

## DAILY CURRENT AFFAIRS (DCA)

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## BIRTH CENTENARY OF M.S. SWAMINATHAN

### Context

- Prime Minister Narendra Modi inaugurated **M.S. Swaminathan Centenary International Conference on August 7** to mark the birth centenary of M.S. Swaminathan.

### M.S. Swaminathan

- He was known as the **Father of India's Green Revolution**. The term 'Green Revolution', was coined by William S Gaud in 1968.
  - M.S. Swaminathan researched fertilizers conducive to the Indian soil for growing wheat, different high-yielding wheat varieties, and efficient farming techniques.
  - He pioneered the Green Revolution, tripling wheat harvest in the first year itself.
- International Recognition:** In 1982, he became Director General of the **International Rice Research Institute in the Philippines** – the first Asian to hold the post.
  - He was awarded the **first World Food Prize in 1987**.
  - He has received the Ramon Magsaysay Award in 1971, the Albert Einstein World Science Award in 1986, UNESCO Gandhi Gold Medal in 1999, the Franklin D. Roosevelt Four Freedoms Award in 2000 to name a few.
- Awards in India:** National awards like the Lal Bahadur Shastri National Award, and the Indira Gandhi Prize all three civilian awards- Padma Shri in 1967, Padma Bhushan in 1972, Padma Vibhushan in 1989, and Bharat Ratna in 2024.

### Green Revolution

- It refers to a **period of significant increase in agricultural production** resulting from the adoption of modern technology, high-yielding variety (HYV) seeds, chemical fertilizers, irrigation, and mechanization.
  - In India, it began in the mid-1960s and transformed the country from a food-deficient nation into a self-sufficient one, particularly in wheat and rice production.
- Key Features:**
  - High-Yielding Variety (HYV) Seeds:** Mainly wheat and rice, introduced from Mexico and the Philippines.
  - Use of Chemical Inputs:** Increased use of chemical fertilizers, pesticides, and insecticides to boost crop yields.

- Expansion of Irrigation:** Emphasis on canal irrigation, tube wells, and multi-purpose river valley projects.
- Mechanization:** Introduction of tractors, harvesters, and thrashers to reduce dependence on manual labor.
- Major Contributors:** **M.S. Swaminathan and Norman Borlaug** introduced HYV seeds globally.
- Geographic Spread:** Primarily benefited Punjab, Haryana, and Western Uttar Pradesh.

### Do you Know?

Revolution	Sectors
White Revolution	Operation Flood, launched in 1970, ushered in the White Revolution and transformed the dairy sector in India.
Yellow Revolution	Launched in the early 1990s to achieve self-sufficiency in Oilseed production
Blue Revolution	Launched in 2015-26, it aims to transform the Fisheries sector
Black Revolution	Self-sufficiency in the crude/petroleum sector
Golden Revolution	Increase in the production of honey and horticulture
Silver Revolution	Launched in the 1970s and 1980s to increase egg production and the growth of the poultry sector

### Achievements

- India became self-sufficient:** Agriculture employs nearly 45% of the labour force.
  - India has not only achieved self-sufficiency but has also emerged as one of the world's largest agricultural exporters.
- Reduced dependency on food imports.
- Helped prevent famines and improve food security.

### Challenges

- Regional Disparities:** Benefits concentrated in irrigated regions; eastern and southern states lagged behind.
- Environmental Damage:** Soil degradation, groundwater depletion, and chemical pollution.
- Decline in Biodiversity:** Focus on a few HYV crops led to neglect of coarse cereals, pulses, and traditional varieties.
- Small Farmers Marginalized:** High input costs made it difficult for small and marginal farmers to participate.
- Extraction of Groundwater:** State governments' policy of free electricity contributed to unsustainable groundwater extraction.
  - According to CGWB (Central Ground Water Board) estimates, around 80% of Punjab's water units are categorised as 'overexploited'.

**Way Forward**

- Focus on **sustainable agriculture and climate-resilient crops**.
- Promotion of organic farming, micro-irrigation, and precision agriculture.
- Policies must prioritise not just productivity but also the income augmentation of smallholder farmers.
- The need of the hour is a holistic approach that combines technological innovation, institutional support, and equitable resource distribution to transform Indian agriculture into a resilient and inclusive growth engine.

Source: TH

## INDIA-RUSSIA: INDUSTRIAL COOPERATION & EXTRACTION OF RARE EARTH MINERALS

**Context**

- India and Russia have reaffirmed their strategic partnership with a renewed focus on industrial cooperation, particularly in the extraction of rare earth minerals and critical resources, amid US's escalated pressure on India's oil trade with Russia.

**US's Tariff & Trade**

- The European Union (EU) imported \$39.1 billion worth of Russian goods in 2024, including \$25.2 billion in oil, while the US itself purchased \$3.3 billion in strategic materials from Russia.
- India imported Russian oil — \$52.7 billion in 2024 — second only to China's \$62.6 billion, despite pressure from the US.
- The **USA has avoided targeting China** because of its leverage over critical materials such as gallium, germanium, rare earths, and graphite, which are vital for defence and technology.

**Implications of US Tariffs on India**

- Exports to the U.S. could drop by 40–50%, especially in non-exempt categories.
- Competitors like Vietnam and Bangladesh face lower tariffs, putting Indian goods at a disadvantage.

**Indo-Russian Cooperation in Rare Earth Minerals**

- **Need:** Rare Earth Elements (REEs) are essential for modern technologies — electric vehicles, wind turbines, semiconductors, and defence systems.

- Recent export restrictions by China, which **controls 85–95% of global supply**, have disrupted India's automobile production and exposed vulnerabilities in its supply chain.
- To counter this, India and Russia are:
  - Exploring joint ventures in rare earth and critical mineral extraction.
  - Focusing on underground coal gasification and modern industrial infrastructure.
  - Advancing technology transfer and capacity building in mining equipment and exploration.

**Expanding Industrial Cooperation**

- The **11th Session of the India-Russia Working Group on Modernisation and Industrial Cooperation**, held in New Delhi, covered a wide range of sectors:
  - **Aerospace Science & Technology:** Plans for a modern wind tunnel, small aircraft piston engines, and joint R&D in carbon fibre, additive manufacturing, and 3D printing.
  - **Aluminium, Fertilizers, & Railway Transport:** Enhanced engagement and technology sharing.
  - **Waste Management:** Industrial and domestic waste solutions were also discussed.
- The meeting concluded with the signing of a protocol reaffirming the strategic partnership and shared commitment to deepen economic ties.

**Scientific Collaboration**

- **India's CSIR-IMMT** signed **Joint Declarations of Intent** with **Russia's Giredmet and Rosatom** to:
  - Advance critical mineral processing technologies.
  - Promote sustainable resource development.
  - Support India's goals under Atmanirbhar Bharat and Viksit Bharat initiatives.

**For More Details On Indo-Russian Cooperation, Refer to:** <https://www.nextias.com/ca/current-affairs/15-04-2025/india-russia-relations-78-years-diplomatic-ties>

Source: IE

## PM MODI EMPHASISED ON THE INTERESTS OF FARMERS, LIVESTOCK REARERS & FISHERFOLK

**Context**

- Amid US Tariffs, Prime Minister Modi said that the **government would never compromise the**



interests of India's farmers, livestock rearers and fisherfolk.

### Background

- **Trade negotiations between India and the US have stalled**, with the US (under Donald Trump administration) pressuring India to:
  - ♦ Open its domestic market to American farm produce.
  - ♦ Relax restrictions on certain imports.
- India's hesitation stems from **domestic livelihood concerns**.

### Major Concerns

- **Agricultural Sector: US is pushing India for importing** genetically modified (GM) soyabean and maize imports.
  - ♦ Both crops are widely grown in India – on some 13 million and 12 million hectares respectively.
  - ♦ India fears that it may cause **domestic price crash and unfair competition** since GM food crop cultivation is banned in India.
  - ♦ This may also **undermine India's seed sovereignty and biosafety norms**.
- **Ethanol Imports:** The US also wants India to allow imports of ethanol for use as bio-fuel.
  - ♦ Currently, **only ethanol produced from domestically** grown sugarcane, maize, and rice is used for blending up to 20% with petrol.
  - ♦ The import from the US **may reduce demand for domestically produced ethanol** and will ultimately hurt India's sugarcane farmers.
- **Dairy Sector:** There is an opposition from the Indian dairy industry to the imports of milk powder, butter oil, and cheese under **any free trade agreement**, whether with the **US, the European Union, New Zealand, or Australia**.
  - ♦ India levies 30% import duty on cheese, 40% on butter, and 60% on milk powder.
  - ♦ There is also the requirement that all imported dairy products should be derived from animals **not fed on any formulation produced from the internal organs, bone meal or tissues of animals**.
  - ♦ The US claims that this is **premised purely on religious and cultural grounds**.
- **Fisheries Sector:** India's seafood exports to the US were valued at **\$2.48 billion in 2024**, US is a major market, the latest tariff of 50% can hugely

impact aqua farmers in states such as **Andhra Pradesh, Gujarat, Odisha, and Tamil Nadu**.

- ♦ This is more so when much lower tariffs of **10-20% have been put on competing countries** such as Chile, Ecuador, Indonesia, and Vietnam.

### India's Stand

- **Protection of Livelihoods:** Safeguard interests of farmers, fisherfolk, and dairy producers from cheaper imports and price volatility.
- **Food & Biosafety Norms:** Maintain ban on GM food crop cultivation and imports in line with domestic regulations and consumer safety concerns.
- **Cultural & Religious Considerations:** Uphold restrictions on dairy imports from animals fed with animal-derived products.
- **Self-Reliance in Key Commodities:** Promote domestic ethanol production to support rural economy and avoid dependence on imports.
- **Trade Balance Concerns:** Resist tariff concessions in sensitive sectors where India is vulnerable to import surges.

### Way Ahead

- **Balanced Trade Negotiations:** Engage in calibrated opening of markets, ensuring sensitive sectors like agriculture and dairy are protected while exploring concessions in less-sensitive areas.
- **Diversification of Export Markets:** India can try to reduce over-dependence on the US for seafood and other exports by tapping new markets in East Asia, Middle East, and Africa.
- **Safeguard Livelihoods:** Continue high import duties and non-tariff barriers for dairy and other vulnerable sectors until domestic producers are competitive.

### Conclusion

- India-US trade negotiations remain stalled due to deep differences in sensitive sectors such as agriculture, dairy, ethanol, and fisheries.
- While India seeks to safeguard livelihoods, cultural norms, and food safety, the US pushes for greater market access.
- A balanced approach that protects domestic interests while expanding mutually beneficial trade avenues is essential for breaking the deadlock.

**Source: IE**

## 11TH NATIONAL HANDLOOM DAY

### Context

- The **11th National Handloom Day** was celebrated at Bharat Mandapam, New Delhi.

### National Handloom Day

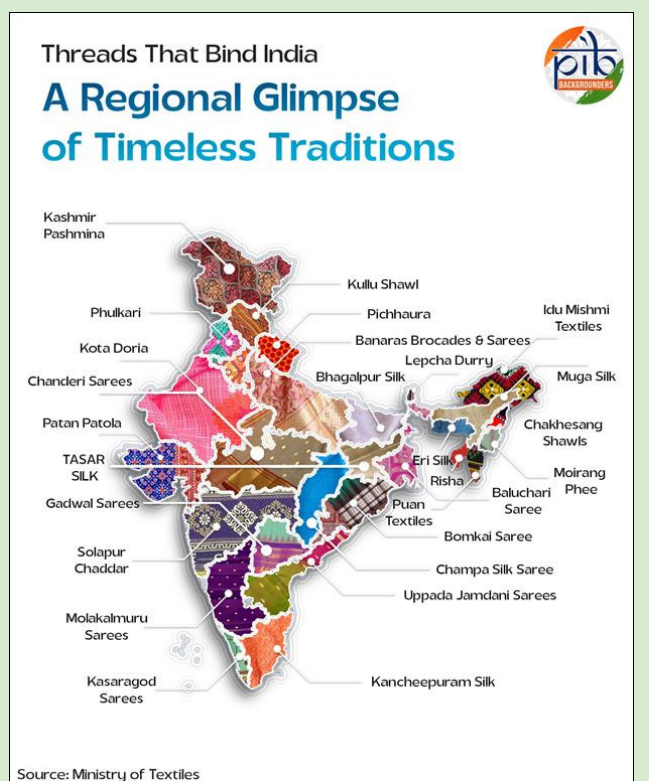
- The handloom sector played a vital role in India's freedom movement. The Swadeshi Movement, launched on August 7, 1905, championed indigenous industries, especially handlooms, as a form of economic resistance to colonial rule.
  - In honour of this legacy, August 7 was declared **National Handloom Day in 2015**.
- It is celebrated annually and it recognises weavers' contributions to the nation and promotes the preservation of India's handloom heritage.

### The Indian handloom industry

- India's handloom sector is known for its wide range of fabrics, including cotton, khadi, jute, linen, and rare fibres like Himalayan nettle.
  - It also produces distinctive silk varieties like Tussar, Mashru, Mulberry, Eri, Muga and Ahimsa, along with woollen weaves like Pashmina, Shahtoosh and Cashmere.
- It is one of the world's oldest cottage industries, showcases the country's rich cultural heritage and skilled craftsmanship.
  - 95% of the world's hand fabric** comes from India.
- It is spread across villages and small towns and it relies on traditional hand-spinning, weaving, and printing techniques passed down through generations.
- Today, handloom weaving is **India's largest cottage industry**. According to the 4th All India Handloom Census (2019–20), about 35.22 lakh households are involved in this work.
  - Around 72% of economic handloom weavers are women.
- In the financial year 2024-25, the United States remained the largest destination, accounting for ₹331.56 crore worth of exports.

### Do you know?

- Every region in India has developed its unique handloom style.
  - For example, Rajasthan is known for its tie and dye, Madhya Pradesh for Chanderi, and Uttar Pradesh for Jacquard patterns.
  - Other well-known styles include Bomkai from Odisha, Kunbi from Goa, Paithani from Maharashtra, Kotpad from Odisha, Balarampuram from Kerala, Jamdani and Baluchari from West Bengal.
    - Each piece is handmade using traditional methods, making every product unique.



## INDIA'S MEDICAL TOURISM ECONOMY

### In News

- Medical tourism, the practice of traveling across borders for affordable, high-quality medical care has grown into a global industry, with **India now holding a significant position as a preferred destination.**
  - ♦ As of 2025, India ranks **10th in the global Medical Tourism Index** and is poised for even greater growth as the industry is predicted to surpass US\$54b globally by 2026.

### What is Medical Tourism?

- Medical tourism refers to the practice of patients traveling, often across national borders, to obtain medical treatment—ranging from complex surgeries and advanced diagnostics to cosmetic, dental, or wellness therapies.

### Why Does India Attract Medical Tourists?

- **Cost Advantage:** Procedures can cost 60–90% less than in Western countries, making quality care accessible to a broader international clientele.
- **Skilled Professionals:** India boasts a large pool of internationally recognized doctors and medical staff, many trained or experienced abroad, and proficient in English.
- **World-class Infrastructure:** Major metros offer state-of-the-art medical facilities, many with international accreditations such as Joint Commission International (JCI).
- **Diversity of Care:** Patients can access both cutting-edge modern treatments and recognized traditional therapies like Ayurveda, Yoga, and wellness rehabilitation.
- **Ease of Communication:** English is widely spoken among healthcare providers, easing patient experiences.

### Government and Industry Initiatives

- **Policy Support:** The 2002 National Health Policy recognized treatment of overseas patients as “deemed export,” catalyzing growth.
- **‘Heal in India’ Campaign:** Centralized promotion of medical value travel, integrating various ministries and marketing India as a holistic destination.
- **Visa Liberalization:** Introduction of e-Medical Visa extended to 171 countries.
- **Infrastructure Investment:** Expansion into Tier-2 and Tier-3 cities and targeted financial incentives.

- **International Agreements:** Bilateral pacts, such as with Bangladesh, to facilitate smoother medical travel.

### Importance for India

- **Foreign Exchange and Economic Growth:** The sector earned around US\$16.3b, supporting a positive balance of payments.
- **Boost to Healthcare Sector:** Drives improvements in quality, infrastructure, and technology in metropolitan and secondary cities.
- **Employment Generation:** Expands job opportunities for skilled and semi-skilled workers, directly in healthcare and indirectly in tourism, hospitality, and wellness sectors.
- **Global Soft Power:** Increases India’s prestige as a healthcare and wellness leader, strengthening diplomatic and cultural influence.

### Challenges & Ethical Issues Involved

- **Healthcare Inequality:** The focus on serving foreign patients in high-end private hospitals can create a resource drain, leaving public health institutions underfunded and underserved.
- **Regulatory Gaps:** Inadequate oversight leads to concerns about misleading advertising, lack of informed consent, and weak data protection, especially for foreign patients unfamiliar with local laws.
- **Public-to-Private Shift:** Skilled professionals may shift away from public service or primary care roles to more lucrative jobs in private hospitals, exacerbating domestic shortages.
- **Ethical Concerns:** Medical professionals sometimes prioritize elective, high-margin procedures for foreign clients over local community needs. This can foster the neglect of primary health care and essential public services.

### Way Ahead

- **Policy and Regulatory Reform**
  - ♦ **Comprehensive Regulatory Framework:** Strengthening patient safety, transparency, informed consent, and standardized quality assurance; strict data protection laws.
  - ♦ **Equitable Resource Allocation:** Policies to ensure revenue from medical tourism is re-invested into public healthcare, infrastructure, and workforce development.
- **Promoting Inclusivity and Best Practices**
  - ♦ **Strategic Partnerships:** Develop more bilateral agreements and region-specific outreach (e.g., with SAARC, Southeast Asia, Middle East, Africa, Europe, North America).

- ♦ **Insurance and Patient Protection:** Reforms to extend insurance coverage for a wider range of treatments and streamline claims for foreign patients.
- ♦ **Digital Transformation:** Expand the reach and reliability of online MVT portals and telemedicine, including AYUSH and wellness modules for a comprehensive care continuum.
- **Sustainable Growth:**
  - ♦ **Public-Private Partnerships:** Foster FDI and innovation through PPPs for integrated hospital-tourism development, learning from successful international models.
  - ♦ **Regional Development:** Bring world-class care to tier-2 and tier-3 cities, reducing pressure on metros and diffusing the benefits of growth.

Source: TH

## CONTAMINATION OF GROUND WATER IN INDIA

### In News

- India relies heavily on groundwater for drinking and irrigation, but rapid, unregulated extraction has led to widespread contamination.

### India's groundwater crisis

- India depends on groundwater for about 85% of its rural drinking water needs and around 60% of irrigation water.
- Despite an increase in rainfall over the past decades, groundwater replenishment is insufficient due to excessive withdrawals and encroachments on natural recharge zones.
- Groundwater levels in many parts of India have depleted drastically, with water **tables in northwestern states** (Punjab, Haryana, Delhi, Western Uttar Pradesh) dropping over 40 meters deep, making extraction expensive and unsustainable.
- According to recent data, about 60% of India's districts face critical groundwater depletion or contamination or both, **threatening the livelihoods of millions**.
- Also, Groundwater is facing a hidden crisis of pollution.
  - ♦ Contaminants originate from **chemical fertilizers, industrial waste, sewage leaks, and natural sources worsened by human activity**.

### Key structural issues

- **Institutional fragmentation:** India's groundwater crisis is driven by a fragmented regulatory system and poor coordination.
  - ♦ Agencies such as the CGWB, the CPCB, the SPCBs, and the Ministry of Jal Shakti operate in silos, often duplicating efforts and lacking coordination for integrated, science-based interventions.
- **Weak legal enforcement:** The Water Act exists, its enforcement — especially on groundwater discharge — is inadequate.
  - ♦ Regulatory loopholes and lax compliance embolden polluters.
- **Lack of real-time, publicly-accessible data:** Monitoring is infrequent and poorly disseminated.
  - ♦ Without early warning systems or integration with public health surveillance, contamination often goes undetected until after serious health outcomes emerge.
- **Over-extraction:** Excessive pumping lowers water tables and concentrates pollutants, making aquifers more vulnerable to geogenic toxins and salinity intrusion.

### Impacts

- The 2024 Central Ground Water Board report highlights pollution with nitrates, fluoride, arsenic, uranium, iron, and heavy metals across many states, **causing serious health issues** like fluorosis, cancers, kidney failure, and developmental disorders.
- Incidents of **groundwater poisoning**, such as in Uttar Pradesh and Odisha, reveal institutional neglect.
- This escalating groundwater crisis poses a major public health threat affecting millions, especially in rural areas.

### Ground Water Assessment and Management Initiatives

- **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):** Includes water conservation and water harvesting structures, enhancing rural water security.
- **15th Finance Commission Grants:** Provides financial assistance to states for rainwater harvesting and other water conservation activities.
- **Jal Shakti Abhiyan (JSA):** Launched in 2019, now in its 5th phase ("Catch the Rain" 2024), focusing on rainwater harvesting and water conservation across rural and urban districts through convergence of various schemes.



- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0:** Supports rainwater harvesting via stormwater drains and promotes groundwater recharge through 'Aquifer Management Plans'.
- **Atal Bhujal Yojana (2020):** Targets water-stressed Gram Panchayats in 80 districts across 7 states, focusing on groundwater management.
- **Pradhan Mantri Krishi Sinchai Yojana (PMKSY):** Aims to expand irrigation coverage and improve water use efficiency through components like Har Khet Ko Pani, Repair & Renovation of water bodies, and Surface Minor Irrigation schemes.
- The Ministry of Jal Shakti has set up the **Bureau of Water Use Efficiency (BWUE)** under the National Water Mission to act as a facilitator for promotion of improving water use efficiency across various sectors.
- **Mission Amrit Sarovar (2022):** Aims to create or rejuvenate 75 Amrit Sarovars in every district for water harvesting and conservation.
- **National Aquifer Mapping (NAQUIM):** Completed by the Central Ground Water Board (CGWB) for over 25 lakh sq. km, supporting groundwater recharge and conservation plans.
- **National Water Policy (2012)** has been formulated by the Department of Water Resources, River Development and Ganga Rejuvenation, which advocates rainwater harvesting and conservation of water and also highlights the need for augmenting the availability of water through direct use of rainfall.
- **National Water Awards:** Launched in 2018 by the Department of Water Resources to recognize and encourage exceptional contributions towards water conservation and management across India.

### Suggestions

- India's groundwater crisis has shifted from scarcity to safety, with invisible and irreversible pollution posing a serious threat.
- Therefore India's groundwater crisis calls for a bold, coordinated, and multi-dimensional strategy and these are :
  - ♦ **Comprehensive Policy Reforms:** Establish stringent extraction limits in over-exploited zones and incentivise water-efficient agricultural practices.

- ♦ **Integrated Monitoring Systems:** Leverage real-time data analytics to track contamination trends and predict future risks.
- ♦ **Public Awareness Campaigns:** Educate communities about contamination risks and promote the adoption of low-cost treatment technologies.
- ♦ **Targeted Remediation:** Deploy region-specific solutions such as rainwater harvesting in salinity-prone areas and phosphate reduction strategies to curb fluoride and nitrate contamination.

Source :TH

## NEWS IN SHORT

### NAURU

#### Context

- Pacific microstate Nauru, has a novel plan to fund its fight against climate change by selling "golden passports".

#### About

- Selling for US\$105,000 each, Nauru plans to drum up more than **US\$5 million in the first year of the "climate resilience citizenship" programme.**
- Nauru believes the passport programme could eventually generate \$43 million which would account for **almost 20% of total government revenue.**

#### About Nauru

- The island republic of Nauru sits on a **small plateau of phosphate rock in the sparsely populated South Pacific.**
- It is the **world's third-smallest country** by area (21 km<sup>2</sup>) after Vatican City and Monaco.





- **Unusually pure phosphate deposits** -- a key ingredient in fertiliser -- once made Nauru one of the wealthiest places, per capita, on the planet.
  - ♦ But these supplies have long since dried up, and researchers today estimate 80% of Nauru has been rendered uninhabitable by mining.
- What little land Nauru has left is threatened by **encroaching tides** as the sea levels are rising **1.5 times faster** than global averages.
- Nauru will eventually **need to relocate 90% of its population** and the first phase of this mass relocation is estimated to cost more than \$60 million.

Source: TH

## WORLD TRADE ORGANIZATION (WTO)

### In News

- Brazil has initiated formal consultations at the **World Trade Organization (WTO)** over US President Donald Trump's decision to impose 50% tariffs on Brazilian imports, escalating diplomatic tensions between the two nations.

### About World Trade Organization (WTO)

- The World Trade Organization (WTO) is the only global international organization responsible for regulating and facilitating trade between nations.
- It was established on January 1, 1995, as the successor to the General Agreement on Tariffs and Trade (GATT), which had governed global trade since 1948.
- The WTO currently has 166 member countries, representing over 98% of global trade and GDP, and is headquartered in Geneva, Switzerland.

#### WTO's Foundational Roles



Source: TOI

## BHARAT FORECAST SYSTEM (BHARATFS)

### Context

- India has developed Bharat Forecast System (BharatFS), an advanced weather prediction model that improves extreme rainfall forecasting accuracy by 30% compared to earlier models.

### About BharatFS

- **BharatFS (Bharat Forecast System)** is India's most advanced real-time global weather prediction model, **developed by IITM-Pune** in collaboration with NCMRWF-Noida and the India Meteorological Department (IMD).
- It is a **flagship product of the "Make in India" initiative** and supports the Atmanirbhar Bharat (self-reliant India) vision.
- BharatFS uses the **Triangular Cubic Octahedral (TCO) dynamical grid**, enabling ultra-high horizontal spatial **resolution of 6 km**—the highest globally for operational real-time models.
  - ♦ This is a leap from the **previous GFS T1534 model (12 km resolution)** and surpasses most leading global models that operate between 9–14 km.
- Its improved resolution allows highly localized forecasts, supporting disaster management and agricultural decision-making down to cluster-of-panchayat/village level.

### Significance

- India is currently the only nation running a global, real-time weather prediction system at such high resolution.
- The improved speed and accuracy (with up to a 30% increase in accuracy for extreme rainfall forecasts) make it especially valuable for short- and medium-range weather predictions.

Source: PIB

## UNDERSTANDING PROPHYLAXIS

### In News

- Haemophilia care now focuses on proactive prevention using regular clotting factor replacement or simpler injections, helping maintain joint health, prevent disability, and improve quality of life toward achieving "zero bleeds."

### Hemophilia

- It is a rare bleeding disorder in which the blood does not clot properly. This can lead to problems with bleeding too much after an injury or surgery

- There are several different types of hemophilia. The most common are:
  - ♦ Hemophilia A (classic hemophilia), which is caused by a lack or decrease of clotting factor VIII.
  - ♦ Hemophilia B (Christmas disease), which is caused by a lack or decrease of clotting factor IX.

#### Status In India

- In India, only about 20% of the estimated 100,000–150,000 haemophilia cases are diagnosed, due to lack of awareness, limited diagnostics, and socio-economic barriers.
- Untreated bleeds reduce life expectancy and cause significant social and economic challenges such as school absenteeism and unemployment.

#### Role of Prophylaxis

- It is also known as regular replacement therapy and is the gold standard treatment for **haemophilia**.
- It aims to prevent bleeding episodes rather than treating them after they occur (as in on-demand therapy).
- It involves frequent clotting factor infusions or newer, easier subcutaneous injections.

#### Relevance

- Prophylaxis prevents joint damage, enhances quality of life, and reduces healthcare burden by minimizing emergency visits and long-term complications.
- While 90% of patients in developed countries use prophylaxis, most in India still rely on on-demand therapy, though some states have begun implementing regular treatment for children under 10.
  - ♦ Increasing awareness and access through policy and education is essential to prevent disability and improve lives.

Source :TH

## NEW LICHEN SPECIES DISCOVERED IN WESTERN GHATS

#### Context

- A new species of lichen, **Allographa effusosoredica**, has been discovered in the Western Ghats.

#### About

- The newly identified species is **crustose lichen** characterized by **effuse soredia** and the

presence of **norstictic acid**, a rare chemical trait within the **Allographa** genus.

- **Significance:** First *Allographa* species from India confirmed with molecular data.
- **Funded by** Anusandhan National Research Foundation (ANRF) under project on **lichen symbiosis in Western Ghats**.
- **Taxonomic status in India:**
  - ♦ 53rd *Allographa* species reported from India.
  - ♦ 22nd from the Western Ghats.
- The government is **actively promoting research and conservation efforts** in biodiversity hotspots like the Western Ghats through various policies, initiatives, and funding mechanisms.

#### Lichens

- **Lichens** are organisms formed by a partnership **between a fungus and an alga or cyanobacterium**, where the fungus gives shelter and absorbs water/nutrients, and the alga/cyanobacterium makes food through photosynthesis.
- **Types of Lichens (Based on Morphology)**
  - ♦ **Crustose:** Crust-like, tightly attached to substrate (e.g., *Graphis*, *Allographa*).
  - ♦ **Foliose:** Leaf-like, loosely attached (e.g., *Parmelia*).
  - ♦ **Fruticose:** Shrub-like, branched (e.g., *Cladonia rangiferina*).
- **Ecological & Economic Importance**
  - ♦ **Bioindicators:** Very sensitive to air pollution (especially SO<sub>2</sub>).
  - ♦ **Soil formation:** Break down rocks by secreting acids.
  - ♦ **Food source:** For reindeer, insects, snails.
  - ♦ **Medicina/Cosmetic uses:** Antibiotics, dyes, perfumes.
  - ♦ **Climate studies:** Lichen growth rate used in lichenometry (dating exposed surfaces).

Source: PIB

## KARNATAKA CABINET APPROVES DEVADASI REHABILITATION BILL

#### In News

- The Karnataka Cabinet has approved the Karnataka Devadasi (Prevention, Prohibition, Relief and Rehabilitation) Bill, 2025, aiming to strengthen efforts against the Devadasi system

### Devadasi rehabilitation Bill

- It will replace the 1982 Act and it includes provisions to protect the dignity of Devadasis and their children, such as removing the mandatory declaration of a father's name on official documents and allowing DNA-based identification.
- It adopts a comprehensive approach by addressing not just prohibition but also offering relief and rehabilitation to Devadasis, responding to long-standing demands for more inclusive legislation.

#### Devadasi system

- It is an ancient practice dating back to the Chola, Chera, and Pandya dynasties, involving dedicating young lower-caste girls to temple deities.
- Though termed "servants of God," these girls often end up providing sexual services to temple patrons and powerful men.
- The system persists under different regional names across India, such as Natis (Assam), Maharis (Kerala), Basavi/Jogati (Karnataka), Jogin (Andhra Pradesh), and Aradhini (Maharashtra).

Source :TH

## COLORADO RIVER

### Context

- **The Colorado River**, a vital water source for millions, faces a crisis as its flow diminishes, prompting states to vie for future water rights.

### About

- The Colorado River is one of the most important rivers in the **western United States and northern Mexico** — both ecologically and economically.

- It is also **one of the most overused and stressed** water systems in the world.
- **Source:** Rocky Mountains, Colorado (La Poudre Pass).
- **Mouth:** Gulf of California, Mexico (though it rarely reaches the sea now due to heavy water usage).
- **Its drainage basin covers** 246,000 square miles (637,000 square kilometres) and includes parts of seven states—Wyoming, Colorado, Utah, New Mexico, Nevada, Arizona, and California.



Source: DTE

