



## Addressing AMR in the Draft Pandemic Treaty

**For Prelims:** [World Health Assembly](#), [antimicrobial resistance \(AMR\)](#), [“Zero Draft”](#), [World Health Organization](#), [pandemics](#), [vaccines](#), [COVID-19 pandemic](#)

**For Mains:** Addressing antimicrobial resistance (AMR), Challenges Posing Risk to the Health Sector.

### Why in News?

The [Draft Pandemic treaty also known as “Zero Draft”](#), is currently under negotiation by **Member States at the [World Health Assembly](#)**.

- However, there is growing concern that the provisions **addressing [antimicrobial resistance \(AMR\)](#) are at risk of being removed from the final text.**
- **Civil society and research organizations** provided analysis and recommendations on addressing AMR.
- A special edition of the **Journal of Medicine, Law and Ethics** emphasized the importance of including AMR in the Treaty.

### What is the Draft Pandemic Treaty?

- **About:**
  - The draft pandemic treaty, is an **international agreement** proposed to prevent, prepare for, and respond to **pandemics and global health emergencies**.
  - It is being negotiated by the [World Health Organization \(WHO\)](#) and member states.
  - The treaty aims to **strengthen global cooperation and solidarity in addressing health threats**.
  - It covers aspects such as **surveillance, detection, notification, access to health technologies, collaboration, and accountability**.
  - The treaty is based on principles of **human rights, equity, and solidarity, while respecting each state's sovereign right** to determine its health policies.
  - It establishes a **global health threats council, a global health threats fund, and an independent review and evaluation mechanism**.
  - The draft pandemic treaty is a response to the **lessons learned from the [COVID-19 pandemic](#)**.
- **Principal Components of the Draft:**
  - **Global Cooperation:**
    - It calls for **increased global coordination and cooperation** in the preparation for and response to pandemics and **other global health emergencies**.
  - **Strengthening of Health Systems:**
    - It emphasizes the **need to strengthen health systems in all countries, particularly in low- and middle-income countries**, to ensure they are better prepared to respond to pandemics and other global health emergencies.
  - **Investment in Research and Development:**
    - It calls for **improved access to essential health technologies**, such as [vaccines](#), diagnostics, and treatments, during pandemics and other global health

emergencies.

- It calls for **increased investment in research and development** of health technologies, particularly for diseases that pose a significant threat to global health.
- **Transparency in Sharing of Information:**
  - It calls for **increased transparency and sharing of information about pandemics** and other global health emergencies, including data on the spread of diseases and the effectiveness of interventions.
- **Pathogen Access and Benefit-Sharing System (PABS):**
  - The constitution of **PABS** has been constituted under the WHO, making Genomic sequences of all pathogens with the pandemic potential **to be shared on an “equal footing” in the system.**
    - The PABS system is an important tool for ensuring the responsible and equitable use of pathogens and their genetic resources in the research and development **of new medicines and vaccines**, while also recognizing the rights and interests of the countries and communities that provide these resources.
- **Addressing Gender Disparities:**
  - In addressing gender disparities in the healthcare workforce, the draft aims to **“ensure meaningful representation, engagement, participation and empowerment of all health and care workers”** by stressing equal pay and addressing barriers specific to women in taking leadership roles.

## Why is AMR Crucial in the Pandemic Treaty?

### ▪ Reasons to Include:

- AMR is the process by which infections caused by **microbes become resistant to the medicines developed to treat them.**
  - Microbes include **bacteria, fungi, viruses and parasites.**
  - **Bacterial infections alone cause one in eight deaths globally.**
- **Not all pandemics are caused by viruses, and past pandemics have been caused by bacterial diseases.**
- AMR is fueling the rise of **drug-resistant infections**, including **drug-resistant tuberculosis, pneumonia and drug-resistant Staph infections** (caused by bacteria called **staphylococcus**) such as **methicillin-resistant Staphylococcus aureus (MRSA).**
- **Secondary bacterial/ fungal infections** are a serious concern during viral pandemics, requiring effective antibiotics.
  - Research from Northwestern University suggests that many of the **deaths among hospitalized COVID-19 patients** were associated with **pneumonia — a secondary bacterial infection** that must be treated with antibiotics.
  - **Black fungus** is a fungal infection caused by **Mucorales fungi**, primarily affecting **immunocompromised** individuals with conditions like **COVID-19 or diabetes.**

### ▪ Impact of Excluding AMR Measures:

- Removal of AMR-related measures would **hinder efforts to protect people from future pandemics.**
- Measures at risk of removal include **access to safe water, infection prevention, surveillance, and antimicrobial stewardship.**
  - Antimicrobial stewardship is the **effort to measure and improve** how antibiotics are prescribed by **clinicians and used by patients.** It **aims to improve clinical outcomes** and **minimize adverse events** related to antibiotic use, including the development of antibiotic resistance.
- **Weakening the language of the Treaty** could allow countries to **opt-out of preventive actions.**

### ▪ The Urgency of Addressing AMR in the Pandemic Treaty:

- AMR requires **global political action and collaboration to mitigate its impact.**
  - Safeguarding **antimicrobials is crucial for pandemic response** and preparedness.
  - **Failing to address AMR** in the pandemic treaty **undermines its broader goals of protecting nations and communities from future health emergencies.**
-

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q. Which of the following are the reasons for the occurrence of multi-drug resistance in microbial pathogens in India? (2019)**

1. Genetic predisposition of some people
2. Taking incorrect doses of antibiotics to cure diseases
3. Using antibiotics in livestock farming
4. Multiple chronic diseases in some people

**Select the correct answer using the code given below.**

- (a) 1 and 2  
(b) 2 and 3 only  
(c) 1, 3 and 4  
(d) 2, 3 and 4

**Ans: (b)**

### Mains

**Q. What is the basic principle behind vaccine development? How do vaccines work? What approaches were adopted by the Indian vaccine manufacturers to produce COVID-19 vaccines? (2022)**

[Source: TH](#)

## India-US Relations

**For Prelims:** [General Electric GE-414 jets](#), [Maritime Domain Awareness](#), [INDUS-X initiative](#), [Indo-Pacific](#), [IPEF](#).

**For Mains:** India-US Relations.

### Why in News?

India and the United States have agreed to initiate negotiations for a '**Security of Supply**' (SoS) **arrangement** and a '**Reciprocal Defence Procurement**' (RDP) **agreement**, aiming to promote **long-term supply chain stability** and enhance security and defense cooperation between both countries.

- A SoS agreement is a **bilateral or multilateral agreement between countries** aimed at ensuring the availability and stability of critical supplies, particularly in the field of defense and security.
- An RDP agreement is a bilateral agreement between countries in the field of defense procurement. It is designed to **facilitate reciprocal procurement of defense items and promote cooperation** in research, development, and production of defense equipment.



## What are the Key Highlights of the Agreement?

- **Assembling Electric Jets in India:**
  - Both sides discussed the deal for assembling [General Electric GE-414 jets](#) in India, which is yet to be finalized.
- **Defence Industrial Cooperation:**
  - The roadmap for 'Defence Industrial Cooperation' has been concluded between India and the US, guiding their **policy direction for the next few years**.
  - Both countries will identify opportunities for **co-development** of new technologies and co-production of existing and new systems, promoting collaboration between defense start-up ecosystems.
- **Capacity Building and Infrastructure Development:**
  - Capacity building, including [Maritime Domain Awareness \(MDA\)](#) and strategic infrastructure development.
  - Increase sourcing by US companies from India, particularly Boeing under the mega-civil aircraft deal with Air India.
    - The establishment of Maintenance, Repair and Overhaul (MRO) facilities by US companies in India to cater to the equipment used by the Indian armed forces and the region.
- **US-India Defence Acceleration Ecosystem (INDUS-X):**
  - The US-India Business Council will launch the INDUS-X initiative to advance **cutting-edge technology cooperation between US and Indian companies**, investors, start-up accelerators, and academic research institutions.

## How have been India's Relations with the US?

- **About:**
  - The U.S.-India strategic partnership is founded on **shared values including a**



**commitment to democracy and upholding** the rules-based international system.

- Both have shared interests in promoting global security, stability, and economic prosperity through trade, investment, and connectivity.

▪ **Economic Relations:**

- The **U.S. has emerged as India's biggest trading partner in 2022-23** on account of **increasing economic ties** between the two countries.
- The bilateral trade between India and the U.S. has increased by **7.65% to USD 128.55 in 2022-23** as against **USD 119.5 billion in 2021-22**.
  - Exports to the U.S. rose by 2.81% to USD 78.31 billion in 2022-23 as against USD 76.18 billion in 2021-22, while imports grew by about 16% to USD 50.24 billion.

▪ **International Cooperations:**

- India and the United States cooperate closely at multilateral organizations, including the [United Nations](#), [G-20](#), [Association of Southeast Asian Nations \(ASEAN\)](#) Regional Forum, [International Monetary Fund](#), [World Bank](#), and [World Trade Organization](#).
- The United States welcomed India joining the UN Security Council in 2021 for a **two-year term** and supports a reformed UN Security Council that includes India as a permanent member.
- Together with Australia and Japan, the United States and **India convene as the Quad** to promote a free and open Indo-Pacific and provide tangible benefits to the region.
- India is also one of twelve countries partnering with the United States on the [Indo-Pacific Economic Framework for Prosperity \(IPEF\)](#).
- India is a member of the [Indian Ocean Rim Association \(IORA\)](#), at which the United States is a dialogue partner.
- In 2021, the United States joined the International Solar Alliance headquartered in India, and in 2022 the [United States Agency for International Development \(USAID\)](#).

## Way Forward

- The partnership between the two countries is critical for ensuring a **free, open, and rules-bound Indo-Pacific region**.
- The unparalleled Demographic Dividend provides **enormous opportunities for the US and Indian firms for technology transfer**, manufacturing, trade and investment.
- India is emerging as a leading player in an international system that is undergoing an unprecedented transformation. It shall use its present situation to explore opportunities to further its vital interests.

[Source: TH](#)

## Prepaid Payment Instrument

**For Prelims:** [Prepaid Payment Instrument](#), [RBI](#), [DICGC](#), [Remittance](#), [Insurance Fund](#), [Regulated Entities](#).

**For Mains:** Coverage of DICGC to Prepaid Payment Instruments.

## Why in News?

A committee reviewing customer service standards for [RBI \(Reserve Bank of India\)](#) regulated entities has recommended the extension of [Deposit Insurance and Credit Guarantee Corporation \(DICGC\)](#) to [Prepaid Payment Instrument \(PPI\)](#) to protect against fraud and unauthorized transactions.

- The committee has recommended that the RBI should examine the possibility of extending DICGC cover to PPI segment, including bank **PPIs and later non-bank PPIs**.
- The RBI should incentivize regulated entities to improve customer service and **strengthen overall customer protection efforts**.

## What are Prepaid Payment Instruments?

### ▪ About:

- PPIs are instruments **that facilitate the purchase of goods and services**, conduct of financial services and **enable [Remittance facilities](#)**, among others, against the money stored in them.
- PPIs can be issued as cards or wallets.
- There are **two types of PPIs**,
  - Small PPIs and full-KYC (know your customer) PPIs. Further, small PPIs are categorized as – PPIs up to Rs 10,000 (with cash loading facility) and PPIs up to Rs 10,000 (with no cash loading facility).
- PPIs can be loaded/reloaded by cash, **debit to a bank account, or credit** and debit cards.
  - The cash loading of PPIs is limited to **Rs 50,000 per month subject** to the overall limit of the PPI.

### ▪ Issuance:

- PPIs can be issued by banks and non-banks **after obtaining approval from the RBI**.
  - As of November 2022, over 58 banks have been permitted to issue and operate prepaid payment instruments.
  - There are **33 non-bank PPI issuers** as of May 2023.

## What is DICGC?

### ▪ About:

- DICGC is a **wholly owned subsidiary of the RBI** and provides deposit insurance.
  - The deposit insurance system **plays an important role in maintaining the stability** of the financial system, particularly by **assuring the small depositors of the protection** of their deposits in the event of a bank failure.
- The deposit insurance extended by DICGC covers all commercial banks including **Local Area Banks (LABs), Payments Banks (PBs), Small Finance Banks (SFBs), [Regional Rural Banks \(RRBs\)](#) and [co-operative banks](#)**, that are licensed by the RBI.

### ▪ Coverage:

- DICGC insures all deposits such as savings, fixed, current and recurring including accrued interest.
- Each depositor in a bank is **insured up to a maximum of Rs 5 lakh** for both principal and interest amount held by them as on the date of liquidation or failure of a bank.
  - The earlier insurance **cover provided by DICGC was Rs 1 lakh**. However, the limit of insurance cover for depositors in insured banks was raised to Rs 5 lakh in 2020.
- **DICGC does not cover**,
  - Deposits of foreign Governments.
  - Deposits of Central/State Governments.
  - Inter-bank deposits.
  - Deposits of the State Land Development Banks with the State co-operative banks.
  - Any amount due on account of any deposit received outside India.
  - Any amount which has been specifically exempted by the corporation with the previous approval of the RBI.

### ▪ Funds:

- The Corporation maintains the following funds:
  - Deposit Insurance Fund
  - Credit Guarantee Fund
  - General Fund
- The first two are funded respectively by the insurance premia and guarantee fees received and are utilised for settlement of the respective claims.

- The General Fund is utilised for meeting the establishment and administrative expenses of the Corporation.

[Source: IE](#)

---

## Dealing with Deepfakes

**For Prelims:** [Deepfake technology](#), deep synthesis technology, [Artificial Intelligence technology](#), [blockchain technology](#)

**For Mains:** Impact of Deepfake Technology, India's stand on dealing with deepfakes, Ethical concerns associated with deepfakes

## Why in News?

Recently, various news sources have focused on the **growing concern over deepfakes**, which are **fabricated media created using deep learning technology**.

- While deepfakes have the potential to distort reality and manipulate public perception, they also **hold promise in various fields**. The challenge lies in responsibly wielding this technology and addressing its impact on society.

## What is Deepfake Technology?

- **About:**
  - [Deepfake technology](#) is a method for manipulating **videos, images, and audio** utilizing powerful computers and **deep learning**. Deep learning is a part of **Deep synthesis**.
    - **Deep synthesis** is defined as the use of technologies, including **deep learning** and **augmented reality**, to generate text, images, audio and video to create **virtual scenes**.
  - It is used to generate **fake news** and **commit financial fraud** among other wrongdoings.
  - It overlays a digital composite over an already-existing video, picture, or audio; [cybercriminals](#) use [Artificial Intelligence technology](#).
  - Deepfakes **surpass traditional photo editing techniques** by leveraging **machine learning algorithms**.
  - Deepfakes have been used to create **manipulated content**, such as **fake videos of political figures and false disaster images**.
- **Redeeming Applications of Deep Learning:**
  - Deep learning technology has enabled positive advancements, such as **restoring lost voices and recreating historical figures**.
  - The ALS Association's voice cloning initiative and recreations of artists and celebrities showcase the potential benefits of deep learning.
  - Deep learning techniques have been applied in **comedy, cinema, music, and gaming to enhance artistic expression**.
- **Unsettling Consequences and Ethical Concerns:**
  - Deepfakes have been employed for **malicious purposes, including revenge porn and hacking facial recognition systems**.
  - They **undermine trust in the media** and **blur the lines between fact and fiction**.
  - Misinformation propagated by deepfakes can be mistaken as true, leading to potential social unrest.

## What is India's Stand on Dealing with Deepfakes?

- India **does not have specific laws or regulations that ban or regulate the use of deepfake technology.**
- Existing laws such as **Sections 67 and 67A of the [Information Technology Act \(2000\)](#)** have provisions that may be applied to certain aspects of **deepfakes, such as defamation and publishing explicit material.**
- **Section 500 of the Indian Penal Code (1860)** provides punishment for defamation.
- The **[Personal Data Protection Bill \(2022\)](#)**, if passed, could provide some protection against the misuse of personal data, but it does not explicitly address deepfakes.
- India **needs to develop a comprehensive legal framework** specifically targeting deepfakes, considering the potential implications for privacy, social stability, national security, and democracy.

## What are Other Countries doing to Combat Deepfakes?

- **European Union:**
  - In 2022, the **European Union** has updated **Code of Practice on Disinformation** that was introduced in 2018 to stop the spread of disinformation through deepfakes.
- **United States:**
  - The **U.S.** introduced the **bipartisan Deepfake Task Force Act** to assist the Department of Homeland Security (DHS) to **counter deepfake technology.**
- **China:**
  - China introduces **comprehensive regulation on deep synthesis**, effective from January 2023. Aimed at curbing disinformation, the regulation requires **clear labeling and traceability** of deep synthesis content. **Consent from individuals and adherence to laws and public morals** are mandated. Service providers must establish review mechanisms and cooperate with authorities.

## Way Forward

- **AI-Powered Social Media Fact-Checking:** Engage social media platforms to invest in **AI-powered algorithms and tools** that can **automatically detect, and flag potentially manipulated or deepfake content.**
  - Collaborate with fact-checking organizations and utilize the power of public participation to quickly address and act against the spreading of false information through deepfakes.
- **Blockchain-based Deepfake Verification:** Use **blockchain technology** to create an **unchangeable record** of who created a piece of digital media and **ensure transparency** in verifying its **authenticity.**
  - This **decentralized approach allows individuals to trace the origin and modification history of media**, discouraging the creation and dissemination of malicious deepfakes.
- **Deepfake Impact Mitigation Policy:** Set up a **fund to help** individuals and organizations **affected by deepfakes.**
- **Deepfake Accountability Act (DAA):** DAA can be introduced aimed at addressing the challenges posed by deepfakes and ensuring accountability in their **creation and distribution and controlling.**
- **Punishments and Public Awareness Campaigns:** Laws should punish **bad-faith actors and protect individuals** from the **manipulation of their digital representations.**
  - **Public awareness and literacy in scientific and digital domains** are crucial to combat the spread of deepfakes.

[Source: TH](#)

---



# Call for a New Treaty for Outer Space

**For Prelims:** [United Nations](#), [Outer Space](#), [Outer Space Treaty 1967](#).

**For Mains:** Call for a New Treaty for Outer Space.

## Why in News?

The [United Nations \(UN\)](#) has recently released a policy brief titled "**For All Humanity — The Future of Outer Space Governance**," recommending the development of a new treaty to ensure **peace, security, and the prevention of an arms race** in outer space.

- The recommendations come ahead of the upcoming **UN Summit of the Future, scheduled for September 2024, in New York**. The summit aims to facilitate multilateral solutions and strengthen global governance to address future challenges.

## What are the Key Highlights?

- **Increasing Satellite Launches:**
  - There has been an exponential increase in **satellite launches over the past decade**, driven by both government and private sector participation.
    - In 2013, there were **210 new launches, which increased to 600 in 2019 and 1,200 in 2020** and 2,470 in 2022.
  - Countries like the United States, China, India, and Japan are **leading the way in space activities**, including manned missions, lunar exploration, and resource exploitation.
    - [National Aeronautics and Space Administration \(NASA\)](#), through its [Artemis](#) mission, **plans to land the first woman and the next man on the Moon**.
    - Minerals on the Moon (has rich deposits of helium 3, which is rare on Earth), asteroids (abundant deposits of valuable metals, including platinum, nickel and cobalt) and planets can be attractive for countries.
- **Lack of International Framework:**
  - There is an absence of an agreed international framework on space resource exploration, exploitation, and utilization.
  - The brief underscores the importance of establishing mechanisms **to support the implementation of space resource activities** while addressing issues of jurisdiction, control, liability, and responsibility for environmental pollution.
- **Coordination and Space Traffic Management:**
  - The current coordination of space traffic is fragmented, with different national and regional entities **employing varying standards and practices**.
  - The lack of coordination poses **challenges for countries with limited space capacity**.
- **Space Debris and Environmental Concerns:**
  - The **proliferation of space debris** is identified as a significant issue, with thousands of **objects posing threats to operational spacecraft**.
  - The UN calls for **legal considerations related to jurisdiction**, control, liability, and responsibility for environmental pollution caused by space debris. Technology to remove space junk is being developed, but the legal aspects require attention.

## What are the Recommendations?

- **New Treaty for Peace and Security:**
  - The UN recommends the **negotiation and development of a new treaty** to ensure peace, security, and the prevention of an arms race in outer space.
  - This treaty would **establish international norms, rules, and principles to address**

**emerging threats** and promote responsible space activities.

- **Coordinated Space Situational Awareness:**
  - Member states are **urged to establish an effective framework for coordinating space situational** awareness, space object maneuvers, and space events. This coordination will enhance the safety and security of space operations.
- **Space Debris Removal Framework:**
  - The UN calls for the **development of norms and principles for [Space Debris](#) removal, considering both legal and scientific aspects.**
  - An effective framework for sustainable exploration, exploitation, and utilization of space resources, particularly on the Moon and other celestial bodies, is recommended.

## What is Outer Space?

- **About:**
  - Outer space, also known as space or celestial space, refers to the **vast expanse beyond Earth's atmosphere** and between celestial bodies. It is a vacuum that exists beyond the Earth's atmosphere and **extends indefinitely throughout the universe.** Outer space is characterized by extremely low density and pressure, as well as the absence of air and other atmospheric elements.
- **UN Treaties:**
  - The treaties commonly referred to as the "**five United Nations treaties on outer space**" are:
    - **[The Outer Space Treaty 1967:](#)** Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies.
    - **Rescue Agreement 1968:** Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.
    - **Liability Convention 1972:** Convention on International Liability for Damage Caused by Space Objects.
    - **The Registration Convention 1976:** Convention on Registration of Objects Launched into Outer Space.
    - **The Moon Agreement 1979:** Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.
  - India is a signatory to **all five of these treaties but has ratified only four. India did not ratify Moon agreement.**

## UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q.** International civil aviation laws provide all countries complete and exclusive sovereignty over the airspace above their territory. What do you understand by 'airspace'? What are the implications of these laws on the space above this airspace? Discuss the challenges which this poses and suggest ways to contain the threat. (2014)

**Source:** [DTE](#)

---

## Adverse Possession

---

**For Prelims:** [Law Commission of India](#), [Adverse possession](#), Limitation Act, 1963, [Supreme Court](#), Hammurabi Code.

**For Mains:** Major Provisions of the Limitation Act, 1963, Historical Development and Legal Framework of Adverse Possession.

## Why in News?

The 22<sup>nd</sup> Law Commission's recent report provides a thorough examination of **adverse possession and its implications in property law** and recommended that no changes are necessary in the existing provisions under the **Limitation Act of 1963**.

- The concept of adverse possession stems from the idea that **land must not be left vacant but instead, be put to judicious use**.

## What is Adverse Possession?

### ▪ About:

- [Adverse possession](#) refers to the acquisition of property through hostile, continuous, uninterrupted, and peaceful possession.
- The concept aims to prevent long-standing doubts over land ownership and to benefit society by allowing someone to make use of idle land left by the owner.
  - It also provides protection to **individuals who have regarded the occupant as the rightful owner of the property**.

### ▪ Historical Development and Legal Framework:

- **Historical Basis:** The concept of "**title by adverse possession**" dates back to the **Hammurabi Code in 2000 BC**.
  - Its development continued through statutes of limitation in England, with the **Property Limitation Act of 1874 being a significant milestone**.
- **Introduction to India:** The law of limitation was introduced in India through the "**Act XIV of 1859**" and underwent significant changes with the enactment of the **Limitation Act in 1963**.

### ▪ Major Provisions of the Limitation Act, 1963:

- **Burden of Proof:** The **1963 Act shifted the burden of proof of adverse possession to the claimant**, thereby strengthening the position of the true owner.
- **Acquisition of Ownership:** Under the **Limitation Act, 1963**, any person in possession of private land for **over 12 years or government land for over 30 years can become the owner of that property**.
  - To claim adverse possession, the possession must be open, continuous, and adverse to the rights of the true owner for the required statutory period.

### ▪ Main Ingredients of Adverse Possession:

- The [Supreme Court](#), in the **2004 case of Karnataka Board of Wakf v Government of India**, outlined the essential elements for proving adverse possession.
  - Claimants must establish the **date of possession, the nature of possession, awareness of possession by the true owner, the continuity of possession**, and that the possession was open and undisturbed.
  - In the 1981 ruling in **Kshitish Chandra Bose vs. Commissioner of Ranchi**, the top court delineated the requirements of openness and continuity.

### ▪ Criticism and Recommendations:

- **Criticism of Current Law:** In the **2008 case of Hemaji Waghaji Jat v. Bhikhabhai Khengarbhai Harijan and Others**, the Supreme Court criticised adverse possession as being unduly harsh on the true owner and benefiting dishonest trespassers.
  - The court urged the **government to reconsider and amend the law**, recognizing the necessity for a fresh perspective on adverse possession.
- **Reference to Law Commission:** In response to the court's recommendation, the [Ministry of Law and Justice](#) referred the matter to the Law Commission in 2008 for

examination and a subsequent report.

## What are the Arguments Against Adverse Possession?

- **Promotes False Claims:** Adverse possession **promotes false claims** and burdens the judicial system with avoidable litigation.
- **Lack of Consent:** Adverse possession allows someone to acquire property without the consent or knowledge of the true owner.
  - This is considered unfair and unethical, as it disregards the owner's rights and denies them the opportunity to make decisions about their own property.
- **Inequitable Outcome:** Adverse possession can lead to **unjust outcomes, especially when the true owner is unaware of the adverse possessor's occupation.**
  - The true owner may suddenly discover that their property has been taken away by someone who had no rightful claim to it, resulting in a loss of property and often emotional distress.

## What is Law Commission of India?

- The Law Commission of India is a **non-statutory body** constituted by the Government of India from time to time, with **definite terms of reference to carry out research in the field of law.**
  - It works as an **advisory body to the Ministry of Law and Justice.**
  - The **first Law Commission of independent India was established in 1955** for a three-year term.
- The **Law Commission of India has submitted 277 reports so far** on various topics ranging from civil law, criminal law, constitutional law, family law, personal law, environmental law, human rights law, etc.
- It is currently in its 22nd term and its chairman is **Justice Rituraj Awasthi** (Former Chief Justice of Karnataka HC)

[Source: IE](#)

## Manual Scavenging in India

**For Prelims:** [Manual-scavenging](#), [Constitution of India](#), [Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013](#), [NAMASTE scheme](#), [Safaimitra Suraksha Challenge](#), [Swachhta Abhiyan App](#)

**For Mains:** Reasons for the Continued Prevalence of Manual Scavenging in India, Government Initiatives to Curb Manual Scavenging.

## Why in News?

Recent revelations by the **Union Ministry of Social Justice and Empowerment** highlight that **only 508 out of 766 districts have declared themselves [manual-scavenging free](#).**

- This discrepancy raises concerns about the **true extent of manual scavenging and the**



effectiveness of government efforts.

## What is Manual Scavenging?

- **Manual scavenging** refers to the practice of manually **cleaning, handling, and disposing of human excreta** and other waste materials from dry latrines, open drains, and sewers.
  - In India, manual scavenging has been a long-standing issue, although it has been **officially banned since 1993**.

## What are the Constitutional Safeguards and Legal Provisions for Manual Scavengers?

- **Constitutional Safeguards:** The [Constitution of India](#) guarantees several rights and protections for manual scavengers such as:
  - **Article 14:** Equality before the law and equal protection of the laws.
  - **Article 17:** Abolition of untouchability and prohibition of its practice in any form.
  - **Article 21:** Protection of life and personal liberty.
  - **Article 23:** Prohibition of traffic in human beings and forced labour.
- **Legal Provisions:** The [Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013](#) is the **main legislation** that aims to prohibit and eliminate manual scavenging in India. It prohibits the employment or engagement of anyone as a manual scavenger and also prohibits anyone from constructing or maintaining insanitary latrines.

## What are the Reasons for the Continued Prevalence of Manual Scavenging in India?

- **Inefficient Sewage Management System:** In India, **most municipalities do not have the latest machines for cleaning the sewage systems** and thus sewage workers are required to enter the underground sewerage lines through manholes.
  - The **unskilled labourers**, meanwhile, are much cheaper to hire and contractors illegally employ them at a daily wage.
- **Caste-based social hierarchy:** Manual scavenging has **historically been associated with the caste system in India**, where certain castes have been marginalised and forced into occupations considered "unclean" or "polluting."
  - The **perpetuation of caste-based discrimination and social stigma contributes to the continuation of manual scavenging** as a means of employment for these marginalised communities.
- **Lack of Alternative Livelihood Opportunities:** Manual scavenging often persists **due to limited alternative employment opportunities** available to the affected communities.
  - Many manual scavengers are trapped in a cycle of **poverty and exclusion**, lacking access to education and skill development programs that could provide them with alternative livelihood options.
  - This **lack of economic alternatives forces them to continue engaging in manual scavenging for survival**.

## What are the Effects of Manual Scavenging?

- **Health Hazards:** Manual scavengers face significant health risks due to direct exposure to human waste and hazardous substances.
  - They are at high risk of contracting diseases such as **cholera, typhoid, hepatitis, and various respiratory infections**.
  - The **absence of protective gear and poor sanitation conditions further exacerbate the health hazards**, leading to a higher incidence of illnesses and premature deaths among manual scavengers.
- **Dignity and Human Rights Violations:** Manual scavenging is a clear violation of the **dignity and human rights** of the individuals involved.
  - They are subjected to degrading and inhumane conditions, handling human waste with their bare hands and lacking access to basic sanitation facilities.

- This occupation perpetuates **social stigma, discrimination, and the marginalisation of affected communities** reinforcing caste-based oppression.
- **Psychological and Emotional Trauma:** Engaging in manual scavenging can have severe psychological and emotional effects on the individuals involved.
  - The constant **exposure to filth, the indignity of the work, and the discrimination they face take a toll on their [mental well-being](#)**. Manual scavengers often experience feelings of shame, low self-esteem, and depression, leading to long-term psychological trauma.

## What are the Government Initiatives and Supreme Court Directions to Curb Manual Scavenging?

- **Supreme Court Directions:**
  - In 2014, a Supreme Court order made it mandatory for the government to identify all those who died in sewage work since 1993 and **provide Rs. 10 lakh each as compensation to their families**.
- **Rehabilitation Effort:**
  - **Payout and Subsidies:**
    - Approximately **58,000 manual scavengers have been identified and given a one-time cash payout of ₹40,000 each**.
    - Around **22,000 manual scavengers have been connected to skills training programs**.
    - Subsidies and loans are available to support those interested in starting their own businesses. The objective is to eliminate manual scavenging deaths entirely.
  - **Merger with NAMASTE Scheme:**
    - The scheme for the rehabilitation of manual scavengers has been merged with the [NAMASTE scheme](#) for **100% mechanisation of sewer work**.
    - The [FY 2023-24 Union Budget](#) lacks specific allocation for the rehabilitation scheme but **allocates ₹100 crore to the NAMASTE scheme**.
    - The NAMASTE scheme necessitates the **identification and profiling of all septic tank/sewer workers, provision of occupational training and safety equipment**, and enrollment in health insurance under the Ayushman Bharat scheme.
- **Other Related Initiatives:**
  - [Safaimitra Suraksha Challenge](#)
  - [Swachhta Abhiyan App](#)
  - [Rashtriya Garima Abhiyan](#)
  - [National Commission for Safai Karamchari](#)

## Way Forward

- **Technology-Driven Solutions:** There is a need to embrace technology to develop innovative tools and machinery that can replace manual scavenging tasks.
  - For example, **automated sewer cleaning robots** can be deployed to clean sewer lines and septic tanks, reducing the need for human intervention in hazardous environments.
- **Promote Entrepreneurship and Skill Development:** There is a need to encourage the training and skill development of affected individuals, empowering them to explore alternative livelihood opportunities.
  - Government and non-governmental organisations can provide vocational training in areas such as **plumbing, electrical work, computer literacy, and entrepreneurship** to help former manual scavengers transition to safer and more dignified professions.
- **Sanitation Infrastructure Upgrades:** Invest in the development and improvement of sanitation infrastructure, including the **construction of modern toilets, sewage treatment plants, and efficient waste management systems**.
  - These upgrades will **reduce the demand for manual scavenging** and provide safer alternatives for waste disposal.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. 'Rashtriya Garima Abhiyaan' is a national campaign to (2016)

- (a) rehabilitate the homeless and destitute persons and provide them with suitable sources of livelihood
- (b) release the sex workers from their practice and provide them with alternative sources of livelihood
- (c) eradicate the practice of manual scavenging and rehabilitate the manual scavengers
- (d) release the bonded labourers from their bondage and rehabilitate them

Ans: (c)

[Source: TH](#)

## Commission of Railway Safety

### Why in News?

Investigation into the recent [tragic train accident in Odisha](#) is being **conducted by the Commission of Railway Safety** for the south-eastern circle.

### What is the Commission of Railway Safety (CRS)?

#### ▪ About:

- CRS is a government body that acts as the railway safety authority in the country.
- It deals with matters related to **safety of rail travel and operations**, among some other statutory functions - **inspectorial, investigatory, and advisory** - as laid down in **the Railways Act, 1989**.
- It is Headquartered in Lucknow, Uttar Pradesh.

#### ▪ Ministry:

- It is under the administrative control of the **Ministry of Civil Aviation (MoCA) instead of the Ministry of Railways**.
  - The reason behind this is to keep the **CRS insulated from the influence of the country's railway establishment** and prevent conflicts of interest.

### What is the History of CRS?

#### ▪ Indian Railway Board Act, 1905:

- As per the Indian Railway Board Act, 1905, and a notification by the then Department of Commerce and Industry, the Railway Board was entrusted with **powers and functions of the government under various sections** of the Railway Act and was also authorised to make rules for railway operations in India.
- This effectively made the **Railway Board the safety controlling authority for railways in India**.

#### ▪ Government of India Act of 1935:

- Section 181(3) of the Government of India Act of 1935 stated that **there should be a separate authority responsible** for ensuring the safety of both passengers and railway personnel. This authority would investigate accidents and determine their causes.

- In 1939, a panel headed by the **then chief inspecting officer of the British Railways, A.H.L. Mount**, noted that the Railway Board was appreciative of the separation argument and “would welcome the change”.
- **Separation from Inspectorate:**
  - In May 1941, the Railway Inspectorate was **separated from the Railway Board and placed under the control of the Department** of Posts and Air at that time.
  - **Later in 1961**, the Inspectorate was renamed as **CRS (Commissioner of Railway Safety)**, and it has been under the authority of the central ministry responsible for civil aviation in India ever since.

[Source: IE](#)

---

## NIRF Ranking 2023

### Why in News?

The [National Institutional Ranking Framework \(NIRF\) Ranking 2023](#) was announced recently, showcasing the excellence and achievements of various educational institutions in India.

- The **Indian Institute of Technology (IIT), Madras** secured the top spot in the overall ranking for the **fifth consecutive year**, while the Indian Institute of Science (IISc), Bengaluru was ranked as the best university.

### What are the Major Highlights of NIRF Ranking 2023?

- **Areas of Ranking:**
  - The ranking exercise for the year 2023 continues with the practice of providing a common **“Overall” rank in addition to a separate rank for Universities, Research Institutions**, Degree Colleges, and discipline-specific ranks in Engineering, Management, Pharmacy, Law, Medical, Dental and Architecture & Planning.
- **Three Distinct Additions of 2023 Edition of India Rankings:**
  - Introduction of a new subject namely **Agriculture & Allied Sectors**
  - Expansion of scope of **“Architecture” to “Architecture and Planning”** to include institutions imparting courses in Urban and Town Planning.
  - Integration of the **“Innovation” ranking previously executed by the Atal Ranking of Institutions on Innovation Achievements (ARIIA)** into the India Rankings to reduce the burden on institutions of providing similar data to two different agencies.
- **Participants:**
  - While the total number of **Higher Educational Institutes** that participated in the ranking exercise in various categories and subject domains have increased from **3565 in 2016 to 8686 in 2023**, the number of categories and subject domains have increased from **4 in 2016 to 13 in 2023**.
- **Major Top Rankings:**
  - **Leading Engineering Institutions: IIT-Madras** maintained its dominance as the top engineering institution in India for the eighth consecutive year, with IIT-Delhi and IIT-Bombay securing the second and third positions, respectively.
  - **Top Management Institutes: Indian Institute of Management (IIM), Ahmedabad**, claimed the top position as the leading management institute in India, followed by IIM Bangalore and IIM Kozhikode.
  - **Top Law Institutes:** The **National Law School of India University, Bengaluru**, emerged as the top law institute in the country. National Law University, Delhi, secured the second position, and NALSAR University of Law, Hyderabad, was ranked third.
  - **Top Pharmacy Institutes: The National Institute of Pharmaceutical Education and**



**Research, Hyderabad**, was recognized as the leading pharmacy institute in India. It was closely followed by Jamia Hamdard and BITS Pilani.

- **Top Colleges: Delhi University (DU)** made its mark in the rankings, with **five of its colleges securing positions in the top 10 colleges in India.**
  - **Miranda House retained its top position**, while Hindu College secured the second spot.

## What is NIRF Ranking?

### ▪ About:

- The NIRF is a methodology to rank institutions across the country based on various parameters.
- NIRF was approved by the **Ministry of Education (Erstwhile Ministry of Human Resource Development)** and launched on **29<sup>th</sup> September 2015.**
- It is the **first-ever effort by the government to rank Higher Education Institutions (HEIs)** in the country.

- **Parameters for NIRF Ranking:** The weightage for each parameter varies depending on the category of the institution.



Fig. 1: NIRF Parameters for Ranking of Institutions



## Li-ion Battery Recycling Technology to Boost Circular Economy

### Why in News?

The **Ministry of Electronics and Information Technology (MeitY)** in India has taken a significant step towards promoting a [circular economy](#) by transferring a cost-effective [Li-ion battery recycling technology](#) to nine recycling industries and start-ups.

- The technology was developed under the "**Centre of Excellence on E-waste management**" at the **Centre for Materials for Electronics Technology (C-MET), Hyderabad**, in collaboration with the **Government of Telangana and industry partner M/s Greenko Energies Pvt. Ltd., Hyderabad**.
- This initiative is part of the [Mission Lifestyle for the Environment \(LiFE\)](#) under the "**Promote circularity campaign.**"

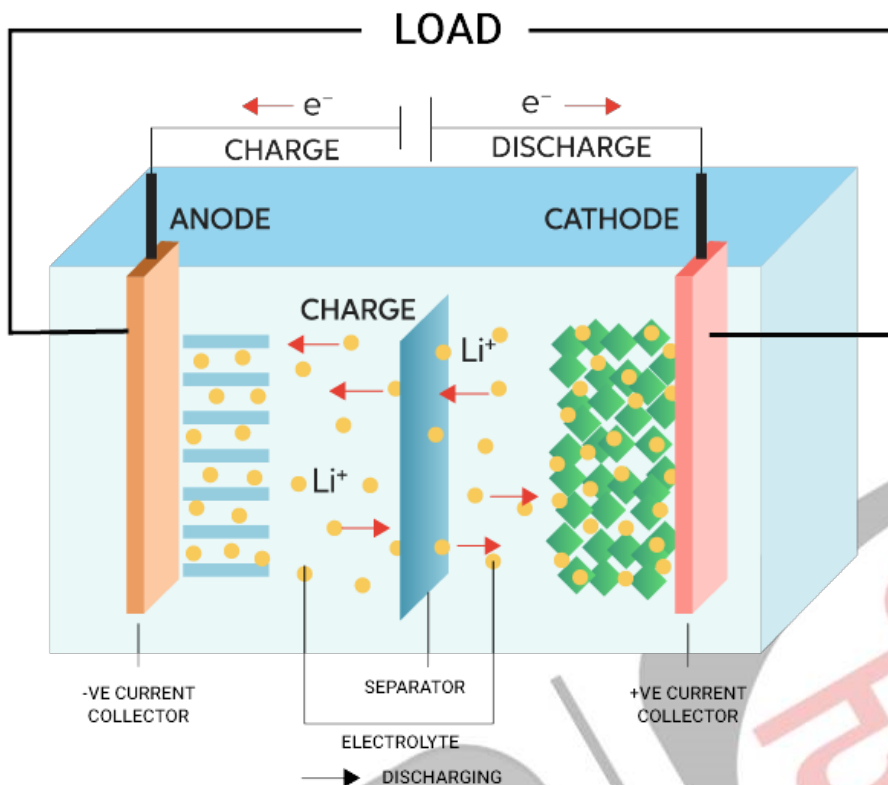
### What is the Recently Invented Recycling Technology?

- The recycling technology for Li-ion batteries is designed to efficiently process and recover valuable materials from discarded batteries.
- The process begins by **soaking the batteries in a solution to extract** the valuable metals.
  - The solution aids in the separation and extraction of [metals](#) such as [Lithium \(Li\)](#), Cobalt (Co), Manganese (Mn), and [Nickel \(Ni\)](#), enabling the recovery of over **95% of their contents in the form of corresponding oxides/carbonates with a purity of approximately 98%**.
- These metals are then transformed into their pure forms, **ready to be reused in making new batteries or other useful applications.**
- This technology ensures that **over 95% of these valuable metals are recovered from batteries.**
- By recycling the batteries, we can reduce the need for mining new resources and contribute to a more sustainable environment.
- The recycling technology for Li-ion batteries plays a crucial role in promoting a **circular economy.**

### What is a Li-ion Battery?

- **About:**
  - A lithium-ion (Li-ion) battery is a type of **rechargeable battery.**
  - Li-ion batteries use an intercalated (Intercalation is the reversible inclusion or insertion of a molecule into materials with layered structures) [lithium compound as one electrode material, compared to the metallic lithium used in a non-rechargeable lithium battery.](#)
  - The battery consists of an **electrolyte, which allows for ionic movement**, and the two electrodes are the constituent components of a lithium-ion battery cell.
  - **Lithium ions** move from the **negative electrode** to the **positive electrode** during **discharge and back when charging.**

# COMPONENTS OF LITHIUM-ION BATTERY



## ▪ Applications:

- Electronic gadgets, Tele-communication, Aerospace, Industrial applications.
- Lithium-ion battery technology has made it the favourite power source for electric and hybrid electric vehicles.

## ▪ Disadvantages of Li-ion Batteries:

- Long charging times.
- Safety issues as instances of batteries catching fires have been there.
- Expensive to manufacture.
- While the Li-ion batteries are seen as sufficiently efficient for applications such as phones and laptops, in case of EVs, these cells still lack the range that would make them a viable alternative to internal combustion engines.

## What is Lithium?

### ▪ About:

- Lithium (Li), sometimes also referred as **'White gold'** due to its high demand for rechargeable batteries, is a soft and silvery-white metal.

### ▪ Extraction:

- Lithium can be extracted in different ways, depending on the type of the deposit — generally either through **solar evaporation of large brine pools**, or from **hard-rock extraction of the ore**.

### ▪ Uses:

- Lithium is an important component of **electrochemical cells** used in batteries of EVs, Laptops, Mobiles etc.
- It is also used in **thermonuclear reactions**.

- **It is used to make alloys** with aluminium and magnesium, improving their strength and making them lighter.
  - **Magnesium-lithium alloy** - for **armour plating**.
  - **Aluminum-lithium alloys** - in **aircraft, bicycle frames and high-speed trains**.
- **Major Global Lithium Reserves:**
  - Chile > Australia > Argentina are top countries with Li reserves.
  - [Lithium Triangle](#): **Chile, Argentina, Bolivia**.
- **Lithium Reserves in India:**
  - Preliminary survey showed estimated lithium reserves of 14,100 tonnes in a small patch of land surveyed in **Southern Karnataka's Mandya district**.
  - Other **potential sites**:
    - Mica belts in **Rajasthan, Bihar, Andhra Pradesh**.
    - Pegmatite belts in **Odisha** and **Chhattisgarh**.
    - **Rann of Kutch** in Gujrat.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

**Q. Which one of the following pairs of metals constitutes the lightest metal and the heaviest metal, respectively? (2008)**

- (a) Lithium and mercury
- (b) Lithium and osmium
- (c) Aluminium and osmium
- (d) Aluminium and mercury

**Ans: (b)**

**Exp:**

- Light metals are metals of low atomic weight while heavier elements generally have high atomic weight.
- Osmium is a hard metallic element which has the greatest density of all known elements. Osmium has an atomic weight of 190.2 u and its atomic number is 76.
- Lithium having an atomic number 3 and atomic weight of 6.941u is the lightest known metal.
- **Therefore, option (b) is the correct answer.**

[Source: PIB](#)

## The Kakhovka Dam in Ukraine

### Why in News?

The **Kakhovka Dam** was a major [hydroelectric power plant and reservoir](#) on the Dnieper **River in southern Ukraine**. It was destroyed on June 6th, 2023, in an explosion that caused massive flooding and a **humanitarian crisis in the war-torn region**.

- Ukraine and Russia have blamed each other for the attack, which has escalated the tensions



between the two countries.

## What are the key Facts About Kakhovka Dam?

### ▪ About:

- The **Kakhovka Dam** was built in **1956** as part of the Soviet Union's ambitious project to harness the **Dnipro River** for **irrigation, power generation and navigation**.
- The dam was **30 meters tall and 3.2 kilometers long**, creating a reservoir that **covered 2,155 square kilometers and held 18 cubic kilometers of water**.
- The dam also supplied water to the **Crimean Peninsula, which Russia annexed in 2014**, and to the **Zaporizhzhia Nuclear Power Plant, which is under Russian control**.
- The dam was located on the **front line between Ukrainian and Russian forces in southern Ukraine, where fighting has been ongoing since 2014**.



### ▪ Ongoing Issue:

- Recently, an explosion occurred inside the **Kakhovka Hydroelectric Power Station**, causing a **breach in the dam and releasing a huge amount of water downstream**.
- The **floodwaters inundated (cover land with water) dozens of towns and villages** on both sides of the river, **displacing thousands of people and damaging infrastructure, crops and livestock**.
- The water level also rose in the **Dniprovska Gulf, a bay of the Black Sea near Kherson city**, threatening coastal areas with erosion and salinization.
- The explosion also cut off electricity to millions of people and **disrupted water supplies to Crimea and Zaporizhzhia**.

### ▪ Impact on the Russia-Ukraine war:

- Adding a new dimension to the conflict, the **collapse of the dam has introduced an unexpected element to the ongoing Russia-Ukraine war**.
- It **remains unclear whether either side benefits from the dam's damage** since **both Russian-controlled and Ukrainian-held lands are at risk**.
  - However, the damage could impede Ukraine's counteroffensive plans in the south and divert the government's attention.

### ▪ The Aftermath and Immediate Concerns:

- **Environmental and Social Impact:**



- The flooding resulting from the dam's collapse **has led to homes, streets, and businesses being inundated downstream.**
- Emergency crews are undertaking evacuations, and concerns have arisen about the cooling systems at the Zaporizhzhia Nuclear Power Plant and the water supply to Crimea.
- **Evacuation Efforts:**
  - Approximately 22,000 people in Russian-controlled areas and 16,000 people in critical zones in Ukrainian-held territory are at risk.
  - Russian and Ukrainian authorities are facilitating the evacuation of residents.

[Source: IE](#)

---

## Rapid Fire Current Affairs

### Indigenous Heavyweight Torpedo Varunastra



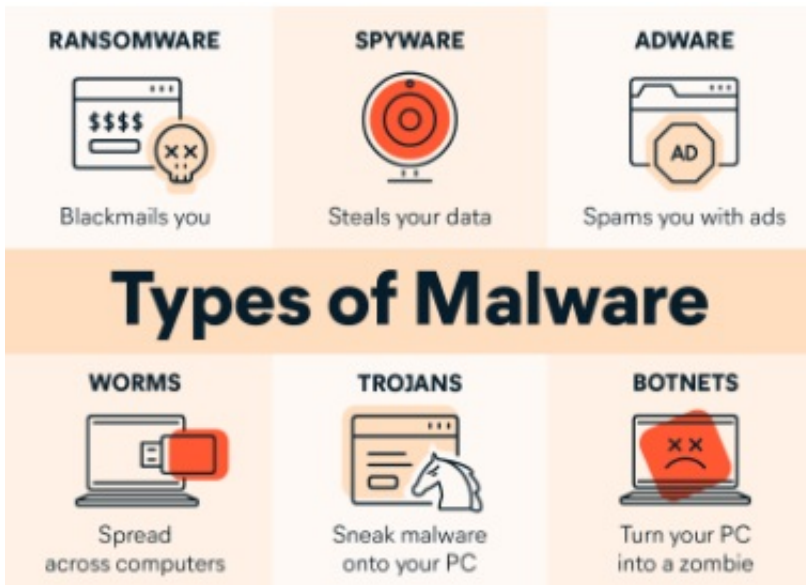
In a significant achievement for the [Indian Navy](#), the **indigenously designed and developed heavyweight torpedo Varunastra** has successfully demonstrated its effectiveness in a live test. Created by the **Naval Science and Technological Laboratory (NSTL)** under the [Defence Research and Development Organisation \(DRDO\)](#), and manufactured by **Bharat Dynamics Ltd (BDL)**, Varunastra combines advanced features such as **low drift navigational systems, acoustic homing, and autonomous guidance algorithms**. During the test, Varunastra showcased its remarkable capabilities by **accurately hitting an undersea target**, solidifying its position as the **go-to anti-submarine torpedo for all naval warships**.

The torpedo will replace the older models currently equipped on naval ships that have the capability to fire heavyweight torpedoes. Varunastra's superior specifications include a **maximum speed of 40 knots and a maximum operating depth of 600 meters**. It boasts **long-range capabilities with multi-maneuvering features**, making it highly effective in **tracking and targeting silent underwater threats**.

Read more: [Varunastra](#)

---

### AIIMS Defended Malware Attack on e-Hospital Services



**All India Institute of Medical Science (AIIMS)** the premier health institution in India, successfully defended its e-Hospital services against a harmful computer program known as [malware](#). Malware is a **malicious program** designed to harm computers, networks, and devices by **disrupting their operations or gaining unauthorized access**. The types of malware include **viruses, worms, Trojans, ransomware, spyware, adware, and scareware**. These threats can **cause data loss, financial damage, privacy breaches, and system vulnerabilities**. It is crucial to protect against malware by using **security measures such as antivirus software, strong passwords, regular updates, and cautious online behavior**.

Read more: [Medical Device and Malware](#)

## Indian President Marks 150 Years of Indian Arrival in Suriname



The [Indian President](#) and President of Suriname commemorated the **150<sup>th</sup> anniversary of the arrival of Indians in Suriname**.

**The Indian President** emphasised the historical significance of this milestone, with the first group of Indians arriving in Suriname aboard the **ship Lalla Rookh in 1873**. She praised Suriname as a multicultural society that has embraced and integrated diverse communities into one family and one country, fostering unity and inclusiveness. And announced the extension of eligibility for the [OCI Card](#), expanding the ties between India and Suriname.

President acknowledged the **deep-rooted attachment of the Indian diaspora to their heritage despite geographical distances and expressed India's commitment to an inclusive global order** and recognized Suriname's involvement in initiatives like the [G-20](#) and the [Voice of Global South Summit](#).

The Indian President Droupadi Murmu was also bestowed with **Suriname's highest civilian honour "Grand Order of the Chain of the Yellow Star"**, further underscoring the importance of the bilateral relationship.

**Read more:** [OCI Card](#), [G-20](#), [Voice of Global South Summit](#)

---

## Cyclone "Biporjoy" Threatens Arabian Sea

**Cyclonic Storm "Biporjoy"** intensifies in the Arabian Sea, posing significant risks and uncertainties for the affected regions. The [India Meteorological Department \(IMD\)](#) reports the storm's rapid development, expecting it to strengthen into a severe cyclonic storm with **winds reaching 115-125 kmph** and gusts of 140 kmph on June 8, 2023. The name 'Biparjoy' (meaning calamity or disaster) was given by Bangladesh.

The **formation of Cyclone "Biporjoy" in June is unusual**, and the increasing sea surface temperatures in the Arabian Sea, attributed to climate change, play a significant role. These higher temperatures, **reaching 30-32 degrees Celsius, favour the intensification of cyclones**.

The cyclonic system also **poses a threat to the southwest monsoon in India**, hindering its arrival and progression. By diverting moisture away from India, the **storm could further delay the monsoon onset**. Climate scientists point out the potential influence of long-term Indian Ocean warming and the developing El Nino, both of which can weaken the monsoon.

**Read more:** [Cyclone](#), [Monsoon](#), [Climate change](#)

---

PDF Reference URL: <https://www.drishtias.com/current-affairs-news-analysis-editorials/news-analysis/07-06-2023/print>