

## DAILY CURRENT AFFAIRS (DCA)

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### Table of Content

- 2024 Global Hepatitis Report
- Financing for Sustainable Development Report 2024: United Nations
- Catastrophic Soil Erosion
- India and Mauritius Relations
- Protection of Women from Domestic Violence Act 2005
- Asian Development Outlook (ADO), 2024
- Switzerland to host Ukraine peace summit
- ISRO's 'Zero Orbital Debris' Milestone

#### NEWS IN SHORT

- Angara rocket
- Water Rationing
- Volcanic Vortex Rings
- Declaration of Moveable Asset
- Sustainable hydrogel to remove microplastics
- Whooping Cough
- Testing Kits for the Human Papillomavirus

## 2024 GLOBAL HEPATITIS REPORT

### In News

Recently, the 2024 Global Hepatitis Report was released by the World Health Organization (WHO).

Do you know ?

- Hepatitis is an inflammation of the liver that is caused by a variety of infectious viruses and noninfectious agents leading to a range of health problems, some of which can be fatal.
- There are five main strains of the hepatitis virus, referred to as types A, B, C, D and E.
- While they all cause liver disease, they differ in important ways including modes of transmission, severity of the illness, geographical distribution and prevention methods.
- In particular, types B and C lead to chronic disease in hundreds of millions of people and together are the most common cause of liver cirrhosis, liver cancer and viral hepatitis-related deaths.

### About the report

- It is the first consolidated WHO report on viral hepatitis epidemiology, service coverage and product access, with improved data for action.
- It presents the latest estimates on the disease burden and the coverage of essential viral hepatitis services from **187 countries across the world**.
- It also updates progress made since 2019 in improving access to health products for both hepatitis **B and C in low- and middle-income countries**, with information from 38 countries that together comprise nearly 80% of global viral hepatitis infections and deaths.

### Key Findings

- According to the Report, **254 million people lived with hepatitis B and 50 million with hepatitis C in 2022** globally.
- The data shows that the estimated number of deaths from **viral hepatitis** increased from 1.1 million in 2019 to 1.3 million in 2022.
  - ♦ **Of these, 83% were caused by hepatitis B, and 17% by hepatitis C.**
  - ♦ Every day, there are 3500 people dying globally due to hepatitis B and C infections.

- Bangladesh, China, Ethiopia, India, Indonesia, Nigeria, Pakistan, the Philippines, the Russian Federation and Viet Nam, collectively **shoulder nearly two-thirds of the global burden of hepatitis B and C.**

- ♦ India accounted for the second-highest number of cases of hepatitis B and C in 2022 after China, with 3.5 crore infections
- ♦ with a total of 3.5 crore cases, India accounted for 11.6% of the total disease burden globally that year.

### Concerns

- Despite progress globally in preventing hepatitis infections, **deaths are rising because far too few people** with hepatitis are being diagnosed and treated.
  - ♦ The number of lives lost due to viral hepatitis is increasing with the disease being the **second leading infectious cause of death globally** (with 1.3 million deaths per year) the same as tuberculosis.
- **Pricing disparities** persist both across and within WHO regions, with many countries paying above global benchmarks, even for off-patent drugs or when included in voluntary licensing agreements.
- **Service delivery** remains centralized and vertical, and many affected populations still face out-of-pocket expenses for viral hepatitis services.
- **Funding for viral hepatitis** both at a global level or within dedicated country health budgets, is not sufficient to meet the needs.

### Recommendations for accelerating hepatitis elimination

- The report outlined a series of actions to advance a public health approach to viral hepatitis, designed to accelerate progress towards ending the epidemic by 2030.
- These include: expanding access to testing and diagnostics; shifting from policies to implementation for equitable treatment; strengthening primary care prevention efforts; using improved data for action; and engaging affected communities and civil society among others.

Source: TH

## FINANCING FOR SUSTAINABLE DEVELOPMENT REPORT 2024: UNITED NATIONS

### Context:

- Recently, the United Nations (UN) has recently released the ‘**Financing for Sustainable Development Report 2024**’ highlighting the urgent need for increased investment in sustainable development to achieve the SDGs.

### About Sustainable Development Goals (SDGs):

- These are a set of 17 goals established by the UN as a shared blueprint for peace and prosperity for people and the planet.
- These goals, adopted by all UN Member States in 2015, are an urgent call for action by all countries - developed and developing - in a global partnership.

### The Journey of SDGs:

- More than 178 countries adopted **Agenda 21**, a comprehensive plan of action to build a global partnership for sustainable development at the **Earth Summit in Rio de Janeiro, Brazil in 1992**.
- It continued through the **Millennium Summit in 2000**, the **World Summit on Sustainable Development in South Africa in 2002**, and the United Nations Conference on Sustainable Development (**Rio+20 in Rio de Janeiro, Brazil, in June 2012**).

### The 17 Goals:



- These SDGs recognise that **ending poverty** and other deprivations must go hand-in-hand with strategies that **improve health and education, reduce inequality, and spur economic growth** – all while **tackling climate change** and working to **preserve our oceans and forests**.

### Key Issues Highlighted in Report:

- Sustainable Development Crisis:** The report identified that the world is facing a sustainable development crisis. It identified **financing challenges as the heart of this crisis**, which threatens the achievement of the SDGs and climate action.
    - Rising geopolitical tensions, climate disasters, and a global cost-of-living crisis have hit billions of people, battering progress on healthcare, education, and other development targets.
    - If current trends continue**, the UN estimates that almost 600 million people will continue to live in extreme poverty in 2030 and beyond, more than half of them women.
  - The Finance Divide:** Developing countries are paying around twice as much on average in interest on their total sovereign debt stock as developed countries.
    - Staggering debt burdens and sky-high borrowing costs are preventing developing countries from responding to the confluence of crises they face.
    - Many of these countries lack access to affordable finance or are in debt distress.
  - The Financing Gap:** The report estimated that the development financing gap has grown to USD 4.2 trillion annually, up from USD 2.5 trillion before the COVID-19 pandemic.
    - It represents a more than 50% increase over the pre-pandemic estimates.
  - Weak Enabling Environments:** Average global growth has declined, while policy and regulatory frameworks still do not set appropriate incentives.
    - Public budgets and spending are not fully aligned with SDGs. Private investors are not incentivised to invest enough in SDGs and climate action.
  - Closing Window:** The window to rescue the SDGs and prevent a climate catastrophe is still open but closing rapidly.
- ### Suggestions Made in Report:
- Urgent Actions Needed:** This is the last chance to correct course if we want to achieve the SDGs by the 2030 deadline.
    - Only an urgent, large-scale and sustainable investment push can help us achieve our global goals.

- **Four Actions:**
  - ◆ Close financing gaps for SDG/climate investments (both public and private) at scale and with urgency;
  - ◆ Close policy and architecture gaps, and reform international institutions;
  - ◆ Close credibility gaps and trust deficits both international and domestically; and
  - ◆ Formulate and finance new development pathways.
- **Reforms in existing systems:** The report concludes that the international financial system, which was set up at the 1944 Bretton Woods Conference, is no longer fit for purpose.
  - ◆ It proposes a new coherent system that is better equipped to respond to crises, scales up investment in the SDGs especially through stronger multilateral development banks, and improves the global safety net for all countries.
- ◆ **Erosion by running water** is more significant in regions with heavy rainfall and steep slopes.
- **Sheet erosion** takes place on level lands after a heavy shower, and removes the finer and more fertile topsoil.
- **Gully erosion** is common on steep slopes.
  - ◆ Gullies deepen with rainfall, cut the agricultural lands into small fragments and make them unfit for cultivation.
- According to **Indian Council of Agricultural Research (ICAR)**, the extent of soil erosion, defined as soil loss more than 10 tonnes per hectare per year, in cultivable land of the country was 92.4 million hectares.

### Conclusion:

- The 'Financing for Sustainable Development Report 2024' serves as a stark reminder of the urgent need for increased investment in sustainable development.
- As the world stands at a crossroads, this report underscores the importance of closing financing gaps, reforming international institutions, and formulating and financing new development pathways.
- The study came up with **six classifications** for soil erosion — ranging from '**minor**' to '**catastrophic**' — in terms of soil eroded in tonnes over a hectare over a year.
- It reveals that nearly 30% of India's landmass is experiencing minor soil erosion, while a critical 3% faces catastrophic topsoil loss.
  - ◆ A region would be **classified as 'catastrophic'** if it reports over 100 tonnes of soil lost to erosion over a hectare during a year's time.

Source: DTE

## CATASTROPHIC SOIL EROSION

### Context:

- Recently, a study 'Geospatial modelling and mapping of soil erosion in India' classified soil erosion on a pan-India basis **for the first time**.

### About Soil Erosion:

- The **destruction of the soil cover** is described as soil erosion.
- It involves the breakdown, detachment, transport, and redistribution of soil particles by forces of water, wind, or gravity.
- **Agents : Wind and water** are powerful agents of soil erosion because of their ability to remove soil and transport it.
  - ◆ **Wind erosion** is significant in arid and semi-arid regions.

### About Topsoil:

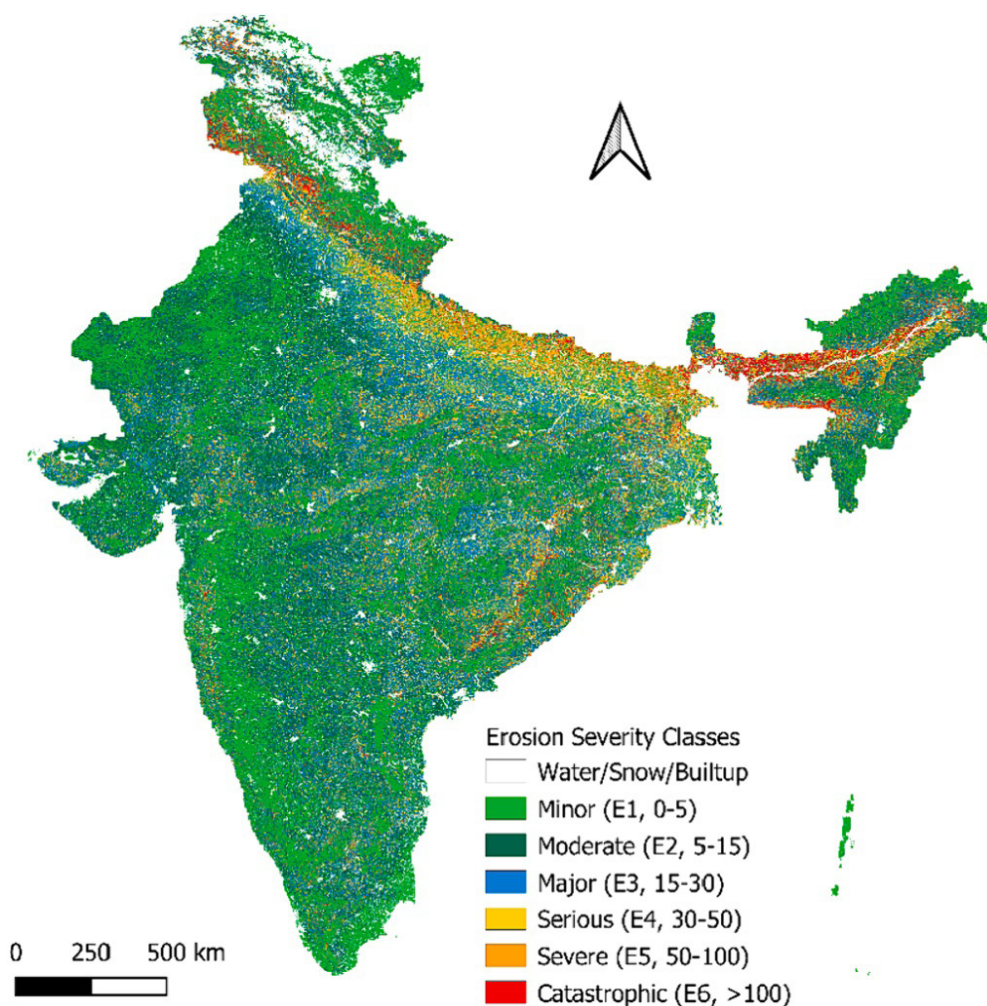
#### Catastrophic Soil Erosion:

- It refers to a severe level of soil degradation where the topsoil **layer is extensively removed**.
- It is the uppermost layer of soil, and is vital for agriculture as it **holds nutrients and moisture** essential for plant growth.
- The organic materials have got incorporated with the mineral matter, nutrients and water, which are necessary for the growth of plants.
  - ◆ Erosion significantly reduces fertility and can lead to decreased crop yields.

### The Worst-Affected Region:

- **Brahmaputra Valley in Assam:** It is the biggest hotspot for soil erosion in India.
  - ◆ Data shows that the northeastern state of Assam lost close to 300 square kilometres or 31% of its surface soil to catastrophic erosion.
  - ◆ It has severe implications for the state's agriculture and the livelihoods of its people.

- **Lower reaches of the Himalayas:** These regions are characterised by moraine or loose soil and highly unstable slopes. It spans from the Kashmir Valley to the southern regions of Himachal Pradesh and Uttarakhand and extends across the border into Nepal and parts of Odisha.
- **Odisha**, which differs markedly from the Himalayas and the Brahmaputra valley in terms of topography and biodiversity, is also another hotspot for 'catastrophic' erosion.
- This region stands as one of the **most prominent erosion hotspots** in the country, exacerbated by its susceptibility to **seismic activity or earthquakes**.



### The Impact of Soil Erosion:

- Soil erosion of this magnitude has far-reaching consequences. According to the **Food and Agriculture Organization (FAO)** of the United Nations, it could take up to 1,000 years to produce 2 to 3 centimetres of topsoil.
  - ♦ It means that the land lost to erosion will take centuries to regain its fertility.
- The loss of soil not only affects the fertility of the land but also leads to a decrease in the water-holding capacity of the soil, affecting the overall ecosystem.
  - ♦ The increasing soil erosion is detrimental to the region's globally important biodiversity.

### The Need for Action:

- The findings of this study underscore the urgent need for action. India needs a comprehensive strategy to combat soil erosion, which includes both preventive measures and efforts to restore eroded lands.
- Without such measures, the country's agricultural productivity could be severely impacted, threatening food security and rural livelihoods.

### Conclusion:

- The study provides valuable insights into the extent and severity of soil erosion in India. It underscores the urgent need for strategies to prevent soil erosion and restore degraded lands.

- As the country strives to achieve its sustainable development goals, addressing soil erosion must be a top priority.

Source: DTE

## INDIA AND MAURITIUS RELATIONS

### Context

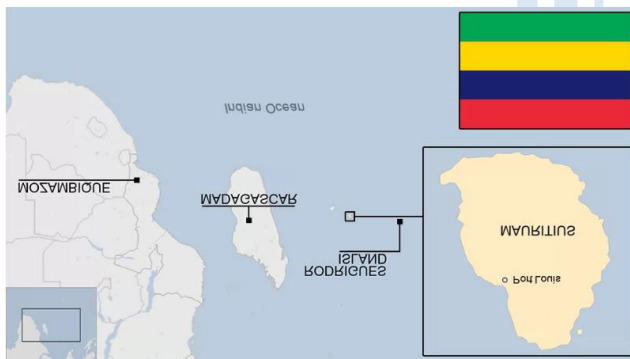
- A **revised tax treaty** between **India and Mauritius** will come into effect only once the **two countries sign the agreement** and will not be applied retrospectively.

### About

- The new provisions in the treaty include a principal purpose test, which will be used to judge **whether tax benefits under the treaty will apply to investments or not**.
- As per the amended treaty, tax benefits for investments will not be granted if it is ascertained that **availing tax benefits was one of the reasons for the transaction**.

### Overview of India and Mauritius Relations

- India has close, long standing relations with Mauritius, an **island nation in the Western Indian Ocean**.



- **Diplomatic Relations:** India and Mauritius established diplomatic relations in **1948** and have become key trading partners in the Asian continent.
  - ♦ As a tribute to **Gandhiji and the Indian freedom struggle**, the **National Day of Mauritius** is celebrated yearly on **March 12** (the date of launch of Dandi Salt March).
  - ♦ Indian origin people comprise nearly **70% of the island's population of 1.2 million** (28% Creole, 3% Sino-Mauritian, 1% Franco-Mauritian).
- **Commercial Relations:** Since **2005**, India has been among the largest trading partners of Mauritius.

- ♦ For the FY 2022-2023, Indian exports to Mauritius was USD 462.69 mn, Mauritian exports to India was USD 91.50 mn and Total trade was USD 554.19 mn.

- ♦ **Cumulative FDI** worth USD 161 billion came from Mauritius to India in the two decades from 2000 - 2022 (26% of total FDI inflows into India), largely due to the **Double Taxation Avoidance Convention (DTAC)**.

- ♦ India and Mauritius entered into the Double Taxation Avoidance Agreement in **1982** so non-residents investors can avoid paying double taxes.

- ♦ Mauritius and India signed the **Comprehensive Economic Cooperation and Partnership Agreement (CECPA)** in **2021**, and is the first trade agreement signed by India with an African country.

- **Defence Relations:** India is the preferred defence partner of Mauritius for acquiring platforms/equipment, capacity building, joint patrolling, hydrological services, etc.

- ♦ The first agreement relates to the transfer of a Dornier aircraft and an Advanced Light Helicopter, Dhruv, on lease to Mauritius.

- ♦ The second agreement relates to a **\$100 million Line of Credit (LoC)**, to enable the procurement of defence equipment by Mauritius.

- **SAGAR:** The term SAGAR - 'Security and Growth for All in the Region' was coined by PM in **2015** during his Mauritius visit with a focus on the blue economy.

- ♦ It is a maritime initiative that gives priority to the Indian Ocean region for ensuring peace, stability and prosperity of India in the Indian Ocean region.

### Areas of Concern

- **Tax Treaty Misuse:** The Double Taxation Avoidance Agreement (DTAA) between India and Mauritius had been a point of concern due to its potential misuse for **illicit activities** like money laundering and round-tripping of funds.

- **Security Concerns:** With Mauritius emerging as an important maritime entity in the Indo-Pacific region, security concerns are paramount.

- ♦ India and Mauritius have a strong defence partnership, but maintaining and enhancing this partnership in the face of evolving regional dynamics can be challenging

- **Economic Challenges:** Despite being major economic partners, there are concerns regarding trade imbalances and the need to diversify the trade basket.
  - ◆ Both countries may need to explore new avenues for trade cooperation and address any barriers that hinder the flow of goods and services.
- **Presence of China:** In recent years, several external powers, including China, have made increasing inroads in Africa and through Indian Ocean.
  - ◆ In 2021, China's Free Trade Agreement (FTA) with Mauritius came into effect.
  - ◆ This agreement will help China expand the Belt and Road strategy in Africa.
  - ◆ China's increasing presence in the region will pose concerns for India.
- **Domestic Violence:** Domestic violence under the Act includes actual abuse or threat of abuse, whether physical, sexual, verbal, emotional, or economic.
  - ◆ Harassment by way of unlawful dowry demands to the women victim or her relatives would also be covered under the definition of Domestic violence.
- **Extension of Protection:** The Law extends protection to women who are sisters including adopted sisters and mothers.

#### Salient features of the Act:

- Ensures Right to Residence under sec 17.
- Ensures economic relief by recognising economic violence.
- Recognises verbal and emotional violence.
- Provides temporary custody of the child.
- Judgements within 60 days of filing of the case.
- Multiple Judgements in a single case.

### Way Ahead

- The relationship between India and Mauritius is multifaceted and has grown stronger over the years. The two nations continue to work together in various fields, including infrastructure, FinTech, culture, and more.
- While India and Mauritius share cultural contiguity dating back to the colonial times and a special partnership in recent years, India cannot take its influence in Mauritius for granted and should continue to enhance its engagement with the important island country.

Source: TH

## PROTECTION OF WOMEN FROM DOMESTIC VIOLENCE ACT 2005

### Context

- The Delhi High Court has recently observed that the Protection of Women from Domestic Violence Act is a “**measure of social justice applicable to each woman irrespective of religious affiliation or social background**”.

### Protection of Women from Domestic Violence Act 2005

- It has come into force since **2006**.
- **Aim:** To provide **protection to wife or female live-in partner** from violence at the hands of the husband or male live-in partner or his relatives.

### Protection Officers

- Protection Officers have been appointed by the Government to help the aggrieved woman in filing the case against her husband or against any male adult person who has committed domestic violence and who is in domestic relationship with the petitioner.
- The Protection Officer facilitates the women to approach the court by providing legal aid and get appropriate relief from the courts concerned.

### Arguments Against the Act

- **Gender Bias:** Critics argue that the Act is inherently biased as it only provides protection to women, ignoring the fact that men can also be victims of domestic violence.
- **Misuse and False Accusations:** There are concerns that the Act is misused by some women to falsely accuse their partners or family members of domestic violence for personal gain, such as gaining leverage in divorce or child custody proceedings.
- **Family Disruption:** The Act's emphasis on providing protection orders and support services to victims may contribute to the breakdown of families and marriages rather than facilitating reconciliation and family harmony.

- ◆ This could have negative consequences, particularly for children who may be adversely affected by family disruption.
- **Legal Complexity and Delay:** The legal processes involved in seeking protection orders under the Act can be complex and time-consuming, leading to delays in obtaining relief for victims.
  - ◆ This may deter some women from seeking help or prolong their exposure to abusive situations.
- **Need for Comprehensive Approach:** Addressing domestic violence requires a more comprehensive approach that goes beyond legal remedies alone.
  - ◆ This includes addressing underlying factors such as poverty, lack of education, and gender inequality, which contribute to the perpetuation of violence in intimate relationships.

### Arguments in Favour of the Act

- **Legal Protection:** The Act provides a comprehensive legal framework specifically tailored to address domestic violence against women.
- **Recognition of Various Forms of Abuse:** The Act recognizes multiple forms of abuse beyond physical violence, including emotional, verbal, sexual, and economic abuse.
  - ◆ This recognition reflects a broader understanding of the ways in which domestic violence manifests and harms women.
- **Empowerment of Victims:** By providing legal remedies such as protection orders, the Act empowers victims to take action against their abusers and seek protection for themselves and their children.
- **Access to Support Services:** The Act mandates the establishment of protection officers and support services, including shelters, counseling, and legal aid, to assist victims in accessing the resources they need to escape abusive situations.
- **Gender Equality:** The Act acknowledges the systemic inequalities and power imbalances that contribute to domestic violence and seeks to address them.
- **International Obligations:** India is a signatory to various international conventions and treaties that obligate it to combat violence against women,

including the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).

### Conclusion

- Overall, the Protection of Women from Domestic Violence Act represents a significant step forward in addressing domestic violence against women in India and is crucial for promoting gender equality, protecting women's rights, and creating a safer and more just society.

Source: IE

## ASIAN DEVELOPMENT OUTLOOK (ADO), 2024

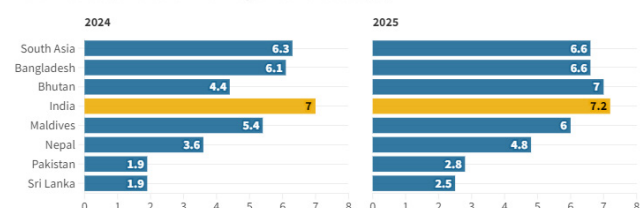
### Context

- The Asian Development Bank (ADB) has prepared the **Asian Development Outlook (ADO), 2024**.

### Key Findings

- Asia's economy expanded by **5.0% in 2023** from 4.3% in 2022, but growth was uneven across subregions. Growth will remain at 4.9% in 2024 and 2025.
- Export growth for high-income technology exporters turned positive in the last quarter of 2023, rising by **5.4%** as demand for semiconductors and electronics began to gain traction.
- International tourism continued to recover, reaching 73% of pre-pandemic levels by the end of 2023.
- Asia's inflation is projected to fall from 3.3% in 2023 to 3.2% in 2024 and 3.0% in 2025.

Asian Development Bank GDP growth forecast (%)



### Issues and Concerns

- There are several risks to developing Asia's growth outlook, including the current conflicts in the Middle East and geopolitical tensions.
- Uncertainty about US interest rates, intensified weakening of the property sector in the People's Republic of China, and the effects of extreme weather also weigh on the region's outlook.



### Indian Scenario

- ADB revised its GDP growth forecast for India, raising it to 7% for the fiscal year 2023-24 from its previous projection of 6.7%.
- India's 'persistent' food inflation is expected to drop to 5.7% as farm output returns to trend this year.
- As India accounts for 80% of South Asia's GDP, it is still the fastest-growing sub-region with improving domestic demand as prices moderate in most economies.
- India's growth will be driven by public and private sector investment demand and by gradual improvement in consumer demand as the rural economy improves.
- Foreign direct investment inflow will likely remain muted in the near term due to tight global financial conditions but will pick up in 2025-26 with higher industry and infrastructure investment.

### Suggestions for Boosting Trade

- India's growth strategy is predicated on substantial export growth. It can be achieved through integration into **global value chains (GVCs)**.
  - ♦ A target of \$2 trillion in exports of goods and services has been set by the government to be achieved by 2030.
- Participation in GVCs encourages FDI, which can generate spillover benefits in terms of productivity improvement and technology upgrades.
- India has been a global leader in service trade. Its share of global service exports increased from 3.5% in FY2017 to 4.6% in FY2022. However, goods exports have a larger impact on employment and growth than do service exports.
- A simplified tariff policy is needed along with continued efforts to improve trade and logistics infrastructure

#### Asian Development Bank

- ADB is a regional development bank established in **1966** for Social and Economic Development. It has **68 members**.
- It is a **multilateral development bank**, which seeks to help its developing member countries to reduce poverty and improve their people's quality of life through inclusive economic growth, environmentally sustainable growth and regional integration.
- **Headquarters:** Manila, Philippines.

Source: TH

## SWITZERLAND TO HOST UKRAINE PEACE SUMMIT

### Context

Switzerland will host a high-level international conference with more than 100 countries invited to help chart a path towards peace in [Ukraine after more than two years of war](#).

### Background and Purpose of conference

- Switzerland has taken the initiative at the request of Ukraine's President Volodymyr Zelenskyy.
- The objective of the conference is to provide a platform for a high-level dialogue on ways to achieve a comprehensive, just and lasting peace for Ukraine based on international law and the UN Charter.
- Switzerland had earlier hosted a **Ukraine Recovery Conference (URC)** at Lugano in July 2022, and a **National Security Advisors Meeting in Davos** in 2024.

### Swiss history of mediation

- Neutrality is a foundational principle of Switzerland's foreign policy. It looked after the interests of both the Kingdom of Bavaria and the Grand Duchy of Baden during the **Franco-Prussian War of 1870-71**.
- It acted as the protecting power during the two **World Wars**.
- Switzerland represented India's interests in Pakistan and Pakistan's in India between 1971 and 1976.
- It hosted talks between the government in **Colombo** and the **Liberation Tigers of Tamil Eelam** in 2006.
- Over the last two decades, Switzerland has been the protecting power between **Saudi Arabia and Iran, the US and Iran, Russia and Georgia**.

### Russia's stand

- Russia will not be a part of the first meeting. However, for the peace process Russia's presence is necessary.
- It has said it is willing to enter talks about Ukraine, but these must respect Russia's security interests and reflect the "new realities" on the ground.

### India's role in peace process

- Switzerland wants India to participate in the conference, to which some 120 countries will be invited at the level of Heads of State/ Government.
- From the beginning of the Ukraine conflict, India has been emphasizing on dialogue and diplomacy. It has pitched itself as being supportive of any peace process.
  - ♦ India abstained from voting against Russia in several resolutions at the UN Security Council.
  - ♦ India believes that it has the credibility of being a non-partisan player in the world.
- Ukraine has sought India's support on a **10-point "peace formula"**, which calls for the withdrawal of Russian troops from Ukraine, release of prisoners, restoration of Ukraine's territorial integrity, and guarantees on nuclear safety, food and energy security.

### Way Ahead

- The conference will aim to create a concrete roadmap for the peace process. However the peace effort is doomed to fail if it doesn't take Russia's interests into account.
- The conference is expected to be only the beginning of a process, and depending on the discussions and the course of the war, Moscow may get involved at a later stage.
- For India, which aspires to be a permanent member of the UN Security Council, the conference presents an opportunity to shape the conversation at the global high table.

Source: IE

### ISRO'S 'ZERO ORBITAL DEBRIS' MILESTONE

#### Context

- The Indian Space Research Organisation (ISRO) has said its PSLV-C58/XPoSat mission has practically left zero debris in earth's orbit.

#### What is Space debris?

- Space debris are defined as all non-functional, man-made objects, including fragments and elements thereof, in Earth orbit or re-entering into Earth's atmosphere.
- **Kessler Syndrome:** It is a theoretical scenario in which a cascade of collisions between artificial objects in low Earth orbit leads to a rapidly increasing amount of space debris, making the use of near-Earth space impossible for an extended period of time.

#### International agreements on space debris

- **The Space Liability Convention of 1972:** It defines responsibility in case a space object causes harm.
  - ♦ The treaty says that "a launching State shall be absolutely liable to pay compensation for damage caused by its space objects on the surface of the earth or to aircraft, and liable for damage due to its faults in space.
- **Absence of law:** However, there is no law against space junk crashing back to earth.

#### About the mission

- The PSLV-C58 Mission was accomplished in January 2024.
- After completing the primary mission of injecting all satellites into their desired orbits, the terminal stage of PSLV was transformed into a **3-axis stabilized platform**, the **PSLV Orbital Experimental Module-3 (POEM-3)**.
- The stage was deorbited from 650 km to 350 km, which facilitated its early re-entry.

#### Significance

- The POEM, serves as a very cost-effective platform for carrying out short-duration space-borne experiments.
- This novel opportunity has been effectively utilized by numerous startups, universities, and NGEs for carrying out experiments in space, including electric thrusters, satellite dispensers, and star-tracking.

Payload	Purpose	Agency/Company
Radiation Shielding Experimenta Module (RSEM)	Evaluation of Tantalum coating effectiveness	TakeMe2Space
Women Engineered Satellite (WESAT)	Comparison of Solar Irradiance and UV Index	LBS Institute of Technology foWomen
BeliefSat0	Amateur radio satellite	K J Somaiya Institute of Technology
Green Impulse TrAnsmmitter (GIT)	Green bipropellant CubeSat propulsion unit	Inspecity Space Labs Private Limited
Launching Expeditions for Aspiring Technologies Technology Demonstrator (LEARTD)	Demonstration of subsystem of microsatellite	Dhruva Space Private Limited
RUDRA 0.3 HPGP	Green Monopropellant Thruster	Bellatrix Aerospace Private Limited
ARKA200	Heater less Hollow Cathode for Hall thrusters	Bellatrix Aerospace Private Limited
Dust Experiment (DEX)	Interplanetary dust count measurement	PRL, ISRO
Fuel cell Power System (FCPS)	Demonstration of fuel cell	VSSC, ISRO
Si based High Energy cell	Demonstration of Silicon based High Energy cells	VSSC, ISRO

**Project NETRA**

- **Project NETRA (Network for space object Tracking and Analysis)**, was initiated by ISRO.
- It is an early warning system that would help detect space hazards to Indian satellites.
- The project is expected to give India its own capability in **space situational awareness (SSA)**, something that other space powers already have.
  - ♦ The SSA is used to predict threats from debris to Indian satellites.

## NEWS IN SHORT

### ANGARA ROCKET

#### Context

- Russia successfully test-launched its Angara-A5 space rocket from the Vostochny Cosmodrome.

#### About

- The Angara-A5 is a **42.7-metre**, three-stage rocket weighing about **773 tonnes** and capable of carrying **24.5 tonnes** into space.
- It is set to replace the **Proton M** as Russia's heavy-lift rocket.
- It is Russia's first post-Soviet space rocket
- **Timeline** :Russia began the Angara project after the 1991 break-up of the Soviet Union as a Russian-made launch vehicle that would ensure access to space even without the **Baikonur Cosmodrome**, which Russia rents from Kazakhstan.

- ♦ The **first Angara-A5 test flight took place in 2014**, and another followed in **2020**, both from Plesetsk in northern Russia.
  - A partial test followed in 2021 that was a failure.

Source: **TOI**

### WATER RATIONING

#### Context

- Bogota, one of the highest capital cities in the world, started water rationing.

#### What is Water Rationing?

- Water rationing is the act of limiting everyday water use when the resource is in scarce supply.
- It is a temporary suspension of water supply, or reduction of pressure below that required for adequate supply under normal conditions.



### About Bogota

- Bogotá is Colombia's sprawling, high-altitude capital.
- Bogota is located on a plateau in the **Andes** known as the **Altiplano Cundiboyacense**.

Source: DTE

## VOLCANIC VORTEX RINGS

### Context:

- Recently, **Mount Etna**, one of the most active volcanoes in the world, has been sending up almost perfect rings of smoke into the air, termed as 'volcanic vortex rings'.

### About the Volcanic Vortex Rings:



- These are generated when gas, **predominantly water vapour**, is released rapidly through a vent in the crater.
- The vent that has opened up in Etna's crater is **almost perfectly circular**.
- These rings are produced roughly in the same way as the smoke rings that some cigarette smokers are able to blow out of their mouths.

### The History of Volcanic Vortex Rings:

- The phenomenon of volcanic vortex rings was **first observed at Etna and Vesuvius in Italy in 1724**.

- In more recent times, volcanic vortex rings have been observed at volcanoes such as Redoubt in Alaska, Tungurahua in Ecuador, Pacaya in Guatemala, Eyjafjallajökull and Hekla in Iceland, Stromboli in Italy, Aso and Sakurajima in Japan, Yasur in Vanuatu, Whakaari in New Zealand, and Momotombo in Nicaragua.

### Significance:

- Volcanic vortex rings provide valuable information about the volcano's activity.
- Scientists can study these rings to gain insights into the volcano's gas emissions, which can help predict future eruptions.

### Mount Etna:



- It is an **active volcano on the east coast of Sicily**, the largest island in the **Mediterranean Sea**.
- Etna's peak is the highest in Italy south of the Alps, and it is Europe's largest and one of the most active volcanoes.
- Its summit has **five craters**, which are responsible for most of the volcano's eruptions.
  - ◆ There are also **'flank' eruptions** that occur out of 300-odd vents of varying sizes along the slopes of the mountain.
- Etna is in almost constant activity, and has seen, since the year 1600, at least 60 flank eruptions and many more summit eruptions.
- It has been a **UNESCO World Heritage Site** since 2013.

Source: IE

## DECLARATION OF MOVEABLE ASSET

### Context:

- The Supreme Court of India has recently passed a significant judgement that provides clarity on the declaration of movable assets by election candidates.

#### The Supreme Court Judgement:

- The apex court noted that **'it is not necessary** that a candidate declare every item of movable property that he or his dependent family members own, such as, clothing, shoes, crockery, stationery and furniture, etc., **unless the same is of such value as to constitute a sizable asset in itself** or reflect upon his candidature, in terms of his lifestyle, and require to be disclosed'.
- It also said that the **voters do not have an absolute right** to know all details of a candidate's private life.

### What are 'Corrupt Practices' under the RPA 1951?

- Under **Section 123**, 'corrupt practices' include bribery, undue influence, false information, and promotion or attempted promotion of 'feelings of enmity or hatred between different classes of the citizens of India on grounds of religion, race, caste, community, or language' by a candidate for the furtherance of his prospects in the election.
- Section 123(2)** deals with '**undue influence**': 'any direct or indirect interference or attempt to interfere on the part of the candidate or his agent, or of any other person, with the consent of the candidate or his election agent, with the free exercise of any electoral right'.
  - It could include threats of injury, social ostracism, and expulsion from any caste or community.
- Under Section 100(1)(b)**, an election can be declared void if 'any corrupt practice has been committed by a returned candidate or his election agent or by any other person with the consent of a returned candidate or his election agent'.
- Under Sections 100(1)(d)(i) and (iv)**, an HC can rule that election results have been '**materially affected**' if there is '**improper acceptance**' of a nomination or non-compliance of the **provisions of the Constitution, the RPA 1951, or any Rules or orders made under the Act.**

Source: IE

## SUSTAINABLE HYDROGEL TO REMOVE MICROPLASTICS

### In News

Researchers at the Indian Institute of Science (IISc) have designed a sustainable hydrogel to remove microplastics from water.

### About Sustainable hydrogel

- The sustainable hydrogel has a **unique intertwined polymer network** that can **bind the contaminants** and **degrade** them **using UV light irradiation**.
- It consists of three different polymer layers – **chitosan, polyvinyl alcohol and polyaniline** – intertwined together, making an interpenetrating polymer network (IPN) architecture.
  - The team infused this matrix with nanoclusters of a material called **copper substitute polyoxometalate (Cu-POM)**.
  - These nanoclusters are catalysts that can use UV light to degrade the microplastics.
  - The combination of the polymers and nanoclusters resulted in a strong hydrogel with the ability to adsorb and degrade large amounts of microplastics.
- The **hydrogel was found to be highly efficient** – it could remove about **95% and 93% of two different types of microplastics** in water at near-neutral pH (~6.5).

#### Do you know ?

- Microplastics are small plastic pieces less than five millimeters long which can be harmful to our ocean and aquatic life.
- They pose a great threat to human health as these tiny plastic debris can enter our bodies through the water we drink and increase the risk of illnesses.
- They are an environmental hazard and found even in remote areas such as polar ice caps and deep ocean trenches, endangering aquatic and terrestrial lifeforms.

Source:TH

## WHOOPING COUGH

### Context

- The number of cases of whooping cough have been rising in several countries like **China, the Netherlands and Czech Republic.**

**About**

- Whooping cough is a **highly contagious respiratory illness** also known as **pertussis** caused by the bacterium *Bordetella pertussis*.
- It gets its name from the “**whooping**” sound which the patient experiences while coughing.
- It is particularly **severe in infants** and in case of complications may lead to **pneumonia and even death**.
- **Spread:** A person catches this bacteria **via droplets** when an infected person coughs or sneezes.
- **Symptoms:** It begins with cold-like symptoms accompanied with low-grade fever.
  - ♦ As it progresses, cough gets accompanied with “whooping” sound and these spells may last for a while leading to vomiting.
- **Vaccination:** There are 2 vaccines which protect children against whooping cough: DTaP and Tdap.

Source: [DTE](#)

## TESTING KITS FOR THE HUMAN PAPILLOMAVIRUS

**Context**

- For the first time, made in **India testing kits for the human papillomavirus (HPV)**, that causes **cervical cancer**, will be validated across multiple study centres with global samples for accuracy.

- ♦ Once validated across samples, the **test kit can be rolled out for early detection at cheaper prices**.

**About Human papillomavirus (HPV)**

- Human papillomavirus (HPV) is a common sexually transmitted infection. Almost all sexually active people will be infected at some point in their lives, usually without symptoms.
- HPV can affect the skin, genital area and throat.

**Cervical Cancer**

- Cervical cancer is cancer that starts in the **cells of the cervix**.
  - ♦ The cervix is the lower, narrow end of the uterus (womb). The cervix connects the uterus to the vagina (birth canal).
- Almost all cervical cancer cases (99%) are linked to infection with **high-risk human papillomaviruses (HPV)**, an extremely common virus transmitted through sexual contact.
- Cervical cancer is the **fourth most common cancer in women**.
  - ♦ Cervical cancer ranks as the **2nd most frequent cancer among women in India** and the 2nd most frequent cancer among women between 15 and 44 years of age.
- **Prevention: Effective primary (HPV vaccination) and secondary prevention approaches (screening for, and treating precancerous lesions) will prevent most cervical cancer cases.**

Source: [IE](#)

