively distinguish the breath of **peptic ulcer and other gastric conditions** with that of healthy individuals.

Peptic ulcer disease (PUD)

- It is a **break in the inner lining of the stomach,** the first part of the small intestine, or sometimes the lower esophagus.
  - An ulcer in the stomach is called a **gastric ulcer**, while one in the first part of the intestines is a duodenal ulcer.
- Currently, peptic ulcer disease is an **important medical-social problem** that has received special attention all over the world.
- **Helicobacter pylori bacterial infection** is considered to be the most significant risk factor for the development of this disease.
- Patients with peptic ulcer **encircling both duodenal and gastric ulcer** may remain asymptomatic or symptomatic, and due to undefined risk factors along with lack of specific symptoms at the early stages, the diagnosis is often delayed, leading to poor prognosis and high rates of recurrence of the diseases.
- **Conventional painful and invasive endoscopic procedures** are not suitable for early detection of the acute onset and progression of peptic ulcer as well as various gastric complications.
- Moreover, the **conventional endoscopic methodology** is not suitable for general population-based screening and consequently, many common people with complex gastric phenotypes remain undiagnosed.

DTE June 13

SEVERE CYCLONIC STORM

(Syllabus: GS Paper 1 - Geography)

Here is why Cyclone Biporjoy intensified into an extremely severe cyclonic storm

Sea surface temperature, ocean heat content, upper air divergence and weak wind shear have helped Biporjoy intensify twice until now

India Meteorological Department
Tropical Cyclone Intensity Scale

Category	Sustained winds (3-min average)
Super Cyclonic Storm	≥120 kt ≥221 km/h
Extremely Severe Cyclonic Storm	90–119 kt 166–220 km/h
Very Severe Cyclonic Storm	64–89 kt 118–165 km/h
Severe Cyclonic Storm	48–63 kt 89–117 km/h
Cyclonic Storm	34–47 kt 63–88 km/h
Deep Depression	28–33 kt 51–62 km/h
Depression	17–27 kt 31–50 km/h

Context: A combination of factors helped **Cyclone Biporjoy intensify** from a very severe cyclonic storm to an **extremely severe cyclonic storm** on June 11, 2023.

- Extremely severe cyclones form when wind speeds reach **168-221 kilometres per hour** (kmph).
- Cyclone Biporjoy has intensified twice in its lifetime. It is also the **fourth longest-lived cyclone in the pre-monsoon region** in the Arabian Sea since 1982.

Key Points

- The **sea surface temperature, weak shear wind, and upper air divergence** overpowered the negative factor (dry air), helping Biporjoy gain strength.
- A study recorded that 52 percent increase in the number of cyclones in the Arabian Sea. And a 150 per cent increase in Very severe cyclones.
- This increase has been **linked to rising ocean temperatures** and increased availability of moisture under global warming.
- Large amounts of **wind shear** are generally bad news for cyclone intensification.
- The **shear towards the northern Arabian Sea** has been weak and favourable for cyclone intensification.
- **Upper air divergence** which happens when air flows (wind) away from a region, also helped the cyclone gain strength. The sea surface temperature and ocean heat content were already favouring the cyclone.

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