

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 27-04-2024

Table of Content

- Supreme Court backs EVMs
- Nuclear, Chemical and Biological Disarmament
- Trend in Solar Power Generation Potential in India
- Germany's Relationship with India
- Floods in UAE and Oman

NEWS IN SHORT

- Marrakesh Agreement
- Microbes Found Beneath Atacama Desert
- Self Bred Coral Reef
- UNDP's Climate Promise
- ASEAN Future Forum
- Chernobyl Disaster
- Carnation Revolution
- Crystal Maze

SUPREME COURT BACKS EVMS

Context

- The Supreme Court upheld the electronic voting machine (EVM) system of polling and refused a plea to revive paper ballots.

Supreme Court Judgement

- The court **refused to hand over paper slips** from Voter Verifiable Paper Audit Trail (VVPAT) units to electors to take a leisurely look before inserting them into the ballot boxes.
- It also declined to direct the cross-verification of **100% EVMs** and VVPATs across the country.
 - ♦ Currently, only five percent of EVM-VVPAT counts are randomly verified in any given Assembly constituency.
- It also directed the **Election Commission of India (ECI)** to “seal and secure” the **Symbol Loading Unit (SLU)** for **45 days** after the declaration of election results.
 - ♦ Currently, only the three components of the EVM — the ballot unit, control unit, and VVPAT — are stored for 45 days after the results.
- The court has allowed candidates to check the one-time programmable software in the **BU (Ballot Unit), CU (Control Unit), and VVPAT** for tampering, in case of any doubts regarding the result.
 - ♦ This verification involves inspecting the burnt memory/ microcontrollers of these three components.

What are Electronic Voting Machines (EVMs)?

- It is a device used to **electronically record and count votes** cast in elections.
- EVMs were first used in **1982** in the Assembly constituency of Paravur in Kerala in 50 out of 123 booths.
- EVM has two parts, it consists of a ‘**control unit**’ and a ‘**balloting unit**’, connected by a **5-meter cable**.
- The control unit is with the Election Commission-appointed polling officer and it is the brain of the EVM.
- The balloting unit is in the voting compartment into which the voter enters to cast the vote in secret by pressing the button against the name and symbol of the candidate of her choice.

- ♦ **The balloting unit** is turned on only after the polling officer presses the ‘Ballot’ button on it.

Voter Verified Paper Audit Trail (VVPAT)

- A VVPAT is intended as an independent verification system for voting machines designed to allow voters to verify that their vote was cast correctly.
- It contains the name of the candidate (for whom vote has been cast) and symbol of the party/ individual candidate.
- When a vote is cast, the VVPAT machine, which is attached to the **ballot unit (BU)** of the **EVM, prints out a slip of paper with the voter’s choice indicated** on it.
 - ♦ Though it remains behind glass, the printed slip is visible for **seven seconds** so the voter can see that the vote has been recorded correctly, before it falls into a box underneath.
- The idea of the VVPAT machine **first emerged in 2010**. However it was used for the first time in the **Noksen Assembly constituency of Nagaland in 2013**.
 - ♦ **The Conduct of Elections Rules, 1961** were amended in **2013** to allow for a printer with a drop box to be attached to the EVM.
- From 2017, 100% of VVPATs began to be used in polls, and the **2019 Lok Sabha elections became the first general election to have 100% of EVMs being attached to VVPATs**.

What is a Symbol Loading Unit (SLU) ?

- The SLU is used to **load the symbols of the candidates** onto the VVPAT.
- Candidate-setting happens at any time from five to two days before voting at a seat. After loading the symbols onto the VVPAT, the SLU is of no relevance to the actual voting process.
- Once the symbol-loading is complete, the SLUs are handed over to the concerned district election officer for safekeeping. They remain in the officer’s custody until the day after voting.

Conclusion

- Overall, while the VVPAT system in India represents a significant step towards **enhancing transparency and accountability in elections**, it continues to face criticism and scrutiny regarding its **effectiveness, cost, and implementation challenges**.

- However “blind distrust” of an institution or a system breeds unwarranted skepticism and impedes progress.
- Addressing these concerns requires efforts to improve the reliability, accessibility, and public acceptance of the VVPAT system.

Source: IE

NUCLEAR, CHEMICAL AND BIOLOGICAL DISARMAMENT

Context

- India and South Korea discussed developments in the areas of disarmament and non-proliferation relating to nuclear, chemical and biological domains.

What is Disarmament ?

- Disarmament refers to the **act of eliminating or abolishing weapons** (particularly offensive arms) either unilaterally or reciprocally.
- It may refer either to **reducing the number of arms, or to eliminating entire categories of weapons.**

Nuclear Powers in the World

- There are **nine countries** recognized as possessing nuclear weapons.
- These countries are often referred to as “**nuclear-armed states**” or “**nuclear powers.**”
- United States, Russia, China, United Kingdom, France, India, Pakistan, North Korea and Israel.

Treaties Related to Nuclear Disarmament

- **Treaty on the Non-Proliferation of Nuclear Weapons (NPT):** Signed in **1968** and entered into **force in 1970**, the NPT aims to prevent the spread of nuclear weapons and promote disarmament.
 - ♦ It divides the world into nuclear-weapon states (NWS), recognized as possessing nuclear weapons at the time of the treaty’s signing, and non-nuclear-weapon states (NNWS), which agree not to develop or acquire nuclear weapons.
 - ♦ The treaty also requires NWS to pursue disarmament negotiations in good faith.
- **Treaty on the Prohibition of Nuclear Weapons (TPNW):** Adopted by the United Nations in **2017** and opened for signature in 2018, the TPNW aims

to prohibit the development, testing, production, stockpiling, stationing, transfer, use, and threat of use of nuclear weapons.

- ♦ It represents a significant step towards nuclear disarmament, although it has not been signed by nuclear-armed states.
- **Comprehensive Nuclear-Test-Ban Treaty (CTBT):** Opened for signature in **1996**, the CTBT aims to ban all nuclear explosions for both civilian and military purposes.
 - ♦ While the treaty has been signed by **185** countries and ratified by **170**, it has not entered into force as nuclear-armed states must ratify it to become operational.
- **Outer Space Treaty:** This multilateral agreement entered into force in 1967 and bans the siting of weapons of mass destruction in space.
 - ♦ All nine states believed to have nuclear weapons are parties to this treaty.

Treaties Related to Chemical Disarmament

- **Chemical Weapons Convention (CWC):** It is a multilateral treaty that bans chemical weapons and requires their destruction within a specified period of time.
 - ♦ CWC is implemented by the **Organization for the Prohibition of Chemical Weapons (OPCW).**
 - ♦ CWC currently has **193 states-parties.** Israel has signed but has yet to ratify the convention. Three states have neither signed nor ratified the convention (Egypt, North Korea and South Sudan).

Treaties Related to Biological Disarmament

- **Biological Weapons Convention, 1972:** The Biological Weapons Convention (BWC) effectively prohibits the development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons.
 - ♦ It was the first multilateral disarmament treaty banning an entire category of weapons of mass destruction (WMD).

Arguments in Favour of Disarmament

- **Humanitarian Concerns:** The weapons possess unparalleled destructive power, capable of causing immense loss of life, widespread devastation, and long-term environmental damage.

- **Global Security:** The proliferation of these weapons increases the likelihood of their use, whether intentionally or accidentally, leading to catastrophic consequences for humanity.
- **Economic Benefits:** Funds can be redirected from weapons towards more constructive purposes to improve overall well-being.
- **Ethical and Moral Imperatives:** Eliminating nuclear weapons is viewed as a moral imperative and a step towards building a more peaceful and just world.
- **Environment Pollution:** The weapon testing and potential use can have devastating environmental consequences.

Arguments Against Disarmament

- **Deterrence:** Possessing these weapons serves as a powerful deterrent against potential adversaries, preventing conflicts and maintaining strategic stability.
- **National Security:** It provides a form of insurance against potential threats and enhances the ability to protect the interests and sovereignty of a country in an uncertain international environment.
- **Verification and Compliance:** Critics argue that without robust verification mechanisms and effective enforcement measures, countries may exploit disarmament agreements for strategic advantage.
- **Geopolitical Realities:** Deep-rooted mistrust, unresolved conflicts, and strategic competition among states make it difficult to envision a scenario in which all countries would willingly and simultaneously relinquish their weapons.

Way Ahead

- Disarmament is seen as a crucial step towards reducing the risks and promoting international peace and stability.
- While achieving complete Disarmament may be a long-term objective, incremental progress can still be made through concerted international efforts and cooperation.
- It requires sustained commitment from all nations to work towards a world free of nuclear weapons, ensuring the security and well-being of future generations.

India's Nuclear Weapon Program

- **Smiling Buddha:** In 1974, India conducted its first nuclear test code-named "Smiling Buddha, and since then, it has developed a nuclear triad consisting of land-based, sea-based, and air based delivery systems.
- **Operation Shakti:** In 1998, India conducted a series of nuclear tests at Pokhran, codenamed "Operation Shakti."
 - ♦ These tests included both fission and fusion devices and marked India's formal entry into the nuclear weapons club.
- **International Criticism:** The international community has criticized India's nuclear weapons programme, particularly the United States and its allies.
- **No First Use:** India has a "no first use" policy, meaning it pledges not to use nuclear weapons first in a conflict but reserves the right to retaliate if attacked with nuclear weapons.

India's stance on nuclear disarmament?

- India has argued that any country's possession of nuclear weapons poses a threat to global security, and that the only way to ensure peace and stability is for all nuclear weapons to be destroyed.
- India is **not a signatory to the Non-Proliferation Treaty (NPT)**, and stated that the NPT is discriminatory and perpetuates a two-tiered system of **nuclear haves and have-nots** by unfairly restricting access to peaceful nuclear technology for non-nuclear weapon states.
- **National Security:** India's nuclear weapons programme is a legitimate expression of its national sovereignty, and that India has the right to defend itself against potential threats.
 - ♦ India's nuclear disarmament and nonproliferation policy is complex and nuanced, reflecting the country's **desire for security and recognition**, as well as its commitment to global disarmament and non-proliferation.

Source: BS

TREND IN SOLAR POWER GENERATION POTENTIAL IN INDIA

Context

- A study by the **India Meteorological Department (IMD)** has revealed a **significantly decreasing trend in solar power generation potential** in the country.

Major Highlights of the Study

- The study titled “**Understanding the climatology and long-term trends in solar radiation using ground based in-situ observations in India,**” is authored jointly by six scientists, and has been published by IMD.
- **Investigation by Authors:** They investigated the climatology and trends of global radiation (GR), diffuse radiation (DR), bright sunshine hours (BHS) and technical potential of solar photovoltaic power (SPV) using data procured from IMD for the **period 1985–2019.**
- **Decrease in SPV Potential:** There is an alarming decreasing trend in the **solar photovoltaic potential in all the selected stations** which is likely to continue in the near future as well. It would negatively impact energy production from solar resources.
- **Reduction in GR:** The study points towards a significant reduction in GR in all parts of the country except the extreme northwest.
 - ♦ Reduction in GR is attributed to the **increased atmospheric turbidity and cloudiness.**
- **Increase in DR:** A significant increase in DR has been observed in more than 50 percent of the stations, especially in the northwest and some parts of peninsular India.
- **Decrease in BHS:** Pointing out that BHS has significantly decreased in **75 percent of the selected stations**, the study brings out that the annual BHS is high in northwest India but low in north, north-east and southern peninsular India.
- **Causative Factors: Increased aerosol load** — fine particles from carbon emissions, fossil fuel burning and dust — and clouding are said to be causative factors.
 - ♦ Aerosols absorb the sunlight and deflect it away from the ground and they can also precipitate the formation of dense clouds that again block sunlight.
 - ♦ The **efficiency of solar panels** are significantly influenced by the amount of sunlight incident on them.
- **Global Trends on Solar Radiation:** The role of aerosols in blocking sunlight available on earth has been apparent since the 1980s, several studies have shown that there are variations both over time as well as location.
 - ♦ Global solar radiation showed a generally decreasing trend from 1981-2006. 1971-2000

showed greater dimming compared to 1981-2006.

- ♦ However, on the whole, there was a reversal in trends after 2001 with the exact causes unclear.

Significance of Solar Energy

- **Impact on Climate of Earth:** Solar radiation has an important role in governing the earth’s surface-atmosphere energy exchange and climate of the Earth.
 - ♦ It modulates global energy balance and changes the climate and hydrological cycle.
- **Reliance of Various Sectors:** Various sectors such as agriculture, energy, industry, etc. directly or indirectly depend on the incoming solar radiation.
- **Source of Clean Energy:** Solar energy has been recognized as an alternative to conventional energy resources.
 - ♦ Amongst all the clean technologies, solar energy serves as an effective renewable energy resource to mitigate greenhouse gas emissions and reduce global warming.
- **Crucial for Self Dependency:** Solar energy is one of the resources capable of self-reliant energy generation, reducing foreign energy dependence.

India’s Solar Energy

- **Capacity:** As of today, **India’s installed solar power capacity** is about 81 GW (1 GW is 1,000 megawatt), or roughly **17% of the total installed electricity.**
 - ♦ India’s largest solar parks are located in the north-west, particularly **Gujarat and Rajasthan.**
- **India’s Goals:** India has ambitious plans of **sourcing about 500 GW**, nearly half its requirement of electricity, from non-fossil fuel sources by 2030.
 - ♦ This would mean at least **280 GW from solar power** by that year or at least 40 GW of solar capacity being annually added until 2030.

Way Ahead

- The technical potential of solar power has a significant decreasing trend in most of the selected stations which is alarming.

- It necessitates the wide use of solar panels with better efficiency to meet the energy requirements from solar resources.

Source: TH

GERMANY'S RELATIONSHIP WITH INDIA

In News

- Germany has granted a licence to India to purchase small arms from German companies.

About India-Germany Relations

- **Diplomatic:** Germany is one of India's most important partners in Europe.
 - ♦ India was also among the first countries to establish diplomatic ties with the Federal Republic of Germany after the Second World War.
- **Strategic Partnership:** India and Germany have a 'Strategic Partnership' since May 2000, which has been further strengthened with the launch of Intergovernmental Consultations (IGC) in 2011 at the level of Heads of Government which allows for a comprehensive review of cooperation and identification of new areas of engagement.
- **High-level Engagements :** There are regular high-level contacts between India and Germany. PM and Chancellor meet regularly for bilateral meetings and on the sidelines of multilateral meetings
 - ♦ India is among a select group of countries with which Germany has such a dialogue mechanism.
- **Multilateral Cooperation :** Germany and India support each other on **UNSC** reforms within the framework of the G4.
 - ♦ Germany joined the **Coalition for Disaster Resilient Infrastructure (CDRI)** in February 2020 and participated in the first Governing Council meeting in March 2020.
 - ♦ In April 2021, the German Federal Cabinet approved the signing of the amended framework agreement of the **International Solar Alliance (ISA), confirming Germany's accession**
- **Economic & Commercial Relations :** Germany is currently the **12th largest trading partner for India in 2022-23.**
 - ♦ It was India's 11th largest trading partner in 2021-22 and 7th largest trading partner in 2020-21.
 - ♦ India constitutes about 1% of Germany's total foreign trade in 2022.
 - ♦ **Major Indian exports** to Germany include electrical products and automobiles/auto components, textile and garments, chemicals, pharma, metal/metal products, food/beverages and tobacco and leather/leather goods.
 - ♦ Major exports to India include machinery automobiles/auto components, chemicals, data processing equipment, and electric equipment
 - ♦ Germany is the 9th largest foreign direct investor in India (8th largest in 2021-22) with a cumulative FDI in India of US\$ 14.1 bn. from April 2000 to March 2023.
- **Bilateral Cooperation :** Important bilateral agreements between India and Germany are the **Agreement on Avoidance of Double Taxation (DTAA)**, which came into force in 1996, and the **Comprehensive Agreement on Social Security**, which entered into force from May 2017
 - ♦ The **Indo-German Energy Forum (IGEF)** has been promoting cooperation in the priority areas of energy security, energy efficiency, renewable energy, investment in energy projects and collaborations in R&D, taking into account the environmental challenges of sustainable development.
- **Science & Technology :** Bilateral Science and Technology cooperation is implemented under an Inter Governmental Agreement on 'Cooperation in Scientific Research and Technological Development' signed in **1974**
 - ♦ The IndoGerman Committee on S&T, established in **1994** coordinates the implementation and reviews joint activities.
- **Culture :** The longstanding cultural relations between India and Germany are strengthened by the cultural and intellectual exchanges between the two countries. The study of Indian literature, especially Vedas and Upanishads, and also translation of famous works from Sanskrit to German language significantly contributed to the better understanding of India.
 - ♦ The visit of Nobel Laureate Gurudev Rabindranath Tagore to Germany in 1921, 1926 and 1930 bridged cultural and intellectual exchange between India and Germany, further supported by established networks in socio-cultural fields.

- **Indian Diaspora** : There are around 2.20 lakh (December 2022) Indian passport holders and Indian-origin people in Germany.
 - ◆ There has been a significant increase in the number of qualified and highly skilled Indian professionals in the fields of IT, banking, finance, etc
- **Defence**: Germany has significantly simplified the licensing requirements for the sale of military equipment to India.
 - ◆ Germany **granted a small arms licence to India**, which is a huge exception.
 - ◆ Germany for some time has had a bar on the sale of small arms to third countries with the exception of European Union member states, NATO (North Atlantic Treaty Organisation) countries and NATO-equivalent countries (Australia, Japan, New Zealand and Switzerland).
 - ◆ The German government has also eased the approval process for defence purchases by India.
 - ◆ **India has an inventory of MP5 submachine guns** manufactured by Heckler & Koch.
 - ◆ Germany has also approved the offer of a **tank engine and propulsion system for India's indigenous** light tank project.
 - ◆ In August 2024, the Indian Air Force (IAF) is scheduled to hold the multilateral exercise **Tarang Shakti**, in which the German Air Force would be joining other countries like the U.K, France, and Spain.
- Also, the **Arabian Peninsula**, on which the UAE and Oman sit, occasionally experiences intense bouts of rain in April and May from what's known as **mesoscale convective systems** — several thunderstorms that together act as a single weather system.

Reasons for the Extreme Rainfall

- **Global Warming**: A team of 21 scientists and researchers, under the World Weather Attribution initiative, found that climate change was causing extreme rainfall events in the two countries — which typically fall during El Niño years — between **10 and 40% more intense** than they would have been without global warming.
 - ◆ The atmosphere in a 1.2-degree warmer world can now hold **8.4% more moisture**, which is making extreme rain events more intense.
 - ◆ **Changing circulation patterns** driven by global warming are also increasing rainfall intensity.
- **El Nino**: The rainfall happened after **months of hotter-than-average sea surface temperatures partly caused by El Niño** - which is when warm waters rise to the surface of parts of the Pacific Ocean.
 - ◆ The higher ocean temperatures **added more moisture to the atmosphere**, making heavy rainfall more likely.
- **Infrastructure and Soil of the Region**: Cities built without adequate storm management combined with **very dry soils** in the region that struggle to absorb excess water also made the impact worse.
- **The UAE and Oman floods** have shown that **even dry regions can be strongly affected by precipitation events**, a threat that is increasing with increasing global warming due to fossil fuel burning.

Source:TH

FLOODS IN UAE AND OMAN

Context

- As per the researchers, the Deadly storms that submerged Dubai and caused fatalities in Oman were likely made worse by climate change.

About

- Over a period of less than 24 hours, the United Arab Emirates experienced **its heaviest rainfall since records began 75 years ago**.
 - ◆ **Dubai** — a glitzy desert city accustomed to months with no precipitation at all — **experienced the equivalent of more than a year and a half's worth of rain in that time**.

What are Floods?

- Floods are the most frequent type of natural disaster and occur when **an overflow of water submerges land that is usually dry**.

Types of Floods

- **Flash floods** are caused by rapid and excessive rainfall that raises water heights quickly, and rivers, streams, channels or roads may be overtaken.

- **River floods** are caused when consistent rain or snow melt forces a river to exceed capacity.
- **Coastal floods** are caused by storm surges associated with tropical cyclones and tsunamis.
- **Urban flooding** occurs as a result of land development. Permeable soil layers are being replaced by impermeable paved surfaces, through which water cannot infiltrate.

What Causes Floods?

• Natural Causes:

- ♦ **Prolonged rainfall:** When rain falls for a prolonged period of time, the soil can become saturated. When water is unable to infiltrate into the saturated soil, it is forced to flow over the soil, thus increasing **surface runoff**.
- ♦ **Intense/Heavy rainfall:** When rain falls heavily; the raindrops hit the ground with a force. This can cause the rain drops to bounce off the soil instead of infiltrating into the soil.
 - The water from the rain is then forced to flow over the surface instead, thus increasing the surface runoff.
- ♦ **Relief** refers to the difference in height between the highest point and the lowest point on land.
 - When rain falls, the surface runoff can move very quickly from mountainous or hilly areas to low lying areas making these low lying areas more prone to flooding.

• Anthropogenic Causes

- ♦ **Deforestation:** The lack of vegetation encourages water to flow over the surface rather than infiltrate into the soil thus increasing surface runoff.
- ♦ **Poor land use practices:** Slash and burn agriculture, over-cultivation and overgrazing eventually cause the soil to become infertile and unable to sustain vegetative growth.
 - Consequently, the lack of green cover encourages water to flow over the surface rather than infiltrate into the soil thus increasing surface runoff.
- ♦ **Urbanization** leads to the replacement of permeable soil with that of an impervious layer of pitch and concrete, through which water cannot infiltrate.
- ♦ **Improper waste disposal:** Oftentimes, garbage that is not properly disposed enters into drainage systems and clogs drains.

- ♦ **Quarrying** is the clearing of land for the removal of aggregates (mainly sand and gravel) which is to be utilized in the construction industry. The action of quarrying leaves land bare and devoid of any trees and shrubs hence increasing surface runoff produced.
- ♦ **Collapsed Dams:** If the dams begin to collapse, they will discharge more water downstream, resulting in flooding.
- ♦ **Climate change:** Uncontrolled human activities can contribute to climatic changes, which are responsible for flooding in most regions.

Implications

- **Drowning** accounts for **75% of deaths** in flood disasters. Flood disasters are becoming more frequent and this trend is expected to continue.
 - ♦ Drowning risks increases in **low- and middle-income countries where people live in flood prone areas**.
- Floods can also have **medium- and long-term health impacts**, including:
 - ♦ water- and vector-borne diseases, such as cholera, typhoid or malaria
 - ♦ injuries, such as lacerations or punctures from evacuations and disaster cleanup chemical hazards,
 - ♦ mental health effects associated with emergency situations,
 - ♦ disrupted health systems, facilities and services, leaving communities without access to health care.
- **Damaged basic infrastructure**, such as food and water supplies, and safe shelter.
- **Economic losses to the State and individuals** are also major concerns of the flooding.

Prevention

- **Drainage Improvement:** Ensure that there is proper drainage or expand on existing drainage systems whenever there's new settlements or structures being constructed.
- **Diversion of Flood Water:** Diverting all or a part of the discharge into a natural or artificially constructed channel, lying within or in some cases outside the flood plains is a useful means of lowering water levels in the river.

- **Catchment Area Treatment/Afforestation:** Watershed management measures such as developing the vegetative cover i.e. afforestation and conservation of soil cover serve as an effective measure in reducing flood peaks.
- **Anti-erosion Works:** Bank erosion can be minimized by adopting measures that aim at deflecting the current away from the river bank or which aim at reducing the current along the bank of the river and induce silt.
- **Inspection, Rehabilitation and Maintenance:** Structural works require a periodic and systematic inspection, rehabilitation and maintenance programme to ensure that the design capabilities are maintained.

Source: BBC

NEWS IN SHORT

MARRAKESH AGREEMENT

In News

- The World Trade Organization (WTO) marks the 30th anniversary of the Marrakesh Agreement, a significant milestone in global trade cooperation.

Marrakesh Agreement

- It was signed on April 15, 1994, during the Uruguay Round of multilateral trade negotiations held in Marrakesh, Morocco.
- The agreement marked a significant milestone in global trade cooperation and set the framework for international trade relations among participating countries.
- The Marrakesh Agreement formally created the World Trade Organization, replacing the **General Agreement on Tariffs and Trade (GATT)** as the primary international body governing global trade.
- The WTO officially came into existence on **January 1, 1995**.

Source: TH

MICROBES FOUND BENEATH ATACAMA DESERT

Context

- Researchers have found **microbes thriving 13 feet beneath** the scorched surface of **Chile's Atacama Desert**.

About

- The newly discovered community inhabits soils between 6.6 feet (2 m) and at least 13 feet deep, it is **dominated by Actinobacteria**.
 - ♦ The bacteria belong to the **phylum Firmicutes**, which are **resilient to high concentrations of salt and do not require oxygen to survive**.

Atacama Desert

- The Atacama Desert is the driest hot desert in the world located in Chile, receiving as much sunshine as Venus.
 - ♦ Only a handful of animals survive the harsh conditions — including Darwin's leaf-eared mouse and the South American gray fox — some bacteria thrive in the desert's salty, mineral-rich soils.



- **Significance:** The Atacama desert is often used as an analog for studying the harsh conditions of Mars, where the surface is completely lifeless, but may hide evidence of microbial life below.
 - ♦ The new research could further inform the search for life on the Red Planet, as Mars also has gypsum deposits, which could potentially serve as a water source for extraterrestrial life.

Source: LS

SELF BRED CORAL REEF

Context

- Recently the self-bred corals from the World Coral Conservatory project were nestled in Europe's largest coral reef at the Burgers' Zoo in the Netherlands.

What are Corals?

- Corals are **invertebrates** that belong to a large group of animals called **Cnidaria**.

- ♦ Corals are formed by **multiple small, soft organisms known as polyps**.
- ♦ They secrete a **rocky chalk-like (calcium carbonate) exoskeleton** around themselves for protection.
- ♦ **Coral reefs** are therefore created by **millions of tiny polyps forming large carbonate structures**.
- **Appearance:** Corals range in color from **red to purple and even blue**, but are most commonly shades of **brown and green**.
 - ♦ They get most of their colors from the **millions of microscopic algae that grow inside each polyp's tissues**.
- **There are three types of coral reefs** – fringing reefs, barrier reefs and atolls.
 - ♦ Fringing reefs **form along shorelines, barrier reefs form in open water** and **atolls are circular reefs** that have formed around **sunken volcanoes**.
- **Significance:** They provide food, shelter, resting and breeding grounds to a quarter of all marine life, acting as nurseries and refuges to protect critical biodiversity.
 - ♦ They also support more than 1 billion people living in coastal regions around the world by providing food, livelihoods and recreation.

Source: [Phys.org](#)

UNDP'S CLIMATE PROMISE

In News

- Climate Promise 2025 Launch, held in the Economic and Social Council chamber in New York

About UNDP's Climate Promise

- The Climate Promise is UNDP's response to climate change.
- It is the **world's largest offer** of support to countries on national climate pledges under the Paris Agreement.
 - ♦ These pledges, or Nationally Determined Contributions (NDCs), are crucial stepping stones towards net-zero emissions and meeting the Paris goals.
- The initiative **supports over 120 countries**, in collaboration with over 35 partners and is a major contribution to the NDC Partnership.

- It provides five key technical areas of support to help countries take bold action to reduce their emissions, increase their resilience to climate impacts and support sustainable development priorities.

What makes UNDP's Climate Promise unique?

Bringing together strong partners



Strong country presence and partner networks



Connecting the national and global



Aligning climate change and development



Source: UN

ASEAN FUTURE FORUM

In News

Secretary-General of ASEAN attended the Opening Session of the ASEAN Future Forum

About ASEAN Future Forum

- It is a one-day conference.
- It is initiated and hosted by **Viet Nam**, with the theme of "Toward fast and sustainable growth of a people-centred ASEAN Community"
- **Objectives:** Promoting insightful and comprehensive discussions in both practical and visionary ways among various stakeholders, within and beyond the region, involving government leaders, policy-makers, experts and practitioners (business community, youths and other stakeholders) on issues vital for ASEAN's future and its progress.

Do you know ?

- The Association of Southeast Asian Nations, or ASEAN, was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration) by the Founding Fathers of ASEAN: Indonesia, Malaysia, Philippines, Singapore and Thailand.
- Brunei Darussalam joined ASEAN on 7 January 1984, followed by Viet Nam on 28 July 1995, Lao PDR and Myanmar on 23 July 1997, and Cambodia on 30 April 1999, making up what is today the ten Member States of ASEAN.

Source: News on air

CHERNOBYL DISASTER

Context:

- Recently, the Chernobyl Disaster was found to be a topic of debate regarding who or what was to blame even today.
 - Some blame the operators for failing to meet 'production discipline', while others point to a **flawed reactor design**.

About the Chernobyl Disaster

- On April 26, 1986, **Reactor 4** of the Chernobyl Nuclear Power Plant in **Ukraine** exploded, causing one of the worst nuclear disasters of all time.
- The explosion released 400 times more radiation than the atomic bomb dropped on Hiroshima, Japan.
 - The entire town of **Pripyat**, which was only three kilometres from the plant, was completely evacuated 36 hours after the accident.
- The initial explosion killed two workers, with 28 firemen and emergency clean-up workers dying within three months from **Acute Radiation Sickness**.

Long-Term Impact

- An area of roughly 2,600 square kilometres remains permanently uninhabitable due to radioactive contamination.
- In 2005, the UN predicted that around 4,000 people may eventually die due to radiation exposure.

Role of the IAEA

- The International Atomic Energy Agency (IAEA) played a central role in coordinating the international response to the disaster.
- The IAEA provided immediate support to the Soviet Union in the areas of environmental remediation, decommissioning, and management of radioactive waste.

Source: IE

CARNATION REVOLUTION

Context

- Recently, Portugal commemorated its 50 Years of Carnation Revolution.

About the Carnation Revolution

- Portugal** witnessed the Carnation Revolution on **April 25, 1974** that was conducted by a **group of junior army officers (April's Captains)** who desired democracy and an end to the long-running wars against independence movements in the **African colonies of Angola, Mozambique, and Guinea-Bissau**.
 - The **April's Captains** touched off rapid decolonization, ending more than five centuries of Portuguese empire in Africa.
- They regarded those wars, which were killing thousands of young Portuguese conscripts, as unjust and unwinnable, and **toppled the longest fascist dictatorship in Europe** and ushered in democracy, and ended a stifling **four-decade dictatorship established by Antonio Salazar**.
- It paved the way for **Portugal's 1986 entry into the European Union**, then called the European Economic Community.

Brief about the fall of a dictatorship

- Antonio Oliveira Salazar** ruled Portugal from 1932 to 1968 which finally crumbled on April 25, 1974.
- Salazar, a professor of political economy, became Portugal's Finance Minister in 1928.
 - Under him, the financially stressed country made major progress, and within a year, he balanced the budget and stabilised Portugal's currency.
- He was appointed as Prime Minister of Portugal by the then President and military dictator Antonio Oscar de Fragoso Carmona in 1932.
- In 1933, Salazar established the **Estado Novo (literally, 'New State')** — a conservative, corporatist, and nationalist regime ostensibly built on the values of Portugal's traditional Catholic faith, and with the purpose of maintaining the Portuguese empire, most importantly in Africa.

Source: IE

CRYSTAL MAZE 2

Context

- The Indian Air Force (IAF) has conducted successful test firing of **Crystal Maze 2 missile**.

About

- It is an air launched ballistic missile capable of hitting targets over **250 kilometers** away.

- It is an extended stand-off range **air-to-surface missile** designed to strike high-value stationary and relocatable targets, including long-range radars and air defense systems.
- It is specifically effective in GPS denied environments, and can also penetrate areas protected by air defense systems.

Source: [IT](#)

