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MINISTRY OF SCIENCE AND TECHNOLOGY

Table of Contents

1. Rupee Depreciation
2. Dvorak Technique
3. ‘maharatna’ Status
4. Plant-Based Meat Products
5. United Nations Security Council
6. Leicester: Places In News
7. NRI Quota
8. Tasmania Whales Stranding
9. Plenipotentiary Conference 2022
10. Brahmos Missile

INDIAN EXPRESS

Page 13

RUPEE DEPRECIATION AND APPRECIATION

(Syllabus: GS Paper 3 - Economy)

AMID FED RATE HIKE, FOREIGN FUND OUTFLOW

At 80.86, Re dives to new low against dollar

ENS ECONOMIC BUREAU
MUMBAI, SEPTEMBER 22

THE RUPEE fell 90 paise to a record low of 80.86 against the dollar on Thursday after the US Federal Reserve raised its interest rate by 75 basis points and hinted at more hikes in the future. Opening weakly at 80.27 over its previous close of 79.96 against the greenback, the rupee fell to an all-time intra-day low of 80.95, before ending at 80.86.

On Thursday, foreign institutional investors net sold Rs 2,509.55 crore of shares in the domestic capital market, as per data available on BSE.

Experts said that after the Fed action, the dollar index can see a significant increase and major market currencies, including the rupee, will be under pressure.

"Federal Reserve sounded extremely hawkish. Following that, the US dollar rose significantly against almost all the currencies, and the rupee had to respond," said Anindya Banerjee, vice president, currency derivatives and interest rate derivatives, Kotak Securities Ltd.

"If we start seeing the rupee depreciating, then from a USD returns perspective for FPIs, India becomes unattractive. We could also witness a reversal of FPI flows in the near to medium term, which will increase market volatility," said Naveen Kulkarni, chief investment officer, Axis Securities PMS.

EQUITIES FALL FOR 2ND STRAIGHT DAY

■ Equity indices fell for the second straight day. The Sensex fell 337.06 points to 59,119.72 and the Nifty by 88.55 points to 17,629.80

He added higher interest rates in the US will force major central banks, including in India, to raise interest rate to stem the pressure on their domestic currencies and with increased interest rates and cost of capital, market multiples can contract.

Meanwhile, equity indices on Thursday retreated for the second straight session. The Sensex fell 337.06 points, or 0.57 per cent, to 59,119.72 and the Nifty by 88.55 points, or 0.50 per cent, to end at 17,629.80.

Experts said despite the fall in the past many months, the rupee's performance is much better than other major currencies.

In a speech on September 5, Reserve Bank of India (RBI) Governor Shaktikanta Das said so far this year, the rupee has moved in an orderly manner and has held its own in a world of sharp depreciation across other emerging market economies' and advanced economies' currencies. "While the US dollar has appreciated by 11.8 per cent during the current financial year so far, the rupee has depreciated by 5.1 per cent, which is among the lowest in the world," he had said.

Although the Reserve Bank has been intervening in the forex market, it has always maintained that the aim is to curb volatility in the exchange rate and not to target any particular level. Forex traders suspect the RBI to have intervened in the foreign exchange market at the 80.80-80.85 levels on Thursday, which helped the rupee gain 20 paise during the trading session. However, towards the session's end, it lost those gains, they said.

The RBI has been selling dollars from the forex reserves in order to maintain the rupee's stability. From April 1 to September 9, the RBI has used around $55 billion from the forex kitty.

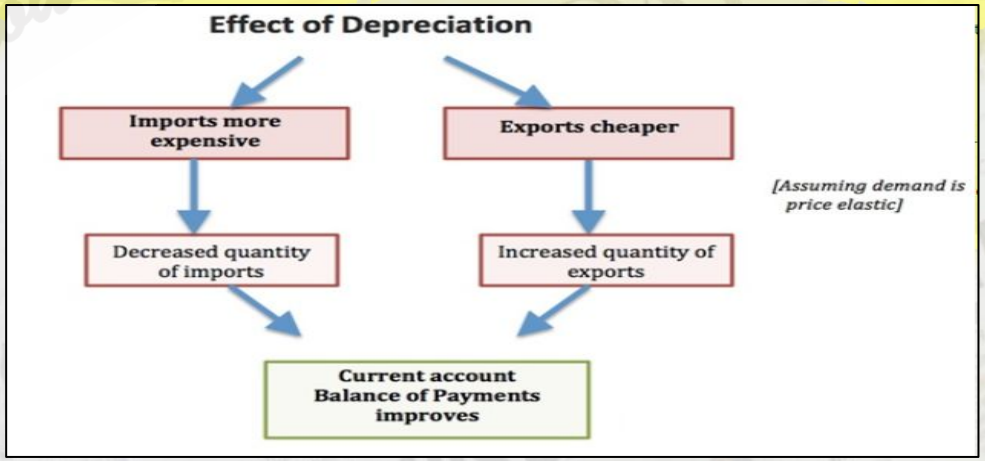
"In recognition of the fact that there is a genuine shortfall of supply of forex in the market relative to demand because of import and debt servicing requirements and portfolio outflows, the RBI has been supplying US dollars to the market to ensure that there is adequate forex liquidity," Das had said during a speech in July. "After all, this is the very purpose for which we had accumulated reserves when the capital inflows were strong. And, may I add, you buy an umbrella to use it when it rains!"

The RBI's monetary policy decision on September 30 is the next big event forex market participants will focus on.

Context: The rupee fell 90 paise to a record low of 80.86 against the dollar after the US Federal Reserve raised its interest rate by 75 basis points and hinted at more hikes in the future.

Rupee depreciation and Appreciation

- **Rupee depreciation** means that the rupee has become less valuable with respect to the dollar.
  - For example: USD 1 used to equal to Rs. 70, now USD 1 is equal to Rs. 77, implying that the rupee has depreciated relative to the dollar i.e. it takes more rupees to purchase a dollar.
- **Rupee Appreciation** is an increase in the value of one currency in relation to another currency.
- **Depreciation Vs Devaluation:**
  - If the value of the Indian Rupee is weakened through administrative action, it is devaluation.
  - While the process is different for depreciation and devaluation, there is no difference in terms of impact.
  - India used to follow the administered or fixed rate of exchange until 1993, when it moved to a market-determined process or floating exchange rate.



INDIAN EXPRESS

Page 12

DVORAK TECHNIQUE

(Syllabus: GS Paper 1 - Geography)

DVORAK TECHNIQUE

The cyclone intensity estimation technique has helped in evacuation planning, saving millions of lives

ON TUESDAY, American meteorologist Vernon Dvorak passed away at the age of 100. He was best known for The Dvorak (read 'Do-rak') technique named after him, said to be one of the greatest meteorological innovations ever. Even with access to several modern tools today, advanced versions of the 50-year-old technique are widely used.



Vernon Dvorak developed the technique in 1969
Wikimedia Commons

Who was Vernon Dvorak?

Dvorak developed the technique in the early 1970s. After the most recent software update in May this year, it has been named the Advanced Dvorak Technique (ADT) by the National Hurricane Centre of the National Oceanic and Atmospheric Administration (NOAA). Dvorak worked with the National Environmental Satellite, Data, and Information Service of NOAA. The latest updated technique will improve tropical storm forecasts with access to sharper and more detailed images.

The meteorologist also presented wind speeds and associated categories of tropical cyclones, making his technique a near-perfect tool for operational cyclone forecasting.

What is the Dvorak technique?

Forecasters used the available satellite images obtained from polar-orbiting satellites to examine features of developing tropical storms. During day time, images in the visible spectrum were used while at night, the ocean was observed using infrared images.

"From the satellite images thus obtained, the Dvorak technique helps forecasters to do a pattern recognition from the observed structure of the storm, locate its eye and estimate the intensity of the storm," said Umasankar Das, a scientist at the India Meteorological Department in Bhubaneswar.

The technique gives the best estimates of cyclone intensity, a vital component of weather warnings.

While experts claim it cannot help make any predictions or measure wind pressure, it is a guide to estimate the storm's possible intensification – crucial for local administration planning evacuation measures.

Wide usage to date

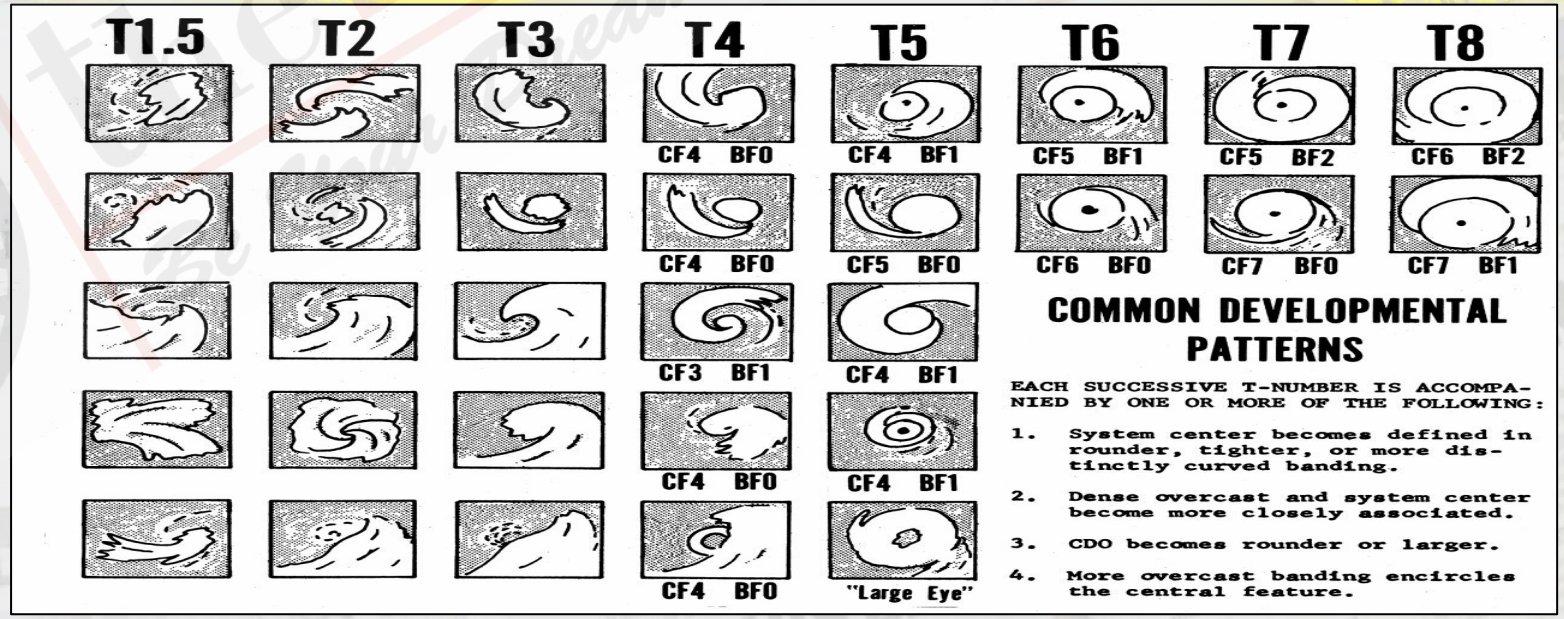
Ocean observations are limited as compared to land observations, and vast regions across the oceans have not been fully examined. Observations are mostly taken by deploying buoys or ships, but it is insufficient. Thus, meteorologists depend more on satellite-based imagery.

ANJALI MARAR

Context: The American meteorologist Vernon Dvorak passed away who was best known for the Dvorak technique, named after him, continues to be widely relied upon by forecasters till date.

Dvorak technique

- The Dvorak technique is a widely used system to estimate tropical cyclone intensity (which includes tropical depression, tropical storm, and hurricane/typhoon/intense tropical cyclone intensities) based solely on visible and infrared satellite images.
- Within the Dvorak satellite strength estimate for tropical cyclones, there are several visual patterns that a cyclone may take on which define the upper and lower bounds on its intensity.
- The primary patterns used are curved band pattern (T1.0-T4.5), shear pattern (T1.5–T3.5), central dense overcast (CDO) pattern (T2.5–T5.0), central cold cover (CCC) pattern, banding eye pattern (T4.0–T4.5), and eye pattern (T4.5–T8.0).
- Several agencies issue Dvorak intensity numbers for tropical cyclones and their precursors, including the National Hurricane Center's Tropical Analysis and Forecast Branch (TAFB), the NOAA/NESDIS Satellite Analysis Branch (SAB), and the Joint Typhoon Warning Center at the Naval Meteorology and Oceanography Command in Pearl Harbor, Hawaii.



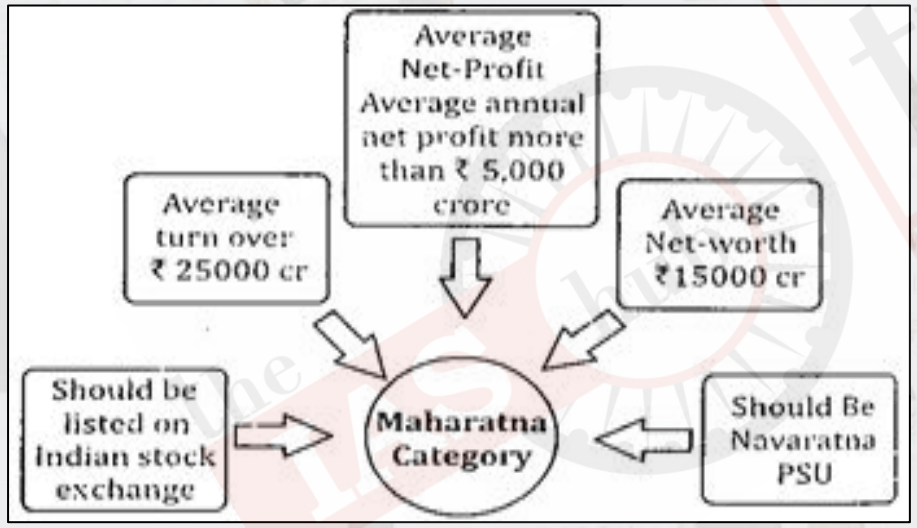
LIVEMINT Page 2

‘MAHARATNA’ STATUS

(Syllabus: GS Paper 3 - Economy)

Non-banking financial company REC gets ‘Maharatna’ status

New Delhi: Power sector focused non-banking finance company REC Ltd has been accorded the status of a ‘Maharatna’ Central Public Sector Enterprise, thus providing it with greater operational and financial autonomy. The granting of ‘Maharatna’ status will impart enhanced powers to the company’s board while taking financial decisions, REC said. **SAURAV ANAND**



Context: Power sector focused non-banking finance company REC Ltd has been accorded the status of a ‘Maharatna’ Central Public Sector Enterprise

‘Maharatna’ Scheme

- Maharatna Scheme was introduced for Central Public Sector Enterprises (CPSEs), with effect from 19th May, 2010, in order to empower mega CPSEs to expand their operations and emerge as global giants.
- The objective of the scheme is to delegate enhanced powers to the Boards of identified large-sized Navratna CPSEs so as to facilitate expansion of their operations, both in domestic as well as global markets.
- **Eligibility Criteria for grant of Maharatna status:**
  - Having Navratna status
    - Navratnas are a set of public sector companies that possess financial autonomy to invest up to 1000 crores without any approval from the central government.
  - Listed on the Indian stock exchange, with a minimum prescribed public shareholding under SEBI regulations
  - An average annual turnover of more than Rs. 20,000 crore during the last three years
  - An average annual net worth of more than Rs.10,000 crore during the last three years
  - An average annual net profit of more than Rs. 2,500 crore during the last 3 years
  - Significant global presence or international operations

Major benefits

- The major benefit associated with Maharatna PSU in terms of investment. It includes the investment amount ranging between INR 1,000 crore and INR 5,000 crore.
- The officers working at these top organizations are called gazetted officers.
- The officials who recruit employees at the Maharatna company in India receive the recognition of full-fledged government employees.

LIVEMINT Page 9

PLANT-BASED MEAT PRODUCTS

(Syllabus: GS Paper 3 - Economy & Agriculture)

India's first plant-based meat shipped to US from Gujarat

The Centre through apex export promotion body—Agricultural and Processed Food Products Export Authority (APEDA)—facilitated the export of first consignment of plant-based meat products under vegan food category from Nadiad in Gujarat to California, US.

The 5,000 kg consignment consisted of mini samosas, hot and spicy strips, momos, spring rolls, nuggets, and grilled patty, among other products, the ministry of commerce and industry said in a statement on Thursday.

APEDA chairman M Angamuthu said that the body is working towards promotion of plant-based meat products in a big way without disturbing the conventional animal-based meat export market. With the growing popularity of vegan food products in developed countries, the plant-based food products have a huge export potential in the international market due to the high nutrient value of the vegan food products. Due to its rich fiber and lesser cholesterol contents, vegan food products are becoming alternative food products across the globe.

SAURAV ANAND



The 5,000 kg consignment consisted of mini samosas. BLOOMBERG

PLANT-BASED VS. VEGAN

	Vegan diet	Plant-based diet	Whole-food, plant-based diet
Meat, seafood, eggs, and dairy	No	Maybe	Maybe
Oils and highly processed foods	Yes	Yes	No
Whole grains	Yes	Yes	Yes
Fruits and vegetables	Yes	Yes	Yes
Legumes	Yes	Yes	Yes
Affects other lifestyle factors (clothing, personal care products, etc.)	Yes	Maybe	Maybe

Context: The Centre through apex export promotion body facilitated the export of first consignment of plant-based meat products under vegan food category from Nadiad in Gujarat to California, US.

Plant-based meat

- Plant-based meat is a term that people use to describe foods that mimic meat products but are made from plants.
- Plant-based meats are made from plants and manufactured to feel, taste, and appear like real meat.
- Plant-based meats are healthier than regular meat as they're lower in saturated fat and calories.
- Ingredients in plant-based meats include coconut oil, vegetable protein extract, and beet juice.

Difference between Plant-based and cultured meat

- Plant-based meats are made of plant-derived ingredients but are designed to look and taste like real meat.
- Cultured meat is a fairly new concept that refers to meat grown in a lab from a small sample of cells taken from an anima.
- The procedure requires the extraction of stem cells from a donor animal, which then proliferate to produce animal tissue structures.

Plant Based Operations in India:

- A slew of Indian startups are making meat-eating which is cruelty-free and more eco-friendly.
- Recently, a team of scientists from IIT Delhi has won an innovation contest (Innovate 4 SDG) organised by the United Nation Development Programme (UNDP) Accelerator Lab India for their innovation of a "plant based mock egg".

THE HINDU Page 1

UNITED NATIONS SECURITY COUNCIL (UNSC)

(Syllabus: GS Paper 2 - International relations)

Ukraine issue of 'profound concern', says India at UNSC

Sriram Lakshman
UNITED NATIONS

External Affairs Minister S. Jaishankar was among a group of Ministers, heads of government and representatives at the United Nations Security Council who expressed their concern on September 22 over the continuing conflict in Ukraine.

While he did not name Russia specifically, unlike the representatives of many other countries, Mr. Jaishankar said the conflict was a matter of "profound concern" for the global community.

"The future outlook appears even more disturbing," he said, a day after Russian President Vladimir Putin announced a partial mobilisation of 300,000 potential combatants and a threat of nuclear action.

Context: External Affairs Minister expressed their concern over the continuing conflict in Ukraine.

United Nations Security Council (UNSC)

- The United Nations Security Council (UNSC) is one of the six principal organs of the United Nations (UN).
- It is charged with ensuring international peace and security, recommending the admission of new UN members to the General Assembly, and approving any changes to the UN Charter.
- Its powers include establishing peacekeeping operations, enacting international sanctions, and authorizing military action.
- The UNSC is the only UN body with the authority to issue binding resolutions on member states.
- The Security Council consists of fifteen members, of which five are permanent: China, France, Russia, the United Kingdom, and the United States.
- Permanent members can veto (block) any substantive Security Council resolution, including those on the admission of new member states to the United Nations or nominees for the office of Secretary-General.
- This veto right does not carry over into any General Assembly or emergency special sessions of the General Assembly matters or votes.
- The other ten members are elected on a regional basis for a term of two years. The body's presidency rotates monthly among its members.
- India Elected as Non-Permanent Member of UNSC. In June 2020, India was elected to the UNSC as a non-permanent member, winning 184 out of the 193 votes at the UNGA. This membership is for 2021-22. India was the only candidate from the Asia-Pacific category for the year 2021-22.

India Elected as Non-Permanent Member of UNSC

- In June 2020, India was elected to the UNSC as a non-permanent member, winning 184 out of the 193 votes at the UNGA. This membership is for 2021-22.
- India was the only candidate from the Asia-Pacific category for the year 2021-22.
- Ecuador, Japan, Malta, Mozambique and Switzerland were elected to the UN Security Council as non-permanent members for the 2023-2024 term and will replace India, Ireland, Kenya, Mexico and Norway.

THE HINDU Page 12

LEICESTER: PLACES IN NEWS
(Syllabus: GS Paper 1 - Geography)

Context: India said its officials were in contact with the authorities in the U.K. over the recent fights in Leicester.

Leicester violence: India asks U.K. to take action

The Hindu Bureau
NEW DELHI

India on Thursday said its officials were in contact with the authorities in the U.K. over the recent fights in Leicester where clashes between two communities continued for three weeks.

MEA spokesperson Arindam Bagchi said, "We are in touch with the diplomatic and security authorities to prevent further attacks and take action against the perpetrators."

Leicester: Places in news

- Leicester is a city, unitary authority and the county town of Leicestershire in the East Midlands of England.
- It is the largest settlement in the East Midlands.
- The city lies on the River Soar and close to the eastern end of the National Forest.
- It is situated to the north-east of Birmingham and Coventry, south of Nottingham and west of Peterborough.
- Leicester is at the intersection of two railway lines: the Midland Main Line and the Birmingham to London Stansted Airport line.
- Leicester is the home to football club Leicester City and rugby club Leicester Tigers.



TIMES OF INDIA

Page 1

OCI, PIO pupils can only apply under NRI quota

OCI and PIO students seeking admission in Indian professional institutes will now be treated on par with foreign nationals and can seek admission only under the NRI quota. This will translate to fewer seats and considerably higher fees, **reports Hemali Chhapia.** Earlier, both categories of students were treated on par with Indians; they had equal opportunity to compete for seats in government institutes.Last year, the SC had given them a year's exemption, but in May 2022, *it* refused to extend the rule. **P6**

NRI QUOTA

(Syllabus: GS Paper 2 - Social Justice)

Context: OCI and PIO students seeking admission in Indian professional institutes will now be treated on par with foreign nationals and can seek admission only under the NRI quota.

NRI Quota

- NRI Quota refers to the reservation of seats that is allotted to Non-Resident Indians by the institutes and universities of India.
- Overseas Citizen of India (OCI), Person of Indian Origin (PIO) and Foreign Nationals are also eligible for admissions under the NRI Quota.
- This reservation of seats under the NRI Quota is available in all major branches of Engineering, Medical, Law, Management and other courses.
- NRI Quota Eligibility
    - One of the parents must be an NRI residing abroad
    - The person sponsoring the education must be an NRI residing outside India and a first-degree relation with the student
    - In case of no parents/relatives, the guardian must be an NRI residing abroad and must treat the student like a ward backed up by an affidavit showing interest in the affairs and relationship with the student.
    - Nearest Relative can be defined as the real brother/sister of the parents, maternal or paternal grandparents, or first degree maternal and paternal cousins.

OCI and PIO

- PIO is an Indian origin individual who has settled abroad, a OCI are those individuals who became eligible to Indian citizens on 26 January 1950 or were a citizen at any point after that.

NRI

- A non-resident Indian is a person who stays in India for less than 182 days during the period of the foreseeing financial year.
- An NRI can also be a person who has gone out of the nation for employment is called an NRI. A person staying abroad for business-related purposes is also called an NRI.

DOWN TO EARTH

Sept 23

TASMANIA WHALES STRANDING

(Syllabus: GS Paper 3 - Env & Eco)

WILDLIFE & BIODIVERSITY

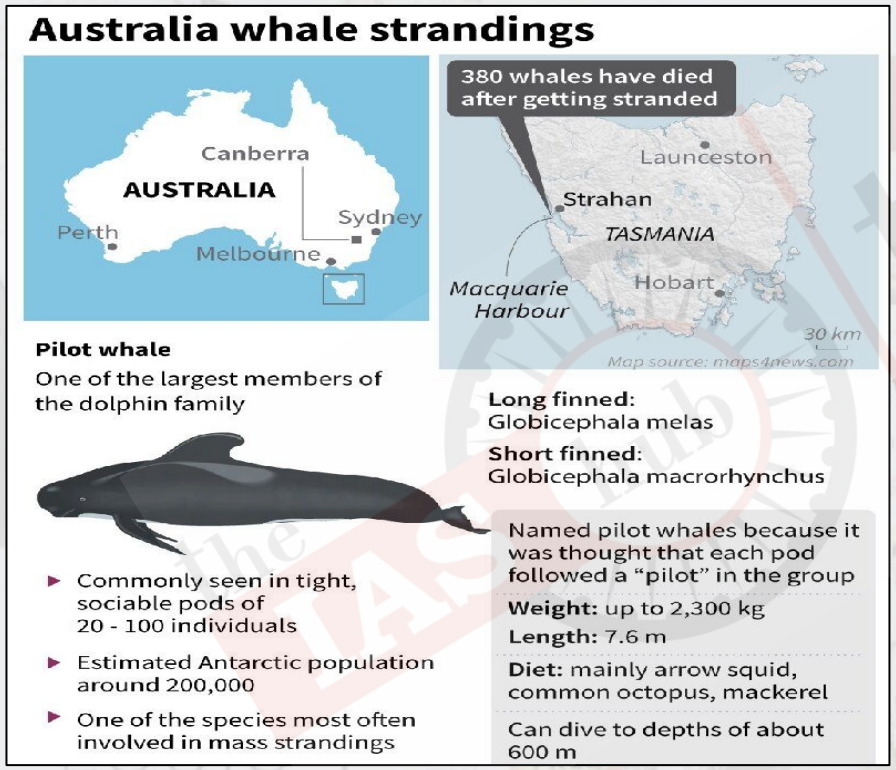
Tasmania whales stranding: Climate change 'among other factors' can cause such events, say experts

Experts say whale stranding tend to recur at the same locations across the world

NEXT NEWS >

By Rajat Ghai
Published: Thursday 22 September 2022





Context: Climate change, among other factors, can cause mass whale strandings, leading to deaths, experts observed, a day after over 200 pilot whales stranded in Tasmania perished.

Key points

- there is still a lot that is not known about this phenomenon.
- Mass strandings had been happening well before the Anthropocene started.
- Indeed, these incidents have been noted in the time of the Greek philosopher Aristotle, according to Karen Stockin..
- Whales navigate through a mechanism known as 'echolocation'.
- They emit calls and listen to the echoes that return from various objects near them.
- They use these echoes to locate and identify the objects.
- Strandings occur when animals become disoriented (their echolocation or bio sonar mechanism is disturbed) in shallow complex areas, when they are sick, fleeing from a predator, due to poisoning from pollution or algal blooms.
- Strandings are very often linked to human activities, especially mortality in fishing nets and sometimes due to naval sonar.

Pilot whales

- Pilot whales are cetaceans belonging to the genus Globicephala.
- The two extant species are the long-finned pilot whale (G. melas) and the short-finned pilot whale (G. macrorhynchus).
- Both species are designated as Data Deficient on the IUCN Red List of Threatened Species.
- The two are not readily distinguishable at sea, and analysis of the skulls is the best way to distinguish between the species.
- Between the two species, they range nearly worldwide, with long-finned pilot whales living in colder waters and short-finned pilot whales living in tropical and subtropical waters.
- Pilot whales are among the largest of the oceanic dolphins, exceeded in size only by the orca.
- They and other large members of the dolphin family are also known as blackfish.

PIB

Sept 23

PLENIPOTENTIARY CONFERENCE 2022

(Syllabus: GS Paper 2 - International organisations)

Shri Devusinh Chauhan to lead the Indian delegation to take part in the Plenipotentiary Conference 2022 in Bucharest, Romania

Context: The Minister of State for Communications would participate in the Ministerial Round Table on "Building a better digital future for all" where he will showcase the giant leaps made by India in the field of telecommunications during last decade.

Plenipotentiary Conference 2022

- The Plenipotentiary Conference is the highest policy-making body of the International Telecommunication Union (ITU).
- Held every four years, it is the key event at which ITU Member States decide on the future role of the organization, thereby determining the organization's ability to influence and affect the development of information and communication technologies (ICTs) worldwide.
- The Conference:
  - sets the Union's general policies;
  - adopts four-year strategic and financial plans; and
  - elects the senior management team of the organization, the Member States of the Council, and the members of the Radio Regulations Board.
- India has put up its candidature to be re-elected as a Member of the next ITU Council.



PIB

Sept 23

BRAHMOS MISSILE

(Syllabus: GS Paper 3 - Sci & Tech)

MOD signs a deal for dual role Surface-to-Surface BrahMos missile with BAPL

Context: The Ministry of Defence (MOD) signed a contract today with M/s BrahMos Aerospace Pvt. Ltd. (BAPL) for acquisition of additional dual-role capable Surface to Surface BrahMos missiles at an overall approximate cost of ₹ 1700 Crore under "Buy-Indian" Category.

- Induction of these dual-role capable Missiles is going to significantly enhance the operational capability of Indian Navy (IN) fleet assets.
- BAPL is a Joint Venture (JV) between India and Russia making crucial contribution to augment the new generation Surface-to-Surface Missiles (SSMs) with enhanced range and dual role capability for land as well as anti-ship attacks.

Surface-to-surface missile

- A surface-to-surface missile (SSM) or ground-to-ground missile (GGM) is a missile designed to be launched from the ground or the sea and strike targets on land or at sea.
- They may be fired from hand-held or vehicle mounted devices, from fixed installations, or from a ship.
- They are often powered by a rocket engine or sometimes fired by an explosive charge, since the launching platform is typically stationary or moving slowly.
- They usually have fins and/or wings for lift and stability, although hyper-velocity or short-ranged missiles may use body lift or fly a ballistic trajectory.
- The V-1 flying bomb was the first operational surface-to-surface missile, used by Nazi Germany during the closing stages of World War II to bomb European Cities.

India's Surface-to-Surface missile

- Prithvi series of missiles – Min Range 150 Km and Max range is around 500 Km.
- Agni series of missiles – Min Range 700 km and max range is around 5000 Km.
- Nirbhay – Subsonic Cruise missile with a range of 1000 km
- Brahmos – Jointly Developed with Russia. It is the fastest cruise missile in the world with a range of around 300 Km.
- Prahar – This is a missile with a range of 150 km.

Brahmos

- Brahmos is developed by Brahmos Aerospace, a joint venture of DRDO and NPO Mashinostroyenia (NPOM) of Russia.
- Brahmos Missile has 3 different variants.
  - Surface to Surface missile.
  - Ship variant – missile which can be launched from Warships
  - Airborne variant – Brahmos can be launched from Fighter Aircrafts. Recently India successfully test-fired Brahmos from Sukhoi 30 Mki.

THANK YOU!

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/mkyadav

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