



DAILY CURRENT AFFAIRS

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2000-YEAR-OLD COPPER COINS DISCOVERED AT ANCIENT SITE OF MOHENJO DARO

Context: Archaeologists in Pakistan have discovered an unusual cache of 2000-year-old coins at the historic site of [Mohenjo Daro](#).

More about the News

- The copper coins are thought to be from the ruins of a Buddhist shrine of the Kushan Empire built at Mohenjo Daro in Pakistan.
 - **The Kushan Empire** ruled the region from about the 2nd century B.C. until the 3rd century A.D., and **conquered the Greco-Bactrian kingdom** established in Central Asia by Alexander the Great.



Significance

- These findings mark the **first artefacts discovered** at the stupa's ruins **since 1931**.
- The coins bear **resemblance to earlier discoveries** from the 1920s and 1930s, featuring depictions of a standing figure and, on the reverse side, representations of Hindu god Shiva and other symbols, reflecting the **syncretism of Buddhist beliefs with Hindu origins**.

Mohenjo Daro (Mound of the dead)

- It was built **entirely of unbaked brick** in the 3rd millennium B.C. and lies in the Indus Valley, in Larkana district of Sindh (Pakistan), about 5 km away from the River Indus.
 - It is one of the largest of the Indus Valley Civilization sites.
- **Discovery:** It was discovered by archeologists **Rakhaldas Banerji and Sir John Marshall**.
- **Features:** The acropolis, set on high embankments, the ramparts, and the lower town, which is laid out according to strict rules, provide evidence of an early system of town planning.
 - Its excavations revealed findings like the *Great Bath*, *Great Granary*, *a large assembly hall*, *temple-like structure*, *the seal of Pashupati* and *a bust of a bearded man*.
 - The city is divided into **citadel and lower city**.
- It was inscribed as **World Heritage Sites of Outstanding Universal Value** by **UNESCO in 1980**.

- Although Mohenjodaro is the most well-known site, the **first site to be discovered was Harappa.**

Mohenjo-Daro and the Influence of Buddhism

- **Mohenjo Daro** was once a thriving city of the Harappan civilization, **abandoned around 1800 BC**, possibly **due to climate change leading to a drying environment.**
- The Buddhist stupa at the site was constructed around 150 AD, during the Kushan Empire's rule.

Do you know?

- **Buddhism** originated in the 6th century BC in ancient India, in the region that is **present-day northeastern India and parts of Nepal.**
 - **Gautama Buddha** founded the religion based on his insights into the nature of suffering and the path to enlightenment.
- Buddhism found fertile ground for growth and development in the **Gandhara region, encompassing parts of modern Pakistan and Afghanistan.**
 - The Gandhara region emerged as a prominent centre for Buddhist art and culture during the Kushan Empire's rule in the 1st to 3rd centuries AD.
- **Taxila**, an ancient city in Pakistan, became a **vital hub of Buddhist learning**, housing one of the world's oldest universities and serving as a repository for Buddhist stupas and monasteries.
- **The Silk Road** further facilitated the exchange of Buddhist ideas and artefacts.

Decline

- The Kushan Empire, by that time, had fragmented into independent kingdoms, facing successive conquests by the Sasanian Persians and northern invaders, possibly associated with the Huns.

Source: Live Science

NAVAL PROWESS OF CHHATRAPATI SHIVAJI

News: PM Modi, unveiled a statue of the 17th century Maratha king at the coastal fort of Sindhugharh, Maharashtra.

Maratha Navy

- The Maratha Navy was the naval wing of the armed forces of the Maratha Empire, which existed from around **mid-17th century to mid-18th century** in the Indian subcontinent.

- In early Modern India, Shivaji realized the importance of a strong navy and commissioned the building of the first Maratha naval vessel in a creek near Kalyan around **1654**. He is considered as the '**Father of the Indian Navy**'.
- He did this to mainly check the power of the **Siddis** [Afro-Indians allied with Deccani Sultans].

Zenith of Maratha Navy

- Between **1661 and 1663**, the Maratha Navy came into existence, and at its peak included 400-odd ships of various kinds and sizes.
- Shivaji Maharaj had four different types of warships like **Manjuhasm Pals, Gurabs and Gallibats**.
- Between **1653 and 1680**, Shivaji ordered the construction of multiple naval forts, starting with the **Vijaydurg in 1653**, and followed by **Sindhudurg and Kolaba**.
 - These forts were used for strategic purposes and to keep a watch on enemies approaching via the seas.
- North Konkan's Kalyan and Bhivandi, which were part of the Bijapur territory, came under Shivaji's control by **1657**.

Marathas and Indian Navy

- **INS Shivaji**: The Indian Navy has named its training establishment in Lonavla as INS Shivaji.
- **INS Angre**: The shore-based logistics and administrative hub of the Western Naval Command, Mumbai, is named as INS Angre — after Kanhoji Angre (1669-1729), the celebrated Maratha naval commander.
- **Naval Ensign**: The Indian Naval Ensign is inspired from the octagonal design of the seal of Shivaji.

The limitations of this Navy

- The Marathas did not really challenge European naval power in the high seas. They paid a special tax to the Portuguese, the preeminent maritime power of Shivaji's time.
- After the decline of Portuguese power, the control of the high seas went to the British, and the Royal Navy.

Source: [IE](#)

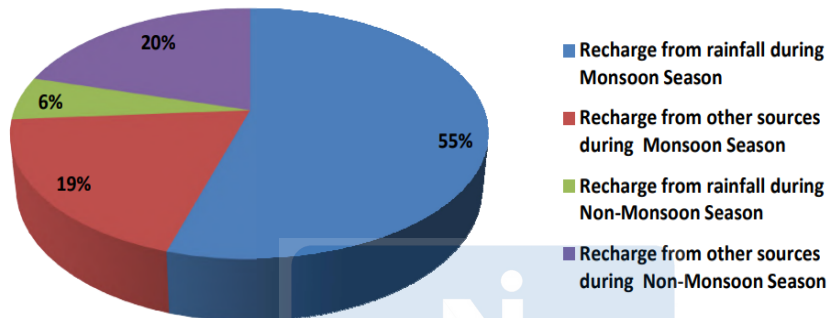
DYNAMIC GROUND WATER RESOURCE ASSESSMENT REPORT

Context: The 'Dynamic Ground Water Resource Assessment Report' was carried out jointly by the Central **Ground Water Board (CGWB) and States/UTs**. CGWB is the apex organization of the **Ministry of Jal Shakti** dealing with groundwater and related issues.

Key Highlights of the report

- Total annual groundwater recharge for the entire country is **449.08 billion cubic metres (BCM)**, marking an increase of 11.48 BCM compared to 2022 and annual ground water extraction for the entire country is 241.34 BCM.
- **Reasons highlighted for increasing groundwater:** Assessment indicates increase in ground water recharge primarily because of increase in recharge from canal seepage, return flow of irrigation water and recharges from water bodies/tanks & water conservation structures.
- Rainfall contributes nearly **60% of the total annual ground water recharge.**

Ground Water Recharge Scenario in India,2023



Implications of extracting groundwater

Environmental Implications: Rapid decline in groundwater reserves and contributing to India's carbon emissions.

- It has **resulted in the Earth's axis tilting nearly 80 cm to the east.**
- It is linked to **land subsidence**, which is an irreversible process.
- Groundwater extraction has been linked to the **climate crisis**, and impacts the ecosystem and biodiversity.

Socio-economic Implications: Groundwater extraction is the lowest since 2004, and came down by about 6 billion cubic metres in 2022 from 2020, causing the increased cost and adverse effects on food supply and communities.

Steps taken for groundwater conservation

- **National Aquifer Mapping and Management (NAQUIM):** The CGWB has taken up the NAQUIM programme under the **Ground Water Management and Regulation** scheme, with the **objectives** to delineate the aquifers, characterise them, and prepare management plans.

- **Master Plan for Artificial Recharge to Groundwater (2020):** It includes artificial recharge in both rural and urban areas, including water-scarce cities.
- **Jal Shakti Abhiyan (JSA):** It was launched in 2019 in **water-stressed blocks** of 256 districts in the country, with the **primary aim** to effectively harvest the monsoon rainfall through the creation of artificial recharge structures, watershed management, recharge and reuse structures, intensive afforestation, and awareness generation.
- **Atal Bhujal Yojana:** It is being implemented in collaboration with States, in certain water-stressed areas of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, and Uttar Pradesh.
 - The primary aim of the scheme is demand-side management through scientific means involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.



Source: PIB

DEFENCE INDIGENISATION

In News: The Defence Acquisition Council(DAC) recently accorded approval for Acceptance of Necessity (AoNs) for various **capital acquisition proposals amounting to ₹2.23 lakh crore.**

About

- Of the total, acquisition worth ₹2.20 lakh crore (98 per cent) will be sourced from **domestic industries.**
- The DAC accorded AoNs for procurement of following equipments:
 - **Anti-tank Munitions namely, Area Denial Munition (ADM) Type - 2 and Type-3,** which are capable of neutralising Tanks.
 - State-of-the-art **Towed Gun System (TGS)** The AoN was also accorded for **155 mm Nubless projectile for use in 155 mm Artillery guns** which will enhance lethality and safety of the projectiles.
 - **Medium Range Anti-Ship Missiles (MRAShM)** for surface platforms of the Indian Navy.
 - **Light Combat Helicopter (LCH)** and **Light Combat Aircraft (LCA) Mk 1A.**

Defence indigenisation

- It is the **capability of a country to develop and produce defence equipment within the country** to achieve self-reliance.
- An indigenous defence industry is a vital objective for India given its **security environment and strategic objectives**.
- **Current Status:** India's defence manufacturing sector has witnessed a **CAGR of 3.9% between 2016 and 2020**.
 - The Government of India has set the defence production target at **US\$ 25 billion by 2025** (including **US\$ 5 billion from exports by 2025**).
 - India remained the **world's largest arms importer for the five-year period between 2018-22** even though its arms imports dropped by **11% between 2013-17 and 2018-22**, according to SIPRI.

Significance of Defence indigenisation

- **Drain of Resources:** India spends around **2.5% of GDP on defence (2022)** and **60% of that is spent on imports**. This leads to a drain of economic resources.
 - Self reliance will **reduce dependability on foreign Original Equipment Manufacturers (OEMs)**.
- **Strategic advantage:** Self-reliance will make India's geopolitical stance strategically stronger as a net security provider in the region.
- **Boost indigenous capability:** While providing **enormous strength to the defence forces**, acquisition from domestic defence industries will take the indigenous capability to a new height and towards **achieving the goal of 'Aatmanirbharta'**.

Challenges

- **Defence budget:** India's defence budget is at a historic low but it remains susceptible to cuts and considerable uncertainty.
 - It has witnessed a steady decline in the past decade, **from nearly 13 percent in 2012-13 to 9.6 per cent in 2021-22**
- **Narrow Private Participation:** Private sector participation in the defence sector is constrained by the lack of a conducive financial framework and monopoly by the public sector.
- **Lack of Research and Critical Technology:** Lack of design capability, inadequate R&D investment, inability to manufacture major subsystems and components hamper indigenous manufacturing.
- **Lack of Coordination:** India's defence manufacturing capability is hindered by overlapping jurisdictions between the Ministry of Defence and the Ministry of Industrial Promotion.
- **Bureaucratic delay and licensing issues:** Investment in the defence sector is subject to compliance with the licensing requirements stipulated by the Department of Industrial Policy and Promotion (DIPP).
- **Poor quality products:** It is largely attributed to the **low-end technology and thereby fair poorly** as compared to products from other advanced countries while coming to exports.

Government initiatives to promote indigenisation

- **IDDM category: According priority to procurement of capital items of Buy Indian (IDDM-Indigenous Designed and Manufactured) category** from domestic sources under Defence Acquisition Procedure (DAP)-2020.
- **'Positive Indigenisation Lists'**: For items for which there would be an embargo on the import beyond the timelines indicated against them.
- **Liberalization of Foreign Direct Investment (FDI) policy: allowing 74% FDI under automatic route.**
- **SRIJAN**: Launch of an indigenization portal namely SRIJAN to **facilitate indigenisation** by Indian Industry including MSMEs.
- **Defence Industrial Corridors: Establishment of two Defence Industrial Corridors**, one each in **Uttar Pradesh and Tamil Nadu**, etc.
- **Amendment in the Defence Acquisition Procedure (DAP) 2020**: In all categories of procurement cases, **minimum 50 percent of indigenous content** shall be in the form of material, components and software that are manufactured in India.
- **Encouraging start-ups/MSMEs participation**: For AoN cost upto ₹300 crore, registered MSMEs and recognised start-ups are considered for issue of Request for Proposal (RFP) without any stipulation of financial parameters.

Suggestions

- **Identify priority areas for transfer of technology**, and ways to assess transfers of technology from foreign OEMs to public and private Indian entities.
- **Assign budgetary estimates** for the procurement of specific systems **over the short, medium and long-term.**
- **Create realistic timeframes for indigenisation** after consultations with Indian R&D centres and industry (both public and private).
- **Identify potential export markets** for specific weapon categories.
- Ensure via changes to the DPP, that **the acquisitions process is neutral on public vs private sector options**, and **sensitive only to Indian vs foreign manufacturing.**
 - **A level playing field between the Indian public and private sectors** will accelerate the process of indigenisation by increasing competition.

Source: [HT](#)

DEEFAKE AND ITS REGULATIONS

In Context: The government had issued notices to social media platforms following reports of deepfake content.

About Deepfakes

- They are digital media which are created by altering media — images, video, or audio using technologies such as Artificial Intelligence (AI) and machine learning, thereby blurring the lines between fiction and reality.
- The first-ever use of deepfake technology can reportedly be traced back to a Reddit contributor who in 2017 had used a publicly available AI-driven software to create **pornographic content** by **imposing the faces of celebrities** onto the bodies of ordinary people.

Impacts

- Although they have clear **benefits** in **education**, **film production**, **criminal forensics**, and **artistic expression**, they can also be used to **exploit people**, **sabotage** elections and spread large-scale misinformation.
- The use of deepfakes to perpetrate technology-facilitated **online gendered violence** has been a rising concern.
- They can potentially be used to damage reputations, fabricate evidence, and undermine trust in democratic institutions.

India's regulatory approach

- India lacks specific laws to address **deepfakes** and AI-related crimes, but provisions under a plethora of legislations could offer both civil and criminal relief.
 - For instance, **Section 66E of the Information Technology Act, 2000** (IT Act) is applicable in cases of **deepfake crimes** that involve the capture, publication, or transmission of a person's images in mass media thereby violating their privacy.
 - Such an offence is **punishable** with up to **three years of imprisonment** or a fine of ₹2 lakh.
 - Similarly, **Section 66D of the IT Act** punishes individuals who use communication devices or computer resources with malicious intent, leading to impersonation or cheating.
 - An offence under this provision carries a penalty of up to three years imprisonment and/or a fine of ₹1 lakh.
 - Further, **Sections 67, 67A, and 67B of the IT Act** can be used to prosecute individuals for publishing or transmitting deep fakes that are obscene or contain any sexually explicit acts.
 - The **IT Rules**, also prohibit hosting '**any content** that impersonates another person' and require social media platforms to quickly take down 'artificially morphed images' of individuals when alerted.
 - Provisions of the **Indian Penal Code, 1860, (IPC)** can also be resorted to for cybercrimes associated with deepfakes — Sections 509 (words, gestures, or

- acts intended to insult the modesty of a woman), 499 (criminal defamation), and 153 (a) and (b) (spreading hate on communal lines) among others.
- The **Delhi Police Special Cell** has reportedly registered an FIR against unknown persons by invoking Sections 465 (forgery) and 469 (forgery to harm the reputation of a party) in the Mandanna case.
- The **Copyright Act of 1957** can be used if any copyrighted image or video has been used to create deepfakes.
 - Section 51 prohibits the unauthorised use of any property belonging to another person and on which the latter enjoys an exclusive right.

Judicial intervention

- The Delhi High Court expressed reservations over whether it could issue any directions to rein in the use of deepfakes, pointing out that the government was better suited to address the issue in a balanced manner.

Issues and Concerns

- The existing laws are not really adequate given the fact that they were never sort of designed keeping in mind these emerging technologies.
- The **current regulations** only focus on either online takedowns in the form of censorship or criminal prosecution but lack a deeper understanding of how generative AI technology works and the wide range of harm that it can cause.
- Now, deepfakes can easily be generated by semi-skilled and unskilled individuals by morphing audio-visual clips and images.

International best practices

- In October 2023, US President Joe Biden signed a far-reaching executive order on AI to manage its risks, ranging from national security to privacy.
- In January, the Cyberspace Administration of China rolled out new regulations to restrict the use of deep synthesis technology and curb disinformation.
- The European Union (EU) has strengthened its Code of Practice on Disinformation to ensure that social media giants like Google, Meta, and Twitter start flagging deepfake content or potentially face multi-million dollar fines.

Suggestions

- AI governance in India cannot be restricted to just a law and reforms have to be centered around establishing standards of safety, increasing awareness, and institution building.
 - AI also provides benefits so there is a need to assimilate it in a way that improves human welfare on every metric while limiting the challenges it imposes.
- India's regulatory response cannot be a replica of laws in other jurisdictions such as China, the US, or the EU.

- There is a need to keep in mind the Indian context
- There is a need to revamp the existing laws and regulatory framework must be based on a market study that assesses the different kinds of harm perpetrated by AI technology.

Source: [TH](#)

CLIMATE FINANCE

In News: Climate finance is a key topic of discussion at COP28 as it has been a bone of contention between low income countries and developed nations.

What is Climate Finance?

- Climate finance refers to **large-scale investments** required for actions aiming to **mitigate or adapt** to the consequences of climate change.
- **Adaptation:** It involves anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause.
 - One example of adaptation measures includes building infrastructure to protect coastal communities against sea-level rise.
- **Mitigation:** It involves reducing the emission of greenhouse gases (GHG) into the atmosphere so that impacts of climate change are less severe.
 - Mitigation is done by increasing the share of renewable energy sources, expanding forest cover, etc.

Who should Finance?

- Developing countries have argued that **developed nations** should provide financial assistance to tackle climate change because it was due to the (now) rich world's **emissions over the last 150 years** that caused the climate problem in the first place.
- **The 1994 United Nations Framework Convention on Climate Change (UNFCCC)** required high-income countries to provide climate finance to the developing world.
 - In **2009**, developed countries pledged to provide **\$100 billion** a year to developing countries by 2020.
 - In 2010, the **Green Climate Fund (GCF)** was established as a key delivery mechanism.
 - The 2015 Paris Agreement reinforced this target, and extended it to **2025**.
- However, the high income countries are yet to fulfil their pledge.

How much Climate Finance is Needed?

- According to the UNFCCC standing committee, developing countries require at least **\$5.8 trillion by 2030** to meet their needs mentioned in their Nationally Determined Contributions (NDCs).
 - This means they require around \$600 billion every year, which is much lower than the amount promised by developed countries.
- According to the **The Organisation for Economic Cooperation and Development (OECD) report on Climate Finance 2023**, by 2025, developing countries are

estimated to need around **USD 1 trillion** annually for climate investments, rising to roughly **USD 2.4 trillion each year between 2026 and 2030**.

How much climate finance is being provided?

- As per the OECD 2023 report, the climate finance provided and mobilised by developed countries reached **\$89.6 billion in 2021**.
 - **Mitigation** continued to represent the **majority (60%)** of total climate finance provided and mobilised as against **27% for adaptation** and **13% for cross-cutting actions**.
- However, the higher income countries have also been criticised for giving most of the money as **non-concessional loans**. This has added to debt pressures across regions and income groups.
- A recent study from CARE International, a global nongovernmental organisation focused on poverty and social justice, revealed that **52% of climate finance** provided by 23 rich countries from 2011 to 2020 was money that **previously went to development budgets**.

Conclusion

- Calls for more climate finance are important, but if current practice is any guide, a large share of the funds will be taken from budgets that fund critical development priorities.
- Although public finance can only contribute a share of these extensive needs, increased involvement of international providers is key.

Source: [IE](#)

NEGLECTED TROPICAL DISEASES (NTDS)

In News: The United Arab Emirates and several charities at the U.N. COP 28 offered \$777 million in financing for eradicating neglected tropical diseases.

About

- The pledges, made as the COP28 summit focused on **climate-related health risks**, included \$100 million from the UAE and another \$100 million from the Bill and Melinda Gates Foundation.
- The World Bank launched a program to explore possible support measures for public health in developing countries, where climate-related health risks are especially high.
- The burden of tropical diseases will worsen as the world warms, along with other climate-driven health threats including malnutrition, malaria, diarrhoea and heat stress.

Neglected Tropical Diseases (NTDs)

- NTDs are a diverse group of 20 conditions that are mainly prevalent in tropical areas, where they mostly affect impoverished communities and disproportionately affect women and children.
- They are caused by a variety of pathogens including **viruses, bacteria, parasites, fungi and toxins.**
- These diseases are often associated with **poverty, limited access to healthcare, and inadequate sanitation and hygiene.**
 - They are common in **low-income populations** in developing regions of Africa, Asia, and the Americas.
- The **term "neglected" highlights** the fact that these diseases historically **receive less attention and funding** for research and development.
- **Prevalence:** NTDs flourish mainly in **rural areas, in conflict zones and hard-to-reach-regions.**
 - They thrive in areas where access to clean water and sanitation is scarce – worsened by climate change.

Neglected Tropical Diseases in India

- India has the **world's largest absolute burden of at least 10 major NTDs** -- hookworm, dengue, lymphatic filariasis, leprosy, kala-azar and rabies, ascariasis, trichuriasis, trachoma and cysticercosis.

Government Initiatives

- **National Vector Borne Disease Control Programme (NVBDCP):** It conducts mass drug administration campaigns, distributes bed nets, and promotes vector control measures to prevent diseases like lymphatic filariasis, malaria, dengue, and kala-azar.
- **National Health Mission (NHM):** The NHM aims to provide accessible, affordable, and quality healthcare to urban and rural populations, including those affected by NTDs.
- **Kala-azar Elimination Programme:** Government of India launched a centrally sponsored Kala-azar control Programme in 1990-91. The National Health Policy (2002) envisaged kala-azar Elimination by 2010 which was revised later to 2015.
 - Now Kala-azar is targeted for elimination by 2023 though WHO NTD Road Map goal is 2030.
- **Lymphatic Filariasis Elimination Programme:** India has been actively involved in the Global Programme to Eliminate Lymphatic Filariasis (GPELF).
- **National Deworming Day (NDD):** Launched in 2015, NDD is a nationwide program aimed at reducing the prevalence of soil-transmitted helminthiasis among children.

Source: TH

FACTS IN NEWS

THE ADVOCATES (AMENDMENT) BILL, 2023

Context: Recently, the Lok Sabha passed an Advocates (Amendment) Bill.

About

- Bill was introduced by the Ministry of Law and Justice.
- The bill amends the Advocates Act, 1961 which consolidates legislation pertaining to legal professionals, establishes Bar Councils, and forms the All-India Bar.
- The Bill repeals specific sections related to touts under the Legal Practitioners Act of 1879.

Key features of Bill

- Bill provides that every High court, district judge, sessions judge, district magistrate, and revenue officer (not below the rank of a district collector) may frame and publish lists of touts.
- The Court or judge may exclude from the premises of the Court any person whose name is included in the list of touts.
- The authorities empowered to frame and publish the list of touts may order subordinate courts to hold an inquiry into the conduct of persons alleged or suspected to be touts.
- Any person who acts as a tout while his name is included in the list of touts will be punished with imprisonment up to three months, a fine up to Rs 500, or both.

Touts

- Tout is someone who tries to get individuals to hire a particular lawyer and receives payment for doing so.
- They often operate around places like courts or government offices, offering their services to connect people with lawyers in exchange for money.

Source: [TH](#)

NEPAL: FIRST SOUTH ASIAN NATION TO REGISTER SAME-SEX MARRIAGE

In News: Recently, Nepal formally registered the first case of same-sex marriage.

Nepal: Key Facts

- Nepal is a **landlocked country** in South Asia and is bordered by China and India. It is located in the Himalayas
- **Capital:** Kathmandu
- It is divided into **three main geographical regions:** Himalayan region, mid hill region and the Tarai region.
- **Highest Point:** Mount Everest

Background

- The Constitution of Nepal, adopted in 2015, explicitly states that there can be no discrimination on the basis of sexual orientation.
- In June 2023, Nepal's Supreme Court issued an interim order allowing same-sex couples to register their marriages pending a final verdict.

Scenario in India

- In October 2023, Five-judge Constitution Bench of the Supreme Court, declined to **legalise same-sex marriage**, leaving it to Parliament to legislate on the subject.
 - The Bench ruled that there is **no fundamental right to marry**, and the court cannot intervene.

Do you know?

- The **Netherlands** was the **first country in 2001** to legalise same-sex marriage by amending one line in its civil marriage law.
- **Taiwan** is the only other country to legalise same-sex marriage in Asia, where societies remain largely conservative.

Source: [DD News](#)

RS PASSES POST OFFICE BILL

Context: Recently, the Rajya Sabha passed the Post Office Bill.

About

- Bill is introduced by the Ministry of Electronics and Information Technology.
- The Bill seeks to replace the Indian Post Office Act of 1898.
- **Key Features of Bill:**
 - **Privilege Restriction:** Exclusive government privilege for conveying letters is eliminated; instead, services provided by India Post will be determined by prescribed Rules.
 - **Director General of Postal Services:** The leadership of India Post will be entrusted to the Director General of Postal Services, who will possess the authority to establish regulations, including those related to service tariffs and the issuance of postage stamps.
 - **Interception Authority:** The government reserves the right to intercept items transmitted through India Post based on specified grounds, such as concerns related to state security and public order.
 - **Liability Limitation:** India Post will not assume any liability for its services, except as stipulated by Rules.

Source: **IE**

CLIMATE CLUB

News: Leaders of COP28 to the UNFCCC formally launched the **Climate Club**, an initiative aimed at **cooperation between countries in decarbonising the industrial sector**.

About

- **Led by Germany and Chile**, the Club has garnered support from **36 member** countries including Kenya, the European Union, Switzerland and others.
 - India is **not a member**.
- The Club is claimed to currently **represent 55 percent of the global economy**.
- **Key priorities for the Club:**
 - **Standardising emission calculations** for carbon dioxide (CO₂) intensities of certain products,
 - **Strategic discussions on definitions for net-zero emissions** for steel and cement, and
 - **Establishment of a platform matching member needs** with available financing instruments from the public and private sector.
- **A secretariat** will be formed to implement the work program.
 - Currently, **OECD and IEA** are the joint interim heads of secretariat.

Source: **DTE**

BIOTECHNOLOGY RESEARCH AND INNOVATION COUNCIL (BRIC)

In News: First Society Meeting of Biotechnology Research and Innovation Council (BRIC) was held recently.

About

- The Union Minister of Science and Technology launched the '**Zero Waste Life on Campus**' program.
- It is aimed at achieving sustainability through application and adoption of knowledge and technologies, and promotion of management models focused on co-responsibility, on each BRIC campus.

About Biotechnology Research and Innovation Council (BRIC)

- The **Department of Biotechnology** has merged **14 autonomous institutions** under it into an **apex body** called the Biotechnology Research and Innovation Council (BRIC).
- **Aim:** To achieve centralised and unified governance and maximise the impact of biotech research.
- Each of the 14 subsumed BRIC Institutions will maintain their distinct research mandates, governed by one Governing Body, at BRIC.
- BRIC and its Institutes can engage in public-private research partnerships and receive endowments including funds from non-Governmental resources for research-related activities.

Department of Biotechnology

- It was established in **1986** with the aim of **promoting and regulating** biotechnology research and development in the country.
- It is under the **Ministry of Science and Technology**.

Source: [PIB](#)

PIEZOELECTRICITY

About Piezoelectricity

- **Piezoelectric Effect** is the ability of certain materials to generate an electric charge in response to applied mechanical stress.
- **History:** Piezoelectricity was discovered in **1880 by Pierre and Paul-Jacques Curie**, who found that when they compressed certain types of crystals including quartz, tourmaline, and Rochelle salt, along certain axes, a voltage was produced on the surface of the crystal.

Piezoelectric Principle

- **Principle:** This property is the result of their unusual crystal structures. Usually, the charges on atoms in the molecules that make them up are symmetric on two sides of an axis.
- When some stress is applied, the molecule becomes distorted and the asymmetry of charges gives rise to a small electric current.
- Some materials also display an inverse piezoelectric effect, where the application of an electric current induces a mechanical deformation.

Applications

- Both direct and inverse piezoelectric materials are used in **pressure sensors, accelerometers, and acoustic devices** – where their ability to convert mechanical signals into electrical signals is crucial.
- The material is also used in devices such as **microphones, phonograph pickups, and wave filters** in telephone-communications systems.

Source: [TH](#)

