



CURRENT AFFAIRS

CONSOLIDATION

JULY
2025
PART-II



C-171/2,
Block-A,
Sector-15,
Noida



641, Mukherjee Nagar,
Opp. Signature
View Apartment,
New Delhi



21,
Pusa Road,
Karol Bagh
New Delhi



Tashkent Marg,
Civil Lines,
Prayagraj,
Uttar Pradesh



Tonk Road,
Vasundhara Colony,
Jaipur,
Rajasthan



Burlington Arcade Mall,
Burlington Chauraha,
Vidhan Sabha Marg,
Lucknow



12, Main AB Road,
Bhawar Kuan,
Indore,
Madhya Pradesh

E-mail : care@groupdrishti.in

Phone: +91-87501-87501

Contents

Polity and Governance	5
National Cooperation Policy 2025.....	5
One Stop Centres Scheme.....	8
Monsoon Session of Parliament 2025.....	10
Mid-Term Resignation of Vice-President of India	11
Impeachment of Judges in India	13
Common Service Centres: Catalysts of Rural Digital Inclusion	14
NAMASTE Scheme.....	16
PM Virasat Ka Samvardhan (VIKAS) Scheme.....	17
Swachh Survekshan 2024-25 Awards.....	18
10 Years of Skill India Mission	21
Generative AI and Copyright Issues.....	24
4 Members Nominated to Rajya Sabha.....	27
Economic Scenario	30
Mission for Cotton Productivity	30
India Achieves 20% Ethanol Blending in Petrol.....	32
Pradhan Mantri Fasal Bima Yojana	34
Outlook of Indian Economy.....	36
Unified Payments Interface.....	37
India's Millet Standards Recognised at Codex Alimentarius Commission.....	38
OECD-FAO Agricultural Outlook 2025-2034	41
PM Dhan-Dhaanya Krishi Yojana.....	42
Decarbonization of Global Shipping.....	45
ICAR & Its Role in Food & Nutritional Security.....	47
International Relations.....	50
China's Mega Dam on Brahmaputra	50
India Hosts 2 nd BIMSTEC Ports Conclave	53
Reset in India-Maldives Relations	54
India-UK Vision 2035 and CETA.....	56
ICJ's Advisory on State Duties for Climate Action	58
US to Quit UNESCO.....	60
India's Concerns on Western Sanctions on Russian Oil.....	61
Social Issues	63
State of Food Security and Nutrition in the World 2025.....	63
Ending Manual Scavenging.....	64

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Denial of Basic Prison Care to Disabled Violates Fundamental Rights: SC	66
Dowry Deaths in India	67
Science & Technology	70
NISAR Satellite	70
Indian Railways Tests First Hydrogen-Powered Coach	71
Advancing India's Nuclear Energy Generation	73
Black Hole Merger	75
Deepfakes	76
Environment and Ecology	78
Depleting Coral Cover in Lakshadweep	78
International Day for Conservation of Mangrove Ecosystem	80
International Tiger Day 2025	82
Progress on India's Climate Targets	86
Towards Resilient and Prosperous Cities in India	87
Global Wetland Outlook 2025	90
Just Transition in the Global Plastics Treaty	92
Chhattisgarh Forest Department Withdraws CFRR Directive	94
The Sevilla Commitment for Financing Sustainable Development	95
History	98
1,000 Years of Rajendra Chola I's Maritime Expedition	98
Art and Culture	102
Sohrai, Pattachitra and Patua Paintings	102
National Flag Day 2025	103
Security	106
Rising Cyber Frauds in India	106
Ethics	109
Ethical Digital Conduct in Public Service	109
Disaster Management	111
India's Preparedness Against GLOFs	111
Parametric Insurance for Disaster Risk Reduction	113
National Crisis Management Committee	115
Rapid Fire Current Affairs	116
Indian Naval Ship Satpura at SIMBEX-25	116
Anamudi Shola National Park	117
India Revives Sawalkote Hydroelectric Project	117

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Paithani Sarees.....	118
Pralay Missile.....	118
SPUN Atlas Highlights Gaps in Mycorrhizal Fungi Conservation	119
India's First Private Test Facility for Heavy Water.....	120
Veer Parivar Sahayata Yojana 2025.....	120
Exercise Bold Kurukshetra 2025	120
India Cuts Zero-dose Children by 43%.....	121
Financial Conditions Index.....	121
Kargil Vijay Diwas	121
India's First Tribal Genome Sequencing Project.....	122
2025 Henley Passport Index Q2	122
Interstellar Comet 3I/ATLAS.....	123
DHRUVA Policy	123
Birth Anniversary of Bal Gangadhar Tilak.....	124
Birth Anniversary of Chandra Shekhar Azad	124
RBI's Financial Inclusion Index 2025.....	125
Hornbill Conservation Centre.....	125
UK Issues Sanctions on Global Migrant Smuggling Networks	126
Hatti Tribe.....	126
Bitra Island	127
AdFalcivax for Malaria	129
Kamchatka Peninsula	129
National Conference on Good Governance Practices	130
Offshore Areas Atomic Minerals Operating Right Rules 2025	131
Birth Anniversary of Shaheed Mangal Pandey	132
Stablecoins	133
Godavari River	133
India's Advancements in Ballistic and Air Defence Systems.....	134
Biostimulants.....	134
Gujarat's Banni Grasslands Ready for Cheetah Reintroduction	135
SC Overrides Spousal Privilege for Fair Trial.....	136
Noise Effect on Quantum Entanglement.....	137
Right to Peace Over Noise.....	138
Birth Anniversary of Adikabi Sarala Das	138
Sanchar Mitra Scheme	139
Ranthambore Tiger Reserve.....	140
India's Ayush AI Efforts Recognised by WHO	140
ADEETIE Scheme to Boost Industrial Energy Efficiency	142
FGD Exemption for Thermal Plants	142
India Achieves 50% Non-Fossil Fuel Power Capacity.....	143
Kaziranga Records High Diversity of Grassland Birds	143

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Polity and Governance

Highlights

- National Cooperation Policy 2025
- One Stop Centres Scheme
- Monsoon Session of Parliament 2025
- Mid-Term Resignation of Vice-President of India
- Impeachment of Judges in India
- Common Service Centres: Catalysts of Rural Digital Inclusion
- NAMASTE Scheme
- PM Virasat Ka Samvardhan (VIKAS) Scheme
- Swachh Survekshan 2024-25 Awards
- 10 Years of Skill India Mission
- Generative AI and Copyright Issues
- 4 Members Nominated to Rajya Sabha

National Cooperation Policy 2025

Why in News?

To mark the **United Nations-designated International Year of Cooperatives (IYC) 2025**, India unveiled the **National Cooperation Policy 2025** to transform the **cooperative sector** into a people-driven economic force.

International Year of Cooperatives (IYC) 2025

- **CoopsDay, or the International Day of Cooperatives**, has been celebrated since 1923 and was officially recognized by the UN in 1995. It is observed on the **first Saturday of July** each year.
- The **Committee for the Promotion and Advancement of Cooperatives (COPAC)** is hosting the IYC 2025.
- **Theme of IYC 2025: "Cooperatives Build a Better World"**, highlighting their **role in inclusive, sustainable development** and achieving the UN Sustainable Development Goals (SDGs) by 2030.
- **Scale of Global Cooperatives:**
 - Over **12% of the global population** is part of the **3 million cooperatives** worldwide.
 - Cooperatives provide **jobs or work opportunities to 280 million people**, about **10% of the global workforce**.
 - The **International Cooperative Alliance (ICA)** represents over **1 billion cooperative members** globally.

What are the Key Features of the National Cooperation Policy 2025?

- **Vision and Objective:** It supports the Ministry of Cooperation's mandate of **"Sahakar se Samridhhi"** by aiming to strengthen cooperatives and expand their grassroots reach.
 - The policy replaces the **National Policy on Cooperatives in 2002** and sets the course for cooperative growth over the next **two decades (2025–2045)**.
- **Convergence of Government Schemes:** The policy aims to leverage existing government schemes such as the **Dairy Infrastructure Development Fund (DIDF)**, **PM Matsya Sampada Yojana (PMMSY)**, and the **National Programme for Dairy Development (NPDD)** to establish **2 lakh new multipurpose Primary Agricultural Credit Societies (M-PACS)** within five years.
- **Inclusive Growth and Employment:** The policy aims to empower rural populations by making cooperatives more inclusive, focusing on **Dalits, Adivasis, women, and youth**, while strengthening their role in the wider economy.
- **Diversification and Education:** The policy pushes cooperatives to expand into **over 25 sectors** like dairy, fisheries, and foodgrain procurement.
 - The policy promotes cooperative education via **Tribhuvan Sahkari University**, India's first national cooperative university.
- **Technological Advancements and Global Engagement:** The policy aims to modernise

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



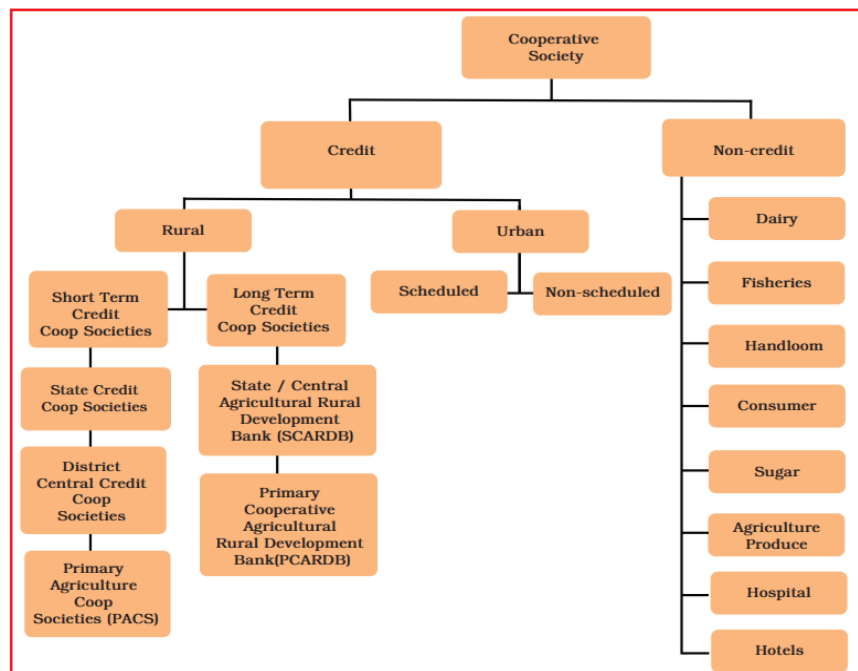
cooperatives to stay competitive in a fast-changing, tech-driven world.

- The policy sets up **National Cooperative Exports Limited (NCEL)** to help cooperatives access global markets, focusing on exports like rice and wheat.

What are Cooperatives?

- **About:** A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs, and aspirations through a **jointly-owned and democratically-controlled enterprise**.
- They follow the principle of “**one member, one vote**”, giving every member equal say, regardless of capital contribution.
- In India, the cooperative movement began in the late 19th century to **tackle rural debt and exploitation**. Key steps included the **Cooperative Acts of 1904 and 1912**.
- Post-independence, cooperatives became central to India's development, with institutions like **National Bank for Agriculture and Rural Development (NABARD)** and **National Cooperative Development Corporation (NCDC)** supporting them.
- Another development of cooperatives is the rise of cooperative banks regulated under the **Banking Regulation Act**, with around **1,400 Urban Cooperative Banks** in India.

- **Constitutional & Legal Backing:** The **97th Amendment, 2011** granted cooperatives constitutional status.
 - **Article 19(1)(c)** ensures the right to form cooperatives, while **Article 43B** promotes them as a **Directive Principles of State Policy (DPSP)**.
 - **Part IXB (Articles 243ZH - 243ZT)** provides governance provisions for Cooperatives.
 - State-level cooperatives fall under the **State List**, while multi-state cooperatives are governed by the **Union List** and the **Multi-State Cooperative Societies (MSCS) Act, 2002**.
 - The MSCS Act is administered by the **Central Registrar**, and state cooperatives are managed by State Registrars.
 - The **Ministry of Cooperation** was established in 2021 by transferring cooperation-related entries from the **former Ministry of Agriculture, Cooperation, and Farmers Welfare**.
 - **MSCS (Amendment) Act, 2023** improved governance and transparency of cooperatives.
- **Scale of Cooperatives in India:** India has nearly **8.42 lakh cooperatives and 29 crore members** (27% of the global total). **IFFCO and Amul** are among the world's top 300 cooperatives.
 - **Maharashtra** leads with over **25% of all cooperatives**, followed by Gujarat, Telangana, Madhya Pradesh, and Karnataka.
 - **Tribhuvandas K. Patel** led the creation of Amul by organising village dairy cooperatives. **Vergheze Kurien**, the force behind **India's White Revolution**, made Amul a national success and turned India into the world's top milk producer.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Initiatives Undertaken by India in the Cooperative Sector?

- **PACS: Model bye-laws** were introduced to bring uniformity and transparency across states. This helps **Primary Agricultural Credit Societies (PACS)** function more efficiently and democratically.
- **Farmer Producer Organisations (FPOs):** As of 2025, around 1,900 FPOs formed in the cooperative sector by NDC.
- **Fish Farmer Producer Organisations (FFPOs)** are being promoted to help small fishers with better resources, training, and credit.
- **National Cooperative Organics Limited (NCOL)** is promoting organic farming through PACS and has launched Bharat Organic products to support sustainable and chemical-free agriculture.
- **White Revolution 2.0:** Launched in 2024, this initiative aims to increase milk procurement by 50% over the next five years, with over 9,000 dairy cooperative societies already registered.
- **Cooperative Banking Reforms: Urban cooperative banks (UCBs)** are now allowed to open new branches, while rural cooperative banks can lend to commercial real estate.
- **GeM portal:** Cooperatives can now register as buyers on the **GeM portal to ensure transparent and cost-effective procurement**. As of 2024, over 550 cooperatives have been onboarded so far.

The Boom of Cooperatives In India



8.44 Lakh
Cooperative Societies

30 Sectors

73,492 PACS proposed for computerisation

59,920 PACS onboarded to a unified ERP platform

23,173 new multipurpose PACS have been registered

667 cooperative societies have been registered as buyers on the GeM

2,986 transactions have taken place by cooperative societies, amounting to **Rs 319.02 crore**, on the GeM

NCEL has onboarded **8,863 PACS/cooperatives**, successfully exporting agricultural commodities valued at **Rs. 5,239.5 crore** to **27 countries**.

Source: Ministry of Cooperation

Some Most Successful Cooperatives in India

Cooperative	Sector	Notable Achievement
AMUL (GCMF)	Dairy	India's largest dairy cooperative; played a pivotal role in the "White Revolution" which helped India become the world's largest milk producer; turnover above 7.3 billion.
IFFCO	Fertilizer	India's largest fertilizer cooperative and the world's largest cooperative by GDP per capita; with revenue above 7.3 billion (FY23), its remarkable growth earned it a place in Fortune India 500 list.
Karnataka Milk Federation (Nandini)	Dairy	Second-largest dairy cooperative in India; operates with 15 milk unions across Karnataka, procuring milk from primary dairy coop societies; serves both urban and rural markets, benefiting over 1,500 members.
Indian Coffee House Society	Consumer/Restaurants	Managed by a network of worker cooperatives; approx. 400 coffee outlets.
Uralungal Labour Contract Cooperative Society	Labour Cooperative Society	Oldest labour cooperative society in India; With a membership of around 1415 individuals, ULCCS has successfully completed more than 7500 projects

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



One Stop Centres Scheme

Why in News?

The Delhi High Court issued multiple directions to the Delhi government concerning the poor condition of **One Stop Centres (OSCs)** set up under the **One Stop Centre scheme** to aid **women affected by violence**.

What is One Stop Centres Scheme?

- **About:** Launched by the **Ministry of Women and Child Development (MWCD)**, OSCs aim to provide **integrated support and assistance to women affected by violence** in **private and public spaces**, including family, community, and workplace settings.
 - Also known as **Sakhi Centres**, they form a key component of the **Sambal vertical** under **Mission Shakti**.
 - It is **100% centrally funded** through the **Nirbhaya Fund** and implemented by **State/UT governments**.
- **Objectives:** They ensure **immediate and long-term access to medical, legal, psychological, and counselling services** for women facing **physical, sexual, emotional, psychological, or economic abuse**.
- **Target Beneficiaries:** It supports **all women and girls**, including those **below 18 years**, affected by **any form of violence**, regardless of **caste, class, religion, region, marital status, education, sexual orientation, or culture**.
 - It is linked to the **Juvenile Justice Act, 2015** and **POCSO Act, 2012** to ensure protection for **minor girls**.
- **Services Offered:**
 - **Emergency response & rescue** (including **police assistance**)
 - **Medical aid** (first aid, treatment, referral services) and **Legal aid & counselling** (FIR filing, legal advice via **NALSA**)
 - **Psycho-social counselling** (mental health support) and **Temporary shelter** (short-stay facilities)
 - **Video conferencing** (for remote legal/medical consultations)

- **Coverage:** At least one OSC per district is encouraged, with **additional centres in high-crime, large, or aspirational districts**.
- **Financial and Audit Mechanism:** Funds are disbursed as per **Public Financial Management System (PFMS)** via **Single Nodal Agency (SNA)** or **SNA SPARSH**.
 - Auditing is done as per **Comptroller & Auditor General (CAG)** norms, along with **social audits** by civil society groups.

What was the Need of OSC Guidelines?

- **Staffing Shortages:** Many OSCs, especially in hospitals, lack **dedicated staff** and are run by **existing hospital personnel**, with **counsellors** called in from external agencies when needed.
- **Non-Compliance with SoPs:** The **SoPs for OSCs** (in case of Delhi) mandate specific staffing-**5 counsellors, 5 senior resident doctors, 5 staff nurses, and 5 nursing orderlies**-but **audits** found these norms were **not consistently followed**.
- **Inadequate Record-Keeping:** Crucial records like **child death case reviews** and **ante-natal care (ANC)** are **not properly maintained**, hindering effective **monitoring** and **service improvement**.

What Directions Did the Delhi High Court Issue?

- **Awareness Campaign:** The government must publicize **OSCs** through **newspapers** and **signboards** at prominent locations like **schools, hospitals, bus stops** with **helpline numbers**.
- **Infrastructure Strengthening:** The court directed the government to ensure **adequate infrastructure** and **immediate staff recruitment** to make all **OSCs fully functional**.
- **SOP Implementation:** The court mandated the circulation of **Standard Operating Procedures (SOPs)** on **child pregnancy and child marriage** among all stakeholders, especially **police and OSC staff**.
- **Appointment of Nodal Officer:** The **Delhi government** was directed to appoint a **Nodal Officer** to oversee **implementation and monitoring**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Note: The above issues were previously highlighted in the **Report of the Comptroller and Auditor General of India on Public Health Infrastructure and Management of Health Services** for the **Government of NCT of Delhi**.

Domestic Violence Against Women

Domestic violence refers to any form of abuse, whether physical, emotional, sexual, or economic, within the confines of the home, family or domestic unit.

National Family Health Survey-5 (NFHS), 2019-2021

- 29.3% of married women experienced domestic/sexual violence
- 3.1% of pregnant women suffered physical violence during pregnancy
- 87% of married women who are victims of marital violence do not seek help



Legal Frameworks in India

Protection of Women from Domestic Violence Act, 2005 (PWDVA)	<ul style="list-style-type: none"> ■ Covers physical, emotional, sexual, and economic abuse ■ Provides various orders for protection, residence, and relief
Indian Penal Code, 1860	<ul style="list-style-type: none"> ■ Section 498A deals with cruelty by a husband or his relatives ■ Criminalises acts of cruelty, harassment, or torture
Dowry Prohibition Act, 1961	<ul style="list-style-type: none"> ■ Makes giving or receiving dowry a crime
Criminal Law (Amendment) Act, 2013	<ul style="list-style-type: none"> ■ Section 354A amended the IPC to include new offenses related to sexual harassment in cases of domestic violence
National Commission for Women Act, 1990	<ul style="list-style-type: none"> ■ Safeguards women's rights and plays a key role in addressing domestic violence
The Prohibition of Child Marriage Act, 2006	<ul style="list-style-type: none"> ■ Prevent child marriages and prohibit domestic violence against child brides.

Global Initiatives

- **Convention on the Elimination of All Forms of Discrimination against Women (CEDAW):** Adopted in 1979 by the UN General Assembly
 - Eliminating discrimination against women in all areas of life
- **UN Declaration on the Elimination of Violence against Women (DEVAW):** First international instrument explicitly addressing violence against women
 - Provides a framework for national and international action
- **Safe Cities and Safe Public Spaces:** Flagship program by UN Women
 - Preventing and responding to sexual harassment and other forms of violence in public spaces
- **Beijing Platform for Action (1995):** Identifies specific actions for governments to take to prevent and respond to violence
- **SDG 5 (Gender Equality):** End all forms of discrimination against all women and girls everywhere



Drishti IAS

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Monsoon Session of Parliament 2025

Why in News?

The **2025 Monsoon Session of Parliament** has begun. During the session, the **Bills of Lading Bill, 2025**, which was passed earlier in the Lok Sabha, was approved by the Rajya Sabha.

What are the Sessions of Parliament?

- **Sessions of Parliament:** A session refers to the period between the **first sitting** and **prorogation** of a House. A **recess** is the interval between **prorogation** and **reassembly** of Parliament. Typically, there are 3 sessions in a year:
 - **Budget Session (Feb–May)**
 - **Monsoon Session (July–August)**
 - **Winter Session (Nov–Dec)**
 - **Special Sessions:** A Special Session of Parliament is convened **outside the 3 regular sessions** (Budget, Monsoon, Winter) to deliberate on **urgent, exceptional, or historic matters** of national significance like **India-China war in 1962**.
- **Key Parliamentary Procedures:**
 - **Summoning:** Under **Article 85** of the Constitution, the **President** summons each House of Parliament, ensuring that the interval between **two sessions does not exceed six months**.
 - While the **Constitution does not specify the number of sessions** or sitting days, Parliament typically meets three times a year.
 - **Adjournment:** It refers to the **temporary suspension** of a parliamentary sitting by the **Presiding Officer**. It may be for a short duration or for the day.
 - **Adjournment sine die** means **suspension without a fixed date** for the next sitting.
 - It does **not end the session**, and pending business **resumes when the House meets again**.

- **Prorogation:** It is the **formal termination** of a parliamentary session by the **President**. After prorogation, the **House can meet again** only when it is **summoned afresh by the President**.
- **Dissolution:** **Dissolution** marks the end of the **Lok Sabha's term**, unlike the **Rajya Sabha**, which is a permanent body. It occurs under the following circumstances: -
 - after 5 years, and after an extended term during Emergency, or through the President's power under **Article 85(2)**.
 - The **President holds the power to dissolve** the Lok Sabha.
 - On dissolution, **all pending business lapses**, except **bills originating in the Rajya Sabha** not passed by the Lok Sabha,
 - **Assurances by Ministers** on the floor of the House still awaiting implementation.
- **Quorum:** It is the **minimum number of members required** to be present to conduct a sitting of either House of Parliament. As per the Constitution, it is **one-tenth of the total strength** of the House.
 - Hence, **55 members in Lok Sabha** and **25 members in Rajya Sabha** constitute the quorum for their respective sittings.

Bills of Lading Bill, 2025

- A **Bill of Lading (BoL)** is a key document in maritime trade, serving as proof of goods loaded, a record of their details, and a title of ownership.
- The **Bills of Lading Bill, 2025** seeks to replace the colonial-era **Indian Bills of Lading Act, 1856**, modernizing the legal framework governing shipping documents.
- The Bill affirms the BoL as **conclusive evidence** of shipment, clarifies rights and liabilities of receivers/transferees, and empowers the **Ministry of Ports, Shipping & Waterways** for implementation.
- It aims to enhance **legal clarity**, **reduce disputes**, and align India's shipping laws with **global trade standards** to improve **ease of doing business**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Mid-Term Resignation of Vice-President of India

Why in News?

Vice-President of India Jagdeep Dhankhar resigned from his post, and submitted his resignation to **President Droupadi Murmu** under **Article 67(a) of the Constitution**. He is the third Vice-President in India's history to step down before completing his term, after **V.V. Giri** and **R. Venkataraman**.

What are the Constitutional Provisions and Procedures if the Vice-President of India Resigns Mid-Term?

- **Resignation:** The Vice-President can resign by writing under his hand, addressed to the President, as per **Article 67(a)** of the Constitution. The resignation takes effect immediately once submitted.
 - Since the Vice-President of India also serves as the **ex-officio Chairman of the Rajya Sabha**, the resignation creates a temporary gap in parliamentary leadership.
 - The Constitution **does not provide for an acting Vice-President**. However, in the Vice-President's absence, the **Deputy Chairman of the Rajya Sabha** will preside over its proceedings.
- **Election to Fill the Vacancy:** The election of the **next Vice-President is to be held within 60 days of the expiry** of the outgoing Vice-President's term. However, in the **case of a mid-term resignation**, unlike the **President** (where the vacancy must be filled within six months), there is **no fixed time frame** for electing a new Vice-President.
 - The only requirement is that the election be held **"as soon as possible."**
 - The **Election Commission of India** conducts the election under the **Presidential and Vice-Presidential Elections Act, 1952**. Traditionally, the **Secretary General of either House of Parliament** is appointed as the Returning Officer for the poll, on a rotational basis.

- **Tenure of the New Vice-President:** The newly elected Vice-President gets a **full five-year term**, regardless of the remaining tenure of the predecessor.

What are the Key Facts About Vice-President of India?

- **About:** The **Article 63** of the Indian Constitution states that there **shall be a Vice President of India**, who is the **second-highest constitutional authority** after the President. The post is modeled on the **American Vice President**.
 - Articles 63 to 71 of the Constitution deal with the Vice President.
- **Election & Eligibility:**
 - **Electoral College:** Elected by **MPs from both Houses of Parliament** (elected and nominated members) but state legislators do not participate (**Article 66**).
 - **Voting Process:** Conducted via **proportional representation** and **single transferable vote**, by **secret ballot**, overseen by a **Returning Officer** (usually the Secretary General of either House).
 - **Eligibility Criteria:** Must be an Indian citizen, at least **35 years old**, qualified for **Rajya Sabha membership**, not **hold an office of profit**, and should **not be a member of Parliament or state legislature**.
- **Oath:** The Vice President takes an oath, administered by the President or a designated person, to **uphold the Constitution and faithfully discharge the duties of the office** (**Article 69**).
- **Term, Resignation & Vacancy:**
 - **Term Duration:** Serves a **five-year term** (**Article 67**), and can continue beyond expiry until a successor takes office.
 - **Resignation:** May resign at any time via a written letter to the President (**Article 67(a)**).
 - **Vacancy:** Vacancies arise due to term expiry, resignation, removal, death, or disqualification. A new election must be held "as soon as possible" (**Article 68**).
- **Primary Roles:** Acts as **ex-officio Chairman of the Rajya Sabha** (Council of States) (**Article 64**) but does not vote except in case of a tie.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The **Vice-President acts as President (Article 65)** during a vacancy caused by death, resignation, removal, or otherwise, until a new President is elected within six months.
 - If the President is absent or ill, the Vice-President acts in their place with full powers and benefits until the President returns.
- **Removal Procedure:** Can be removed by a resolution in the **Rajya Sabha** (effective majority (more than 50% of the effective strength (i.e., total membership minus any vacancies)) and approved by Lok Sabha **(simple majority)**).
- A **14-day notice must be given before moving such a resolution**, clearly stating the intention.

Articles Related to Vice-President at a Glance

Article No.	Subject-matter
63.	The Vice-President of India
64.	The Vice-President to be ex-officio Chairman of the Council of States
65.	The Vice-President to act as President or to discharge his functions during casual vacancies in the office, or during the absence, of President
66.	Election of Vice-President
67.	Term of office of Vice-President
68.	Time of holding election to fill vacancy in the office of Vice-President and the term of office of person elected to fill casual vacancy
69.	Oath or affirmation by the Vice-President
70.	Discharge of President's functions in other contingencies
71.	Matters relating to, or connected with, the election of Vice-President

What is the Role of the Vice President of India as the Chairman of the Rajya Sabha?

- **Presiding Over Sessions:** The Chairman conducts proceedings in the Rajya Sabha, maintains order, and ensures **discipline and decorum in the House**.
 - Under Rule 256 of **Procedure and Conduct of Business in the Rajya Sabha**, the Chairman can suspend a member for the remainder of the session if the member's conduct is **grossly disorderly or disregards the authority of the Chair**.

- The Chairman interprets and decides on procedural issues raised during sessions.
- **Maintaining Neutrality and Order:** As a non-member of the House, the Chairman is expected to **remain impartial while allowing free and fair debates**. They ensure equal participation and adherence to parliamentary norms.
- **Casting Vote:** Though the Chairman does not vote in the first instance, they can cast a deciding vote in the **event of a tie (Article 100)**.
- **Referral to Committees:** The Chairman plays an administrative role by referring bills, motions, and resolutions to parliamentary committees for detailed consideration.
- **Limitations Compared to Lok Sabha Speaker:** The Chairman does not preside over joint sittings of Parliament. The Chairman cannot certify a bill as a Money Bill (only the Lok Sabha Speaker can).
- **In Case of Presidential Vacancy:** When the Vice President acts as or discharges the functions of the President, they temporarily stop performing duties as Chairman. The Deputy Chairman then takes over.

Vice President of India vs US

Feature	India	United States
Presiding Role	Chairman of Rajya Sabha (Upper House).	Chairman of the Senate (Upper House).
Voting Power	Only votes in case of a tie in Rajya Sabha.	Only votes in case of a tie in the Senate.
Succession to President During Vacancy	Acts as President temporarily (max 6 months).	Becomes full President for remainder of term.
Executive Role	Mostly ceremonial, steps in only if needed.	Part of the executive branch, often has an active role.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Vice-President of India

Occupies the second highest office in the country after President



Origin

Modelled on the lines of the American Vice-President

Const. Provisions

Article 63-71

Election

Indirectly elected by an electoral college

This electoral college consists of the elected members of LS and RS + nominated members of RS but not the members of State LAs (unlike electoral college for Presidential election)



The power of conducting elections to the office of VP rests with the ECI (Article 324)

Qualification

Citizen of India - at least 35 years of age

Term of Office

5 years; eligible for re-election

Removal from Office

- VP may resign
- Removal by a effective majority of RS (all the then members) and LS agreeing to it (simple majority)
 - Resolution for removal is introduced only in RS
- Constitution mentions no ground for removal

Powers

- Ex-officio Chairman of RS - Powers and functions similar to the LS Speaker
- Acts as President (max 6 months) - when a vacancy occurs in his office

This is different from the office of American VP who succeeds to the Presidency when the office falls vacant

When acting as the President, VP does not perform the functions of the Chairman of RS



Drishti IAS

Impeachment of Judges in India

Why in News?

Union Parliamentary Affairs Minister announced that over **100 Members of Parliament (MPs)** have signed a notice to initiate an **impeachment motion** against **Justice Yashwant Varma**.

- The motion comes after a judicial panel indicted Justice Varma over sacks of burnt currency found at his residence during a fire in March 2025. **Chief Justice Sanjeev Khanna** recommended his removal, but Justice Varma refused to resign and instead challenged the findings in the **Supreme Court of India**.

What is the Impeachment Process for Judges in India?

- Judicial Impeachment:** The word "impeachment" isn't directly used in the **Constitution of India for judges**, it's the common term for the formal process to remove a judge of the **Supreme Court or High Court** for **proved misbehaviour or incapacity**.
 - The process is meant to protect judicial integrity without allowing political interference.
- Constitutional and Legal Provisions:** Articles **124(4)** of the **Constitution of India**, along with the **Judges (Inquiry) Act, 1968**, provide the framework for removing judges of the Supreme Court. **Article 218** extends these provisions to High Court judges.

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Judges can only be removed for **Proved misbehaviour** (serious ethical or professional misconduct) and **incapacity** (Inability to discharge duties due to physical or mental reasons).

➤ **Impeachment Process:**

- **Initiating the Motion:** An impeachment motion can be introduced in either the Lok Sabha or the Rajya Sabha. It must have the support of at least 100 MPs in the Lok Sabha or 50 MPs in the Rajya Sabha.
 - The motion can proceed only if accepted by the **Speaker or the Chairman**.
 - **Inquiry Committee:** A three-member committee is set up under the Judges (Inquiry) Act, 1968. It includes a Supreme Court judge (or the Chief Justice of India), the Chief Justice of a High Court, and an eminent jurist.
 - The committee acts like a fact-finding body and holds a quasi-judicial inquiry into the charges.
 - **Committee Report and Parliamentary Debate:** The committee submits its findings to the House that initiated the motion. If the judge is found guilty, the matter is debated in both Houses.
 - Removal of a judge requires a **special majority in both Houses of Parliament during the same session**. This means the motion must be passed by an absolute majority (more than 50% of the total membership) and also by at least two-thirds of the members present and voting.
 - **Presidential Approval:** The Constitution provides that based on a motion passed by both Houses of Parliament, a judge can be removed only by an order of the President.
- **Drawbacks of Impeachment Process for Judges in India:** If a judge resigns during the proceedings, the process usually **ends abruptly**, raising questions about full accountability.
- **No judge in India has been successfully impeached since independence.** The stringent voting thresholds, along with **political negotiations and shifting alliances**, make the process rare and difficult to complete.

➤ **Notable Impeachment Attempts in India**

- **Justice V. Ramaswami (1993):** First SC judge to face impeachment. The panel found him guilty of misuse of funds, but motion failed in Lok Sabha due to abstentions.
- **Justice Soumitra Sen (2011):** Accused of misappropriating funds. Rajya Sabha passed the motion, but he resigned before it reached Lok Sabha.

IMPEACHMENT PROCEEDINGS

- A **removal motion** signed by 100 members (in case of Lok Sabha) or 50 members (in case of Rajya Sabha) is to be given to the Speaker/Chairman.
 - If the motion is admitted, then a **three-member committee to investigate** into the charges is constituted.
 - If the committee finds the judge to be guilty of the charges (**misbehaviour or incapacity**), the House in which the motion was introduced, can take up the consideration of the motion.
- Special majority: Majority of total membership of the House & majority of not less than two thirds members present and voting.**
- Once, the House in which removal motion was introduced passes it with **special majority**, it goes to the second House which also has to pass it with a special majority.
 - After the motion is passed, an **address** is presented to the President for removal of the judge. The President then passes an order removing the judge.



Common Service Centres: Catalysts of Rural Digital Inclusion

Why in News?

The **Common Services Centres (CSCs)**, a flagship initiative under the **Digital India Mission**, have emerged as vital hubs for **grassroots governance, digital access, and inclusive rural empowerment**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are Common Services Centres (CSC)?

- **About:** CSCs are a key initiative under the **Ministry of Electronics and Information Technology (MeitY)**, completed 16 years of service on 16th July 2025, approved in 2006 as part of the **National e-Governance Plan (NeGP)**.
 - CSC e-Governance Services India Ltd., an Special Purpose Vehicle (SPV), established on 16th July 2009 by MeitY, under the Companies Act, 1956.
 - It oversees the CSC scheme to deliver **digital services, especially in rural areas**.
 - CSCs promote **inclusive, transparent governance** and have expanded from **83,000 in 2014 to over 6.5 lakh in 2025**—a 680% growth in a decade.
- **Objectives:** To provide **high-quality, cost-effective services in e-governance, education, health, agriculture, financial services, and digital literacy**.
 - To create a **self-sustainable delivery mechanism** using **ICT-based infrastructure** for both **G2C (Government to Citizen)** and **B2C (Business to Citizen)** services.
 - To empower **Village Level Entrepreneurs (VLEs)** and promote **local entrepreneurship** in rural areas.
- **Structure Model of CSCs:** The CSC scheme operates on a **Public-Private Partnership (PPP)** model with a **3-tier structure**:
 - **Village Level Entrepreneur (VLE):** Local individual managing service delivery at the village level.
 - **Service Centre Agency (SCA):** Manages a cluster of 500–1000 CSCs within a region.
 - **State Designated Agency (SDA):** Nominated by State Governments to supervise implementation across the state.
- **CSC 2.0:** CSC 2.0 was launched in 2015 with the aim to establish **at least one CSC in each of the 2.5 lakh Gram Panchayats**.
 - The CSC framework utilizes existing digital infrastructure like **State Wide Area Network (SWAN)**, **State Data Centres (SDC)**, **National Optical Fibre Network (NOFN)/BharatNet**, **e-District Portals** and **SSDG (State Service Delivery Gateway)**, promoting entrepreneurship-

driven service delivery, digital literacy, and financial inclusion.

- In 2022, CSC partnered with **NABARD** and the **Ministry of Cooperation** to enable **Primary Agricultural Credit Societies (PACS)** and **LAMPS (Large Area Multi-Purpose Societies)** to operate as CSCs, enhancing outreach in deep rural areas.

What is the Significance of CSCs of Rural India?

- **Realising Digital India Goals:** CSCs advance the **three core pillars of Digital India** by ensuring **digital infrastructure at the grassroots**, facilitating **on-demand governance and services like Aadhaar, PAN, DigiLocker**, and utility payments, and fostering **digital empowerment through literacy programs like PMGDISHA**, skill training, and access to over 300 digital services.
- **Ensuring Inclusive Growth:** With over **74,000 women Village Level Entrepreneurs (VLEs)**, CSCs serve as engines of **rural entrepreneurship**, especially among women, youth, and marginalized communities.
 - They help bridge the **rural-urban digital divide**, ensuring **last-mile service delivery**.
- **Boosting Rural Economy:** By integrating with **Primary Agricultural Credit Societies (PACS)** and offering services like **banking, insurance, pension schemes**, and **PM-KISAN registration**, CSCs enhance **rural credit delivery**, financial empowerment, and **direct benefit transfer (DBT) efficiency**.
- **Strengthening PPP Model:** Operating on a successful **PPP model**, CSCs act as the **digital interface** between the government and citizens.
 - With services like **IRCTC ticket booking**, integration with **state IT platforms**, and platforms like **CSC Grameen eStore**, they facilitate **e-governance, rural commerce, and scalable digital outreach**.

What is the Digital India Mission?

- **About:** **Digital India Mission** is a flagship programme launched by the **Government of India on 1st July 2015** with the vision to **transform India into a digitally empowered society and knowledge-based economy**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It aims to ensure that **government services are made available to citizens electronically** by improving online infrastructure and increasing Internet connectivity, especially in rural and remote areas.

➤ **Key Initiatives:** [Aadhaar](#), [BharatNet](#), [Digital Locker](#), [BHIM UPI](#), [eSign framework](#), [MyGov](#) etc.

➤ **Key Achievements:**

- **Digital Infrastructure:** From 2014 to 2025, telephone connections rose to 120 crore (up from 93.3 crore), tele-density improved to 84.49%, while internet users grew by 285% and broadband connections by 1,452%.
- **Digital Finance:** UPI facilitated 1,867.7 crore transactions (Apr 2025) worth Rs 24.77 lakh crore, contributing 49% of global real-time payments and expanding to 7+ countries.
- **AI & Semiconductors (2024–2025):** The [IndiaAI Mission](#) deployed 34,000+ GPUs to boost AI innovation, startups, and ethical AI, supported by institutions like IndiaAI Innovation Centre, AIKosh, and FutureSkills.
- **Citizen Empowerment & Governance:** [Karmayogi Bharat](#) and [iGOT](#) trained 1.21 crore officials, issuing 3.24 crore certificates.
- **DigiLocker** (53.92 crore users) and [UMANG App](#) (2,300+ services in 23 languages; 8.34 crore users) boosted digital access.
 - [BHASHINI](#) promotes linguistic inclusivity with support for 35+ Indian languages, 1,600 AI models, and integration with IRCTC and [NPCI](#).

NAMASTE Scheme

Why in News?

On the occasion of NAMASTE (National Action for Mechanized Sanitation Ecosystem) Day (16th July), the Union Minister of State for Social Justice and Empowerment inaugurated the helpline number (14473) for waste pickers and distributed [PPE kits](#) and [Ayushman cards](#) to Sewer and Septic Tank Workers (SSWs) and Waste Pickers.

What is the NAMASTE Scheme?

- **About :** NAMASTE is a human-centric, rights-based initiative aimed at eliminating hazardous [manual scavenging](#) of sewers and septic tanks, launched in 2023 as a [Central Sector Scheme](#) for a period of 3 years (2023–24 to 2025–26).
- It replaces the earlier **Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS)**, and covers 4800+ Urban Local Bodies (ULBs) across India.
- The scheme aligns with UN [Sustainable Development Goals \(SDGs\)](#) such as SDG 6 (Clean Water and Sanitation), SDG 8 (Decent Work), and SDG 10 (Reduced Inequality).
- **Implementation:** Jointly launched by the Ministry of Social Justice & Empowerment (MoSJE) and the Ministry of Housing & Urban Affairs (MoHUA) and being implemented by the [National Safai Karamcharis Finance and Development Corporation \(NSKFCDC\)](#).
- **Objectives:** Formalizing, rehabilitating, and empowering Sewer and Septic Tank Workers (SSWs) and Waste Pickers, ensuring their safety, dignity, and inclusion through mechanized sanitation (no direct contact with human waste or sanitation workers.) and health protection.
 - Achieve zero fatalities in sanitation work by promoting trained, certified personnel, strengthening Emergency Response Sanitation Units (ERSUs), and encouraging Sanipreneurship (entrepreneurship in sanitation) and SHG formation among sanitation workers.
- **Key Components:**
 - **For Sewer and Septic Tank Workers (SSWs):** Provision of digital profiling of SSWs employed by [Urban Local Bodies \(ULBs\)](#) through a mobile app, provision of Personal Protective Equipment (PPE) kits and safety tools, occupational safety training and skill upgradation.
 - It also includes health insurance under Ayushman Bharat–PMJAY, access to subsidized sanitation vehicles/equipment, and promotion of “Sani-preneurship” through upfront capital subsidy and capacity building initiatives.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **For Waste Pickers (added in 2024):** Focuses on enumeration and profiling, supply of seasonal/need-based PPE kits, training in occupational safety and skill development, [Ayushman Bharat-PMJAY coverage](#), and capital subsidy for waste collection vehicles and sustainable livelihood projects.
- **Institutional Support Mechanisms:** Includes strengthening of **Emergency Response Sanitation Units (ERSUs)** for hazardous sanitation operations and conducting **Information, Education & Communication (IEC)** campaigns to promote awareness, safety, and dignity of sanitation workers.

What is Manual Scavenging?

- **About:** Manual scavenging refers to the removal of human excreta from dry latrines, public streets, septic tanks, sewers, and gutters, often carried out under unsafe and inhumane conditions.
- **Legal Prohibition:** It is banned under the [Prohibition of Employment as Manual Scavengers and their Rehabilitation \(PEMSR\) Act, 2013](#), which recognizes it as a dehumanizing practice.

Schemes Related to Manual Scavenging

- [National Safai Karamcharis Finance and Development Corporation \(NSKFDC\)](#)
- [Rashtriya Garima Abhiyaan](#)
- [Swachh Bharat Mission 2.0](#)
- [The Deendayal Antyodaya Yojana-National Urban Livelihoods Mission \(DAY-NULM\)](#)
- [Safaimitra Suraksha Challenge](#)
- [Swachhta Abhiyan App](#)
- [National Commission for Safai Karamchari](#)
- [Swachhta Udyami Yojana \(SUY\)](#)

How does Caste-Based Occupation Perpetuate Manual Scavenging in India?

Click to Read More: [Caste-Based Occupation Perpetuate Manual Scavenging](#)

What are the Challenges of Abolition and Rehabilitation of Manual Scavenging in India?

Click to Read More: [Challenges of Abolition and Rehabilitation of Manual Scavenging in India](#)

PM Virasat Ka Samvardhan (VIKAS) Scheme

Why in News?

The Ministry of Minority Affairs (MoMA) launched a skill training and women entrepreneurship development project under the [Pradhan Mantri Virasat Ka Samvardhan \(PM VIKAS\) scheme](#).

- Under this project, 150 youth candidates will be trained in [Internet of Things \(IoT\)](#) and 300 women candidates will receive entrepreneurship training, with stipends and industry linkages for [employment](#) opportunities.

What is PM-VIKAS Scheme?

- **About:**
 - It is a **skilling initiative from MoMA** focusing on the skilling, entrepreneurship and leadership training requirements of the minority and artisan communities across the country.
 - The scheme is **intended to be implemented in convergence with the Skill India Mission** and through integration with the Skill India Portal (SIP).
 - The PM VIKAS scheme integrates the Ministry's earlier skilling and education **initiatives into a unified platform** to support the socio-economic development of **India's six notified minority communities** - Muslims, Sikhs, Christians, Buddhists, Jains, and Zoroastrians (Parsis).
 - The scheme also **provisions to facilitate credit linkages by connecting beneficiaries with loan programs** offered by the National Minorities Development & Finance Corporation (NMDFC).
- **Implementation:**
 - For the implementation of the scheme, the Ministry **aims to select art & craft clusters in Minority Concentrated Areas (MCAs)**.
 - The scheme also **aims to converge with other Ministries** like Ministry of Tourism, Ministry of

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Women & Child Development, Ministry of Panchayati Raj, Ministry of Education along with Ministry of Skill Development & Entrepreneurship to ensure holistic development of minorities in the identified clusters.

➤ **Components of the Scheme:**

○ **Skilling and Training Component:**

- **Traditional Training (earlier known as USTTAD and Hamari Dharohar):** It primarily covers training in need-based courses for minority artisan communities and their family members who are engaged in traditional arts and crafts including languishing art forms.
- **Non-traditional Skilling (earlier Seekho aur Kamao):** It seeks to impart skill training, particularly to minorities and artisan families, in National Skills Qualification Framework (NSQF) compliant job roles in sectors having linkages with arts and crafts along employment opportunities.

○ **Leadership and Entrepreneurship Component (earlier Nai Roshni):**

- It aims to promote leadership development and basic entrepreneurship primarily among youth from minority communities and artisan families through focused modules.
- The **Entrepreneurship sub-component of this initiative** aims to provide exclusive support to women trained in leadership and basic entrepreneurship by offering intensive entrepreneurship training.
- Further, it intends to select aspiring women entrepreneurs, from amongst those trained, to become **Business Mentors (to be known as 'Biz Sakhis' in the scheme)** and promote establishment of individual or group enterprises for the same.

○ **Education Component (earlier Nai Manzil):**

- This component aims to provide education bridge program to school dropouts from minority and artisan communities for pursuing open schooling in class 8th- 12th and provide

them certification through National Institute of Open School (NIOS) or any other institutions approved by MoMA.

Schemes Related to Upliftment of Minority Communities

- Pre-Matric Scholarship Scheme and Post-Matric Scholarship Scheme
- National Means Cum-Merit Scholarship Scheme (NMMSS)
- Jiyo Parsi
- Pradhan Mantri Jan Vikas Karyakram (PMJVK)
- Pradhan Mantri Kaushal Vikas Yojana

Schemes Related to Skill Development, Entrepreneurship and Training

- Skill India Programme
- Skills Acquisition and Knowledge Awareness for Livelihood SANKALP Scheme
- Scheme for Higher Education Youth in Apprenticeship and Skills (SHREYAS)
- TEJAS Skilling Project
- Model Skill Loan Scheme

Swachh Survekshan 2024-25 Awards

Why in News?

The **President of India** conferred **Swachh Survekshan Awards 2024-25** (9th edition) hosted by the **Ministry of Housing and Urban Affairs (MoHUA)** in New Delhi.

What are the Key Highlights of Swachh Survekshan 2024-25 Awards?

- **Revamped Format & Super Swachh League:** To ensure a **level playing field** and acknowledge **consistent top performers** like Indore (ranked No. 1 for **7 consecutive years**), MoHUA introduced a new category- **Super Swachh League (SSL) Cities**.
 - These **SSL cities** were **excluded from regular rankings** to promote **fairness and encourage emerging cities**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



**SWACHH
SURVEKSHAN**
Reduce | Reuse | Recycle 2024-2025



आवास और शहरी कार्य मंत्रालय
MINISTRY OF HOUSING AND
URBAN AFFAIRS
GOVERNMENT OF INDIA



Super Swachh League Cities 2024-25

**More than
10 Lakh**

Indore
Surat
Navi Mumbai
Vijayawada

**3 Lakh-
10 Lakh**

Noida
Chandigarh
Mysuru
Ujjain
Gandhinagar
Guntur

**50,000-
3 Lakh**

New Delhi
Municipal
Council
Tirupati,
Ambikapur
Lonavala

**20,000-
50,000**

Vita
Sasvad
Deolali
Pravara
Dungarpur

**Less than
20,000**

Panchgani
Patan
Panhala
Bishrampur
Budni



➤ **City Classification Based on Population:** For the first time, city classification based on population was introduced, enabling fair comparison and targeted improvement across **Urban Local Bodies (ULBs)**. Cities were ranked in 5 categories:

- **Very Small Cities** (< 20,000)
- **Small Cities** (20,000 – 50,000)
- **Medium Cities** (50,000 – 3 lakh)
- **Big Cities** (3 – 10 lakh)
- **Million Plus Cities** (> 10 lakh)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses

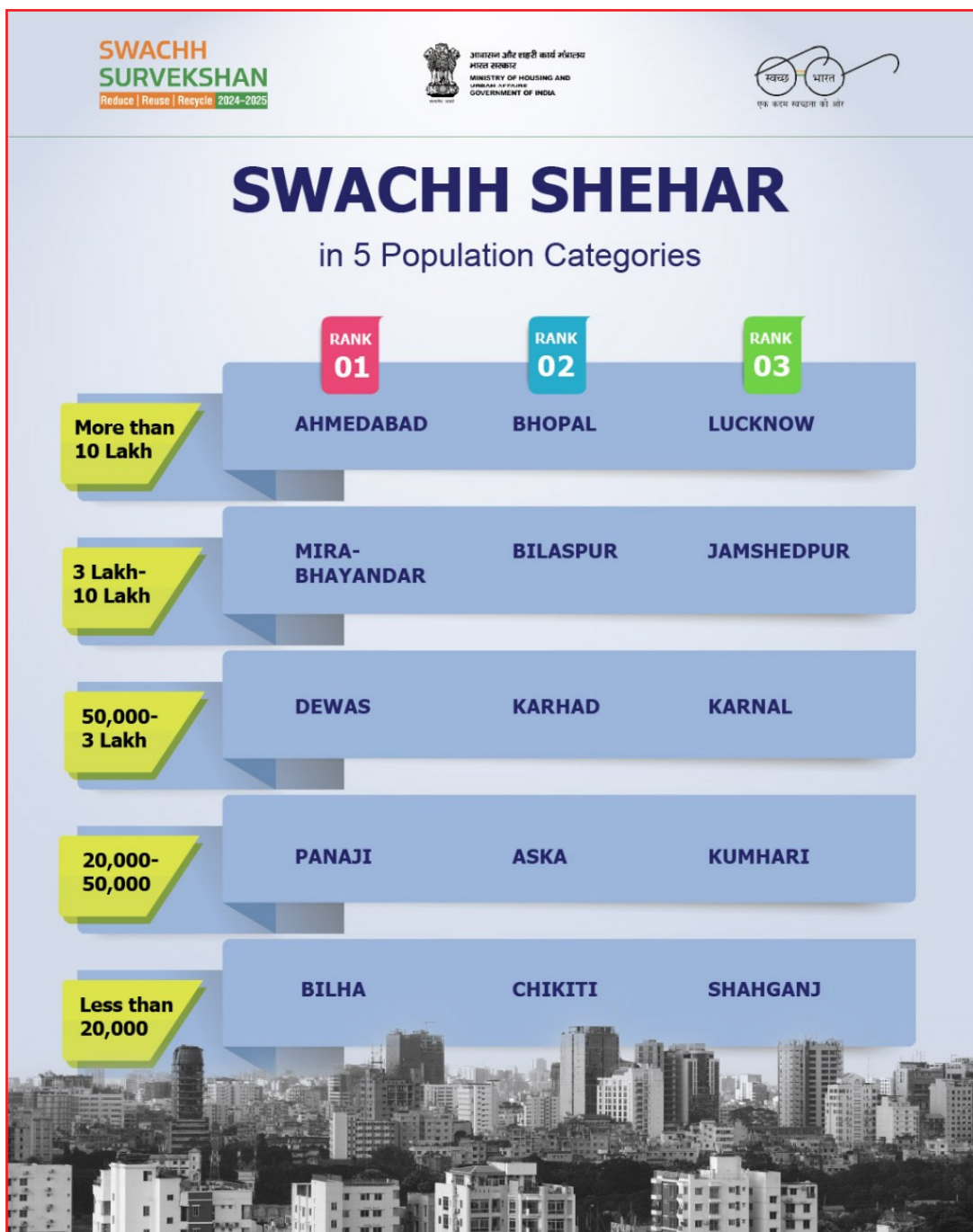


IAS Current
Affairs Module
Course



Drishti
Learning
App





➤ **Special Awards:**

- Recognition for Special Initiative of Swachh **Mahakumbh 2025**: Prayagraj (for waste management during the Mahakumbh 2025)
- Cleanest Ganga Town: Prayagraj
- Safaimitra Surakshit Shehar Awards: Visakhapatnam, Jabalpur, and Gorakhpur recognized for ensuring the safety and dignity of sanitation workers.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Cleanest Cantonment Board: Secunderabad** Cantonment
- **Promising Swachh Shehar of State: 35 cities across 33 States/UTs** were recognized as “Promising Swachh Shehar” for their notable progress in urban sanitation.
 - Key cities included **Rajahmundry, Patna, Guwahati, Pimpri Chinchwad, Agra, and Bhubaneswar.**

What is Swachh Survekshan under Swachh Bharat Mission (SBM)?

Swachh Survekshan

- **About:** Swachh Survekshan, conducted by the MoHUA since 2016, is the world’s largest **urban sanitation** and cleanliness survey under **Swachh Bharat Mission–Urban (SBM-U)**.
 - **Swachh Survekshan Awards** are annual rankings and recognitions given to cities and urban local bodies (ULBs) under the Swachh Survekshan.
- **Objective:** It aims to foster **citizen participation**, generate **awareness on sanitation**, and promote **competitive federalism** through performance benchmarking.
- **Key Features:**
 - **Launched** with just **73 cities**, it has expanded to cover **4,589 Urban Local Bodies (ULBs)** in the **2024–25 edition**.
 - Cities are evaluated based on parameters such as **waste segregation, processing, sanitation in public spaces, and citizen feedback**.
 - The **9th edition** was conducted from **April 2024 to March 2025**.
- **Swachh Survekshan 2025:** Under the revamped framework of **Swachh Survekshan 2025**, indicators have been **simplified and restructured into 10 comprehensive sections**, with a **special focus on tourist and high-footfall areas** and the **sanitation of public spaces**.
 - The annual theme for 2025 is **“Reduce, Reuse, Recycle (3R)”**, promoting **circular economy principles** in line with the **Jaipur Declaration** adopted at the **12th Regional 3R and Circular Economy Forum** (March 2025).

- Additionally, **new indicators** have been introduced for **Project Grounding** and **City Transport Unit (CTU) transformation**, along with the **launch of school-level assessments** to inculcate **Swachhta values among the youth**.

Swachh Bharat Mission (SBM)

- **About:** Launched on **2nd October 2014**, the SBM is a **nationwide cleanliness drive**, divided into **SBM-Gramin** (under the **Ministry of Jal Shakti**) and **SBM-Urban** (under **MoHUA**), with funding support from the **Swachh Bharat Kosh** for CSR and philanthropic contributions.
- **Objective:** The mission’s **initial goal** was to make India **Open Defecation Free (ODF)** by **2nd October 2019**, through large-scale construction of toilets and behavioral change campaigns.
 - **Phase-II (SBM-Gramin)** was launched in **2020–21** with the aim to achieve **ODF Plus status** by **2024–25** through **solid and liquid waste management** in rural areas.
 - **SBM-Urban 2.0**, introduced in **2021**, focuses on **garbage-free cities, faecal sludge and plastic waste management, greywater treatment, and capacity building** to sustain urban sanitation outcomes.

10 Years of Skill India Mission

Why in News?

The **Skill India Mission** launched on **15th July 2015** (**World Youth Skills Day**) has completed **10 years in 2025**, marking a decade of efforts to empower India’s youth with **job-ready skills**.

Note:

- **World Youth Skills Day**, declared by the **United Nations General Assembly’s (UNGA)** in 2014, is celebrated annually on **15th July** to emphasise the strategic importance of skilling youth.
- The **2025 theme** focuses on **empowering youth through Artificial Intelligence (AI)** and digital skills.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What is the Skill India Mission?

- **About:** The scheme is designed to **skill, reskill, and upskill** India's youth by offering industry-relevant training through a **vast network of centers and programs**, addressing the increasing demand for **employability, entrepreneurship, and quality job opportunities**.
 - Over **6 crore individuals** have been trained under various schemes, including in **emerging sectors** like **artificial intelligence, robotics, green energy**, and **Industry 4.0 technologies**.
- **Restructured Skill India Mission (2022–26):** In February 2025, the restructured Skill India Mission was approved for 2022-23 to 2025-26, merging **Pradhan Mantri Kaushal Vikas Yojana 4.0 (PMKVY 4.0)**, **Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS)**, and **Jan Shikshan Sansthan (JSS) Scheme** into a single Central Sector Scheme.
- **Key Features:** All the courses and certifications under the Skill India Program are aligned with the **National Skills Qualification Framework (NSQF)** and integrated with **DigiLocker & National Credit Framework (NCrF)**.

What are the Key Initiatives Launched Under Skill India Mission?

Scheme	About & Objectives	Achievements
Pradhan Mantri Kaushal Vikas Yojana (PMKVY):	<p>PMKVY, launched on 15th July 2015 under the Skill India Mission, aims to provide free, short-term, quality-assured skill training to enhance the employability of youth.</p> <p>Phases:</p> <ul style="list-style-type: none"> ➤ Phase 1 (2015-16) trained 19.85 lakh youth as a pilot; ➤ Phase 2 (2016-20) aligned with initiatives like Make in India and Digital India, training 1.10 crore individuals; ➤ Phase 3 (2020-22) focused on Covid-19 warriors and the Skill Hub Initiative under NEP 2020. ➤ Phase 4 (2022-26) emphasizes short-term training, reskilling, and upskilling through RPL, integrating with schemes like PM-NAPS and JSS, while supporting initiatives like PM Vishwakarma and Green Hydrogen Mission. 	As of July 2025 , over 1.63 crore candidates have been trained across sectors like manufacturing, healthcare, IT, and construction .
Jan Shikshan Sansthan (JSS) Scheme:	<p>JSS is a community-based vocational training programme for non-literates, neo-literates, and school dropouts.</p> <ul style="list-style-type: none"> ➤ It offers low-cost, flexible skilling, aligned with PM JANMAN and Understanding of Lifelong Learning for All in Society (ULLAS) for inclusive skilling. 	Over 26 lakh individuals trained between FY 2018–19 and 2023–24 .
Pradhan Mantri National Apprenticeship Promotion Scheme (PM-NAPS):	PM-NAPS aims to boost apprenticeship training by providing 25% stipend support Direct Benefit Transfer (DBT) for individuals aged 14–35 years .	As of May 2025 , over 43.47 lakh apprentices have been engaged across 36 States/UTs .

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Empowering India

Key Steps Driving the Success of PMKVY 4.0 Nationwide



Focus on New Age Skills like Industry 4.0, Web 3.0, AR/VR, Climate Change, Circular Economy, Green Economy, etc;

Greater reliance on On-Job-Training (OJT) for better practical exposure to candidates;

Emphasis on Re-skilling, and Up-skilling under Recognition of Prior Learning (RPL);

Flexibility in course curriculums by introducing courses in partnership with industry.

Cross utilization of available infrastructure with the educational institutions viz. Institutes of National Importance (INIs) / Schools / Colleges / Universities / Central and State Government Institutions, etc;



Training aligned to National Priorities and Policy Announcements focusing on clusters in sectors like Semiconductor, 5G, AI, Green Hydrogen, EV, Solar Mission, Care, Tourism etc.

Source: Ministry of Skill Development and Entrepreneurship

Skill Development Schemes in India

- **Rural Self Employment and Training Institutes (RSETIs):** These are **bank-led residential training centres** providing entrepreneurship development to rural youth.
 - As of **June 2025**, over **5.67 million candidates** have been trained, significantly rising from **2.29 million** in FY 2016–17.
- **Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY):** Launched under **NRLM** in 2014, it targets **rural youth unemployment** through **demand-driven, placement-linked skill training**, ensuring **wage employment** and **inclusive rural development**.
- **PM Vishwakarma Yojana:** Launched on **17th September 2023**, this scheme supports **traditional artisans and craftspeople** engaged in **18 identified trades** (e.g., carpenter, potter, blacksmith). It provides **toolkits, digital incentives, collateral-free credit, and market linkage support**.
- **Skill India Digital Hub (SIDH):** A **tech-driven platform** enabling **Aadhaar-based verification, real-time monitoring** of skilling outcomes, and **integration with education and entrepreneurship ecosystems**.
- **Centres of Excellence at NSTIs:** Launched in 2025 at **Hyderabad and Chennai**, these centres focus on **advanced instructor training** and skilling in **AI, robotics, and green technologies**, boosting national skilling capacity.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Click Here to Read: [Key Issues Associated with India's Skilling Initiatives](#)

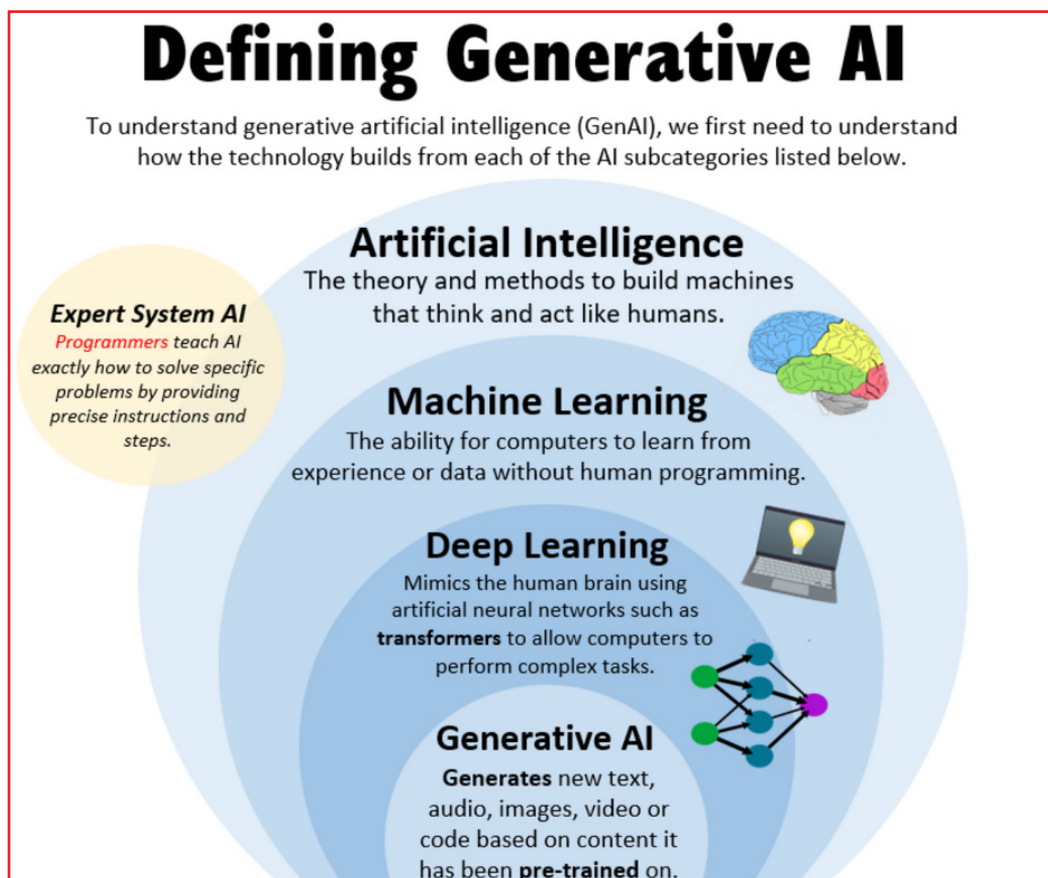
Click Here to Read: [Strategic Measures to Reform India's Skilling Ecosystem](#)

Generative AI and Copyright Issues

Why in News?

The rapid growth of **generative artificial intelligence (AI)** like ChatGPT and Gemini has triggered concerns over the **use of copyrighted content**, raising key debates around **intellectual property rights, authorship, deep fakes, and ethical AI governance**.

- These developments challenge conventional legal and ethical frameworks and require urgent attention.



What is Artificial Intelligence (AI)?

- **Artificial Intelligence (AI)**, first coined by John McCarthy in 1956 broadly refers to the ability of machines to perform tasks that typically require human intelligence, such as learning, reasoning, and problem-solving.
- **Generative AI** represents a major advancement in AI, enabling machines to **create original content**—such as **text, images, music, code, or videos**—by learning from large datasets like **books, websites, and digital art**.
- **Eg:** ChatGPT, Gemini, and Claude for natural language generation; DALL-E and Midjourney for image creation; and AIVA and Amper Music for music composition.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



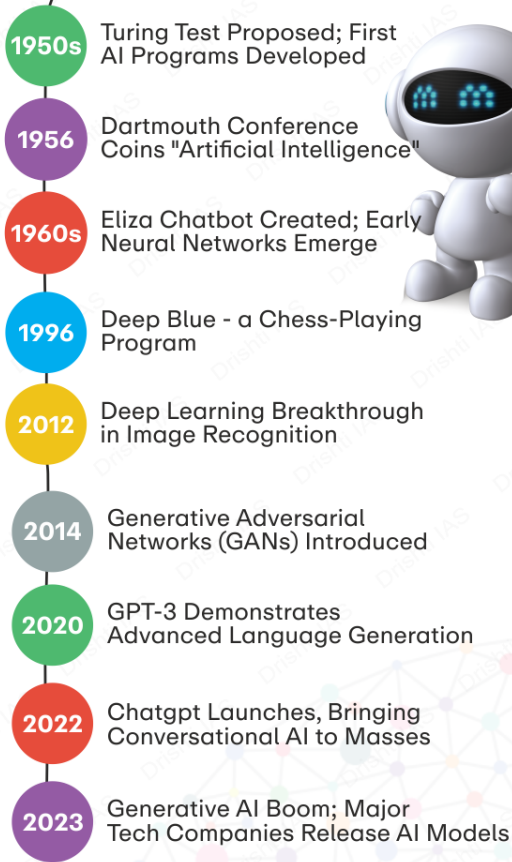
Drishti
Learning
App



Artificial Intelligence(AI)

AI is the simulation of human intelligence in machines programmed to think and learn like humans, capable of problem-solving, reasoning, and adapting to new information.

AI Timeline - Major Milestones



Applications of AI

- **Healthcare:** Personalised medicine
- **Finance:** Algorithmic trading
- **Transportation:** Autonomous vehicles
- **Marketing & Customer Service:** Targeted advertising, chatbots
- **Education:** Adaptive learning systems, personalised tutoring
- **Agriculture:** Crop monitoring
- **Cybersecurity:** Threat detection
- **Energy:** Smart grid management, consumption forecasting

Concerns

- Deepfakes & misinformation
- Algorithmic bias
- Automation & job displacement
- Privacy issues
- Data ownership & liability issue
- Ethical decision-making complexes

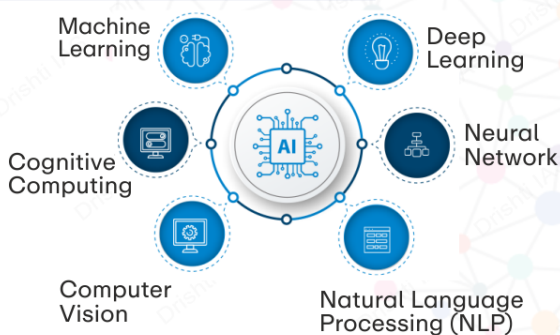
Regulating AI

- **Global Partnership on AI (GPAI)** launched in 2020
- **Bletchley Declaration (2023):** Enhance Global Collaboration on AI
- **G20 New Delhi Leaders' Declaration (2023):** Harnessing AI responsibly for good and for all
- **Hiroshima AI Process (2023)** by G7

India and AI

- **National Strategy For AI 2018**
- **AI For All:** Self-learning online program
- **GPAI Summit 2023** hosted by India
- **IndiaAI Mission 2024**
- **US India Artificial Intelligence (USIAI) Initiative:** AI cooperation in critical areas
- **AIRAWAT** (AI Research, Analytics and Knowledge Assimilation Platform): Supercomputer

KEY COMPONENTS OF AI



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Copyright Challenges Related to AI-generated Content?

- **AI Mimics Copyrighted Material:** AI models require vast datasets, often comprising **copyrighted texts, images, and music**, to train and optimize performance, raising concerns of **unauthorized copying when AI mimics or replicates creative elements** of original works.
 - Although the AI may not directly reproduce works, its **outputs can closely resemble protected content**, leading to potential **copyright infringement**.
- **Fair Use & Transformative Use:** The **doctrine of fair use** allows **limited use of copyrighted material** without permission, especially for **research, education, or commentary**. In the US, it is based on 4 factors: **purpose, nature, amount used, and market impact**.
 - Tech firms claim AI training is **transformative use**, adding new expression, meaning or utility and qualifying as **“non-expressive use”**, i.e., not directly replicating expressive elements.
 - In the *Bartz vs. Anthropic (Claude AI) case*, a **US court upheld fair use for AI training on pirated books** but acknowledged liability for storage.
 - In *Silverman vs. Meta (LLaMA AI) case*, no market harm was found, but the court emphasized the need for **creator compensation frameworks** — highlighting evolving legal standards.
- **AI, Creativity & Legal Liability:** AI is reshaping copyright norms through **AI-generated works** (created solely by machines) and **AI-assisted works** (human-created with AI support).
 - AI-assisted content is owned by humans, but **AI-generated works raise unresolved questions of authorship and ownership**.
 - **Legal liability** in copyright infringement cases remains unclear, whether on the **developer, user, or platform**.

What is the Legal Status of AI-Generated Content in India?

- **Legal Status of AI-Generated Content in India:**
 - **Legal Gaps for AI-Generated Content:** Indian law currently does **not recognize non-human**

authorship, the **Indian Copyright Act, 1957** attributes authorship solely to **natural persons**, excluding AI and its developers. As a result, **AI-generated works without significant human input are not protected**.

- Additionally, the **use of copyrighted material for AI training** remains a **legal grey area**, with **no explicit provisions** in place.
- While **Section 52 permits certain uses for “research,”** its applicability to AI training has **not been tested in Indian courts**.
- **Protection for AI-Assisted Works:** When a human uses AI as a **creative tool**, the output **may be protected** and in such cases, **authorship lies with the human**, akin to traditional works created using digital tools.
- **Fair Use Provisions under Indian Copyright Law:** Section 52 of the **Copyright Act, 1957** outlines **exceptions** to infringement, including:
 - **Private or personal use**, including research or education
 - **Criticism or review** of any work
 - **Reporting of current events** or public lectures
 - **Reproduction for judicial proceedings**
 - **Transient or incidental storage** during digital transmission or linking
 - These exceptions form the **doctrine of fair dealing**, similar to the **fair use doctrine in the US**.
- **Judicial Interpretation Regarding Use of Copyrighted Material:**
 - **Civic Chandran v. Ammini Amma (1996):** The Kerala High Court held that **parody does not amount to infringement**, establishing a **3-factor test: quantity/value of content taken, purpose of use and likelihood of market competition**
 - **Eastern Book Company v. D.B. Modak (2008):** The Supreme Court (SC) held that **raw SC judgments are public domain and not copyrightable**, but **editorial additions** (like headnotes, formatting) by publishers are **copyrightable** if they show **originality through skill and judgment**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The Court rejected the “sweat of the brow” doctrine and adopted the “skill and judgment” test, marking a key judicial interpretation on the originality threshold under Indian copyright law.
- **India TV v. Yashraj Films (2012)**: Delhi High Court, in this case expanded fair dealing to cinematographic and musical works, especially after the Copyright (Amendment) Act, 2012, which included exceptions for disabled access and non-commercial public use.
- **DU Photocopy Case (Oxford v. Rameshwari Photocopy Services, 2016)**: The Delhi High Court ruled that photocopying book excerpts for educational use was fair dealing, affirming access to knowledge and public interest as guiding principles.
- **Comparative & Evolving Frameworks**: Indian courts increasingly rely on US fair use factors to interpret fair dealing under Section 52 of the Copyright Act, 1957, including the purpose and character of use, nature of the copyrighted work, amount and substantiality, market impact, and transformative character.
- However, India lacks a clear definition of “substantial portion”, leaving judicial discretion to determine fair use on a case-by-case basis.
- As a TRIPS-compliant nation, India seeks to align with Article 13 of the TRIPS Agreement, which mandates that exceptions to copyright must not conflict with normal exploitation of the work or unreasonably prejudice the rights holder.
- **Policy Developments**: A 2025 Commerce Ministry panel is reviewing the Indian Copyright Act, 1957 to address digital and AI-related gaps.

Comparative Global Approaches to AI-Generated Content

- **US**: Copyright is granted only if there’s substantial human creativity (*Thaler v. Perlmutter, 2023*). Purely AI-generated works are not protected.
- **European Union**: The AI Act 2024 mandates transparency of training data. Discussions are ongoing on a *sui generis right* for AI outputs, though the 2019 Copyright Directive lacks direct provisions.

- **China**: Beijing Internet Court delivered a first-of-its-kind judgment in mainland China, recognizing that a picture generated using the AI software Stable Diffusion qualifies as an artwork protected under copyright law.
- The court emphasized the “originality” and the intellectual contribution of the human creator, despite the use of AI tools.
- **United Kingdom**: Section 9(3) of the Copyright, Designs and Patents Act, 1988 allows copyright for computer-generated works (CGWs) without a human author, assigning authorship to the person making the “necessary arrangements”. However, such works lack moral rights and the provision remains rarely applied due to legal ambiguities and limited judicial interpretation.

Note

- In 2021, South Africa became the first country to grant a patent to a machine-generated work, recognizing AI system DABUS as the inventor of a food container design based on fractal geometry.

4 Members Nominated to Rajya Sabha

Why in News?

The President of India has nominated 4 persons (Harsh Vardhan Shringla, Ujjwal Nikam, Meenakshi Jain, and C. Sadanandan Master) to the Rajya Sabha under the category of 12 seats reserved for distinguished experts in literature, science, art, and social service.

Key Facts About 4 Nominated Personalities to Rajya Sabha

- **Harsh Vardhan Shringla**: Former Foreign Secretary and 1984-batch IFS officer; served as Ambassador to the US, Thailand, and High Commissioner to Bangladesh.
- Played a key role in the “Howdy Modi” event (2019) and was the Chief Coordinator of India’s G20 Presidency (2023). Known for expertise in strategic affairs, multilateral diplomacy, and foreign policy formulation.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Ujjwal Nikam:** Special Public Prosecutor in major cases like the **26/11 Mumbai attacks, 1993 Bombay blasts, and Khairlanji massacre.**
 - Known for his **tough stance on terrorism, courtroom skills, and commitment to justice.**
- **Meenakshi Jain:** Former **Delhi University** professor with 30+ years of teaching. Authored **NCERT Medieval History** textbook.
 - She is also a **Padma Shri awardee (2020)**, ex-member of **Indian Council of Historical Research (ICHR)**, affiliated with **Indian Council of Social Science Research (ICSSR).**
 - Known for contributions to **Indian civilisation, religious identity, and alternative historiography.**
- **C. Sadanandan Master:** A former teacher, columnist, and political leader from Kerala, he survived a **brutal political attack in 1994** that left him **physically disabled.**

What is the Procedure of Elections for Members to the Rajya Sabha?

- **About Rajya Sabha:** The **Rajya Sabha (Council of States)**, is the **upper house** of the Indian **Parliament** constituted under **Article 80** of the Constitution.
 - It was first constituted in **1952**, is a **permanent body** and is **not subject to dissolution.** However, **one-third of its members retire every 2 years**, and they are **eligible for re-election or renomination** without any limit.
 - While the **Constitution does not specify the term** of its members, the **Representation of the People Act, 1951** prescribes a **6-year term** for each member.
- **Members of RS:** The **Rajya Sabha** can have a **maximum of 250 members**, of which **238 are indirectly elected** by the elected members of State and Union Territory **Legislative Assemblies**, and **12 are nominated by the President** under **Article 80(1) (a).**

- As per **Article 80(3)**, the nominated members must possess **special knowledge or practical experience** in **literature, science, art, or social service.**
 - While **sports** is **not explicitly mentioned**, it has been included under **"art"** by interpretation, leading to nominations of personalities like **Sachin Tendulkar** and **Mary Kom.**
- **Indirect Election in Rajya Sabha:**
 - **Electoral College:** **Rajya Sabha** members representing states are **elected indirectly only by the elected members of the State Legislative Assemblies (MLAs)** through proportional representation using the **Single Transferable Vote (STV) system.**
 - **Nominated MLAs and Members of Legislative Councils (MLCs)** do **not** have voting rights in these elections.
 - **Seat Allocation by Population:** **Rajya Sabha** seats are allotted to states based on their **population.**
 - For example **Uttar Pradesh** has 31 seats and **Goa** has only 1 seat.
- **Election Procedure:**
 - **Proportional Representation with STV:** **Rajya Sabha** members are elected by **elected MLAs** through the **STV** system using **proportional representation.** The **vote (quota)** to win is calculated as:
 - **Quota = (Total valid votes ÷ (Seats to be filled + 1)) + 1**
 - **Preferential Voting System:** **MLAs** rank candidates in order of preference (1, 2, 3...). A **candidate meeting the quota with first preference votes is declared elected.** **Surplus votes** are transferred to next preferences.
 - **Elimination & Transfer:** If no one meets the quota, the candidate with the **fewest votes is eliminated**, and their votes are **transferred** to remaining candidates based on preferences. This continues until all seats are filled.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Cross-Voting & Legal Safeguards

- To curb **cross-voting** in Rajya Sabha elections, the **Representation of the People Act, 1951** was amended in **2003** to introduce the **open ballot system**. Party MLAs must show their **marked ballot to the party's authorised agent**, else the vote is invalid.
 - **Independent MLAs** are prohibited from revealing their vote. This ensures **transparency and enforces party discipline**.
- **Cross voting** occurs when a **member of a legislative body** votes for a candidate or party **outside their own political affiliation**.

Special Powers to Rajya Sabha

- RS enjoys certain **special powers under the Constitution** that are not available to the Lok Sabha.
- Under **Article 249**, it can **authorize Parliament to legislate on subjects in the State List** if it is deemed necessary in the **national interest**. Additionally, under **Article 312**, it can **authorize the creation of new All-India Services** common to both the **Centre and the States**.

More Related Articles

- [What is Cross Voting?](#)
- [Does Anti-Defection Law Apply to Rajya Sabha Elections?](#)



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Economic Scenario

Highlights

- Mission for Cotton Productivity
- India Achieves 20% Ethanol Blending in Petrol
- Pradhan Mantri Fasal Bima Yojana
- Outlook of Indian Economy
- Unified Payments Interface
- India's Millet Standards Recognised at Codex Alimentarius Commission
- OECD-FAO Agricultural Outlook 2025-2034
- PM Dhan-Dhaanya Krishi Yojana
- Decarbonization of Global Shipping
- ICAR & Its Role in Food & Nutritional Security

Mission for Cotton

Productivity

Why in News?

To strengthen India's **textile value chain** and enhance global competitiveness, the Government has launched the '**Mission for Cotton Productivity**' in line with the **Vision 2030** for the **textile industry**.

- **Textile Vision 2030 for India** aims at positioning India as a global textiles manufacturing hub by building a **USD 250 billion** textile industry and achieving **USD 100 billion** in global textile exports by 2030.

What is the Mission for Cotton Productivity?

- **About:** It is a **five-year initiative** launched by the **Government of India** in the **Union Budget 2025-26** to significantly **enhance cotton production** in the country.
 - It will provide scientific and technological support to cotton farmers, aligning with the Government's

5F vision- **Farm to fibre, fibre to factory, factory to fashion, fashion to foreign** for the textile sector.

- It seeks to increase farmers' incomes while ensuring a consistent supply of high-quality cotton, vital for revitalizing India's traditional textile industry.
- The **Department of Agricultural Research & Education (DARE)** is the **nodal agency** for implementing the mission, with the **Ministry of Textiles** as a key partner.
- **Key Objectives :**
 - **Enhance cotton productivity** by adopting **advanced scientific methods** and developing **climate-smart, pest-resistant, and high-yielding varieties**, including **Extra Long Staple (ELS) cotton**.
 - **ELS cotton** is known for its **long fibers, superior strength, softness, and durability**.
 - Utilize **advanced breeding techniques** and **biotechnology tools** to improve fibre quality.
 - Equip farmers with **cutting-edge technology** to build resilience against **climatic and pest-related challenges**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



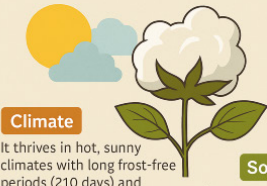
IAS Current
Affairs Module
Course



Drishti
Learning
App



GROWING CONDITIONS



Climate

It thrives in hot, sunny climates with long frost-free periods (210 days) and requires high temperatures, light rainfall or irrigation, and bright sunshine.

Soil Types

It grows well in Deccan plateau's black cotton soil, deep alluvial soils in northern India, black clayey soils in central regions, and mixed black and red soils in the southern zone.



Sensitivity

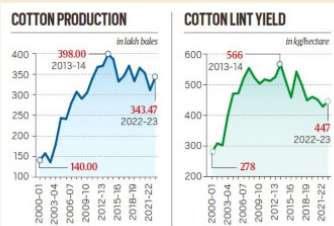
While cotton can tolerate some salinity, it is highly vulnerable to waterlogging.



Growth Cycle

As a Kharif crop, cotton requires 6 to 8 months to mature.

India's Cotton Production

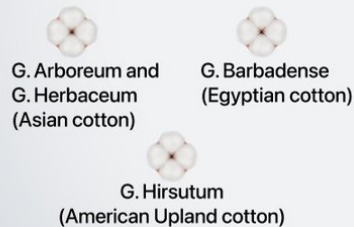


Drishti IAS

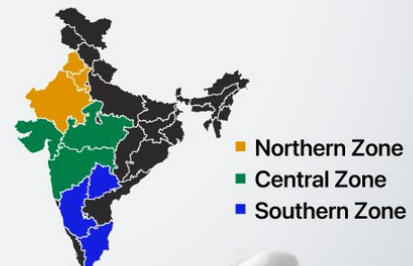
Cotton Cultivation

India got **1st** place in the world in cotton acreage with **130.61** lakh hectares area under cotton cultivation i.e. around **40%** of the world area of **324.16** lakh hectares.

India is the only country which grows all four species of cotton



Major 9 cotton growing states divided according to Agro-Ecological zones



What are the Reasons Driving the Need for Mission for Cotton Productivity?

- **Low Productivity:** India ranks 1st globally in cotton acreage, with 130.61 lakh hectares under cultivation, accounting for 40% of the world's total cotton area (324.16 lakh hectares).
 - However, in terms of **productivity**, India stands **39th** in the world, with an average yield of just **447 kg/ha**.
- **Rising Dependence on Imports:** Cotton imports surged from **USD 518.4 million** in 2023–24 to **USD 1.04 billion** in 2024–25, while exports fell from **USD 729.4 million** to **USD 660.5 million**.
- **Stagnation after Success:** Despite the success of **Bt (Bacillus thuringiensis) cotton** and **Bollgard-II** technologies, India has not approved any new **genetically modified (GM) cotton** variants since 2006.
- **Infestation:** The decline in **cotton production** is mainly due to the **increased infestation of pink bollworm (PBW)**.
 - Initially, **Bt cotton** offered effective pest control, but over time, **PBW developed resistance to Bt proteins**.
- **Missed Opportunities in Global Markets:** Countries like the US and Brazil, with robust biotech adoption, are capturing the export space once dominated by India.

What are the Key Factors that Influence Cotton Cultivation in India?

- **About Cotton:** Cotton is a fluffy staple fiber that grows in a boll around its seeds.
 - In northern India, cotton is planted between April and May, while in the southern regions, the season is delayed due to monsoon patterns.

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Production:** India leads the world in cotton acreage, accounting for around 40% of global cotton cultivation. The major cotton-producing regions in India are:
 - India ranks **second globally in cotton production**, with an estimated output of 343.47 lakh bales (5.84 MMT) in 2022-23, contributing to 23.83% of global cotton production.
 - India ranks **39th in global cotton yield**, lagging behind countries like the USA, China, and Brazil.
 - India is the **second-largest cotton consumer globally**, accounting for **22.24% of world consumption in 2023**. Less than 10% of India's cotton consumption is imported by the textile industry.
- **Key Factors Influencing its Cultivation:**
 - Cotton can tolerate **temperatures up to 43°C** but temperatures below **21°C** are detrimental.
 - Cotton requires **210 frost-free days and 50 to 100 cm of rainfall** for optimal growth.
 - Warm days and cool nights with large diurnal temperature variations during the fruiting period promote better boll and fiber development.
 - Cotton is grown in various soil types, including well-drained deep **alluvial soils** in the northern region, **black clayey soils** in the central region, and **black and mixed soils** in the southern zone.
 - Cotton is semi-tolerant to salinity and sensitive to waterlogging, preferring light, well-drained soils that retain moisture.

India's Initiatives For Development of the Cotton Sector

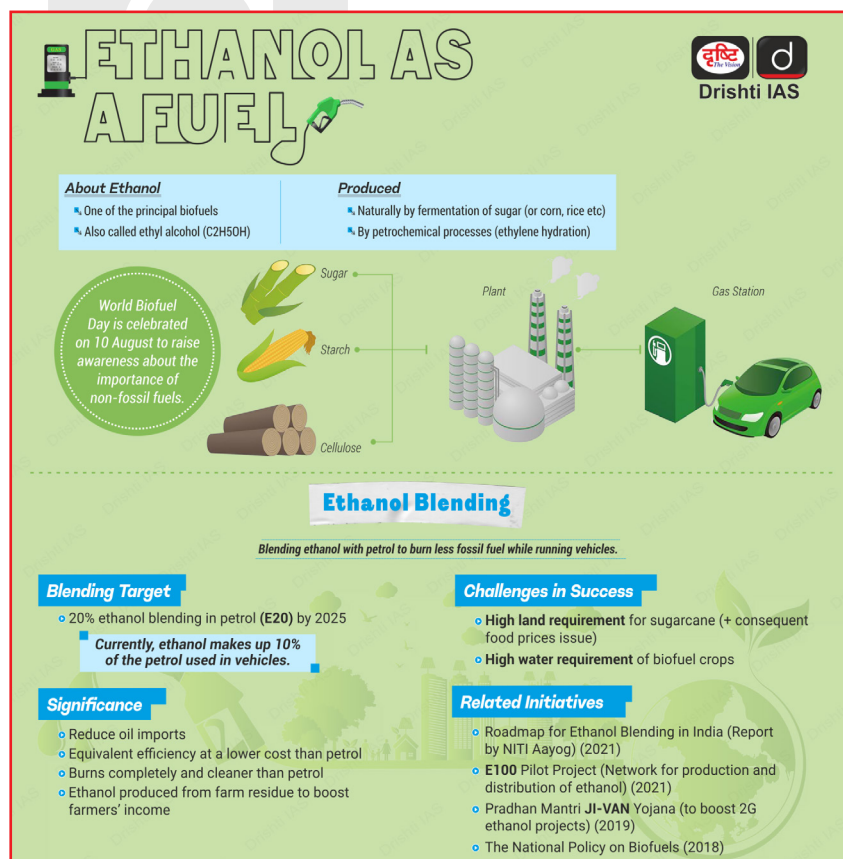
- **Cotton Development Programme Under the National Food Security Mission (NFSM)**
- **PM MITRA Scheme**
- **Cotton Corporation of India (CCI)**
- **MSP for Cotton**
- **The Kasturi Cotton Bharat programme**
- **Cott-Ally Mobile App**

India Achieves 20% Ethanol Blending in Petrol

Why in News?

India has reached a significant milestone in clean energy by **achieving 20% ethanol blending in petrol in 2025** under the **Ethanol Blending Programme (EBP)**.

- This rapid progress underlines the country's commitment to energy security, rural income enhancement, and environmental sustainability.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Factors Behind India's Ethanol Blending Success?

- **Policy and Regulatory Framework:** The **National Policy on Biofuels (2018, amended in 2022)** advanced the 20% ethanol blending target from 2030 to **2025-26**.
 - The policy promotes use of diverse feedstocks: **sugarcane, molasses, corn, damaged food grains, agricultural residues, and even waste biomass**.
 - Flexibility in feedstock choice ensures stable supply and minimizes competition with food security.
 - The **EBP Programme** was institutionalized with regular monitoring and updates.
 - The **National Biofuel Coordination Committee (NBCC)** oversees feedstock use based on surplus declarations.
 - The **Pradhan Mantri JI-VAN Yojana** encourages production of advanced biofuels from **agricultural and forestry residues**, industrial waste, and algae, expanding the biofuel ecosystem.
- **Infrastructure and Pricing Reforms:**
 - **Ethanol Interest Subvention Schemes (EISS):** Financial support (2018–2022) to set up molasses- and grain-based ethanol plants.
 - **Long-Term Offtake Agreements (LTOAs):** The LTOAs signed by Public Sector Oil Marketing Companies (OMCs) ensured steady demand, timely payments, and market stability for Dedicated Ethanol Plants (DEPs).
 - **Administered Pricing Mechanism:** Assured pricing for ethanol under the EBP Programme, encouraging private participation.
 - **GST Reduction:** Reduction of **Goods and Services Tax (GST)** on ethanol from **18% to 5%** helped **lower production costs and encouraged higher ethanol production** and blending.
 - **Amendments to Industries (Development & Regulation) Act, 1953:** Facilitated smooth interstate and intrastate movement of ethanol.

What are the Socio-Economic and Environmental Impacts of Ethanol Blending in India?

Socio-economic Impacts

- **Enhanced Farmer Income and Rural Prosperity:** Ethanol procurement till 2025 earned farmers Rs 1.18 lakh crore and distilleries Rs 1.96 lakh crore.
 - New agro-processing and distillery jobs boosted rural employment in states like Uttar Pradesh, Maharashtra, and Bihar.
- **Foreign Exchange Savings and Energy Independence:** India saved Rs 1.36 lakh crore in forex by cutting **crude oil imports**.
 - Ethanol Blending reduced India's oil import dependency, which is important for managing **trade deficits** and geopolitical risk.
- **Promotion of 'Make in India' and Self-Reliance:** Ethanol Blending strengthens domestic energy infrastructure and fosters the bio-economy, aligning with **Atmanirbhar Bharat** goals.
- **Price Stabilization and Crop Diversification:** Absorption of **surplus sugarcane and food grains** (e.g., broken rice, maize) stabilizes farm gate prices.
 - Facilitates crop diversification through incentives for non-food feedstocks like sweet sorghum, corn, and biomass.

Environmental Impacts

- **Reduced Greenhouse Gas (GHG) Emissions:** Approx. **700 lakh tonnes of CO₂ emissions avoided** (till 2025), aiding India to reach **Paris Agreement** targets.
 - Reduction in vehicular emissions of **carbon monoxide (CO)**, **hydrocarbons**, and particulate matter with E10–E20 blends.
- **Lower Air Pollution in Urban Areas:** Blended fuel burns more completely, reducing tailpipe pollutants, significant for **air-quality** challenged cities like Delhi and Kanpur.
- **Waste-to-Wealth Utilization:** Conversion of **damaged grains, molasses, crop residues, and agricultural waste** into ethanol reduces landfill burden and methane release, aligns with **circular economy** principles.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Challenges in Deeper Ethanol Integration in India?

- **Feedstock Concerns and Food Security:** Ethanol from food crops (sugarcane, rice, maize) may pressure **food supplies**, and in 2024-25 **India became a net importer of maize** to meet ethanol demand.
- **Water Scarcity:** Ethanol production is **water-intensive**, grain-based units use 8–12 litres of water per litre of ethanol.
 - Sugarcane and molasses add to high water use, deforestation, and waste. Distilleries release **vinasse**, a toxic wastewater that can pollute rivers.
- **Climate Sensitivity:** Ethanol production depends heavily on climatic conditions affecting crop yields (e.g., droughts, unseasonal rains).
 - Intensive mono-cropping for ethanol production, driven by profitability, may reduce soil fertility and alter land-use patterns, posing a threat to biodiversity.
- **Industrial Pollution Concerns:** Ethanol distilleries are classified as “**red category**” industries due to their high pollution risk.
 - They emit harmful chemicals like **acetaldehyde, formaldehyde, and acrolein, which can cause respiratory issues and cancer.**
 - In Andhra Pradesh, many units got environmental clearance without public hearings or proper assessments, and are often set up near residential areas.
- **Infrastructure and Logistics Gaps:** Ethanol infrastructure like pipelines, storage, and inter-state coordination needs upgrades.
 - Blending remains uneven across OMCs and states, with rural areas lacking facilities, raising safety and quality concerns.
 - Most existing vehicles in India are **E10-compatible**, E20 leads to marginal fuel efficiency loss unless engines are retuned.
 - Scaling beyond E20 will require industry-wide transition to **Flex-Fuel Vehicles (FFVs)** and fuel distribution upgrades.

- **Second and Third Generation Ethanol Technology:** Still underdeveloped in India, it needs large-scale investment and viability demonstration.

Pradhan Mantri Fasal Bima Yojana

Why in News?

The **Pradhan Mantri Fasal Bima Yojana (PMFBY)** has seen major expansion, but states have defaulted on approx. Rs 6,450 crore in claim settlements since FY20, raising concerns over delays and farmer support.

What is the Pradhan Mantri Fasal Bima Yojana (PMFBY)?

- **About:** The PMFBY is a government-sponsored **crop insurance** scheme launched by the **Ministry of Agriculture & Farmers Welfare**.
 - It aims to provide financial support to farmers in the event of crop loss due to natural calamities, pests, or diseases and to stabilize their income.
- **Premium:** Farmers pay a capped premium of 2% (Kharif), 1.5% (Rabi), and 5% (commercial/horticultural crops).
 - The remaining premium is shared between the **Centre and States in a 50:50 ratio, and 90:10 for North-Eastern States from Kharif 2020.**
 - Premium rates depend on crop risk, insured area, and notified crops.
- **Key Benefits of PMFBY:**
 - **Broad Coverage:** Covers crop loss from natural disasters, pests, diseases, and post-harvest localised events.
 - **Faster Compensation:** Aims to settle claims within two months post-harvest.
 - **Tech-Based Assessment:** Uses satellite, drones, and mobile tech for accurate loss estimation and quick claim settlement.
- **Farmer Coverage:** The scheme is **voluntary** and open to all States, Union Territories (UTs), and farmers. For every **Rs 100 of premium paid** by the farmers, they have received **nearly Rs 500 as claims.**

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



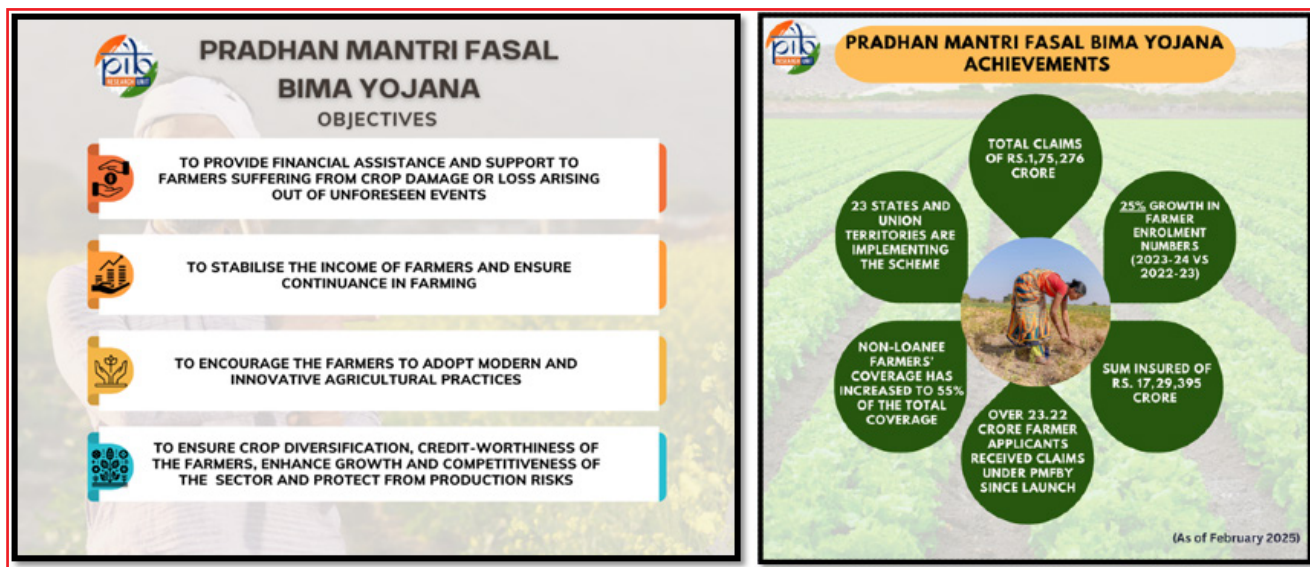
IAS Current
Affairs Module
Course



Drishti
Learning
App



- Since 2016, over **Rs 1.78 lakh crore** has been paid out in claims, which is **5 times** the total premium paid by farmers.
- Awareness campaigns like **Fasal Bima Saptah** and **Meri Policy Mere Haath**, along with village-level events like **Fasal Bima Pathshalas**, helped boost participation and close the information gap.



What are the Challenges Affecting the Implementation of PMFBY?

- **Large-Scale State Defaults:** States like Andhra Pradesh, Rajasthan, and Madhya Pradesh have delayed their premium contributions.
 - This has impacted the timely settlement of farmer claims and eroded trust in the scheme.
- **Delayed Payouts:** Farmers have often faced delays in receiving claims, undermining the scheme's core objective of timely risk mitigation.
- **Assessment Bottlenecks:** Manual and outdated crop loss assessment methods have often led to discrepancies and inefficiencies.
- **Limited Private Sector Confidence:** Repeated payment delays and high claim ratios have deterred some insurance companies from active participation.
- **Disparity in Enrollment:** Although 4.19 crore farmers were enrolled in 2024–25, categories like **tenant (6.5%)** and **marginal (17.6%)** farmers remain underrepresented compared to **loanee farmers (48%)**.

What Measures have been Introduced to Improve PMFBY?

- **Digital Reforms: National Crop Insurance Portal (NCIP)** developed as a single platform for farmer enrolment, claim tracking, and direct benefit transfer.
 - **Digiclaim Module** operational since Kharif 2022, integrates NCIP with PFMS and insurers' systems to ensure timely, transparent claim processing.
 - A 12% penalty is auto-imposed on insurers for claim delays from Kharif 2024 onwards.
 - **Crop Cutting Experiments (CCEs)-Agri App** captures crop cutting experiment data, directly uploaded to the NCIP.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **YES-TECH** (Yield Estimation System Based on Technology), which uses **remote sensing to estimate crop yields more accurately**.
 - From Kharif 2023, YES-TECH became mandatory for paddy and wheat. Soybean was added in Kharif 2024.
- **WINDS (Weather Information Network and Data System)** expanded the network of **weather stations** and rain gauges at Gram Panchayat and block level to support yield estimation, drought management, and better insurance products.
- **Escrow-Based Advance Premium System:** From Kharif 2025–26, states must deposit their share of premiums in **escrow accounts** to ensure timely fund availability.
- **Proportional Claim Disbursal:** The Centre's **premium subsidy is delinked** from **state contributions**, farmers will now receive at least the Centre's share of claim irrespective of state default.

Outlook of Indian Economy

Why in News?

The **Reserve Bank of India's** article titled "**State of the Economy**" offers a cautiously optimistic view of the Indian economy, amid global and trade-related uncertainties.

What is India's Present State of the Economy?

- **Inflation:** Retail inflation (measured by the **Consumer Price Index (CPI)**) fell from **5.4% in 2023–24** to **2.1% in June 2025**, the lowest since January 2019.
 - In June 2025, **core inflation** rose to 4.4% due to costlier personal care, education, and recreation, while overall inflation eased more sharply in rural (1.7%) than urban areas (2.6%).
- **Balance of Payments:** India recorded a **current account surplus** of 1.3% of **Gross Domestic Product (GDP)** in Q4 2024–25.
 - India's **Current Account Deficit** narrowed to 0.7% of GDP in FY24.
- **Fiscal Developments:** **Gross fiscal deficit (GFD)** stood at 0.8% of its 2025-26 budget estimates, a significant improvement from 3.1% in 2024-25

- Till May 2025, the Centre received 21% of Budget Estimates (BE) 2025-26 of Total Receipts. Total expenditure stood at 14.7% of FY26 BE, with a notable focus on **capital expenditure**.
- **Trade Performance:** India's overall trade deficit narrowed nearly 30% in May 2025, mainly due to **falling oil prices and strong services exports**.
 - Compared to May 2024, total exports in May 2025 grew by 2.8% boosted by a 9.4% rise in services exports, while total imports fell by 1%.
 - India's **export performance in FY 2024–25** was driven by strong growth in sectors like coffee, tobacco, electronic goods, rice, and drugs & pharmaceuticals.
 - Other sectors such as **ready-made garments (RMG) of textiles**, plastic & linoleum, engineering goods, and fruits & vegetables also saw positive growth.
 - The **US, UK, Japan, UAE, and France** emerged as **top export destinations** during the year.
 - On the import front, major sources included **UAE, China, Thailand, US, and Russia**.
- **Foreign Direct Investment (FDI):** **FDI** inflows up 14% in FY25 from FY24, and 125% higher than FY14.
 - The services sector led with 19% of equity inflows, followed by software & hardware (16%) and trading (8%).
 - Manufacturing FDI rose by 18% in FY25 compared to FY24, Maharashtra topped with 39% of inflows, while **Singapore was the largest source (30%)**, followed by Mauritius and the US.
- **Foreign Portfolio Investment (FPI):** India witnessed positive net **Foreign Portfolio Investment (FPI)** inflows of USD 44.1 billion in FY24.
- **External Debt:** India's **external debt** rose by 10% in 2025 compared to 2024, with the debt-to-GDP ratio rose slightly to 19.1% from 18.5% FY24.
- **Foreign Exchange Reserves:** India's **foreign exchange reserves** stood at USD 696 billion as of July 2025, covering over 11 months of goods imports and 95% of external debt.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Factors Affecting the Indian Economy at Present?

➤ Global Headwinds:

- **Geopolitical and Trade Tensions:** Ongoing Iran-Israel tensions and uncertainty around US tariff policies are keeping the global environment unstable.
 - Global tariff rates may rise to levels last seen in the **1930s**, which could raise India's import costs and worsen inflation.
- **Weak Global Confidence:** Consumer and business sentiment remains subdued worldwide, slowing the **pace of global recovery**.
 - This reduces demand for Indian exports, especially in sectors like manufacturing and IT services.
- **Sticky Global Inflation:** Inflation has increased in **advanced economies** and remains elevated in emerging markets like Brazil and Russia.
 - This may lead to **tighter global monetary policy**, which can restrict foreign capital flows into India and increase borrowing costs.

➤ Domestic Activity:

- **Industrial Slowdown:** Growth in the Index of Industrial Production (IIP) fell to 1.2% in May 2025, the lowest since August 2024.
 - This hampers **job creation and weakens momentum in industrial and manufacturing sectors**.
- **Drop in Credit Growth:** Bank credit to Non-Banking Financial Companies (NBFCs) and industry declined.
 - NBFC loan disbursements dropped **13% year-on-year** in the September 2024 quarter. Urban loan sanctions fell 23%, and long-term loans dropped by 50%.
 - Loans against securities and education loans also saw sharp declines. This curbs business investment and slows economic expansion.
- **Slower GST Revenue Growth:** Goods and Services Tax (GST) collections grew by only about 6% in June 2025, the slowest pace in four years.

- This suggests weakening demand, a cautious business sentiment, and adds pressure on government finances.
- **Labour Market Strain:** While unemployment remained steady at 5.6% in June 2025, rural labour force participation declined due to the agricultural lean season and extreme heat.
 - This signals stress in rural employment, which can hurt rural consumption and overall demand.
- **State Finances:** States face **rising subsidy burdens from loan waivers and free services**, which strain finances and divert funds from infrastructure.

Unified Payments Interface

Why in News?

The International Monetary Fund (IMF) released a note titled **Growing Retail Digital Payments: The Value of Interoperability**, emphasizing the role of the Unified Payments Interface (UPI) in transforming India's digital payment ecosystem.

What is Unified Payments Interface (UPI)?

- **About:** UPI is a real-time mobile payment system developed by National Payments Corporation of India (NPCI)
 - It allows users to link multiple bank accounts into one app for seamless peer-to-peer and merchant transactions.
- **Working:** UPI enables both **push (send) and pull (receive) transactions** using a Virtual Payment Address (VPA), with two-factor authentication, eliminating the need to enter bank details each time.
- **Technologies Used:** UPI is built on IMPS (Immediate Payment Service) and integrates Aadhaar Enabled Payment System (AePS)
 - IMPS facilitates funds transfer to an account of the beneficiary with a participating bank, based on beneficiary's Mobile Number & Mobile Money Identification Number (MMID) or Account number & Indian Financial System Code (IFSC).

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The AePS allows basic banking services like cash withdrawal, deposit, balance enquiry, and money transfer (interbank or intrabank) using Aadhaar authentication.
- **BHIM App:** **Bharat Interface for Money (BHIM)** is a UPI-based payment app developed by NPCI.

How Has UPI Transformed India's Digital Payment Ecosystem?

- **Scale and Adoption:** UPI processed Rs 24.03 lakh crore through **18.39 billion transactions in June 2025**.
 - UPI now serves 491 million users and 65 million merchants, connecting over 675 banks on one platform.
 - India's UPI is now the **world's top real-time payment system**, processing over 640 million daily transactions more than **Visa's 639 million** and powers **85% of India's digital payments** and nearly 50% of global real-time payments.
 - UPI has integrated digital payments into daily life in India, enabling instant 24/7 transactions and easy management of all bank accounts through one app.
 - **Two-factor authentication** ensures safety, while **UPI IDs** protect privacy by avoiding the need to share sensitive bank details. **Quick Response (QR) codes** make payments at shops fast and easy.
- **Interoperability:** UPI enabled seamless, platform-agnostic payments by removing the **limits of closed-loop systems** like restricted wallets or bank-specific transfers.
 - It allows users to transact across different apps and banks, making digital payments easier and more flexible.
 - This openness also pushed apps to compete and improve, driving innovation and better user experience.
- **Financial Inclusion:** UPI's **zero-cost, real-time transfers** have made digital payments **accessible for small vendors and first-time users**.
 - It has empowered **millions of kirana stores and micro-businesses**, while also promoting digital literacy and building trust in digital finance.

- **Global Reach and Diplomacy:** UPI is now live in **7 countries**, including the UAE, Singapore, Bhutan, Nepal, Sri Lanka, France, and Mauritius.
 - Its launch in France marks its entry into Europe. India is also pushing for UPI to be adopted across **BRICS nations**, which would boost **remittances** and simplify payments for Indians abroad.

Digital Foundation Behind UPI

- UPI's global success is rooted in years of investment in digital infrastructure, with India building a strong foundation through the **JAM trinity** (Jan Dhan Yojana (financial inclusion), Aadhaar (digital identity), and Mobile connectivity) along with affordable internet.
 - As of mid-July 2025, **Jan Dhan Yojana** opened over 55.9 crore bank accounts, bringing millions into the formal financial system and enabling direct benefit transfers.
 - **Aadhaar** gave every resident a unique biometric-linked identity. With over 142 crore Aadhaar numbers generated by June 2025, it enabled secure authentication and underpinned services like UPI.
 - **Connectivity** improved rapidly with one of the **world's fastest 5G rollouts** (4.74 lakh base stations now cover almost all districts).
 - Data costs dropped from Rs 308/GB in 2014 to Rs 9.34 in 2022, supporting 116 crore mobile users.
- These pillars made UPI the world's top real-time payment system and a global model for digital finance.

India's Millet Standards Recognised at Codex Alimentarius Commission

Why in News?

India's leadership in developing a group standard for whole **millet grains** was appreciated during the **88th Session of the Executive Committee of the Codex Alimentarius Commission (CAC) 2025**, held at the **Food and Agriculture Organization (FAO)** headquarters in Rome, Italy.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What is the Codex Alimentarius Commission (CAC)?

- **About:** CAC is an international food standards body established jointly by the [FAO](#) and the [World Health Organization \(WHO\)](#) in 1963 with the objective of protecting consumer's health and ensuring fair practices in food trade.
 - The **CAC has 189 members. India joined in 1964.**
- **Codex Alimentarius:** The Codex Alimentarius, or "Food Code", is a collection of standards, guidelines, and codes of practice adopted by the CAC.
 - It sets standards for all major foods (processed, semi-processed, or raw) and covers areas like **hygiene, additives, residues, contaminants, labelling, and inspection.**
 - Codex standards guide **food safety trade disputes** under the [World Trade Organization \(WTO\) Agreement on the Application of Sanitary and Phytosanitary Measures \(SPS Agreement\)](#).
- **India and CAC:** India actively engaged in discussions around the **Codex Strategic Plan 2026–2031**, advocating for **SMART (Specific, Measurable, Achievable, Relevant, Time-bound)** Key Performance Indicators.
 - Since 2014, India has chaired the **Codex Committee on Spices and Culinary Herbs**, and led the development of global standards for millets, fresh dates, and India will also serve as co-chair in new work proposals to develop standards for fresh turmeric and broccoli. It also promoted Codex Trust Fund use for capacity building.

What are Millets, and How is India Leading their Promotion?

- **Millets:** Millets, also known as **Shree Anna**, are small cereal grains grown **mainly as a Kharif crop** and belong to the **Poaceae (grass) family**.

- **Significance:** The **United Nations General Assembly**, based on a proposal by India, declared **2023 as the [International Year of Millets \(IYM\)](#)**.
 - Millets are **more nutritious than wheat and rice**, being rich in protein, vitamins, and minerals. They are **gluten-free with a low glycemic index**, suitable for celiac and diabetic patients.
 - As climate-resilient crops, millets require less water and can grow in poor soils, making them ideal for sustainable agriculture.
- **India's Standards on Millets:** The [Food Safety and Standards Authority of India \(FSSAI\)](#) has framed group standards for **15 types of millets, specifying 8 quality parameters** i.e., maximum limits for moisture content, uric acid content, extraneous matter, other edible grains, defects, weevilled grains, immature grains, and shriveled grains.
 - These standards form an important foundation for developing global standards.
- **India's Position in Millets Production:** India is the **largest producer of millets**, contributing **38.4% of global production (FAO, 2023)**.
 - India grows a wide range of millets including **sorghum (jowar), pearl millet (bajra), finger millet (ragi)** and others like foxtail, barnyard, kodo, and proso millet.
 - The total area under millet cultivation in **FY24 was 12.19 million hectares, producing 15.38 million metric tonnes**.
 - **Rajasthan** leads in both area and production, followed by Uttar Pradesh, Karnataka, and Maharashtra.
- **Exports:** India exported **1.46 lakh metric tonnes of millets in FY24**, earning **USD 70.89 million**. Key export destinations include the **UAE, Saudi Arabia, USA, Japan, and Nepal**.
- **India's Initiatives to Promote Millets:**
 - **Production Linked Incentive Scheme for Millet-Based Products (PLISMBP) (2022–2027):** The

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



PLISMBP incentivizes companies producing Ready-to-Eat/Cook products with $\geq 15\%$ millet content.

- **Sub-Mission on Nutri-Cereals (Millets) under NFSM:** Covers 28 States and 2 UTs, promoting major, minor, and pseudo-millets like **buckwheat and amaranth**.

- It provides farmers with incentives for seed production, better farming techniques, tools, and awareness training.

- **Nutrition and Public Distribution:** Millets added under **TPDS (Targeted Public Distribution System)**, **ICDS (Integrated Child Development Services)**, **Mid-Day Meal Scheme**, and **Poshan Abhiyan**.

- **FSSAI's Eat Right Campaign:** Promotes millets as part of a balanced diet.

- **Rashtriya Krishi Vikas Yojana (RKVY):** Under RKVY, states have the flexibility to **promote millets based on local priorities**.

- States like Assam, Bihar, Odisha, Karnataka, and others have also launched their own Millet Missions.

Millets

About

- Small-grained cereals also known as **coarse grains**
- Often referred to as **'Superfood'**
- Among the **first crops to be domesticated** - evidence of millet consumption dates back to the **Indus Valley Civilisation (3,000 BC)**

Climatic Conditions

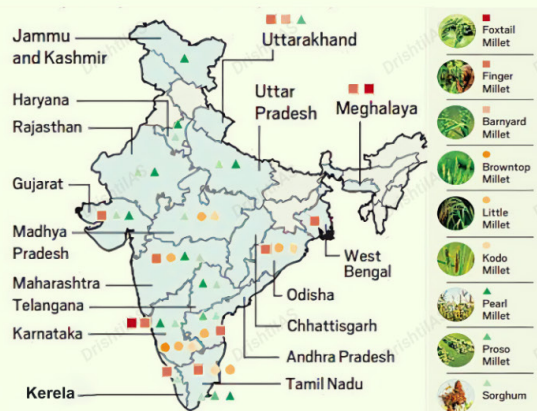
- **Mainly a Kharif crop in India**
- **Temperature:** $27^{\circ}\text{C} - 32^{\circ}\text{C}$
- **Rainfall:** Around 50-100 cm
- **Soil Type:** Inferior alluvial or loamy soil

India and Millets

- **Global Largest Millet Producer:**
 - 20% of global production, 80% of Asia's production
- **Common Millets:**
 - **Ragi** (Finger millet), **Jowar** (Sorghum), **Sama** (Little millet), **Bajra** (Pearl millet), and **Variga** (Proso millet)
 - **Indigenous varieties** (small millets) - **Kodo, Kutki, Chenna and Sanwa**
- **Top Millets Producing States:**
 - Rajasthan (largest), Karnataka, Maharashtra, Madhya Pradesh and Uttar Pradesh
- **Govt. Initiatives:**
 - Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP)
 - **'India's Wealth, Millets for Health'**
 - Millet Startup Innovation Challenge
 - **Hiked MSP** for Millets
 - Agriculture Ministry declared millets as **"Nutri Cereals"** in 2018

Significance

- Less expensive, **nutritionally superior**
- High protein, fibre, minerals, iron, calcium and a **low glycemic index**
- Help tackle **lifestyle problems and health** (obesity, diabetes etc.)
- Photo-insensitive, **resilient to climate change & water efficient**



International Year of Millets - Year 2023

Proposed by India, declared by UNGA



Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



OECD-FAO Agricultural Outlook 2025-2034

Why in News?

The Organisation for Economic Co-operation and Development (OECD) and the Food and Agriculture Organization (FAO) *Agricultural Outlook 2025-2034* report, offers a 10-year outlook on global agricultural and fish markets to guide evidence-based policymaking.

What are the Global Market Trends According to OECD-FAO Agricultural Outlook 2025-2034?

- **Cereal Production and Biofuel Demand:** Global cereal production is expected to grow at **1.1% annually**, driven largely by **yield increases** (0.9% per year). However, the expansion of harvested area will slow to **0.14% annually** through 2034.
 - By 2034, **40% of cereal production** will be consumed directly by humans, while **33%** will be used for **animal feed** and **27%** will be diverted to **biofuels and industrial uses**.
 - By 2034, **India and Southeast Asia will drive 39% of global cereal consumption growth**, while China's share will fall to 13% from 32%, reflecting changing consumption trends.
 - **Biofuel demand** is projected to grow at **0.9% annually**, primarily due to increases in countries like **Brazil, India, and Indonesia**.
- **Agricultural and Fish Commodity Growth:** Global agricultural and fish production is projected to grow by **14%** through 2034, primarily driven by **productivity gains in middle-income nations**.
 - However, this growth will also lead to a **6% increase in agricultural greenhouse gas emissions**.
- **Rise in Animal Product Consumption:** Global **per capita calorie intake** from **livestock and fish products** is expected to increase by **6%** over the next decade, driven by growth in **lower-middle-income countries**, where intake is anticipated to rise by **24%** nearly four times the global average.

- This increase will raise daily intake in lower-middle-income countries to **364 kcal**, but **low-income countries** will remain far behind, with an intake of just **143 kcal**, well below the **300 kcal/day** target for a healthy diet.

How does the Rising Demand for Biofuels Impact Global Food Security?

- **Land Use:** Growing **biofuel crops can reduce land available for food production**. To meet the **E20 target**, India would need 7.1 million hectares (around 3% of its total cropped area), raising serious concerns about land use and food security.
- **Pressure on Water and Resources:** Biofuel crops require significant water (ethanol production uses **8-12 liters of water per liter of ethanol**) and fertilizers, straining resources needed for food farming.
- **Food Inflation:** Biofuels raise food prices by increasing demand for feedstock crops. India's ethanol shift to **maize and rice may divert food supplies**, with rice prices **rising 14.5% in 2023**, hitting poor households hardest.
 - Poorer nations face greater risks of food insecurity due to reduced **access and affordability**.
- **Environmental Trade-offs:** Expansion of biofuel crops can lead to deforestation and biodiversity loss, indirectly affecting food systems.

How Can Sustainable Biofuel and Food Security Policies Be Ensured?

- **Feedstock Diversification:** Promoting **3G ethanol** (from microalgae using wastewater/sewage/seawater) offers a sustainable alternative to 1G (sugarcane, wheat, rice) and 2G (crop residues) biofuels, avoiding food and water stress.
 - India can also invest in developing **genetically modified (GM) crops** specifically tailored for biofuel production to boost yields and reduce pressure on food crops.
- **Zoning and Land Use Planning:** Implement a biofuel zoning policy that prevents diversion of fertile agricultural land.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Use marginal and wastelands for biofuel crops under strict ecological safeguards to avoid deforestation or biodiversity loss.
- **Crop Diversification Incentives:** Strengthen **Minimum Support Prices (MSP)** and procurement for diverse food grains to counter biofuel-driven monocultures.
- Align ethanol procurement policies with food surplus seasons to avoid market distortion.
- **Improving Productivity and Sustainability:** Increased agricultural productivity is critical to reduce **undernourishment** and curb **GHG emissions**.
- The report suggests that global undernourishment could be eradicated and emissions reduced by **7%** with **15% productivity improvements** and investments in **emissions-reduction technologies** (e.g., precision farming, livestock feed enhancements, and low-cost practices like crop rotations).

Organization for Economic Co-operation and Development (OECD)

- OECD is an intergovernmental body established in 1961 to promote economic growth and global trade. **Headquartered in Paris, France** it has 38 member countries, mostly high-income nations with high **Human Development Index (HDI)**.
 - While **India is not a member, it is a key economic partner**.
 - The OECD releases several important reports and indices, including **Government at a Glance** and the **Better Life Index**.

Food and Agriculture Organization (FAO)

- The **FAO is the UN's oldest specialized agency**, founded in 1945, with headquarters in Rome. Its mandate is to **fight hunger, improve nutrition, and promote sustainable agriculture**.
 - With 194 member states and the EU, FAO supports countries through research, technical aid, education, and data services.
 - It focuses on agriculture, forestry, fisheries, and resource management, but food relief is handled by the **World Food Programme**.

- Key reports include **State of World Fisheries and Aquaculture (SOFA)**, **State of the World's Forests (SOFO)**, **State of Food Security and Nutrition in the World (SOFI)**, and **State of Food and Agriculture (SOFA)**.

PM Dhan-Dhaanya Krishi Yojana

Why in News?

The Union Cabinet has approved the **Prime Minister Dhan-Dhaanya Krishi Yojana (PMDDKY)**, a major initiative aimed at transforming Indian agriculture. Originally announced in the **Union Budget 2025–26**, the scheme has an annual outlay of Rs 24,000 crore for six years, starting from 2025–26.

- PMDDKY, inspired by **NITI Aayog's Aspirational Districts Programme**, targets **100 underperforming districts to boost farm productivity** through improved irrigation, storage, credit access, and sustainable practices.

What is the PM Dhan-Dhaanya Krishi Yojana?

- **About:** PMDDKY is a **comprehensive farm programme** designed to enhance productivity, promote sustainable practices, and improve livelihoods.
 - It merges **36 schemes** from **11 Union Ministries** to create a unified agricultural support system.
- **District Selection Criteria:**
 - **Low Productivity:** Districts with low agricultural output per hectare.
 - **Low Cropping Intensity:** Regions with limited crop variety or insufficient crop cycles per year.
 - **Low Credit Disbursement:** Areas with limited access to financial resources for farmers.
 - **Representation Across States:** The selection will consider the share of **Net Cropped Area** and operational holdings in each state/union territory.
 - A minimum of one district will be selected from each state to ensure balanced regional development.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



➤ **Implementation and Monitoring:**

- **District Agriculture and Allied Activities Plans:** Each district will prepare a plan through the **District Dhan Dhaanya Samiti**, involving progressive farmers, aligned with national goals like crop diversification, water conservation, and agricultural self-sufficiency.
- **Monitoring and Evaluation:** Progress will be tracked through **117 Key Performance Indicators (KPIs)** using a dedicated dashboard, with monthly reviews.
 - Central Nodal Officers will be appointed for each district to ensure smooth implementation. NITI Aayog will guide and review district plans regularly.
- **Committees at Various Levels:** Committees at the district, state, and national levels will oversee planning, implementation, and progress monitoring to ensure the scheme's effectiveness.

➤ **Expected Outcomes:** 1.7 crore farmers across India are expected to benefit directly.

- The scheme integrates allied sectors like **livestock, dairy, and fisheries to add value and create local livelihoods**. It focuses on post-harvest storage, improved irrigation, easier credit access, and promotes natural and organic farming, enhancing rural economic resilience.

Greener fields

The PMDDKY aims at enhancing **agricultural productivity**, increasing adoption of **crop diversification** and **sustainable agricultural practices**, and augmenting **post-harvest storage**

₹ 24,000 cr.

to be allocated yearly for six years for the scheme

- States and private sector to **partner with the Centre** to implement the scheme

100 districts to come under the scheme which will begin this financial year

- Districts to be identified based on 3 key indicators: **low productivity, low cropping intensity, less credit disbursement**

Helping hand: Nearly 1.7 crore farmers will benefit from the scheme. PTI



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Aspirational Districts Programme (ADP)

- **Launch:** Initiated in 2018 by the Government of India to uplift 112 of the most underdeveloped districts.
- **Focus Areas:** Health, nutrition, education, infrastructure, and economic opportunities.
- **Key Principles and Approach:**
 - **3Cs Framework:**
 - **Convergence:** Coordination between various central and state schemes.
 - **Collaboration:** Involvement of district, state, and national agencies.
 - **Competition:** Healthy competition among districts to drive development.
 - **Data-Driven Governance:** Progress is tracked using a public platform, the **Champions of Change Dashboard**, which monitors 49 indicators across five areas.
- **Monitoring:** The **Champions of Change Dashboard** monitors progress across **49 indicators**, focusing on real-world issues such as infant mortality, school dropout rates, sanitation, and crop productivity.
 - Unlike traditional rankings, ADP employs the **delta ranking** system that measures the pace of progress, motivating districts to compete against their own past performances.
- **Success Stories:**
 - **Chamba, Himachal Pradesh:** Once a symbol of rural deprivation. In February 2022, it became the 100th district to achieve “Har Ghar Jal” status, providing every household with clean tap water.
 - The district also saw 100% coverage under Pradhan Mantri Jan Dhan Yojana (PMJDY), ensuring financial inclusion.
 - **Notable District Successes:** By 2019, 8 districts moved from Tier IV to Tier I showcasing significant improvement in agriculture, health, and infrastructure.
 - Andhra Pradesh stood out, with 2 of its 3 Aspirational Districts ranking in the top 10, showing strong sectoral progress.

- **Global Recognition of ADP:** Singapore’s highlighted ADP as a “globally relevant model” for empowering communities and strengthening local health systems.
 - The ADP’s emphasis on localized, inclusive governance has been recognized as a model that can be replicated in other developing countries.

What are India’s Initiatives Promoting Agricultural Productivity in India?

- **Increased Budget Allocation for Agriculture:** The sharp rise in the agriculture budget from **Rs 11,915 crore in 2008-09 to Rs 1,22,528 crore in 2024-25** has enabled greater investment in inputs, research, irrigation, and infrastructure, all of which contribute to higher productivity.
 - **Agricultural Infrastructure Fund (AIF)** launched in 2020, has supported over 87,500 projects, boosting **post-harvest infrastructure such as warehouses and cold chains**. This has helped reduce crop losses and encouraged the cultivation of high-value crops.
- **Crop Yield Improvements:** Between 2013-14 and 2023-24, yields for key crops like **rice, wheat, maize, and pulses** saw notable increases.
 - For instance, crop yields rose with rice (19.3%), wheat (13.2%), maize (25.2%) and coarse cereals (71.5%).
- **Minimum Support Price (MSP) Enhancements:** **MSP** revisions, ensuring at least 50% profit over the cost of production, have encouraged farmers to invest more in inputs and better crop management, indirectly supporting productivity.
- **e-NAM Integration and Market Access:** Better price discovery through **electronic National Agriculture Market (e-NAM) (1,410 mandis linked)** has incentivized farmers to adopt higher-yield crops and improve quality.
- **Pradhan Mantri Fasal Bima Yojana (PMFBY):** Crop insurance under **PMFBY** encourages risk-taking and adoption of modern practices. Farmers are more likely to invest in better technologies if crop failure risks are covered.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Soil Health Cards:** Over 25 crore **Soil Health Cards** have been distributed, helping farmers use the right fertilisers and improve crop yields while reducing harmful chemical use.
- **Fertiliser Subsidies:** For 2025–26, the government allocated over Rs 1.67 lakh crore for fertiliser subsidies, making up nearly 70% of the agriculture budget and 40% of total subsidy spending.
- **Institutional Credit Expansion & Kisan Credit Card (KCC):** The growth in short-term agri credit from Rs 6.4 lakh crore (2014-15) to Rs 15.07 lakh crore (2023-24) has given farmers better access to inputs like fertilizers, quality seeds, and machinery, all of which support productivity.
 - As of 2024, there are 7.75 crore active **KCC accounts** with ₹9.81 lakh crore in loans.

Decarbonization of Global Shipping

Why in News?

Global shipping is now on track to drastically cut its **carbon emissions** by 2040-2050. This shift is being driven by mounting climate pressures and **global decarbonisation goals**.

- The move presents a big opportunity for India both in supplying green fuels and building the infrastructure needed for this transition.

Note: The global shipping industry contributes nearly **3% of total greenhouse gas (GHG)** emissions, mainly from its use of **Very Low Sulphur Fuel Oil (VLSFO)**, diesel, and **Liquefied Natural Gas (LNG)**.

- If the global shipping industry were a country, it would rank as the **6th largest emitter**. Without intervention, emissions could increase by up to **250% by 2050**.
- The **International Maritime Organization (IMO)** targets a carbon intensity cut of 40% by 2030, 70% by 2040 (vs 2008 levels), and net-zero emissions by 2050.

What are the Green Fuels used for Decarbonising Shipping?

- **Green Methanol:** Derived from **green hydrogen** (generated using renewable energy) and **CO₂** captured from industrial processes.
 - **Advantages:** It can be used as a **drop-in fuel** for existing engines, reducing carbon emissions by **90-95%** compared to conventional fuels.
 - **Challenges:** **Green methanol** incurs high production costs driven by **renewable electricity** prices and **electrolyser infrastructure**.
- **Green Ammonia:** Produced by combining **green hydrogen** with **nitrogen** from the air.
 - **Advantages:** Completely **carbon-neutral**, making it a long-term solution for shipping.
 - **Challenges:** **Green Ammonia** has a **highly volatile nature**, requiring specialized **storage tanks** and modifications to **engine technology**.
- **Biofuels:** Derived from organic matter, biofuels can offer a lower-carbon alternative but are not as scalable as **methanol or ammonia**.
 - **Advantages:** Can be used in existing engines with minimal modifications
 - **Challenges:** Limited scalability due to land and feedstock constraints, Biofuel production competes with food production in some cases.

What are the Challenges in Adopting Green Fuels in the Shipping Industry?

- **Cost Considerations:** Producing green fuels like methanol requires **electrolysers and large amounts of renewable energy**, both of which are capital-intensive.
 - It takes **10–11 MWh of renewable electricity to produce one tonne of green methanol**, which costs around USD 1,950 per tonne compared to USD 560 for **VLSFO**, making it significantly more expensive.
 - Demand for **green methanol is expected to exceed 14 million tonnes by 2028**, while **supply may reach only 11 million tonnes**, adding to price pressure.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Technological and Infrastructure Barriers:** The adoption of **green fuels** requires substantial modifications to both **ships** and **port facilities**. This includes retrofitting engines and building **bunkering infrastructure** at global ports.
 - Ammonia engines are **still experimental**, and many shipping firms prefer green methanol, which is safer and more compatible. The Maritime is a **conservative sector** and slow to adopt untested tech, and global standards for green fuels are still lacking.
- **Regulatory and Certification Issues:** International Maritime Organization (IMO) regulations are evolving but not yet uniformly adopted. Lack of **certification frameworks** for green fuels impedes market confidence.
- **Storage and Safety Concerns:** While **hydrogen** is a potential fuel, its **storage and transportation** challenges make it unfeasible for direct use in shipping. Therefore, **green ammonia** and **green methanol** are considered more viable options.
- **Geopolitical Dynamics:** The discussions at the IMO were heavily influenced by geopolitical tensions. **Oil-exporting countries** such as Saudi Arabia **opposed drastic changes to safeguard their fossil fuel markets**. China favored minimal levies to maintain global competitiveness.
 - Smaller nations, particularly small island states, advocated for steep carbon levies to finance green development initiatives.
 - India, alongside Singapore, piloted a **compromise solution** that integrated both environmental effectiveness and economic fairness.

What is India's Role in Global Shipping Decarbonisation?

- **Policy Leadership and Global Collaboration:** India played a key role in shaping the **Market-Based**

Measure (MBM) framework to reduce emissions from global shipping, which was adopted at the IMO's 83rd Marine Environment Protection Committee (MEPC) session.

- Under the MBM framework, India suggested a '**bridging mechanism**' to penalise polluters, while rewarding those adopting **Zero or Near-Zero (ZNZ) fuels**.
- India hosted the **Green Shipping Conclave 2025** in Mumbai, underscoring its leadership in shaping global decarbonisation frameworks.
- **Clean Fuel Production:** India's National Green Hydrogen Mission aims to make India a **global hub for green hydrogen production**, essential for **green ammonia** and **methanol** key fuels for shipping.
 - India has vast **solar potential** and aims to reach **280 GW of solar power by 2030**, forming a major part of its **500 GW renewable energy target**, making it an ideal hub for green hydrogen production, supporting global shipping decarbonisation
- **Maritime Infrastructure and Green Ports:** India is enhancing **green bunkering facilities** and investing in **green ports** through initiatives like the Harit Sagar Green Port Guidelines and the Green Tug Transition Programme.
 - India is focused on **green fuel production** and has ambitious plans to develop **green fuel bunkering ports** at locations like Tuticorin V.O. Chidambaranar and Kandla.
- **Financial Commitment to Green Shipping:** The **Rs 25,000 crore Maritime Development Fund** for FY26 will catalyse investments in **green infrastructure**, **fleet modernisation**, and **alternative fuels** to meet the IMO's emission reduction targets.
 - Policies like Maritime India Vision 2030 align with global decarbonisation goals.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses

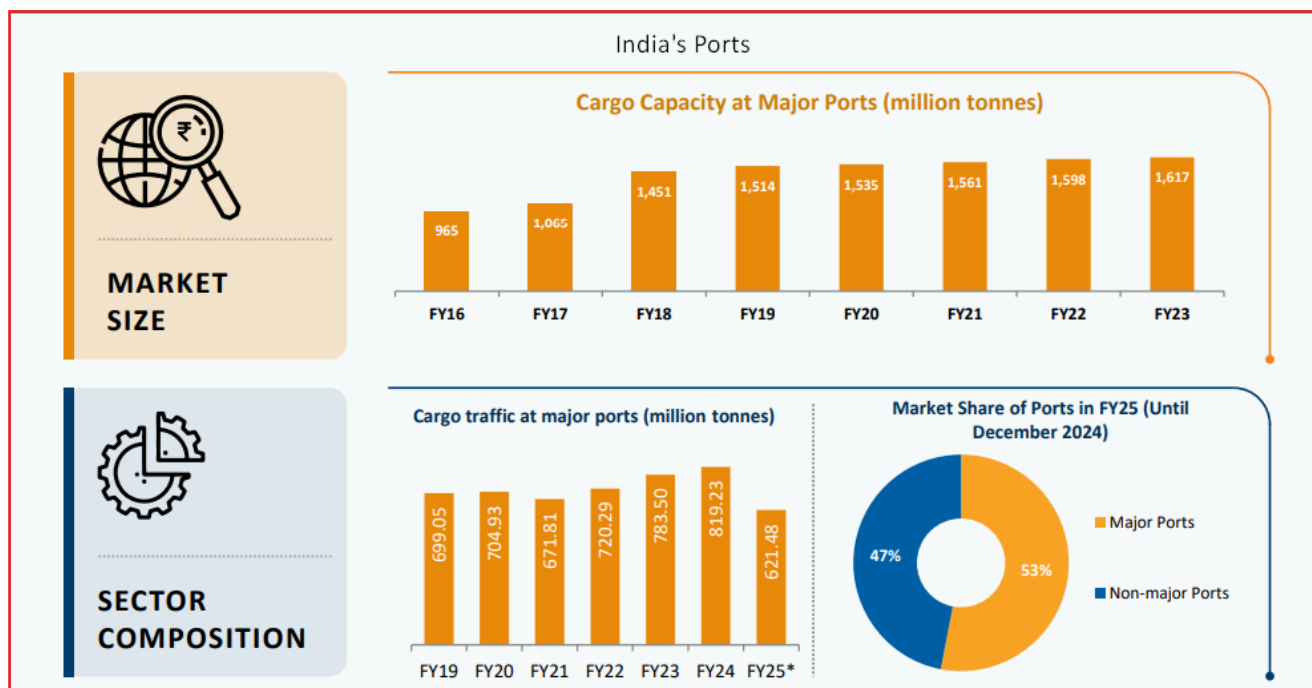


IAS Current
Affairs Module
Course



Drishti
Learning
App





ICAR & Its Role in Food & Nutritional Security

Why in News?

The Indian Council of Agricultural Research (ICAR) celebrated its 97th Foundation Day on 16th July 2025, marking a significant milestone and highlighting its transformative role in strengthening Indian agriculture and ensuring food and nutritional security.

Indian Council of Agricultural Research (ICAR)

- **About:** It is the **apex body** for **coordinating, guiding, and managing agricultural research and education** in areas such as **agriculture, horticulture, animal sciences, and fisheries** in India.
 - Established on **16th July 1929** as a registered society under the **Societies Registration Act, 1860** and **headquartered in New Delhi**.
- **Functioning:** It functions as an **autonomous organisation** under the **Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare**.
 - ICAR is among the **largest national agricultural systems globally**, with **113 research institutes** and **74 agricultural universities** across India.

What are Highlights of ICAR's Role in Ensuring Food and Nutritional Security?

- **Agricultural Growth & Food Security:** ICAR played a pivotal role in the **Green Revolution** and **food security** by boosting production of foodgrains (6.21x), horticulture (11.53x), fish (21.61x), milk (13.01x), and eggs (70.74x) from 1950–51 to 2021–22.
 - In 2024–25, India achieved its **highest-ever foodgrain output** at **353.95 million tonnes**, becoming the **largest producer of rice and milk**, and **second in wheat, horticulture, and fish**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Research Excellence & Innovation:** ICAR released **679 field crop varieties** (including 27 bio-fortified), **world's first two genome-edited rice varieties**, and contributed 90% to **Rs 50,000 crore basmati exports**.
 - It also led to **115.3 MT wheat production** (85% under ICAR varieties) and significantly boosted **pulse and oilseed output**.
- **Advancement in Horticulture, Fisheries, Livestock & Engineering:** Developed **83 horticulture varieties**, **2,950+ tonnes of breeder seeds**, and **22 lakh planting materials**.
 - It introduced **super-intensive shrimp farming**, breeding protocols for 7 fish species, registered **10 livestock breeds**, released **2 chicken varieties**, and deployed **45 new agri-machines**, enhancing on-farm efficiency and sustainability.
- **Climate-Smart & Resource Management Initiatives:** Established **National Soil Spectral Library**, developed **35 Good Agricultural Practices (GAPs)**, **organic farming** models for 10 cropping systems, promoted **agroforestry in Odisha**, and innovated a **microbial consortium** reducing methane emissions in rice cultivation by **18%**.
- **Capacity Building, Education, and Extension:** Implemented the **6th Deans Committee Report on agricultural education**, launched **PM-One Nation One Subscription (PM-ONOS)** scheme.
 - It awarded **ASEAN Fellowships**, and trained staff under **Karmayogi Jan Seva**. ICAR conducted **18.57 lakh farmer trainings**, issued **4.19 crore mobile advisories**, helped reduce **stubble burning by 80%**.
- **Global Collaboration & Strategic Initiatives:** Strengthened ties with **ASEAN, SAARC, G20, QUAD, BRICS**, etc., signed **9 MoUs**, participated in platforms like **Consultative Group on International Agricultural Research (CGIAR)** & **International Center for Agricultural Research in the Dry Areas (ICARDA)**.

- It also launched transformative programmes like the **Global Centre on Millets (Shree Anna)**, **Clean Plant Programme**, **National Gene Bank**, **MAHARISHI initiative**, and genome editing in **40 crops**, positioning India for next-gen agri-resilience.

What are the Key Initiatives for Promotion of Agriculture in India?

- **Credit & Financial Support:**
 - Kisan Credit Card (KCC) scheme
- **Crop Insurance:**
 - Pradhan Mantri Fasal Bima Yojana (PMFBY): Covers crop loss from pre-sowing to post-harvest.
 - Restructured Weather-Based Crop Insurance Scheme (RWBCIS): Covers weather-related risks.
- **Mechanisation & Infrastructure:**
 - Sub Mission on Agricultural Mechanization (SMAM): Promotes equipment training via Farm Machinery Training & Testing Institutes (FMTTIs).
 - Agriculture Infrastructure Fund (AIF): Provides loans (interest subvention up to 3%) for post-harvest infrastructure, capped at 9% for loans up to Rs 2 crore.
- **Research & Technology:**
 - **National Research Centre for Makhana (NRCM)**: Developed Makhana processing machines and supported 24 enterprises.
 - **Project VISTAAR**: Unified digital agri-ecosystem integrating AI chatbots, Agristack, and real-time farmer feedback.
 - **Gramin Krishi Mausam Sewa (GKMS)**: Disseminates weather advisories via 130 Agromet Field Units and apps like **Meghdoot** and **Mausam**.
- **Organic & Sustainable Farming:**
 - Paramparagat Krishi Vikas Yojana (PKVY) for promoting organic farming clusters.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Per Drop More Crop (PDMC)** provides subsidies to small/marginal farmers for micro-irrigation (drip/sprinkler systems).
- **Institutional Support & Decentralization:**
 - **Rashtriya Krishi Vikas Yojana (RKVY)**
 - **Agriculture Technology Management Agency (ATMA):** Strengthens decentralized agricultural extension services.
- **Collectivization & Market Access:**
 - **Formation and Promotion of 10,000 FPOs Scheme**
- **Pension & Social Security:**
 - **Pradhan Mantri Kisan Maandhan Yojana (PMKMY)** provides Rs 3,000/month pension post age 60 farmers.
- **Skill Development & Education**
 - **Krishi Vigyan Kendras (KVKs)**
 - **Skill Training of Rural Youth (STRY):** 7-day short-term training in agriculture & allied sectors.
 - **Student READY Programme:** Skill-oriented training, internships, and rural exposure for agri-students.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



International Relations

Highlights

- China's Mega Dam on Brahmaputra
- India Hosts 2nd BIMSTEC Ports Conclave
- Reset in India-Maldives Relations
- India-UK Vision 2035 and CETA
- ICJ's Advisory on State Duties for Climate Action
- US to Quit UNESCO
- India's Concerns on Western Sanctions on Russian Oil

China's Mega Dam on Brahmaputra

Why in News?

China is building a 60,000 MW hydropower project on the **Yarlung Zangbo River** (known as the **Brahmaputra** in India and **Jamuna** in Bangladesh) in Tibet, near **Gelling** in **Arunachal Pradesh**.

- Announced in **2021**, the project involves **5 cascade dams** and is expected to be completed by the **2030s**.
 - It will be **3 times more powerful than the Three Gorges Dam**, the world's largest hydropower station.



What are the Key Concerns of India over China's Mega-Dam on Brahmaputra?

- **Ecological and Seismic Risks:** Situated in the **seismically active Himalayan zone**, where the **Indian and Eurasian plates** meet, the region is **highly prone to earthquakes, landslides, and flash floods**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The project threatens large-scale displacement, similar to the **Three Gorges Dam**, which displaced over 1.3 million people.
- The dam could act as a “**water bomb**” and China may **weaponise the dam** to exert **geopolitical pressure on India**, particularly after India’s suspension of the **Indus Waters Treaty** following the **Pahalgam terror attack**.
- **Hydrological & Environmental Impact:** The Brahmaputra is vital for **agriculture, livelihoods, and biodiversity**.
 - Sudden water release or diversion could devastate ecosystems, particularly in tribal regions like the **Siang belt**, home to the **Adi tribe**.
- **Loss of Traditional Knowledge:** Artificial flow regulation **undermines indigenous flood management systems**, increasing vulnerability to climate extremes and displacing centuries-old practices.
- **Legal & Diplomatic Gaps:** China’s unilateral actions **disregard India’s riparian rights**, as **China is not a signatory to any international water-sharing treaty**.
- **Threat to Regional Water & Food Security:** The dam could **impact irrigation, hydropower, and flood regulation** in India’s northeastern states, threatening **water, food, and energy security**.

What is India’s Response on China’s Construction of Dams on Brahmaputra?

- **Siang Upper Multipurpose Project:** India plans a around **11.2 GW hydropower project in Arunachal Pradesh** as a strategic and **water-security response**. It will **regulate floods from upstream Chinese dams**.
 - The project involves **local tribal engagement**, especially the **Adi community**.
- **Monitoring & River Contribution:** Though India has only around **34% of the basin**, it contributes **over 80% of the Brahmaputra’s flow** due to **2,371 mm rainfall** and snowmelt, unlike Tibet’s 300 mm.
 - **Indian tributaries**, especially in **Arunachal Pradesh and Assam**, contribute **30% of water resources and 41% of hydropower potential**, with Arunachal Pradesh playing a key role despite challenges.

- **Proposed River Linking Projects:**
 - **Manas–Sankosh–Teesta–Ganga Link:** Aims to connect the **Manas (a Brahmaputra tributary)** to the **Ganga** via **Sankosh and Teesta**.
 - **Jogighopa–Teesta–Farakka Link:** Proposes linking the **Brahmaputra at Jogighopa Barrage** to the **Ganga at Farakka**.
- **Diplomatic Dialogue & CBMs:** India **raised concerns with China regarding Chinese infrastructure and its impact on downstream flow**.
- **Bilateral talks held in Beijing (March 2025)** addressed **water-sharing and border disengagement**.
 - **Confidence-Building Measures (CBM)** include **resumption of tourist visas and Kailash Mansarovar Yatra** after 5 years.

What Measures can India take to Address Risk from China’s Brahmaputra Dams?

- **Accelerate Strategic Water Infrastructure:** India must **fast-track projects like the Upper Siang Hydropower Project** in Arunachal Pradesh, featuring a **300-metre-high dam** capable of absorbing upstream flow variations.
 - **Parallely, expanding storage capacity across the Brahmaputra basin** will help mitigate risks of **flooding and seasonal water stress** arising from Chinese interventions.
- **Enhance Scientific & Institutional Preparedness:** Conduct **scientific assessment of the ecological and geopolitical risks posed by China’s dam-building spree**.
 - **Strengthening institutional capabilities** for real-time **data modelling and predictive analytics**, as highlighted by **Institute for Defence Studies and Analyses (IDSA)** will enable **timely responses to potential water weaponisation**.
- **Implement Interlinking & Channel Diversion Plans:** India should operationalise **National Water Development Agency (NWDA)’s interlinking plans**, connecting Brahmaputra tributaries to the **Ganga basin** to redirect excess water to drought-prone regions.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



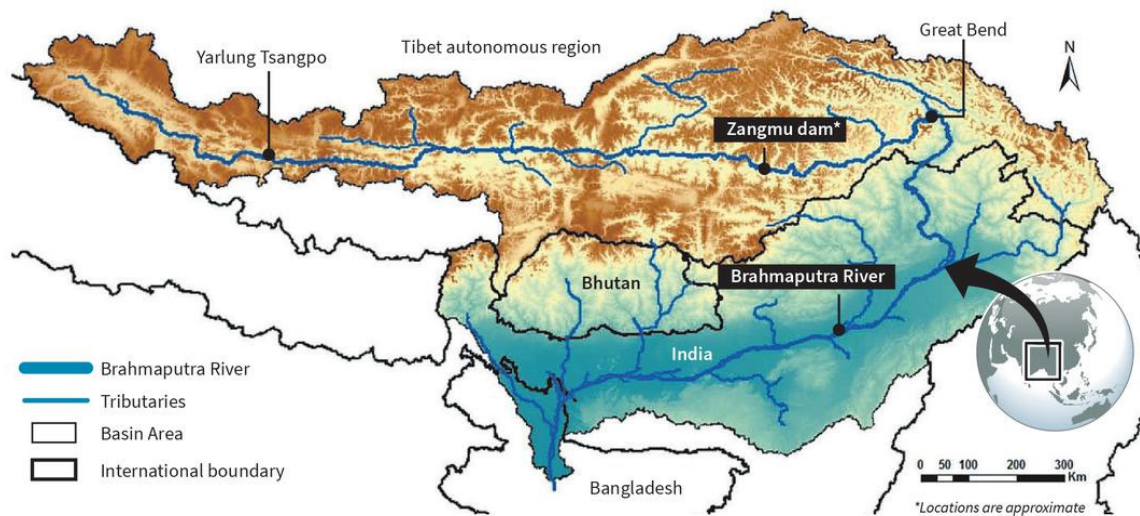
- Additionally, **inland channel systems** can serve as buffers to manage **monsoon overflow** and **reduce flood vulnerability**.
- **Strengthen Diplomacy & Regional Cooperation:** China has **ceased sharing crucial hydrological data with India since 2022**.
 - The **Brahmaputra MoU**, in place since **2002**, expired in **June 2023**, and the **Sutlej River MoU**, from **2005**, expired in **November 2020** and **has not been renewed since**.
 - India should push for **diplomatic channels** with China to obtain **detailed real-time hydrological and project data** to **assess downstream impact on a continuous basis**.
 - Also, developing **regional coordination** with **Bhutan, Bangladesh, and Myanmar** is vital for **joint disaster preparedness, early warning systems, and collective transboundary water governance**.

The Key Facts Related to Brahmaputra River System

- **Origin & Course:** The **Brahmaputra River** originates from the **Chemayungdung Glacier** in the **Kailash Range** near **Mansarovar Lake** in **Tibet**, where it is called the **Yarlung Tsangpo**.
 - It enters India through **Arunachal Pradesh** as the **Siang (or Dihang)**, flows through **Assam**, and enters **Bangladesh** as the **Jamuna** after merging with the **Teesta River**. It then joins the **Ganga (Padma)** near **Goalundo Ghat** and finally merges with the **Meghna River**, draining into the **Bay of Bengal**.

Taming the 'rogue' river

The Brahmaputra is a transboundary Himalayan river basin spanning four riparian countries. This map shows its flow from the Tibetan Autonomous Region in China through Bhutan and India into Bangladesh.



- **Basin:** The **Brahmaputra River Basin** spans **Tibet (China), Bhutan, India, and Bangladesh**. In India, its catchment area covers **Arunachal Pradesh, Assam, West Bengal, Meghalaya, Nagaland, and Sikkim**.
 - The basin is **bounded by the Himalayas** to the **north and west**, the **Patkai Hills** to the **east**, and the **Assam Hills** to the **south**.
 - The Brahmaputra is **2,900 km long**, with only **916 km flowing through India**. (The Ganges is the longest river entirely within India).

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



➤ Major Tributaries:

- **Right Bank:** Lohit, Dibang, Subansiri, Jiabharali, Dhansiri, Manas, Torsa, Sankosh, Teesta
- **Left Bank:** Burhidihing, Desang, Dikhow, Dhansiri (south), Kopili

➤ Ecological & Hydrological Significance: The Brahmaputra Basin holds over 30% of India's total water resources and contributes around 41% of the country's hydropower potential.

- It supports critical biodiversity zones, including **Kaziranga** and **Manas National Parks**, and rich ecosystems.
 - The basin is also characterized by **deciduous forests** in the valley and surrounding hills, making it vital for both **ecological balance** and **sustainable development**.

➤ Unique Features: Majuli, the world's largest river island, and Umananda, the smallest river island, are both located on the Brahmaputra River in Assam, highlighting its unique fluvial dynamics.

Read More: [Transboundary Rivers of India](#)

Read More: [Hydro Electric Projects in Brahmaputra Basin \(India\)](#)

India Hosts 2nd BIMSTEC Ports Conclave

Why in News?

India hosted the 2nd [BIMSTEC \(Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation\) Ports Conclave](#) in Visakhapatnam, to strengthen maritime connectivity, and sustainable development in the region.

BIMSTEC Ports Conclave

- **Theme 2025:** "Navigating the Future: Blue Economy, Innovation and Sustainable Partnerships."
- **Significance for India:** Boosts India's leadership in [Bay of Bengal](#) maritime cooperation, and aligns with [Sagarmala](#) goals of port-led growth and connectivity
 - It enhances [India's Indo-Pacific role](#) through stronger BIMSTEC ties.

What are the Key Outcomes of 2nd BIMSTEC Ports Conclave?

- **Push to Implement AMTC:** Member countries were urged to ratify and implement the **BIMSTEC Agreement on Maritime Transport Cooperation**

(AMTC), signed during the 6th BIMSTEC Summit (2025, Bangkok).

- The AMTC aims to boost port-led growth, enhance maritime trade and tourism, and promote skill development across BIMSTEC nations.

➤ Kaladan Corridor: The [Kaladan Multi-Modal Transit Transport Project \(KMTTP\)](#) was recognized as a strategic corridor linking India's Northeast with the Bay of Bengal, central to India's Act East and Neighbourhood First policies.

- The KMTTP, jointly developed by **India and Myanmar**, enables efficient cargo movement from India's eastern ports to the Northeast via Myanmar.

- It includes a waterway on **Myanmar's Kaladan River from Sittwe to Paletwa**, and a road from **Paletwa to Zorinpui on the India-Myanmar border in Mizoram**.

- KMTTP helps bypass the narrow [Siliguri Corridor \(or "Chicken's Neck"\)](#), reducing transport costs and time.

➤ BIMSTEC Sustainable Maritime Transport Centre (Mumbai): It will be launched under the **Indian Ocean Centre of Excellence for Sustainable Maritime Transport (IOCE-SMaT)**, which will lead efforts in policy harmonisation, green transition, and digital innovation in the maritime sector.

➤ Cruise Tourism Potential: Conclave emphasised **eco-sensitive cruise routes**, and **Public-Private Partnerships (PPPs)** led cruise terminals to position

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



the Bay of Bengal as a premier **sustainable tourism corridor**.

What is BIMSTEC?

- **About:** BIMSTEC is a regional organization established on 6th June 1997 through the **Bangkok Declaration**.
- **Purpose:** Promote economic and technical cooperation among Bay of Bengal countries.
- **Evolution:** Originally started as BIST-EC (Bangladesh, India, Sri Lanka, Thailand Economic Cooperation), the grouping became BIMST-EC after Myanmar joined in 1997. It was renamed BIMSTEC in 2004 following the inclusion of Nepal and Bhutan.
 - At the 3rd BIMSTEC Summit in 2014, the **BIMSTEC Secretariat was established in Dhaka, Bangladesh**.
- **Sectors of Cooperation:** Initially six (trade, technology, energy, transport, tourism, and fisheries). In 2008, it expanded to include agriculture, public health, counter-terrorism, environment, and climate change.
 - To improve coordination, the sectors were reorganized in 2021, with each member state taking the lead in specific areas.
 - **India leads the Security pillar in BIMSTEC**, covering counter-terrorism, transnational crime, disaster management, and energy.

Reset in

India-Maldives Relations

Why in News?

India's Prime Minister participated as the guest of honour at the 60th Independence Day celebrations of

the **Maldives**, marking a **reset in bilateral ties** between the two nations.

- This is significant as India-Maldives ties have been **strained** under the current Maldivian President due to his **India Out campaign** and **derogatory social media remarks by officials linked to his administration**.

What are the Key Outcomes of the Visit?

- **Progress on Strategic Partnership:** Both countries reviewed the progress of the **2024 Economic and Maritime Security Partnership**, and India reaffirmed its "**Neighbourhood First**" and **MAHASAGAR** policies.
- **Economic & Digital Partnership:** India highlighted that the proposed **Free Trade Agreement (FTA)** and **Bilateral Investment Treaty (BIT)** would create **new opportunities** for both nations.
 - Both countries welcomed agreements on **UPI**, **RuPay card**, and **local currency trade** to boost the digital economy and tourism.
- **Financial Support:** India extended a **USD 550 million Line of Credit (LoC)** for infrastructure, while an **Amendatory Agreement** on existing LoCs cut **Maldives' annual debt repayment by 40%**.
- **Infrastructure & Social Projects:** Both countries inaugurated **key infrastructure projects**, including roads and drainage in Addu City, **6 community development projects**, and **3,300 social housing units**.
- **Healthcare & Disaster Support:** India donated **two Aarogya Maitri Health Cubes (BHISHM)**, equipped to provide **emergency medical aid for up to 200 casualties**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses

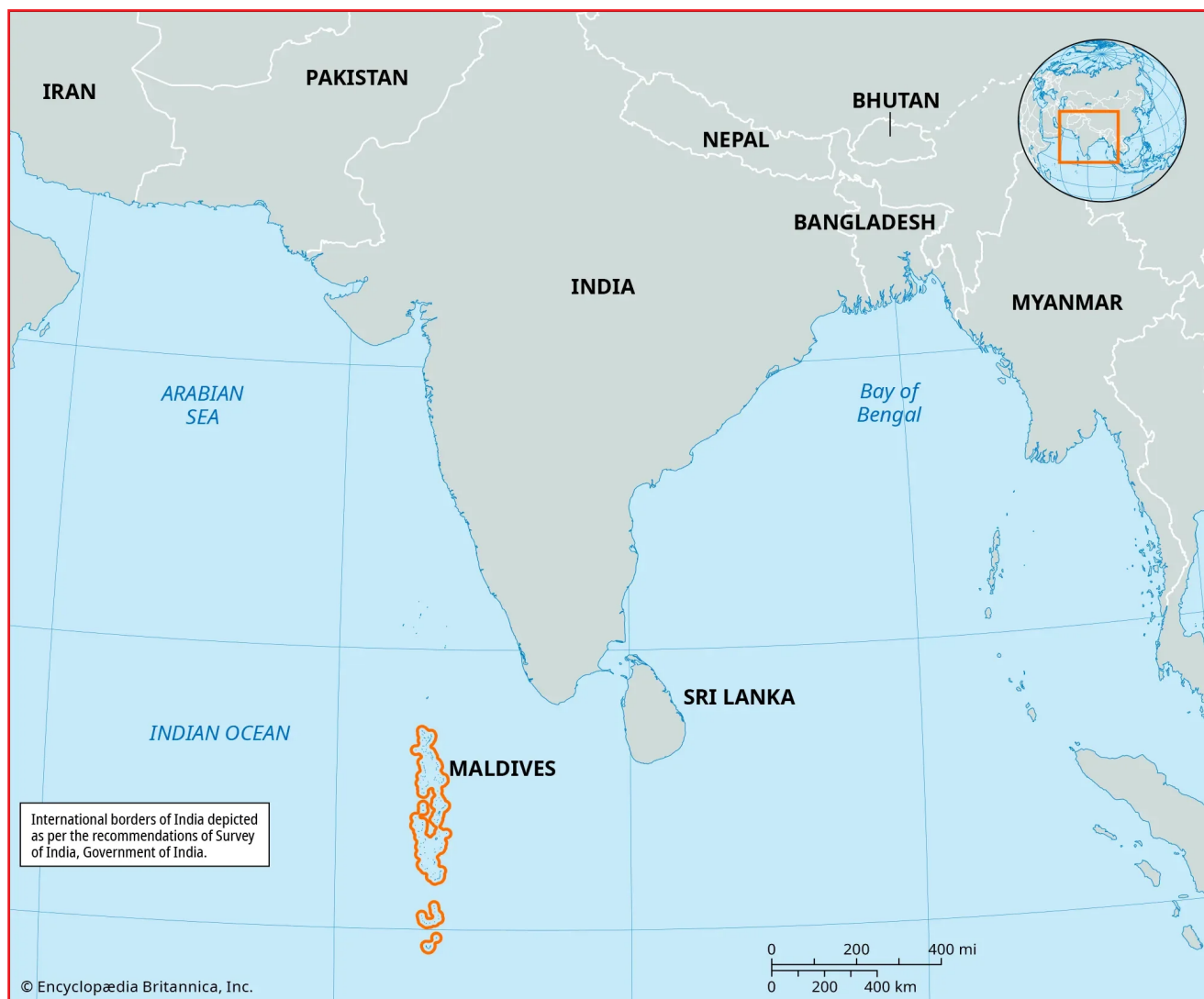


IAS Current
Affairs Module
Course



Drishti
Learning
App





What Encouraged the Maldives to Recalibrate its Ties with India?

- **Severe Economic Crisis:** The Maldives was recently grappling with a major economic downturn, with **foreign exchange reserves** falling to USD 440 million.
 - Adding to the strain, **Moody's downgraded** the country's credit rating due to the **risk of debt default**.
- **Economic Dependence on India:** The Maldives relies heavily on **Indian tourists**, a key source for its **tourism sector**. Strained ties led to a loss of around **USD 150 million**.
 - India also supplies **essential goods** like food, medicines, and construction materials to Maldives.
- **India's Strategic Role:** India has historically played a **vital role in Maldives' development and security**. Alienating India could jeopardize regional **stability and security**.
 - The Maldivian President acknowledged India as the '**First Responder**' during crises like the **2014 water crisis (Operation Neer)**, **Covid-19 pandemic**, and **Operation Cactus (1988)**, highlighting strong security and humanitarian ties.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Geopolitical Balancing with China:** The **softened stance** reflects a pragmatic effort to **balance relations with both India and China**, ensuring the Maldives can benefit from **India's support** while maintaining a **diversified foreign policy**.
- **Political Realism:** It signals a **strategic recalibration** to protect and strengthen ties with India, recognizing its **economic and geopolitical significance**.

Why is a Reset in India-Maldives Relations Crucial for Both Nations?

Significance of Maldives for India

- **Strategic Location:** Positioned along key **International Shipping Lanes (ISLs)** in the **Indian Ocean**, the Maldives plays a crucial role in facilitating **global trade and energy flow**.
 - Notably, **50% of India's external trade** and **80% of its energy imports** transit through these waters.
- **Countering China's Influence:** India considers the Maldives a **strategic ally** to help **counterbalance China's growing presence** in the Indian Ocean region and safeguard its own **security interests**.
- **Indian Ocean as India's Strategic Sphere:** India views the Indian Ocean as its **backyard**, making a **stable and cooperative maritime environment** vital to its **strategic goals**. The Maldives is a key **partner in ensuring regional maritime stability**.

India's Significance for Maldives

- **Security Cooperation:** India has a longstanding role as a **security provider**, notably through **Operation Cactus (1988)** to thwart a coup, and regular **joint exercises** like **Ekuverin**, **Dosti**, and **Ekatha** to enhance defense collaboration.
- **Tourism Contribution:** Indian tourists have emerged as the **top source market** for the Maldives accounting for **11.2% of arrivals in 2023**.
- **Education Partner:** India is the **preferred destination for Maldivian students** pursuing **higher education**, offering **scholarships** and access to prestigious institutions.
- **Climate Change Cooperation:** Given the Maldives' vulnerability to **sea-level rise** and other **climate-related risks**, it serves as a significant partner for

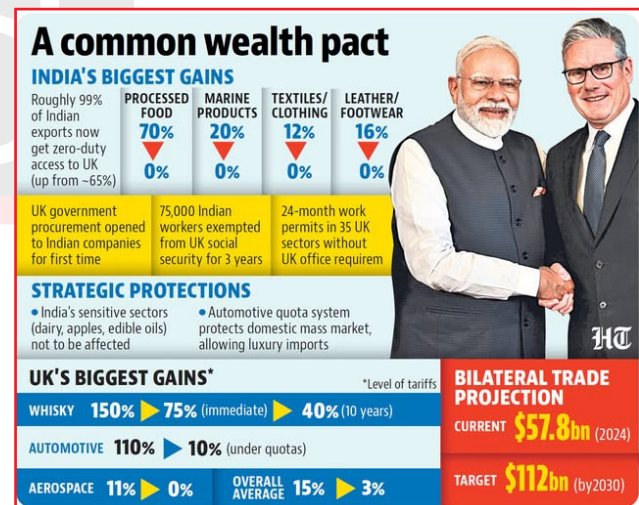
India in advancing **climate change adaptation and mitigation efforts**.

- **Disaster Relief and Humanitarian Support:** India has consistently extended **aid during emergencies**, including **tsunamis**, **drinking water shortages**, and the **Covid-19 pandemic**, reinforcing its role as a **dependable partner**.

India-UK Vision 2035 and CETA

Why in News?

The Indian Prime Minister's visit to London marked the unveiling of the **India-UK Vision 2035** roadmap and the formalisation of the **Comprehensive Economic and Trade Agreement (CETA)**, a **Free Trade Agreement (FTA)**, with the goal of pushing bilateral trade beyond **USD 100 billion by 2030**.



What are the Key Features of the India-UK Vision 2035?

- **Trade and Economic Cooperation:** The newly signed CETA is central to the Vision 2035, aiming to increase bilateral trade and create jobs.
 - The **Joint Economic and Trade Committee (JETCO)** will oversee its implementation, with plans to advance a **Bilateral Investment Treaty (BIT)**.
- **Technology and Innovation:** A major focus is the **Technology Security Initiative**, targeting

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



advancements in next-generation technologies such as **Artificial Intelligence (AI)**, **quantum computing**, telecom, and **critical minerals**.

- **Defense:** The two countries have agreed on a **10-year defence industrial roadmap, focusing on joint research and manufacturing** in areas like jet engine technology, maritime security, and directed energy weapons.
 - The UK will also rely on India for logistics in the **Indian Ocean Region** and work with India under the **Indo-Pacific Oceans' Initiative (IPOI)** to set up a **Regional Maritime Security Centre of Excellence (RMSCE)** to tackle non-traditional maritime security threats.
- **Climate and Sustainability:** India and the UK will work together to **mobilize green finance**, collaborate on **offshore wind and nuclear technologies**, and build joint supply chains in **green goods**.
 - Platforms like the **International Solar Alliance** and **Coalition for Disaster Resilient Infrastructure** will facilitate these efforts.
- **Education and Skills:** The UK will encourage the establishment of university campuses in India, and both countries will focus on **Mutual Recognition of Qualifications** and **climate-linked job creation** through a **Green Skills Partnership**.
- **Global Governance:** Reinforces commitment to multilateralism and advocating for reforms in institutions like the **United Nations, WTO, IMF**, and the World Bank.

What are the Key Highlights of the India-UK CETA?

- **Key Features:**
 - **Duty-Free Access:** India will have **99% duty-free access** to the UK market, benefiting labor-intensive sectors such as textiles, leather, marine products, electric and hybrid vehicles and auto components.
 - India to cut or eliminate duties on 90% of tariff lines, covering 92% of imports from the UK (includes cars, alcohol).

- India will eliminate tariffs on **UK electric vehicles** in the sixth year of the agreement, with no duties on EVs priced below GBP 40,000.
- **Services Sector:** Indian professionals and companies will enjoy expanded market access in IT, financial services, education, and more, with simplified visa processes for sectors like engineering, architecture, and hospitality.
- **Double Contribution Convention:** Under Double Contribution Convention, India-UK CETA will exempt Indian professionals and their employers from **UK social security contributions for three years**, improving the competitiveness of Indian talent.
- **Inclusive Growth:** The agreement will promote participation from **women, youth, Micro, Small, and Medium Enterprises (MSME)**, farmers, and innovators, encouraging access to global value chains and supporting sustainable practices.
- **Agricultural Benefits:** Indian agricultural products like processed foods, edible oils, and seafood will see tariff reductions, boosting exports to the UK.
- **Impact:**
 - **Trade Expansion:** The CETA aims to double bilateral trade by 2030, reaching nearly **USD 112 billion in goods and services combined**. The agreement is projected to increase **UK exports to India by 60% by 2040**.
 - **Job Creation:** The agreement will stimulate job creation in both countries by expanding economic activities, especially in sectors like **manufacturing, services, and agriculture**.
 - **Increased Investment:** The inclusion of provisions that benefit MSMEs, startups, and entrepreneurs will encourage **investment flows** between India and the UK.

How India-UK Relations Evolved Over Time?

- **Trade and Investments:** Bilateral trade reached **USD 21.34 billion in 2023–24**. India's exports to the UK rose by **12.6% to USD 14.5 billion in 2024–25**. Imports from the UK grew by 2.3% to USD 8.6 billion.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Technology and Innovation:** The India-UK Technology Security Initiative (TSI), launched in 2024, focuses on key emerging sectors like AI, semiconductors, and cybersecurity.
 - The UK is now **India's second-largest research partner after the US**. India-UK **"NET Zero" Innovation Virtual Centre** will focus on green hydrogen and decarbonisation.
 - The UK also named India a partner in its **International Science Partnership Fund**.
- **Defence and Security:** India and the UK have strengthened defence ties through joint exercises like **Konkan, Cobra Warrior, and Ajeya Warrior**, focusing on Indo-Pacific cooperation and defence tech.
- **Health:** India and the UK collaborated during the Covid-19 pandemic, notably with the **AstraZeneca-Serum Institute vaccine partnership**. Over 60,000 Indians work in the UK's National Health Service.
- **Indian Diaspora:** The UK is home to 1.86 million people of Indian origin, contributing significantly to science, arts, business, and politics.

What are the Key Areas of Friction Between India- UK?

- **Extradition Issues:** India accuses the UK of sheltering **fugitives** (e.g., Vijay Mallya). The UK's reluctance on extradition strains legal and diplomatic trust.
- **Russia-Ukraine War:** India's neutral stance clashes with the UK's strong support for Ukraine, causing strategic discomfort.
- **Climate Tariffs:** The UK's planned **Carbon Border Adjustment Mechanism (CBAM)** may hurt Indian exports like steel. India sees this as protectionism.
- **Khalistani Activities:** **Pro-Khalistani protests** in the UK strain ties. India wants stronger UK action against such groups.
- **Intellectual Property Rights:** UK's push for strict IP protection clashes with India's need for affordable medicines and flexible innovation rules.

ICJ's Advisory on State Duties for Climate Action

Why in News?

The International Court of Justice (ICJ) issued a landmark **advisory opinion** stating that **countries can be held legally responsible** for their role in driving climate change.

- Earlier in 2021, Vanuatu sought an **ICJ advisory opinion on climate change**, which gained backing from other **UN member states** in March 2023.

What is the ICJ's Stance on State Obligations on Climate Change?

- **Climate Action is a Legal Duty:** States are obligated under international law to reduce greenhouse gas emissions and adapt to climate change.
 - Obligations come not just from the UN Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Agreement (limit global warming to 1.5°C above pre-industrial levels) but also from other environmental treaties like the Montreal Protocol, Convention on Biological Diversity, UN Convention to Combat Desertification and Law of the Seas.
 - Obligations are not just for the present but also for protecting the rights and environment of future generations.
- **Failure is a Wrongful Act:** The ICJ affirmed that all countries, regardless of size or development, have climate obligations.
 - Failure to act is an **"internationally wrongful act"** and may lead to liability, including halting harmful actions, preventing repeats, and compensating affected nations.
 - This bolsters global calls for climate reparations and **"loss and damage" funding**.
- **Role of Developed Countries:** Developed nations (especially those listed in **Annex I of the UNFCCC**) must take the lead in reducing emissions and supporting others.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- ICJ noted that protecting the climate is part of fulfilling international **human rights obligations**.
- **Significance:** The **ICJ opinion**, though not legally binding, is expected to have huge influence at the **30th session of the Conference of the Parties (COP 30) in Brazil** and influence **future climate lawsuits**.
- It boosts the push for **stronger climate action**, especially from **historically high-emitting countries**, and marks a key moment in climate justice by supporting legal accountability.

What is the International Court of Justice (ICJ)?

- **About:** The ICJ, established in 1945 and active since 1946, is the **UN's principal judicial body**.
- It settles legal disputes **between states and provides advisory opinions on international law**.
- Based in **The Hague, Netherlands** it's the only UN organ outside New York. Its official languages are English and French.
- The ICJ settles disputes only between states and gives legal opinions, not criminal verdicts.
- Its judgments are final and binding, with no appeal. Under Article 94 of the UN Charter, UN members must comply. **Advisory opinions are non-binding**.

- **Historical Background:** The ICJ evolved from global efforts for peaceful dispute resolution, starting with the **1899 Hague Peace Conference**, which created the **Permanent Court of Arbitration**, followed by the **Permanent Court of International Justice (PCIJ)** under League of Nations (1922). After World War II, the ICJ replaced the PCIJ.
- **Composition:** The court has 15 judges elected for nine-year terms by the UN General Assembly and Security Council.
- **Significance:** It promotes peaceful conflict resolution, upholds international law, clarifies global legal norms (e.g. climate change, self-determination), supports human rights, and strengthens multilateral cooperation.
- **India's Engagement With ICJ:**
 - **Right of Passage over Indian Territory (Portugal v. India, 1960):** Portugal was granted the right of passage for civilians but India could block military or political access, affirming its sovereignty..
 - **Kulbhushan Jadhav Case (India v. Pakistan, 2019):** ICJ ruled Pakistan violated the **Vienna Convention** by denying India consular access and ordered review of its sentence.

Note: The ICJ is separate from the **International Criminal Court (ICC)**, which deals with criminal cases against individuals.

Differences between the ICJ and the ICC

The International Court of Justice (ICJ) and the International Criminal Court (ICC) are two courts with different functions within the international legal system.

	 ICJ International Court of Justice	 ICC International Criminal Court
Established	1945	2002
UN-relationship	Highest court of the UN	Not part of the UN
Location	The Hague, the Netherlands	The Hague, the Netherlands
Jurisdiction	UN member-states	Individuals
Types of cases	Legal disputes between states and requests for advisory opinions on legal questions	Prosecutes individuals for the most serious crimes as per the Rome Statute
Appeals	No	Yes
Enforcement power	None - relies on the UN Security Council to uphold judgements, with permanent members having veto power	None - relies on cooperation from member states to enforce its decisions

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



US to Quit UNESCO

Why in News?

The **United States** announced its decision to **withdraw** from the **United Nations Educational, Scientific and Cultural Organization (UNESCO)**, just **two** years after rejoining in 2023, citing alleged bias against Israel.

What are Key Facts Regarding UNESCO?

- **About:** UNESCO is a specialized agency of the **United Nations (UN)** that promotes **peace** through international cooperation in education, science, and culture.
 - Headquartered in **Paris**, it has **194 Member States** and **12 Associate Members**.
- **History:** UNESCO was founded on **16th November 1945**, and its first General Conference was held in **Paris** between **November and December 1946**.
 - **India** is a founding member of the organization.
- **Role and Mandate:**
 - Ensure **inclusive, equitable, and lifelong learning** opportunities for all (aligned with **SDG 4**).
 - Protect **tangible and intangible cultural heritage** (**World Heritage List**).
 - Promote **scientific research, sustainable development**, and use of science for peace and humanity.
 - Enhance **mutual understanding** and tolerance.

What is the History of US Quitting UNESCO?

- **US Quitting UNESCO:** This is the third time that the United States has left UNESCO, and the second time during a Trump administration.
- **Timeline of Exits and Reentries:**
 - **First Exit (1984, Reagan Administration):** The **US** withdrew from UNESCO, citing **mismanagement, corruption**, and alignment with **Soviet** interests during the **Cold War**.
 - **Second Exit (2017, Trump's First Term):** The **US** exited UNESCO, citing **anti-Israel bias**, especially

after the agency voted to include **Palestine** as a member state in 2011.

- **Third Exit (2025, Trump's Second Term):** President **Trump** announced a **second withdrawal** from UNESCO by **December 2026**, following rejoining under the **Biden** administration in 2023.

What can be the Potential Impact of US Withdrawal from UNESCO?

- **Global Impact:**
 - **Financial Crunch:** **US** exit creates a significant **budget gap**, threatening **education, heritage**, and **climate research** programs.
 - E.g. The **US** and **Israel** halted **UNESCO** funding after its **2011** decision to include **Palestine** as a member state.
 - **Geopolitical Power Shift:** **China** may dominate **UNESCO's** agenda, promoting **pro-China** narratives.
 - **Setback to Science & Education:** **US** absence reduces support for **AI ethics, climate science**, and **girls' education** programs globally e.g. hampering UNESCO's **STEM Clinics** organised to familiarize girls with **STEM education**.
 - **Crisis in Multilateralism:** The **US'** unpredictable disengagements disrupt global cooperation, weakening multilateral institutions and leaving developing countries **frustrated by inconsistent international support and policies**.
- **Impact on India:**
 - **Opportunities:** India can **expand its diplomatic influence** in UNESCO by shaping global agendas on **culture, education, and AI ethics**.
 - It can also **project soft power**, promote **South-South cooperation**, and advocate for more **Indian sites** on the **World Heritage List**.
 - **Challenges:** **Funding cuts** may impact key Indian projects at sites like **Nalanda** and **Sundarbans**, while **education programs** face shortfalls.
 - Rising **Chinese influence** in UNESCO and pressure to **increase contributions** could strain India's **resources** and **geopolitical balance**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



India's Concerns on Western Sanctions on Russian Oil

Why in News?

India has sharply criticised the **proposed US Russian Sanctions Act, 2025**, which threatens **500% tariffs** on countries importing Russian oil and energy products.

- The move comes alongside strong pressure from **North Atlantic Treaty Organization (NATO)** which advised India, China, and Brazil to stop buying Russian oil or face 100% secondary sanctions.
- India accused the **West of "double standards"**, noting Europe still buys Russian energy while pressuring others to stop.

What are Secondary Sanctions?

- **About:** Secondary sanctions are a type of **economic penalty** that don't directly target the country or entity violating international norms, but instead punish **third parties**, usually other countries, companies, or individuals that continue doing business with the primary sanctions target.
 - The goal is to **isolate the primary target more completely** by discouraging others from engaging with them, even if those third parties aren't violating any international laws themselves.
- **Key Features:** They **reinforce primary sanctions** by closing off loopholes and discouraging workarounds.

- Secondary sanctions can impose 100% tariffs, block financial access, and restrict trade even on foreign entities not tied to the sanctioning country.

- **Concerns Regarding Secondary Sanctions:** They often **extend the reach of one country's laws into the affairs of others** which many see as a form of economic coercion.

- Secondary sanctions can **strain diplomatic ties**, especially if the targeted third party is an ally.

How Significant is Russian Oil to India?

- **Strategic Cushioning Amid Global Turbulence:** Russian oil, sold at a discount since Western sanctions following the **Russia-Ukraine war, 2022**, has helped India **manage inflation**, **stabilize its current account deficit**, and reduce fuel subsidies.
 - By importing discounted crude from Russia, India has saved around **USD 13 billion (2022-2024)**.
- **Rising Dependence post-2022:** In FY22, Russia accounted for only **2.1% of India's oil imports**. By FY25, this jumped to 35.1%, making Russia the top supplier, ahead of **West Asian sources (Qatar, UAE)**.
 - In 2024, India imported nearly **1.9 million barrels/day** from Russia, compared to just **0.1 mb/d in 2021**.

Country-Wise Share in Value of India's Oil Imports

From just about 2% to 35%, Russia's share in India's oil imports has grown significantly!

Year/Country	2021-22	2022-23	2023-24	2024-25	Change in share (FY25 minus FY22)
Russia	2.10%	19.10%	33.40%	35.10%	33.00%
Iraq	24.50%	20.70%	20.70%	19.10%	-5.40%
Saudi	18.30%	17.90%	15.60%	14.00%	-4.30%
UAE	10.00%	10.40%	6.40%	9.70%	-0.30%
Kuwait	6.10%	4.90%	3.10%	2.80%	-3.30%
US	8.90%	6.30%	3.60%	4.60%	-4.30%
Mexico	3.00%	1.80%	1.30%	1.10%	-1.90%
Colombia	1.60%	1.00%	1.40%	1.30%	-0.30%
Malaysia	0.90%	0.80%	2.00%	0.50%	-0.40%
Nigeria	7.60%	3.70%	2.40%	2.20%	-5.40%
Iran	0.00%	0.00%	0.00%	0.00%	0.00%
Venezuela	0.00%	0.00%	0.60%	1.00%	1.00%
Others	17.00%	13.40%	9.50%	8.60%	-8.40%

TOI Source: EY

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Why is India Opposing the Russian Sanctions Act and NATO's Tariff Threats?

- **Energy Security:** India imports over **85%** of its oil needs, and Russian crude has been a key source since 2022.
 - Excluding **Russia, which supplies 10% of global oil**, could raise prices to **USD 130 per barrel**, causing spikes and hurting consumers.
- **Double Standards by the West:** India points out that many **European countries still buy Russian energy**, often through third countries. The **EU imported 18%** of its natural gas from Russia in 2024.
 - India argues that the same standards are not applied to the West, questioning the legitimacy and fairness of US and NATO sanctions.
- **Threat to Trade Sovereignty:** The proposed 100%–500% tariffs would hit all Indian exports to the US, putting its **USD 41 billion trade surplus (2024-25)** at risk, especially in IT, textiles, and pharma.
 - Earlier, in 2019, India had halted Iranian oil imports under similar US secondary sanctions, highlighting the pressure on its economic sovereignty.
- **Negotiation Strategy:** India views the sanctions threat as a pressure tactic, and is engaging with the US to voice its concerns and seek waivers or exemptions from proposed tariffs.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Social Issues

Highlights

- *State of Food Security and Nutrition in the World 2025*
- *Ending Manual Scavenging*
- *Denial of Basic Prison Care to Disabled Violates Fundamental Rights: SC*
- *Dowry Deaths in India*

State of Food Security and Nutrition in the World 2025

Why in News?

The **State of Food Security and Nutrition in the World (SOFI) 2025 report**, shows global hunger dipped to 673 million, but India still has the highest number of **wasted children** under five.

Note: SOFI is jointly produced by **Food and Agriculture Organization (FAO)**, the **International Fund for Agricultural Development (IFAD)**, the **United Nations International Children's Emergency Fund (UNICEF)**, the **UN World Food Programme (WFP)**, and the **World Health Organization (WHO)**.

What is the Current State of Global Hunger and Food Insecurity as Highlighted in SOFI 2025?

Global

- **Hunger Trends:** In 2024, **8.2% of the world population (673 million)** experienced hunger, down from 8.5% in 2023. Hunger remains above **pre-Covid-19 levels**, indicating incomplete recovery.
 - By 2030, around **512 million people may remain chronically undernourished**, with nearly 60% in Africa. Achieving **SDG 2 (Zero Hunger)** will need major shifts in policy, funding, and food systems.
- **Food Insecurity:** Globally, 2.3 billion people are moderately or severely food insecure, representing a significant portion of the world's population.
 - **The pandemic and the Ukraine war** worsened global **food price inflation**, pushing up the cost of

a healthy diet through 2023 and 2024. Yet, the number of people unable to afford such a diet fell from **2.76 billion in 2019 to 2.60 billion in 2024**.

- **Regional Breakdown:** Asia accounted for the **highest number of undernourished people** at 323 million, followed by Africa (307 million) and Latin America and the Caribbean (34 million).

India's Nutritional Paradox

- **Undernourishment and Diet Affordability:** About **12% of India's population is undernourished** (172 million people). While this is an improvement from **243 million in 2006**, India still ranks **48th globally and 7th highest** in Asia for undernourishment.
 - In India, 42.9% of people cannot afford a healthy diet, as food costs rose from USD 2.77 (2017) to USD 4.07 (2024) in **Purchasing Power Parity (PPP) terms**.
- **Double Burden of Malnutrition:** **Overweight children** increased from **2.7 million (2012) to 4.2 million (2024)**.
 - Adult obesity rose from **33.6 million to 71.4 million**, highlighting **rising overnutrition alongside undernutrition**.
- **Child Wasting and Stunting:** India has the **world's highest child wasting rate (18.7%)** with over **21 million children**.
 - **37.4 million children** under five are stunted, showing chronic undernutrition.
- **Anaemia in Women:** Over 53.7% of women aged 15–49 in India suffer from anaemia (203 million in total). India ranks **4th globally** in anemia prevalence, behind Gabon, Mali, and Mauritania.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Malnutrition in Children

Indicator	Definition	Consequences and Implications
Stunting	Height-for-age < -2 Standard Deviation (SD) of the WHO Child Growth Standards median.	Delayed mental development and poor school performance.
Wasting	Weight-for-height < -2 SD of the WHO Child Growth Standards median.	Impairs the immune system , leading to increased severity and duration of diseases. It is an urgent sign of severe malnutrition .
Overweight	Weight-for-height > +2 SD of the WHO Child Growth Standards median.	Increased risk of non-communicable diseases (NCDs) like cardiovascular diseases, diabetes, musculoskeletal disorders (osteoporosis), and certain cancers (endometrial, breast, colon).
Underweight	Weight-for-age < -2 SD of the WHO Child Growth Standards median.	Children who are severely underweight are at greater risk of death . ➤ Impaired growth and development and delayed cognitive abilities.

What are the Causes of India's Nutrition Paradox?

- **Persistent Poverty and Inequality:** Malnutrition and food insecurity remain **concentrated among socio-economically marginalized** communities, especially in rural and tribal areas.
- **Inadequate Dietary Diversity:** Lack of access to fruits, vegetables, and protein-rich foods despite calorie sufficiency leads to **hidden hunger** (micronutrient deficiency).
- **High Food Prices:** **Inflation** in nutrient-dense foods (e.g., milk, pulses, fruits) makes healthy diets **financially inaccessible** for a large population.
- **Health Service Gaps:** **Antenatal care, anaemia screening, and nutrition counselling** remain inadequate across primary health systems.
- **Nutrition Transition:** Urbanization and income growth have increased consumption of **processed foods**, resulting in higher rates of **childhood and adult obesity**.

India's Schemes Related to Food and Nutritional Security

- **Public Distribution System (PDS):** As of 2025, India's PDS covers over 80 crore people with 99.6% **Fair Price Shops (FPSs)** automation ensuring transparent foodgrain delivery.

- **PM POSHAN:** Provides mid-day meals to school children, it aims to improve nutrition and boost school attendance.
- **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY):** Offers 5 kg of free foodgrains per month to 81.35 crore people as of 2025, it is extended till 2029 to ensure nationwide food security.
- **POSHAN Abhiyaan:** Targets malnutrition in women, children, and adolescents with over 10 crore beneficiaries by 2024.
- **PM Formalization of Micro Food Processing Enterprises Scheme (PMFME):** Supports micro food enterprises. Over 54,000 units set up and 1.88 lakh jobs created by 2023-24.
- **Price Stabilization Efforts:** Buffer stocks and subsidized Bharat food products keep essentials like onions, atta, dal, and rice affordable.

Ending Manual Scavenging

Why in News?

A Ministry of Social Justice study analyzed **54 hazardous cleaning deaths** linked to **manual scavenging** (out of 150 nationwide) across **8 States/UTs** during **2022–2023**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Findings of the Study?

- **Lack of Safety Gear:** In 90% of cases (49 out of 54), no safety equipment was provided. The rest had minimal protection—gloves in 5 cases and gloves with gumboots in 1.
 - Most deaths occurred in the absence of mechanized equipment such as suction pumps or robotic cleaners.
- **Institutional Negligence:** In most cases, agencies lacked equipment readiness, and awareness drives were either absent or incomplete, even in places where they were conducted.
- **No Informed Consent:** Many workers entered sewers without consent, and even when written consent was taken, they were not informed of associated risks.
- **Exploitative Hiring Practices:** Most workers were hired informally on individual contracts, with only a few as direct government or outsourced PSU employees.

What is Manual Scavenging and the Legal Framework Addressing It?

- **About:** Manual scavenging refers to the practice of manually handling or cleaning human excreta, often from insanitary toilets, open drains, pits, or railway tracks.
- **Current Status:** According to the government, manual scavenging has officially ended, and the current challenge lies in addressing the issue of hazardous cleaning of sewers and septic tanks.
 - The **NAMASTE scheme** has identified 84,902 sewer and septic tank workers across 36 States and Union Territories in India.
- **Violation of Fundamental Rights:** Manual scavenging violates fundamental rights, particularly **Article 17** (abolition of untouchability) and **Article 21** (right to life with dignity).
- **Legal Framework:**
 - **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR):** India banned it under the **PEMSR Act, 2013**, which prohibits any individual from manually handling human excreta in any form until its final disposal.

- The Act identifies manual scavenging as a dehumanizing practice.

- **SC/ST (Prevention of Atrocities) Act, 1989:** It criminalizes the employment of Scheduled Castes in manual scavenging.
- **Supreme Court (SC) Guidelines:** In ***Dr. Balram Singh v. Union of India (2023)***, the SC directed the Union and State governments to eliminate manual scavenging and hazardous cleaning across the country. SC guidelines included:
 - **Rehabilitation:** Rs 30 lakh for deaths, Rs 10–20 lakh for disabilities, plus jobs for kin and education for dependents.
 - **Accountability:** Penalties and contract cancellations for negligence.
 - **NALSA:** To oversee compensation disbursement and create standard models.
 - **Transparency:** Launch of a portal to track deaths, compensation, and rehabilitation.

What are the Key Challenges Faced by Manual Scavengers?

- **Health Risks:** Exposure to human waste and toxic gases like hydrogen sulphide makes manual scavengers vulnerable to **Hepatitis, Tetanus, Cholera**, and **asphyxiation**.
- **Social Stigma:** Seen as untouchables, they face caste-based discrimination, reinforcing social exclusion and the caste system.
- **Economic Challenges:** Paid below **minimum wage**, often on contractual/daily-wage basis, with no job security or social protection, trapping them in poverty.
- **Double Discrimination:** Women face gender-based exploitation, including sexual harassment, abuse, and economic inequality.
- **Psychological Issues:** Social stigma and poor work conditions cause anxiety, depression, and low self-esteem.
- **Substance Abuse:** Many turn to drug use to cope with stress, humiliation, and physical hardship, worsening their health.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



India's Initiatives to Curb Manual Scavenging

- **NAMASTE (National Action for Mechanised Sanitation Ecosystem)**
- **Safaimitra Suraksha Challenge**
- **Swachhta Abhiyan App**
- **National Commission for Safai Karamchari**
- **Technological Initiatives:**
 - **Bandicoot Robot:** Remotely or autonomously cleans and unclogs sewer lines.
 - **Endobot & Swasth AI:** Detect and prevent pipeline issues like contamination and overflows.
 - **Vacuum Trucks:** Remove sewage using powerful suction, avoiding manual entry.

Denial of Basic Prison Care to Disabled Violates Fundamental Rights: SC

Why in News?

The **Supreme Court (SC)** of India, in *L Muruganantham vs. State of Tamil Nadu Case (2025)*, ruled that **denying prisoners with disabilities essential facilities in prisons violates their fundamental rights**.

- It also emphasised **reforms** to align with the **Rights of Persons with Disabilities Act, 2016 (RPwD Act)**, to ensure **dignity and care** for disabled inmates in prisons.

How do Structural Barriers Exacerbate the Marginalization of Disabled Inmates?

- **Institutional Inaccessibility:** Most prison facilities are **structurally inaccessible** to individuals with **mobility, sensory, or cognitive impairments**.
 - The absence of **trained caregivers or proper custodial policies** has led to denial of daily care—such as **assistance with bathing, eating, and dressing**—further exacerbating the suffering of disabled prisoners.
 - **Social exclusion faced in free society** is intensified in custody due to **bureaucratic apathy and lack of institutional sensitivity**.

- The Court emphasized that such inaccessibility violates prisoners' fundamental rights, including their dignity under **Article 21 of the Indian Constitution**.

- **Procedural Discrimination:** Lack of **interpreters, sign language facilitators, and accessible formats** in trial proceedings deny fair hearing.
 - Absence of assistive technologies, caregivers, or communication aids was deemed as **"indirect discrimination."**
- **Neglect of Therapeutic Needs:** Absence of dedicated **physiotherapy, psychotherapy, or psychiatric care** facilities in jails leads to avoidable deterioration of health.
- **Data Gaps:** NCRB does not record **disability status of prisoners**, hampering policy design and targeted intervention.
- **Violation of RPwD Act, 2016:** The SC's judgment highlights breaches of **Sections 6, 25, and 38** of the **Rights of Persons with Disabilities (RPwD) Act, 2016**, which **mandate accessible infrastructure and reasonable accommodations** in institutions, including prisons.
 - The Court criticized **prison manuals as outdated and not compliant with RPwD Act, 2016** or prior judicial pronouncements.

What are the Constitutional and Legal Rights of PWDs in Custodial Settings?

- **Fundamental Rights Violations:** Article 14 (Equality before law) and Article 21 (Right to life and personal liberty) are directly infringed when basic care is denied.
 - The Court affirmed that incarceration does not justify the denial of dignity, humane treatment, or necessary accommodations.
- **RPwD Act, 2016 Provisions:**
 - **Section 6:** Protection and safety in situations of risk, including custodial settings.
 - **Section 25:** Access to healthcare, including preventive and rehabilitative services.
 - **Section 38:** Mandates equal opportunity in all public services including law enforcement and justice systems.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **International Commitments:** Article 15 of the United Nations Convention on Rights of Persons with Disabilities (UNCRPD), to which India is a signatory, prohibits any cruel, inhuman, or degrading treatment of disabled persons in detention.

Rights of Persons with Disabilities Act, 2016

- **About:** The RPwD Act, 2016 was enacted to implement the [UN Convention on the Rights of Persons with Disabilities](#), which India ratified in 2007.
 - It replaced the earlier **Persons with Disabilities (Equal Opportunity, Protection of Rights and Full Participation) Act, 1995**.
 - According to Census 2011, there are **2.68 crore persons with disabilities** in India which constitute **2.21% of the total population**.
- **Key Features:**
 - **Expanded Definition of Disability:** The types of disabilities have been **increased** from existing **7 to 21** in which for the first time **Acid Attack Victims, Blood diseases like Haemophilia & Sickle Cell Anemia** among others have been included.
 - **Rights and Entitlements:** Appropriate governments are responsible for ensuring **equal rights** for persons with disabilities.
 - It also provides **additional benefits** for individuals with **benchmark disabilities** and those requiring **high support**, including a **minimum 5% reservation in higher education, 4% in government jobs, and 5% in land allotment**.
 - **Mandates for Public Buildings:** The **Rights of Persons with Disabilities Rules, 2017** require the **central government** to set **accessibility standards** for persons with disabilities across **public buildings, transport, and ICT infrastructure**.

What are the SC's Key Directives for Making Prisons Disabled-Friendly?

- **Identification of Prisoners with Disabilities:** Prison authorities must promptly **identify prisoners with disabilities** at admission, allowing them to **declare their condition and specific needs**.

- **Universal Accessibility:** Rules and essential prison information must be provided in accessible formats like **Braille, large print, sign language, or simplified language**, ensuring universal accessibility.
 - Prisons must have **wheelchair-friendly spaces, accessible toilets, and ramps** to ensure **universal accessibility**.
- **Therapeutic Facilities:** All prisons must have **dedicated spaces** for **physiotherapy, psychotherapy, and other essential therapeutic services**.
- **Access Audit:** A **State-level access audit** of all prisons in **Tamil Nadu** must be completed within **six months** by an **expert committee** including officials from the **Social Welfare Department, the Department for the Welfare of Differently Abled Persons, and certified access auditors**.
- **Training and Sensitization of Prison Officials:** Prison staff should undergo **training and sensitization** on the **needs of prisoners with disabilities** to promote a **compassionate and informed approach**.

Dowry Deaths in India

Why in News?

A surge in **dowry-related deaths** across states like Uttar Pradesh, Chandigarh, and Tamil Nadu shows the persistent grip of this illegal practice. Women continue to face harassment, assault, and suicide over dowry, while investigations drag on and convictions remain rare.

Dowry Death and Cruelty

- **Dowry Death:** According to the Section 80 of [Bharatiya Nyaya Sanhita \(BNS\)](#) A woman's **death by burns, injury, or in unnatural circumstances within 7 years of marriage** is considered dowry death if she faced cruelty or harassment over dowry soon before her death.
 - **Punishment:** Minimum 7 years imprisonment, extendable to life.
- **Cruelty:** Under Section 86 of the BNS, cruelty is defined as any willful conduct likely to **drive a woman to commit suicide or cause serious harm to her physical or mental health**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It also includes harassment intended to force her or her family to meet **unlawful demands for money or property**, or harassment due to their failure to meet such demands.

What are the Reasons for the Persistence of Dowry-related Deaths in India?

- **Cultural Entitlement and Deep-rooted Traditions:** Dowry, though illegal since 1961 under the **Dowry Prohibition Act**, continues to be treated as a social practice.
 - Many families still see it as an essential part of marriage, **often disguised as “gifts.”** In some sections of society, **a girl’s worth is judged not by the life she builds, but by the dowry she brings.**
 - Cultural and societal pressures push families to meet rising dowry demands, which often leads to harassment, abuse, and even deaths.
- **Extent of the Dowry Problem in India:** Between 2017 and 2022, India saw an average of 7,000 dowry deaths annually, based on reports from the **National Crime Records Bureau (NCRB)**.
 - The NCRB data is conservative, as many dowry deaths go unreported, underscoring the extent of the issue.
 - A **World Bank** study covering 40,000 marriages in rural India from 1960 to 2008 revealed that dowry was paid in **95% of marriages**. This shows how deep-rooted the practice remains.
- **Gender Discrimination and Patriarchal Practices:** Dowry is often used to **assert control over women**, who are perceived as a burden upon marriage. The demands from husbands and in-laws for additional dowries are rooted in patriarchal attitudes that value women as commodities.
- **Normalizing Abuse:** Laws like Section 80 and 85 of the **Bharatiya Nyaya Sanhita, 2023** make dowry-related deaths and harassment criminal offenses. Yet, the practice of dowry has **normalized abuse in many households**. Such violence often goes unreported, dismissed as a **private family matter**.
 - Between 2017 and 2022, dowry was the main motive in **over 6,100 murders across India**.

- Over 60% occurred in **West Bengal, Odisha, and Bihar**. Together with Jharkhand, Uttar Pradesh, Madhya Pradesh, Rajasthan, and Haryana, these States accounted for 80% of all dowry death cases during this period.
- This lack of awareness and ineffective implementation of laws makes it **harder for women to break free from abusive relationships**.
- **Role of Economic Factors:** Rising economic pressures contribute to the demand for higher dowries. The growing **consumerism, social media influence, and the desire for a ‘grand wedding’** create an environment conducive to dowry expectations.

Judicial Interventions

- **Sanjay Kumar Jain v. State of Delhi (2011):** The Supreme Court condemned the dowry system as a curse on Indian society and called for strong efforts to eliminate the rising menace of dowry deaths.
- **K. Prema S. Rao v. Yadla Srinivasa Rao (2003):** The Supreme Court stressed that stricter laws would only be effective if implemented seriously. It urged courts and enforcement agencies to act firmly to meet the intent of anti-dowry legislation.
- **Satvir Singh & Ors v. State of Punjab (1998):** The Punjab & Haryana High Court called dowry a stigma and social evil, stressing the urgent need for a shift in societal thinking and stronger laws to prevent dowry-related deaths.
- **S. Gopal Reddy v. State of Andhra Pradesh (1996):** The Supreme Court emphasized that the Dowry Prohibition Act targets both receiving and demanding dowry. Dowry, as a **quid pro quo for marriage, is illegal and reflects deep-rooted gender bias**.

What are the Key Legal and Judicial Challenges in Dowry-related Cases in India?

- **Inadequate Investigation and Slow Response:** Only around 4,500 out of 7,000 dowry deaths reported each year lead to charge sheets.
 - The rest remain stuck due to investigations being **delayed, mishandled, or disposed** of due to lack of evidence or false complaints.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- More than **67% of dowry deaths in 2022** had investigations **pending for over six months**, indicating systemic delays.
- **Judicial Bottlenecks:** Even after charge sheets are filed, over **90% of cases face delays in courts**. With limited convictions (around 100 annually), cases often remain unresolved for years, leading to a sense of impunity among perpetrators.
- **Lack of Coordination Between Police and Judiciary:** Police often try to “resolve” dowry complaints through **mediation**, especially in small towns or villages.
 - Additionally, the slow pace of charge sheet filing (70% after two months or more) and delays in court proceedings create a system where justice is not only delayed but sometimes denied.
- **Underreporting and Victim-Blaming:** Many dowry-related deaths go unreported due to **fear of stigma, lack of legal awareness**, and pressure from both society and family.
 - Many women **fear being disowned**, and victims’ families often hesitate to pursue justice in close-knit communities.

Chart 1: The share of dowry death cases pending investigation by the end of 2022, by duration

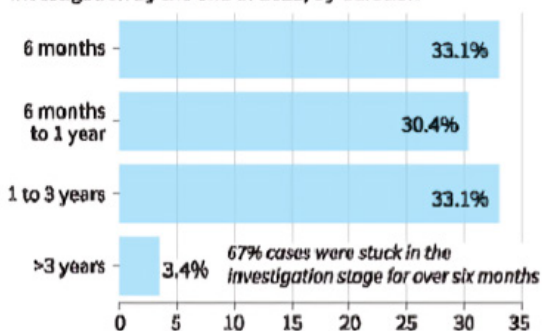


Chart 2: The time taken to file charge-sheets for the share of dowry death cases for which charge-sheets were filed in 2022

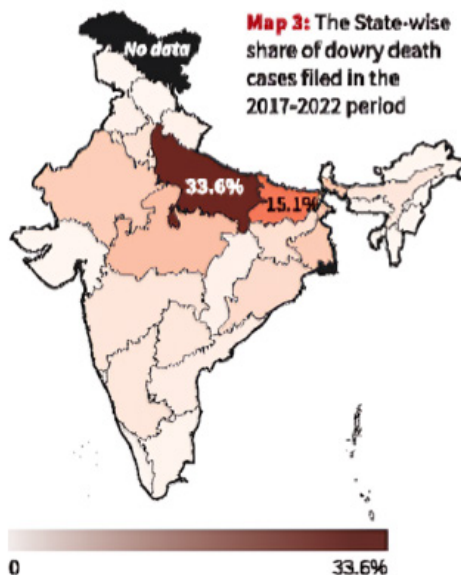
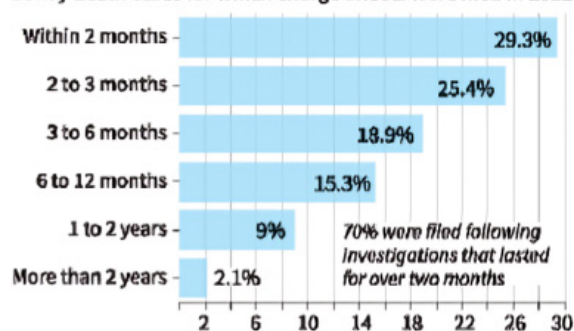
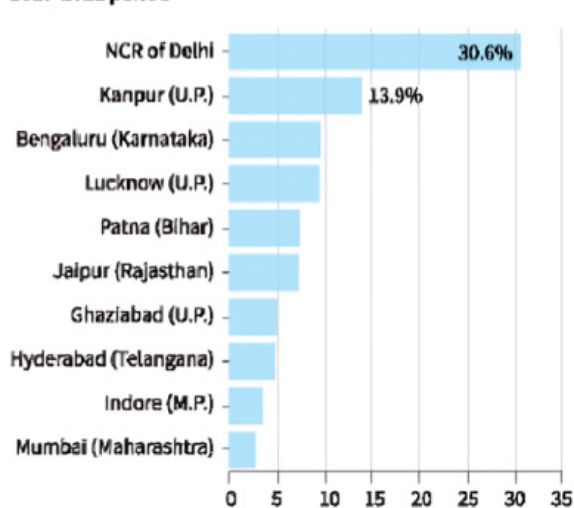


Chart 4: The city-wise share of dowry death cases filed in the 2017-2022 period



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Science & Technology

Highlights

- NISAR Satellite
- Indian Railways Tests First Hydrogen-Powered Coach
- Advancing India's Nuclear Energy Generation
- Black Hole Merger
- Deepfakes

NISAR Satellite

Why in News?

The **National Aeronautics and Space Administration (NASA) - Indian Space Research Organisation (ISRO) Synthetic Aperture Radar (NISAR)** satellite, an Earth observation mission, was launched by **ISRO** from Sriharikota.

Watching from above

NISAR, which has a mission life of five years, will observe Earth with a swathe of **242 km** and high spatial resolution



Key applications include:

Shoreline monitoring, storm characterisation, mapping of surface water resources, and disaster response

1 It is the first major earth-observing satellite with radars of two frequencies

2 The radars will allow NISAR to monitor both surface and subsurface changes through clouds, smoke, vegetation

■ Its scan-on-receive method will give a spatial resolution of

3-10 metres and centimetre-scale vertical mapping



Giant leap: ISRO's GSLV-F16 carrying the NISAR satellite lifts off from Sriharikota on Wednesday. AP

What are the Key Facts About NISAR Satellite?

- **About:** NISAR, jointly developed by ISRO and NASA, is the **first satellite mission to use dual-frequency radar** (L-band and S-band) from a single platform, with advanced **microwave imaging capabilities** including polarimetric and interferometric data.
- **Technical Features:**
 - **Dual-band Synthetic Aperture Radar (SAR):**
 - **L-band SAR** (by NASA): Penetrates forest canopy, ice, and soil, useful for biomass and deformation studies.
 - **S-band SAR** (by ISRO): Better for monitoring crops, wetlands, and other surface-level features.
 - **Launch Vehicle: Geosynchronous Satellite Launch Vehicle Mark II (GSLV Mk II) (specifically the GSLV-F16 variant)**, India's largest rocket, is an expendable three-stage launch vehicle.
 - The NISAR mission marks the **first time ISRO is using a GSLV** to place a satellite in **sun-synchronous polar orbit**.
 - **Mission Life:** 5 Years.
 - **Phases:** The mission includes **four phases**- launch, deployment, commissioning, and science operations.
 - The deployment phase extends a **12-meter** antenna **9 meters** from the satellite, with commissioning in the first 90 days, followed by science operations for the rest of the mission.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



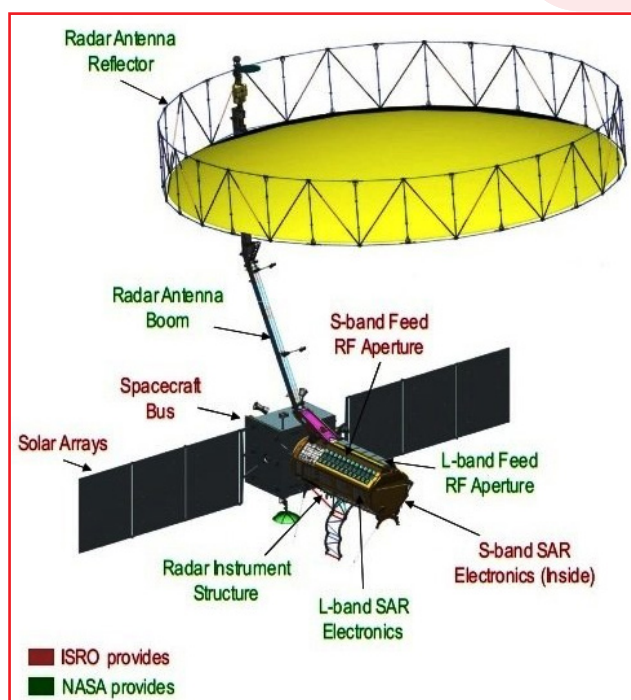
IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Mission Objectives and Coverage:** The NISAR mission will provide **high-resolution data every 12 days** to monitor land changes across Earth.
 - It will track ground deformation caused by **earthquakes, landslides, and volcanic activity**.
 - Measure forest biomass and carbon stock by observing woody vegetation.
 - It monitors agricultural patterns such as crop extent and growth cycles, and assesses changes in wetlands driven by seasonal and climatic variations.
 - Study cryosphere dynamics, including glacier and sea ice melt in the Arctic and Antarctic regions.
- **Significance for India:** NISAR marks as a key step in **Indo-US space ties**, the launch reflects India's rise as a global science partner or '**Vishwa Bandhu**'.
 - It supports **disaster management, agriculture, and climate monitoring**.
 - Furthermore, **India** has joined the **Artemis Accords** and collaborated with NASA on **human spaceflight**, marking a deeper partnership in space exploration.



What is a Radar Band?

- **About:** Electromagnetic radiation with frequencies between about 10 kHz and 100 GHz are referred to as **radio frequencies (RF)**.
 - The RFs are divided into groups that have similar characteristics, called "**bands**," such as "S-band," "L-band," etc.

Common Radar Bands:

Band	Approx. Range of Wavelengths (cm)	Approximate Frequencies
UHF	100-10	300-3000 MHz
L	30-15	1-2 GHz
S	15-7.5	2-4 GHz
C	7.5-3.75	4-8 GHz
X	3.75-2.4	8-12 GHz
K	2.4-0.75	12-40 GHz
Q	0.75-0.6	40-50 GHz
V	0.6-0.4	50-80 GHz
W	0.4-0.3	80-90 GHz

Significance:

- **Lower frequency bands (L, S)** can penetrate through rain, clouds, vegetation useful for mapping and Earth observation.
- **Higher frequency bands (X, Q, V, W)** give sharper images and better resolution, but are more affected by weather and atmospheric conditions.

Indian Railways Tests First Hydrogen-Powered Coach

Why in News?

Indian Railways has successfully tested its **first hydrogen-powered coach at the Integral Coach Factory (ICF) in Chennai**, as part of its "**Hydrogen for Heritage**" initiative.

- The project involves converting two 1600 HP diesel power cars into **Hydrogen Fuel Cell** systems and setting up a 3,000 kg hydrogen refuelling station at **Jind, Haryana**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The design and testing are being carried out by the **Research Designs and Standards Organisation (RDSO)**.

What are the Key Benefits of Hydrogen as a Power Source?

- **High Energy Density and Versatility:** Hydrogen possesses one of the **highest energy-to-weight ratios** among known fuels, making it exceptionally well-suited for heavy-duty transportation sectors.
 - Furthermore, it is **versatile** and can be used in **fuel cells**, **internal combustion engines**, or as a feedstock in industrial processes.
- **Zero Emission Energy Carrier:** When used in fuel cells, **hydrogen emits only water vapor as a byproduct**, making it a critical enabler of clean mobility and industrial decarbonization.
- **Supports Renewable Energy Integration:** Hydrogen acts as an **energy storage vector**, allowing excess electricity from intermittent **renewable sources** (like **solar and wind**) to be stored in the form of hydrogen via electrolysis.
 - This helps in **grid stabilization, peak shaving, and achieving round-the-clock (RTC) power supply**—a key requirement for energy reliability and sustainability.
- **Decarbonization of Hard-to-Abate Sectors:** **Green hydrogen** enables deep decarbonization of hard-to-abate sectors such as **steel manufacturing, cement production, oil refining, fertilizers, and chemical industries**, where direct electrification is either technically or economically unfeasible.

Note: Hydrogen is central to India's strategy to achieve energy independence and **Net Zero emissions by 2070**. India's **National Green Hydrogen Mission** aims to make the country a global hub for green hydrogen production and export, positioning India as a key player in the emerging hydrogen economy.

- **Hydrogen Fuel Cell:** It is an electrochemical device that converts **chemical energy of hydrogen into electricity through a reaction with oxygen**, with water and heat as the only by-products.

Applications of Hydrogen Fuel Cell:

- **Transportation:** Powering cars, buses, trucks, trains, and drones.
- **Stationary Power:** Backup and off-grid power for homes, businesses, and data centers.
- **Portable Power:** Charging laptops, phones, and equipment in remote areas.
- **Industrial Use:** Forklifts, cranes, and machinery in warehouses and factories.
- **Space Exploration:** Powering spacecraft (e.g., NASA uses hydrogen fuel cells particularly in their crewed space missions like the **Apollo**).

What are the Key Technological Developments in Indian Railways?

- **Artificial Intelligence & Automation**
 - **'Gajraj' Elephant Detection System:** AI-based tool using optical fiber to detect elephant movement near tracks.
 - **AI in Namo Bharat (RRTS) Trains:** AI-enabled security surveillance and automated schedule optimization.
- **Rail Safety Technologies**
 - **Kavach (Automatic Train Protection):** Prevents signal passing at danger (SPAD) and over-speeding.
 - Uses RFID to apply brakes automatically.
 - Certified at **SIL-4 level**, error probability: 1 in 10,000 years.
 - **Ultrasonic Flaw Detection (USFD):** Detects rail cracks and flaws to prevent derailments.
 - Used for real-time track condition monitoring.
- **Signalling & Interlocking Systems**
 - **Electronic Interlocking (EI):** Widely adopted to reduce human error and automate signal control.
 - **Automatic Block Signalling (ABS):** Railway signaling system that allows for increased train traffic on high-density routes by **enabling multiple trains to operate simultaneously in the same direction**.
- **Sustainability:**
 - **Bio-toilets:** **Bio-toilets** in Indian Railways use **anaerobic bacteria** to decompose human waste

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



in a sealed biodigester tank, converting it into water and gases.

- **Developed by DRDO**, these systems prevent open discharge on tracks, improving hygiene and reducing corrosion.

Advancing India's Nuclear Energy Generation

Why in News?

The **Union Budget 2025–26** set an **ambitious target** of **100 GW nuclear power capacity** by **2047** positioning **nuclear energy** as a key pillar in achieving **Viksit Bharat (2047)** and **net-zero emissions by 2070**.

- This shift requires **comprehensive reforms** in the **legislative, financial, and regulatory frameworks** to **address existing challenges**.

How is India Advancing in its Nuclear Power Development?

- **Historical Overview:** India began its nuclear journey early with **Asia's first research reactor, Apsara (1956)**, and power reactors at **Tarapore (1963)**. In 1954, **Dr. Homi Bhabha, the architect** of India's nuclear programme, presented a target of generating **8 GW** of nuclear power by 1980.
 - Despite international hurdles, India successfully indigenised the **220 MW Pressurised Heavy Water Reactor (PHWR)**, first employed in Rajasthan and later replicated at **Narora, Kaiga, and Kakrapar**.
- **Current Capacity & Future Potential:** India's present nuclear power capacity is **8.18 GW**, with an ambitious goal of reaching **100 GW by 2047**. This will be a critical part of India's strategy to become a developed country and achieve net-zero emissions by 2070.
- **Global Partnerships and Developments:** India endorsed the **COP28 declaration** to **triple global nuclear energy capacity**. India aims to engage with international partners like France and the U.S. to accelerate nuclear power projects.

What is the Significance of Nuclear Energy for India's Development?

- **Energy Security:** India **Nuclear power** can play a crucial role in helping **India meet its energy needs**, which are projected to **quadruple by 2047**, by providing a **reliable 24/7 power supply**.
 - **Small Modular Reactors (SMR)** and microreactors provide **clean energy** to **remote areas** without grid reliance, while **nuclear desalination** helps tackle **water scarcity** in coastal regions.
- **Supporting Industrial Growth:** Nuclear reactors can support **energy-intensive industries** (steel, cement, data centers) that need **reliable, high-capacity power**.
 - **Small Modular Reactors (SMR)** can support **remote industries, hydrogen production, and desalination**.
- **Geopolitical Leverage:** Indigenous advances like the **Prototype Fast Breeder Reactor (Kalpakkam)** showcase **technological strength**, reducing **strategic vulnerabilities** and improving **bargaining power** in global energy deals.
- **Disaster Resilience:** Nuclear energy offers **resilient supply** during **natural disasters** or **geopolitical disruptions**. They remain reliable during recent **grid disruptions**.

Small Modular Reactors (SMRs)

- **Small modular reactors (SMRs)** are advanced nuclear reactors with a power output of up to **300 MW (e) per unit**, about **one-third the capacity of conventional nuclear power reactors**.
 - SMRs are **characterized** by being:
 - **Small:** **Significantly smaller** in size compared to traditional nuclear reactors.
 - **Modular:** Designed for **factory-assembly and transport**, allowing systems and components to be delivered as **complete units for installation**.
 - **Reactors:** Using **nuclear fission** to generate **heat**, which is then converted into **electricity**.
- Types of Reactors:**
- **Micro Reactors:** 1 MW to 20 MW, Can fit on a flatbed truck, mobile and deployable.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course

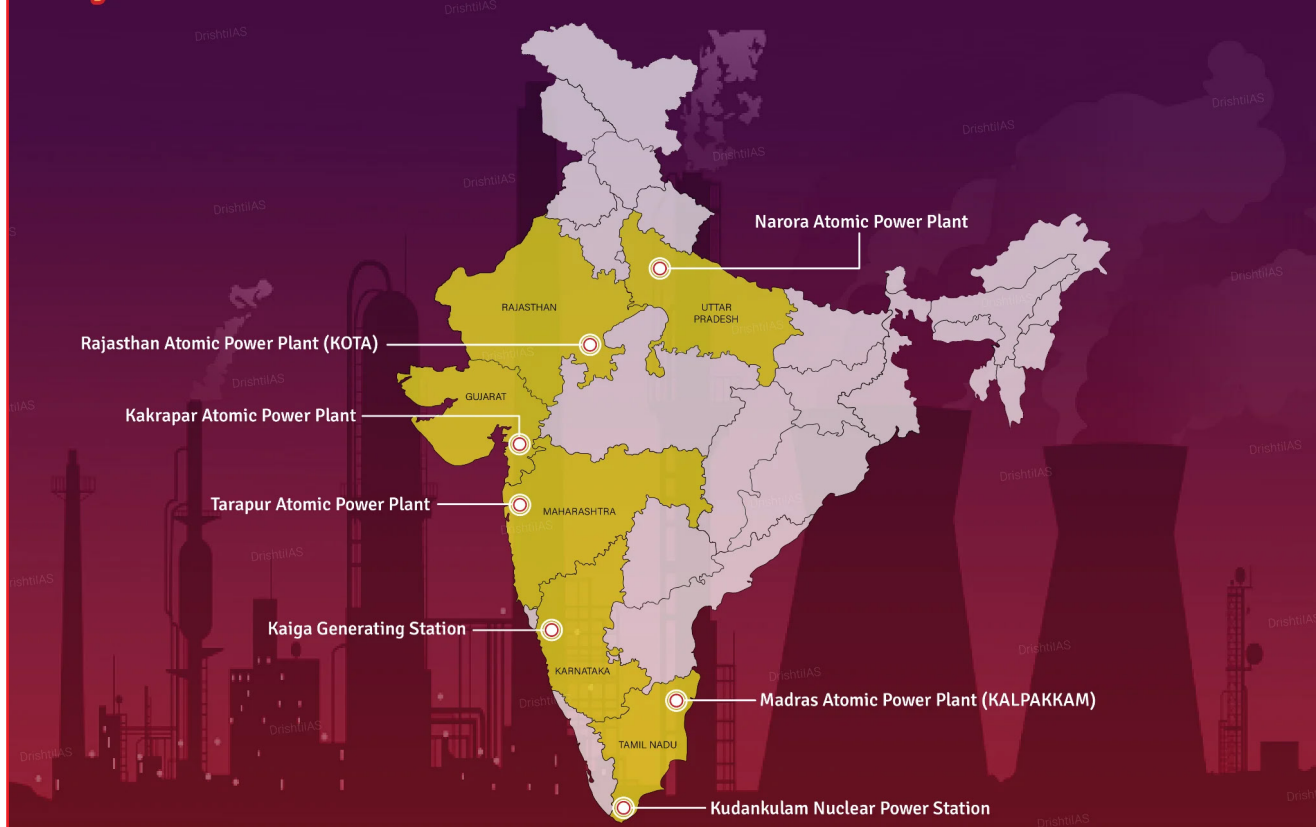


Drishti
Learning
App



- **Small Modular Reactors (SMRs):** 20 MW to 300 MW, Can be scaled up or down by adding more units.
- **Full-Size Reactors:** 300 MW to 1,000+ MW, Provides reliable, emissions-free baseload power.

Operational Nuclear Power Plants in India



FACTS

- Presently, India has 22 nuclear power reactors operating in 6 states, with an installed capacity of 6780 MegaWatt electric (MWe).
- Activities concerning the establishment and utilization of nuclear facilities and use of radioactive sources are carried out in India in accordance with the Atomic Energy Act, 1962.
- Atomic Energy Regulatory Board (AERB) regulates nuclear & radiation facilities and activities.
- **Newest & Largest Nuclear Power Plant:** Kudankulam Power Plant, Tamil Nadu.
- **First & Oldest Nuclear Power Plant:** Tarapur Power Plant, Maharashtra.



What are the Challenges in India's Nuclear Energy Generation?

- **Legislative and Regulatory Hurdles:** Atomic Energy Act, 1962 reserves nuclear power generation solely for the government, with **Nuclear Power Corporation of India Limited (NPCIL)** as the exclusive operator, limiting private sector participation.
- **Civil Liability for Nuclear Damage Act, 2010 (CLNDA)** imposes liability on both operators and suppliers, deterring foreign countries like the US and France.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The **Atomic Energy Regulatory Board (AERB)**, subordinate to the **Department of Atomic Energy**, lacks full autonomy.
- **Financing and Cost Challenges:** Indigenised **Pressurised Heavy Water Reactors (PHWRs)** cost around **USD 2 million/MW**, nearly **double** that of coal plants; **foreign reactors** are even costlier.
 - Despite being **low-carbon**, **nuclear energy** isn't classified as "**renewable**", making it **ineligible** for **tax benefits** and **green financing instruments**.
- **Fuel Supply Constraints:** India's limited **uranium reserves** and **Nuclear Suppliers Group (NSG)** non-membership hinder **fuel supply**, and despite the **2008 NSG waiver**, agreements with **France** and the **US** remain **slow**.
- **Waste Management Issues:** India has **systems in place** for managing **nuclear waste**, but lacks a **permanent deep geological repository** for **high-level waste**.

Click Here to Read: [Civil Liability for Nuclear Damage Act, 2010](#)

Click Here to Read: [Convention on Supplementary Compensation for Nuclear Damage \(CSC\), 1997](#)

Black Hole Merger

Why in News?

An international team of scientists has detected the most **massive black hole merger** ever observed. The event, named **GW231123**, was observed by the **LIGO-Virgo-KAGRA (LVK)** collaboration, which forms the **Gravitational Wave Network**.

What is a Black Hole Merger?

- **About:** A black hole merger occurs when **two black holes orbit each other** and gradually move closer by emitting **gravitational waves** (ripples in space-time caused by some of the most violent and energetic processes in the universe).
 - As they spiral inward, they eventually **collide and merge into a single, larger black hole**.
- These gravitational waves are detected on Earth by observatories like the LVK network of gravitational wave observatories.
- **Significance of GW231123:** It involved two black holes, approximately **100 and 140 times** the mass of the Sun, colliding to form a single, massive black hole about **225 times the Sun's mass**.
 - The waves from GW231123 actually **originated billions of years ago**, but only reached Earth in 2025.
 - This black hole merger, unlike **typical stellar black holes under 60 solar masses**, GW231123 is much bigger and **spinning unusually fast**, making the discovery even more intriguing.
- **Implications:** Black holes this big are typically thought to come from the collapse of huge stars. This event suggests that some may instead **form through mergers** of smaller black holes.

Gravitational Wave Network

- The gravitational wave network, often referred to as the LVK collaboration, is a global alliance of observatories that work together to detect gravitational waves.
- **LVK:**
 - **LIGO (Laser Interferometer Gravitational-Wave Observatory):** The first to detect gravitational waves in 2015, LIGO has two detectors located in the US.
 - That historic gravitational wave detection confirmed a prediction made by Einstein (predicted their existence in his general theory of Relativity in 1916) and earned the **2017 Nobel Prize in Physics**.
 - **Virgo:** Located in Italy, Virgo joined the network to increase detection accuracy and help pinpoint the location of events.
 - **KAGRA (Kamioka Gravitational Wave Detector):** A newer detector in Japan, KAGRA adds sensitivity and a broader geographic spread.

Note: India in collaboration with the US is building the third detector of LIGO, which will be known as **LIGO-India**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



BLACK HOLES

ABOUT

- A place in space with **extremely high gravity pull**; even light can't escape (hence, **invisible**)
- The strong gravity is due to matter being squeezed into a tiny space

The term 'black hole' was coined in the mid-1960s by American physicist John Archibald Wheeler

DETECTION

- By seeing how stars very close to black holes act differently than other stars
- In April 2019, scientists at the **Event Horizon Telescope Project** released the first-ever image of a Black Hole (shadow, more precisely)

Albert Einstein and Black Hole

- First predicted their existences in **Theory of General Relativity**
- It showed that when a massive star dies, it leaves behind a small, dense remnant core

India's first dedicated satellite, AstroSat observed for the very first-time rapid variability of high energy X-ray emission from a black hole system

TYPES

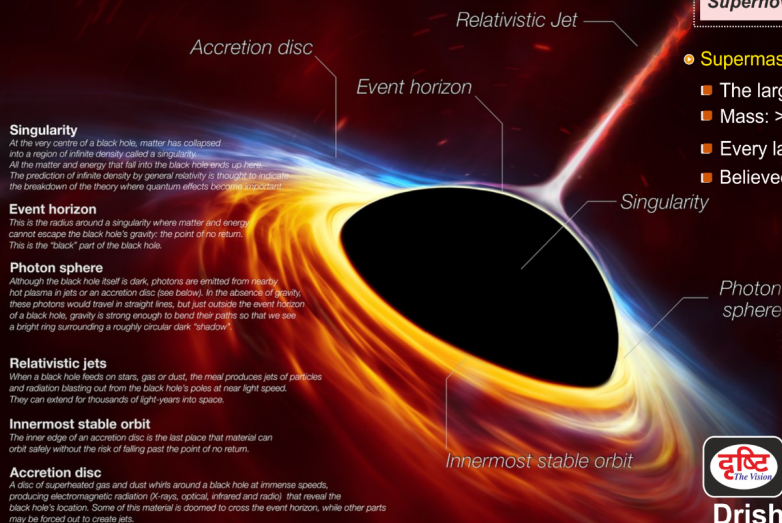
- **Miniature (Hypothetical):**
 - The smallest; size of just 1 atom
 - Mass: varies from 1/100th of a milligram to the mass of a large mountain
 - Believed to be formed when universe began
- **Stellar:**
 - Mass: **20x the mass of sun**
 - Believed to be formed due to **Supernovae explosion**

Supernova is an exploding star that has reached the end of its life

- **Supermassive**
 - The largest
 - Mass: >1 million suns together
 - Every large galaxy has a supermassive black hole at its centre
 - Believed to be made at the same time as their home galaxy

Sagittarius A is the supermassive black hole at the centre of Milky Way (mass: ~about 4 mn suns)

The Sun will never turn into a black hole as it is not big enough to make a black hole



Deepfakes

Why in News?

Denmark has proposed a landmark copyright amendment to **ban the sharing of deepfakes** without consent, protecting **individuals' voices, faces, and likenesses**.

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The proposed law treats realistic deepfakes as **copyright violations**, gives individuals control over their digital likeness for **50 years after death**, and requires platforms to remove such content or face penalties.

What are Deepfakes?

- **About:** Deepfakes are synthetic media (videos, images, or audio) that are digitally altered using **Artificial Intelligence (AI)** to make it look like **someone said or did something they never actually did**. They blur the line between reality and manipulation.
- **Technology Used:** Deepfakes are powered by deep learning, a subset of **machine learning**, which itself is a subset of AI.
 - They're created using **Generative Adversarial Networks (GANs)**, where **two neural networks** (a generator and a discriminator) work together to create and refine fake content.
 - GANs use real data to recreate faces, voices, or movements. A **generator makes fake content**, and a **discriminator tries to detect it**. The generator improves until it can fool the discriminator,
 - **Natural Language Processing (NLP)** is used for cloning voices. **Lip-syncing** techniques align deepfake audio with video.
- **Common Types:**
 - **Face swaps:** Replace a person's face in a video with another's.
 - **Voice clones:** Imitate someone's voice to say anything.
 - **Source Video Manipulation:** Make someone appear to do or say things they never did.
- **Detection:**
 - **Clues:** unnatural blinking, facial distortions, mismatched audio, lighting glitches.
 - **Tools:** Adobe, Microsoft, Sensity AI, and others offer deepfake detection software.
 - Social media platforms are beginning to flag or remove malicious deepfakes.

How has India Dealt with Deepfakes?

- India **doesn't have a dedicated law for deepfakes**, but several existing laws offer partial protection.
- **Information Technology Act, 2000 ("IT Act"):** **Section 66D of IT Act**, targets impersonation and cheating via digital means.
 - Further, Sections 67, 67A, and 67B of the IT Act can be used to prosecute individuals for **publishing or transmitting deepfakes** that are obscene or **contain any sexually explicit acts**.
- **IT Rules, 2021:** Require platforms to **remove impersonation or morphed content when alerted quickly** or lose their **'safe harbour' protection** (a provision that protects social media companies from regulatory liability for third-party content shared by users on their platforms).
- **Copyright Act, 1957:** The **Copyright Act, 1957** can be applied if deepfakes use **copyrighted images or videos without permission**. It bars the unauthorised use of any content over which someone holds exclusive rights.
- **Indian Computer Emergency Response Team (CERT-In):** Issued advisories on deepfake threats and measures that need to be followed to stay protected against.
- **Indian Cybercrime Coordination Centre (I4C):** Assists law enforcement agencies in effectively tackling cybercrimes, including deepfakes.
- **Judicial Interventions:**
 - **Anil Kapoor's Case (2023):** Delhi High Court (HC) granted an ex-parte, omnibus injunction restraining from using Anil Kapoor's name, image, or traits (like dialogue phrases) through **AI** or **morphing** for commercial gain.
 - The court held that his personality rights (including name, likeness, and image) deserve protection not just for his own sake, but also for the dignity of his family and friends.
 - **Mr. Shivaji Rao Gaikwad (Rajnikanth) vs M/S. Varsha Productions (2015):** The Madras High Court granted an injunction **restraining the use of Rajnikanth's name, image, caricature, and dialogue style** in the film Main Hoon Rajnikanth, recognizing his personality rights as a celebrity.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Environment and Ecology

Highlights

- Depleting Coral Cover in Lakshadweep
- International Day for Conservation of Mangrove Ecosystem
- International Tiger Day 2025
- Progress on India's Climate Targets
- Towards Resilient and Prosperous Cities in India
- Global Wetland Outlook 2025
- Just Transition in the Global Plastics Treaty
- Chhattisgarh Forest Department Withdraws CFRR Directive
- The Sevilla Commitment for Financing Sustainable Development


Depleting Coral Cover in Lakshadweep

Why in News?

A study tracking coral health at **three major atolls** —Agatti, Kadmat, and Kavaratti—has revealed alarming findings, showing a **50% decline in coral cover** in the Lakshadweep reefs, from 37.24% in 1998 to 19.6% in 2022.

What are the Key Findings of the Study on Coral Reefs?

- **Drastic Decline in Coral Cover:** Repeated **marine heatwaves** triggered by **El Nino** events in 1998, 2010, and 2016, along with **climate change**, are the main drivers of coral loss.
 - These stressors have slowed **reef recovery**, with improvement only after over **six consecutive years without coral bleaching**.
- **Distinct Coral Response Clusters:** Corals displayed **six distinct response patterns** based on **heatwaves** impact, recovery rate, depth, and wave exposure.
 - While local efforts like **coral gardening** aid restoration, only **global emission cuts** can provide the **critical recovery time** reefs need to survive.



Coral Reefs

(Rainforests of the seas)

About


- ✦ **Large underwater structures** – made of skeletons of **colonial marine invertebrates** 'coral' – individually called **polyp**
- ✦ **Symbiotic Relationship** with algae '**zooxanthellae**' (responsible for beautiful colours of corals)
- ✦ Support over 25% of marine biodiversity

Hard Corals vs Soft Corals

- ✦ **Hard Corals** - Rigid skeleton made of **CaCO₃** - reef-building corals
- ✦ **Soft Corals** - Non reef-building


Great Barrier Reef (Australia)

- ✦ Largest Coral Reef in the World
- ✦ World Heritage Site (1981)
- ✦ Endures Mass Coral Bleaching



Corals in India

- ✦ Present in the areas of Gulf of Kutch, Gulf of Mannar, Andaman & Nicobar, Lakshadweep Islands and Malvan




Significance

- ✦ Coral reefs **protect coastlines** from **storms/erosion**, provide jobs, offer opportunities for recreation
- ✦ Source of **food/medicines**


Threats

- ✦ **Natural:** Temperature, Sediment Deposition, Salinity, pH, etc.
- ✦ **Anthropogenic:** Mining, Bottom Fishing, Tourism, pollution, etc.



Coral Bleaching


- ✦ Corals under stress - expel algae – thus turning white (bleached)
- ✦ Bleached corals - not dead – but, more risk of starvation/disease



Initiatives to Protect Corals

Technology

- ✦ **Cyromesh:** Storage of the coral larvae at (-196°C) - Can be later reintroduced to the wild
- ✦ **Biorock:** Creating artificial reefs on which coral can grow rapidly



Global

- ✦ International Coral Reef Initiative
- ✦ The Global Coral Reef R&D Accelerator Platform

Indian

National Coastal Mission Programme


Prepare with Drishti IAS

UPSC
Mains
Test Series
2025

UPSC
Classroom
Courses

IAS Current
Affairs Module
Course

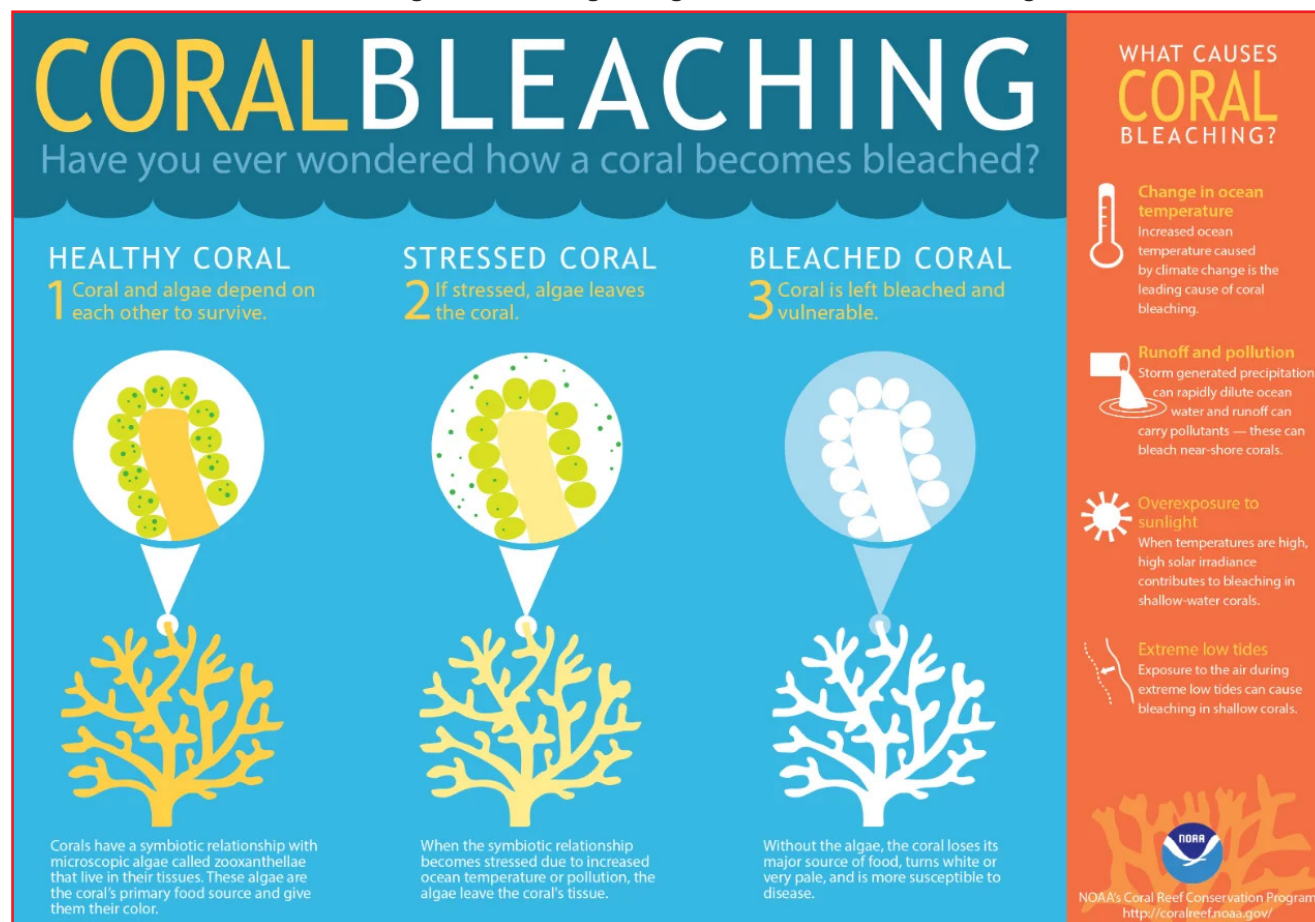
Drishti
Learning
App



drishti

What are the Key Reasons for the Depletion of Coral Reefs?

- **Rising Sea Temperatures:** Marine heatwaves disrupt the **symbiotic relationship between corals and algae**, leading to bleaching. Climate change and El Nino events are intensifying **ocean warming**, making bleaching **more frequent and severe**.
 - **High UV radiation** and **thermal stress** worsen coral heat stress and increase vulnerability to **infections like white band disease**, raising the risk of **future bleaching**.
- **Ocean Acidification:** Increased **CO₂ absorption** by oceans leads to **lower pH levels**, which **weakens coral skeletons** and **slows their growth**.
 - This hampers corals' ability to form **calcium carbonate structures**, making them **more susceptible to bleaching**.
- **Pollution & Runoff:** **Agricultural and urban runoff** containing **fertilizers and sewage** promotes **algal blooms** that smother corals. **Sedimentation from coastal development** blocks **sunlight**, depriving corals of essential energy for survival.
- **Human Activities:** **Destructive fishing methods** such as **dynamite or cyanide** cause direct coral mortality, while **tourism activities** like **anchoring and snorkeling/diving** also contribute to coral damage.



What are the Implications of Coral Depletion?

- **Loss of Marine Biodiversity:** Coral reefs support **25% of marine life**, but **bleaching-driven coral death** threatens ecosystems, causing **fish population declines**, **species extinction**, and **marine food web** disruption.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Economic Consequences:** Reef collapse can reduce **fish stocks**, endangering the **reef fishery industry** and global **seafood security**.
 - **Bleaching also hurts tourism**, leading to **job losses** and **economic decline** in coastal communities reliant on reef-based activities.
- **Reduced Coastal Protection:** Coral reefs serve as **natural barriers**, shielding coastlines from **erosion**, **storm surges**, and **flooding**.
 - Without them, **coastal communities**, especially in **low-lying regions** like the **Lakshadweep** and **Maldives**, face greater risk from **hurricanes**, **sea-level rise**, and **costly artificial defenses**.
- **Decline in Scientific Discoveries:** Coral reefs offer **potential medicines** for diseases like **cancer** and **arthritis**, but **bleaching destroys unexplored species**, limiting **future medical discoveries**.
- **Water Quality and Climate Regulation:** Coral reefs **function as natural water filters**, with organisms like **sponges removing toxins** and supporting **photosynthetic plants** that absorb **CO₂** and release **oxygen**.
 - When reefs die, these functions are lost, leading to **poor water quality**, **algal blooms**, and **weakened ocean carbon cycling**.

What are the Various Initiatives to Protect Coral Reefs?

- **International Coral Reef Initiative (ICRI):** It is a **global partnership of nations and organizations** dedicated to the **conservation of coral reefs and related ecosystems**.
- **Global Fund for Coral Reefs (GFCR):** It is a **blended finance platform** that mobilizes **grants and private capital** to **protect and restore coral reefs** and support **dependent communities**.
 - It brings together **UN agencies, governments, philanthropies, investors**, and others to advance **ecological, social, and economic resilience**.
- **Technological Interventions:**
 - **Biorock Technology:** **Biorock technology** is an innovative **mineral accretion method** that creates **natural building structures underwater**, aiding in **coral restoration** (e.g., in the **Gulf of Kachchh**).

- **Super corals:** They are developed through **ex-situ breeding** using **human-assisted evolution** to enhance **resistance to high temperatures**.
- **Frozen Coral:** Scientists have used **cryomesh technology** to **freeze and preserve coral larvae** more effectively, allowing storage at **-196°C** for long-term conservation.

International Day for Conservation of Mangrove Ecosystem

Why in News?

The **International Day for Conservation of Mangrove Ecosystem** (26th July) serves as a **crucial reminder** that these **coastal guardians** are vanishing **3-5 times faster** than global forests.

- **UNESCO and IUCN data** reveals that **global mangrove cover** has halved since **1985**, with **50% of remaining ecosystems** now at **risk of collapse**.
 - The **Tamil Nadu Forest Department** held an awareness camp, highlighting mangrove biodiversity and the **Fish Bone Channel Technique** for ecological restoration.

International Day for the Conservation of the Mangrove Ecosystem

- Observed annually on **26th July**, this day aims to raise **awareness** about the significance of **mangrove ecosystems** as **unique, special, and vulnerable ecosystems**, and to promote their **sustainable management, conservation, and use**.
- It was **adopted by UNESCO's General Conference in 2015** to highlight the vital ecological and socio-economic roles mangroves play in **coastal protection, biodiversity support, and climate mitigation**.

Fishbone Technique of Mangrove Restoration

- It is a **mangrove restoration method** for areas with **poor tidal flow**, involving a central **"backbone" channel** and angled **feeder channels** to divert water from creeks.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



SCAN ME

UPSC
Classroom
Courses



SCAN ME

IAS Current
Affairs Module
Course



SCAN ME

Drishti
Learning
App



SCAN ME

- Once **salinity and water flow** are suitable, **mangrove seedlings** are planted. It **mimics natural creeks**, enhances **tidal reach**, and supports **natural regeneration** with minimal effort.



What are Mangroves?

- **About:** Mangroves are specialized **coastal ecosystems** consisting of **salt-tolerant (halophytic) trees and shrubs** that flourish in the **intertidal zones of tropical and subtropical regions**.
 - They are uniquely adapted to survive in **saline, low-oxygen (anaerobic) environments** with **slow-moving waters** and **accumulated fine sediments**.
 - Common mangrove species include **Red Mangrove, Grey Mangrove, and Rhizophora**, which play a crucial role in **coastal protection, carbon sequestration, and biodiversity conservation**.
- **Mangrove Cover in India:** As per **Indian State of Forest Report (ISFR) 2023**, India's mangrove cover is about **4,992 sq. km**, accounting for **0.15% of the country's geographical area**.
 - **West Bengal** has the largest mangrove cover in India, followed by **Gujarat** in second place.

What is the Significance of Mangroves?

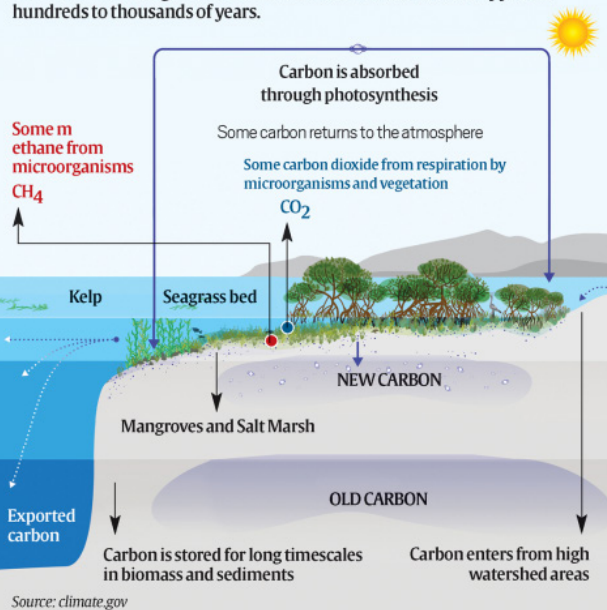
- **Carbon Sequestration:** Mangroves store **around 394 tonnes of carbon per hectare**, exceeding most terrestrial forests, due to **anaerobic and saline soils** that slow decomposition.

- According to **UNESCO**, **1 hectare can store up to 3,754 tonnes of carbon**, equivalent to **removing over 2,650 cars annually**.
 - They uniquely **lock carbon in soil for millennia**, making them critical for **climate change mitigation**.

HOW MANGROVES TRAP CARBON



Mangroves are natural carbon sinks. They can capture carbon up to ten times faster than tropical forests, and can store between three and five times more carbon for similar area of natural forests. Much of this carbon is stored below the ground, in the soil, where it can remain trapped for hundreds to thousands of years.



- **Coastal Protection:** Mangroves serve as **natural buffers** against **storm surges, tsunamis, and coastal erosion** acting as “**bio-shields**”.
 - Their **dense root systems absorb wave energy and stabilize shorelines**, reducing **wave energy by 5–35%** and **flood depths by 15–20%**, with reductions exceeding **70% during extreme storms** (100-year return period), playing a crucial role in **disaster risk reduction and climate resilience** of coastal regions.
- **Biodiversity Hotspots:** Mangroves support diverse **terrestrial and aquatic species** across habitats like **mudflats and aerial roots**.
 - India's mangroves host **5,746 species** (84% animals) across **21 phyla**, the highest globally, including **Bengal tigers, estuarine crocodiles, Indian pythons, and 260+ bird species**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- They serve as **nurseries for marine life** and support **one-third of wild fish landings** in **Southeast Asia**.
- **Economic Significance, Food Security & Livelihood Support:** Mangroves are vital to **coastal economies**, supporting **fishing, honey collection, boating, and non-timber forest produce**.
- They nurture nearly **800 billion aquatic species annually**, providing **nutrient-rich seafood** (rich in protein, omega-3s, vitamins D & B12, iron, and zinc) and sustaining livelihoods through the **blue economy**.
- Mangroves also offer **eco-tourism potential** and play a key role in **food security and human wellbeing** in coastal regions.

Sundarbans: Ecological Significance, Threats & Conservation Efforts

- The **Sundarbans**, the **world's largest mangrove forest** in the **Ganges-Brahmaputra-Meghna delta**, holds immense ecological value as a **UNESCO Biosphere Reserve** and **Ramsar site**.
- It is a **biodiversity hotspot**, home to **Royal Bengal Tiger, Irrawaddy and Ganges dolphins**, **saltwater crocodiles** and crucial for **coastal protection** against **cyclones** and **carbon sequestration**.
- However, it faces **severe threats** from **climate change** (sea-level rise, **cyclones**), **coastal erosion**, and **unsustainable livelihoods**.
- Conservation efforts include **increased government funding** for **mangrove plantations**, **Indo-Bangladesh climate-smart village initiatives**, and **community-led Joint Mangrove Management** for sustainable preservation.

What are the Major Threats to Mangroves?

- **Land Conversion for Agriculture:** According to the "State of the World's Mangroves 2024" report, extensive **conversion of mangrove land** for **aquaculture (26%), oil palm plantations, and rice cultivation (43%)** is a major driver of loss.

- **Urbanisation, infrastructure projects, and coastal tourism** also lead to large-scale deforestation and fragmentation of mangrove ecosystems.
- **Pollution & Industrial Activities:** **Oil spills**, industrial effluents, and plastic waste degrade water quality and hinder mangrove regeneration.
 - Cases like the **Niger Delta** highlight how oil contamination leads to long-term ecological damage. **Timber extraction and charcoal production** also contribute to degradation.
- **Climate Change & Sea-Level Rise:** **Rising sea levels**, increased **frequency of cyclones**, and **coastal erosion** due to climate change pose existential threats. As per the **IUCN Red List of Ecosystems**, climate change threatens **33% of mangrove ecosystems**.
- **Invasive Species & Biodiversity Loss:** Species like **Prosopis juliflora**, found in **Tamil Nadu and Sri Lanka**, disrupt native mangrove habitats by altering **soil salinity**, reducing **freshwater availability**, and preventing natural **regeneration**, thereby threatening local biodiversity.

Key Initiatives Related to Mangroves Conservation

- **Mangrove Alliance for Climate (MAC)**
- **Mangroves for the Future (MFF)**
- **MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes)**
- **Sustainable Aquaculture In Mangrove Ecosystem (SAIME) initiative**
- **Coastal Regulation Zone (CRZ) Rules**
- **CAMPA Funds & National Coastal Mission**
- **Vana Samrakshana Samitis (Andhra Pradesh)**
- **Green Tamil Nadu Mission**

International Tiger Day 2025

Why in News?

International Tiger Day (also known as **Global Tiger Day**) on 29th July raises awareness about tiger (*Panthera tigris*) conservation and also highlights the **Amur tiger** (*Panthera tigris altaica*), the world's largest wild cat.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



History of International Tiger Day

- Global Tiger Day was instituted at the **2010 Saint Petersburg Tiger Summit, Russia** where 13 tiger-range countries, including India, Bhutan, Nepal, Malaysia, and Bangladesh came together in response to the sharp decline in tiger populations.
 - The summit launched the **Tx2 initiative**, aiming to double the wild tiger population by 2022.
- **Global Efforts for Tiger Conservation:**
 - **Global Tiger Recovery Program (GTRP):** Launched in 2010 as part of the St. Petersburg Declaration, the GTRP aimed to double the global wild tiger population by 2022.
 - **Global Tiger Forum (GTF):** The only intergovernmental body of Tiger Range Countries, headquartered in New Delhi, focused on collaboration and capacity.
 - **Global Tiger Initiative (GTI):** Launched in 2008 by the World Bank and partners to unite governments and other organisations to prevent tiger extinction.

How has India Contributed to the Conservation of Tigers?

- **Need for Conservation:** In the early 1900s, India had around 1 lakh tigers. By 1972, the number had dropped sharply to just 1,827.
 - Alarmed by this, India launched **Project Tiger in 1973** to protect Bengal tigers (*Panthera tigris tigris*) and their habitats.

Project Tiger

- **About:** It is a **Centrally Sponsored Scheme**, provides **60% Central Assistance to most states for non-recurring expenses and 50% for recurring costs**, with states matching the rest.
- **Primary Aim:** Ensure a viable population of Bengal tigers in natural habitats.
- **Key Steps Taken:** Establishment of **tiger reserves** with a **core-buffer** strategy to **protect habitats in core zones** while allowing sustainable human activities in buffer zones.

- The **National Tiger Conservation Authority (NTCA)** set up under the **Wildlife Protection Act, 1972**, oversees Project Tiger and conducts the **national tiger census every four years** (last census done in 2022).
- **Progress:** Launched in 1973 with 9 reserves, Project Tiger now covers over 50 reserves across 18 states, spanning about 2.2% of India's land.
 - Tiger numbers rose from 1,827 in 1973 to an estimated 3,682 (avg) with an upper limit of 3,925 as per 2022 data.
 - **Madhya Pradesh has the largest tiger population**, followed by Karnataka, Uttarakhand, and Maharashtra.
 - Reserves with the highest tiger numbers are **Corbett** (Uttarakhand), **Bandipur** (Karnataka), **Nagarhole** (Karnataka), and **Bandhavgarh** (Madhya Pradesh).
 - **Nagarjunsagar-Srisailem Tiger Reserve (Andhra Pradesh)** is the largest tiger reserve in India.
 - Corbett (Uttarakhand) has India's highest tiger density, followed by Bandipur (Karnataka) and Kaziranga (Assam).
 - India now hosts around 75% of the world's tiger population. The population has **more than doubled in the last two decades**, with a growth rate of **6.1% per year**.
 - The Project Tiger and Project Elephant Scheme has been merged from FY 2023-24 and is now known as **Project Tiger & Elephant**.
- **Iconic Figures:**
 - **Machhli (T-16)** a famous tigress from **Ranthambore**, often called the '**Queen Mother of Tigers**' and '**Tigress Queen of Ranthambore**.' She became the **poster face of Project Tiger**.
 - **Kailash Sankhala**, known as the **Tiger Man of India**, was the first director of Project Tiger.
- **Cultural Significance:** The **Royal Bengal Tiger** is **India's national animal** and is deeply rooted in Indian mythology and pride.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Amur Tiger

- The Amur tiger, or **Siberian tiger** is the **largest tiger subspecies and the biggest wild cat on Earth**.
- Native to **Russia's Far East**, it's adapted to harsh winters with thick fur and body fat. Solitary and territorial, it preys on wild boar, deer, and sometimes bears. It faces threats like **poaching and habitat loss**.
- In the Russian Far East, indigenous groups like the **Udeghe, Nanai, and Oroch** spiritually revere the **Amur tiger**, seeing it as a forest guardian.
 - This mirrors tiger-linked beliefs in South Asia, like **Bon Bibi** in the Sundarbans.

TIGER

Royal Bengal Tiger (*Panthera Tigris*) is the National animal of India.

Subspecies of Tiger

- * The continental (*Panthera tigris tigris*)
- * The Sunda (*Panthera tigris sondaica*)

Habitat

Tropical rainforests, evergreen forests, temperate forests, mangrove swamps, grasslands, and savannas

Countries Where Tiger Population Is Found

- ▣ Found only in **13 Tiger Range countries**- India, Nepal, Bhutan, Bangladesh, Myanmar, Russia, China, Thailand, Malaysia, Indonesia, Cambodia, Laos, and Vietnam
- ◆ As per the latest report by IUCN, tiger has gone extinct in Cambodia, Laos, and Vietnam

Protection Status

- ▣ **IUCN Red List:** Endangered
- ▣ **CITES:** Appendix I
- ▣ **WPA 1972:** Schedule I

Threats

- ▣ Habitat loss
- ▣ Poaching and illegal trade
- ▣ Human-Wildlife conflict

Conservation Efforts

- ▣ **International Big Cats Alliance (IBCA):** For conservation of seven big cats namely Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar and Puma (launched by India)
- ▣ **Tx2 campaign:** Launched by WWF; stands for 'Tiger times 2' signaling the goal to double the tiger population by 2022
- ▣ **National Tiger Conservation authority (NTCA):** Constituted under the WPA, 1972
- ▣ **Project Tiger:** Launched in 1973
- ▣ **Tiger Census:** Every 4 years

Tigers In India

- ▣ India has the **largest** population
 - ◆ As of 2022, India has 3167 tigers
 - ◆ Largest population has been found in Central Indian Highlands & Eastern Ghats Landscape
- ▣ **Tiger Reserves:** India now has 58 tiger reserves



Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



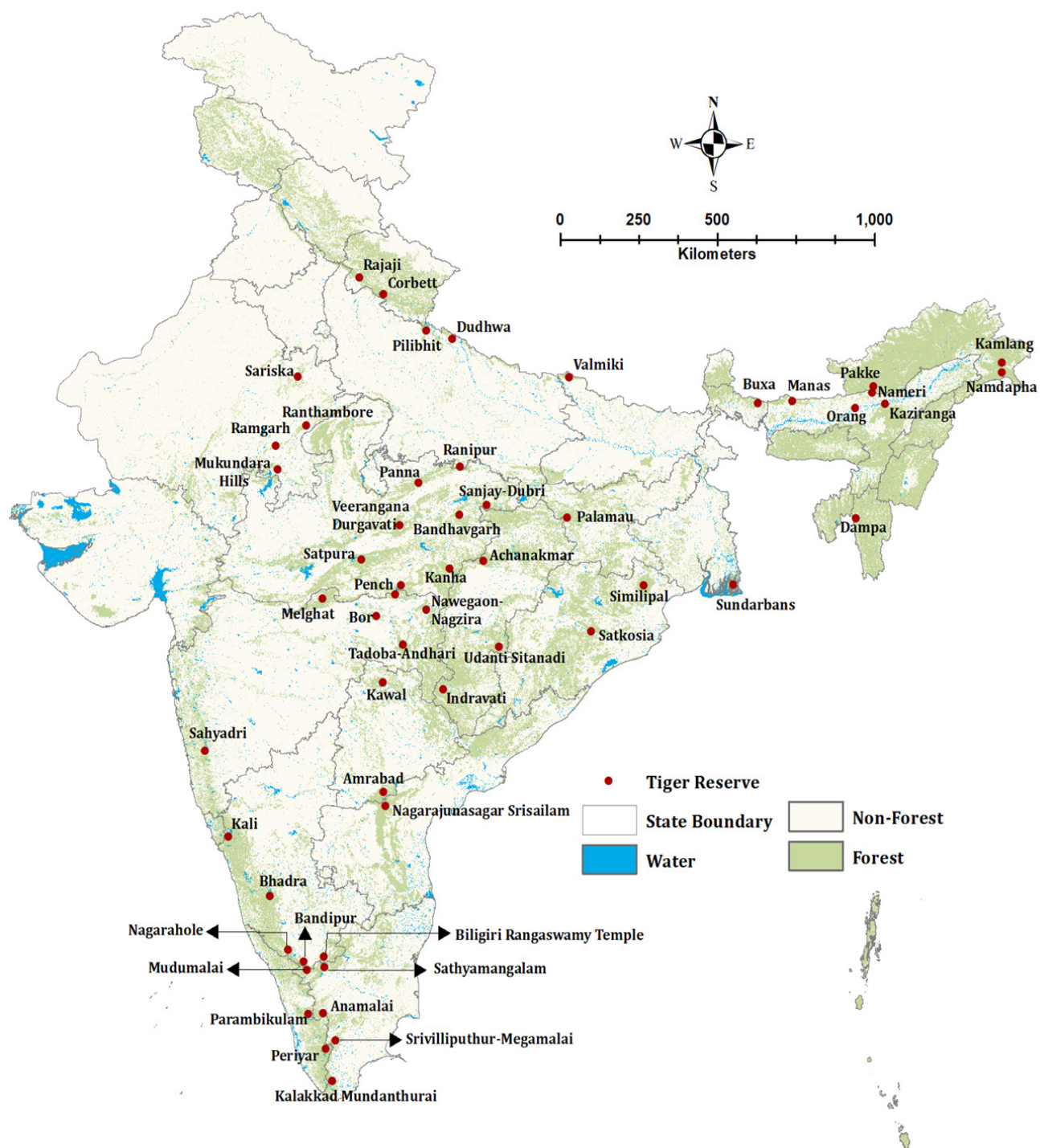
IAS Current
Affairs Module
Course



Drishti
Learning
App



Tiger Reserves in India



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



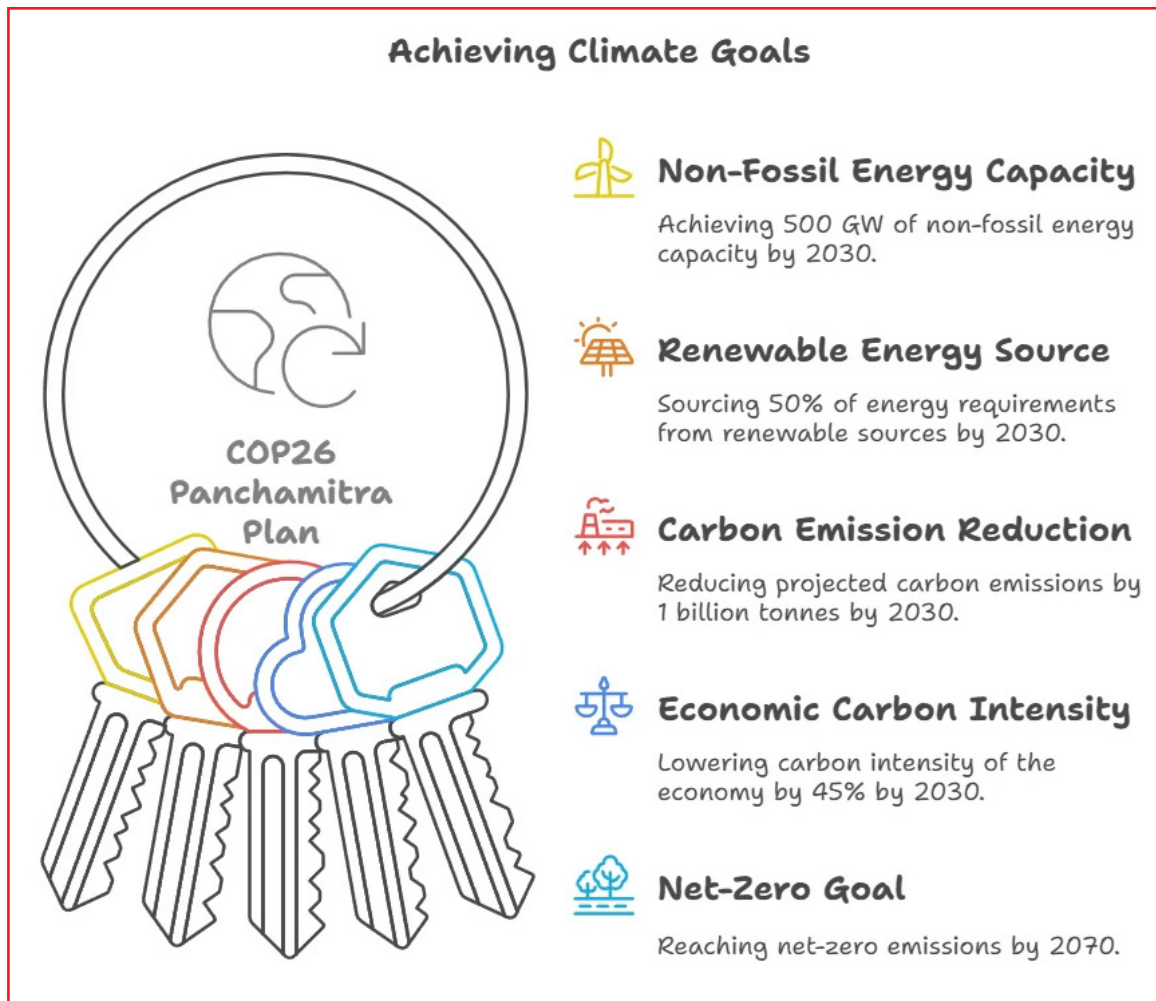
Drishti
Learning
App



Progress on India's Climate Targets

Why in News?

India has made remarkable progress on its climate commitments under the **Paris Agreement 2015**, achieving one of its major targets **five years ahead of schedule** and nearing completion on the other two.



Note: The **Paris Agreement (2015)**, adopted at **COP21**, set the goal of limiting global warming to **well below 2°C**, preferably **1.5°C**. **COP26 (Glasgow, 2021)** served as a key milestone to **review and enhance Nationally Determined Contributions (NDCs)**, reinforcing the Paris Agreement's implementation.

What is the Status of India's Climate Commitments?

- **Non-Fossil Fuel Capacity:** India achieved its **non-fossil fuel capacity target** in **2024—five years ahead of schedule (2030)**—with **242.78 GW** (around **50%**) of its **484.82 GW** total installed capacity from **non-fossil sources** (solar, wind, hydro, nuclear).
- **Carbon Sink:** India had pledged to create an additional **2.5–3 billion tonnes of carbon sink** through **forests and tree cover**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- By **2021**, it had already achieved **2.29 billion tonnes**, and with a yearly increase of **around 150 million tonnes** (2017–2021), the total likely crossed **2.5 billion tonnes** by **2023**.
- **Emissions Intensity:** India pledged to reduce the emissions intensity of its **GDP** by **45%** from **2005** levels by **2030**, and had already achieved a **36% reduction** by **2020**.
- Despite limited recent data, **current trends** suggest India is on track to **comfortably meet or exceed** this target.

India's Initiatives to Achieve Climate Targets

- **National Adaptation Plan (NAP)**
- **National Action Plan on Climate Change (NAPCC)**
- **Sovereign Green Bonds**
- **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)**
- **Mission LiFE (Lifestyle for Environment)**

What Concerns are Associated with India's Climate Targets?

- **Capacity vs Generation Gap:** India achieved **50% non-fossil installed capacity** in **2024**, but only **28% of electricity generated** comes from non-fossil sources.
 - Moreover, just **approx 6% of total energy consumption** is clean, as **fossil fuels still dominate** sectors like **industry, transport, and households**.
- **Heavy Reliance on Solar Energy:** In **2024**, India set a record by installing **30 GW of renewable energy**, with solar alone contributing nearly **24 GW**.
 - However, **wind, hydro, and nuclear** sectors continue to grow at a **sluggish pace** due to **land acquisition issues, policy delays, and financial hurdles**, while **China is scaling up renewables ten times faster** (in the past 2 years).
 - India's nuclear capacity is expected to reach just **17 GW by 2030** against **100 GW target by 2047** (the **Union Budget 2025-26**).
- **Sustainability Concerns on Carbon Sink:** Concerns persist about the **share of natural forests vs monoculture** plantations, their **ecological impact**, and whether gains can be **maintained amid urbanisation and land use pressures**.

- **Emissions Intensity Reduction:** The **lack of reliable emissions data after 2020** hampers efforts to **monitor progress and adjust policies** in real time.
 - Despite being on track to meet **intensity targets**, continued **fossil fuel dependence** in key sectors could lead to **rising absolute emissions** without a clear roadmap for **hard-to-abate industries** (e.g., steel, cement).
- **Climate Finance Shortfalls:** India has repeatedly flagged the **shortfall in climate finance and technology transfer** from developed nations, despite their **Paris Agreement commitments**.
 - Many wealthy countries have **missed emission reduction targets** and **under-delivered on the USD 100 billion annual climate finance pledge**.

Towards Resilient and Prosperous Cities in India

Why in News?

A **World Bank** report, in collaboration with the Union Ministry of Housing and Urban Affairs, titled **"Towards Resilient and Prosperous Cities in India"**, forecasts that by 2030, Indian cities will generate 70% of new employment but will face risks from flooding and extreme heat, urging the need for **greater autonomy and climate-resilient planning**.

What are the Key Climate Risks Impacting Indian Cities?

- **Urban Growth:** Urban population projected to nearly double to **951 million by 2050**. By 2030, 70% of all new jobs will be generated in cities, but rapid urbanisation increases vulnerability to climate shocks.
 - Indian cities will require **USD 2.4 trillion by 2050** to build climate-resilient infrastructure and services.
- **Flooding:** Urban sprawl into flood-prone areas and increased concrete construction are worsening **pluvial flooding** by limiting rainwater absorption.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



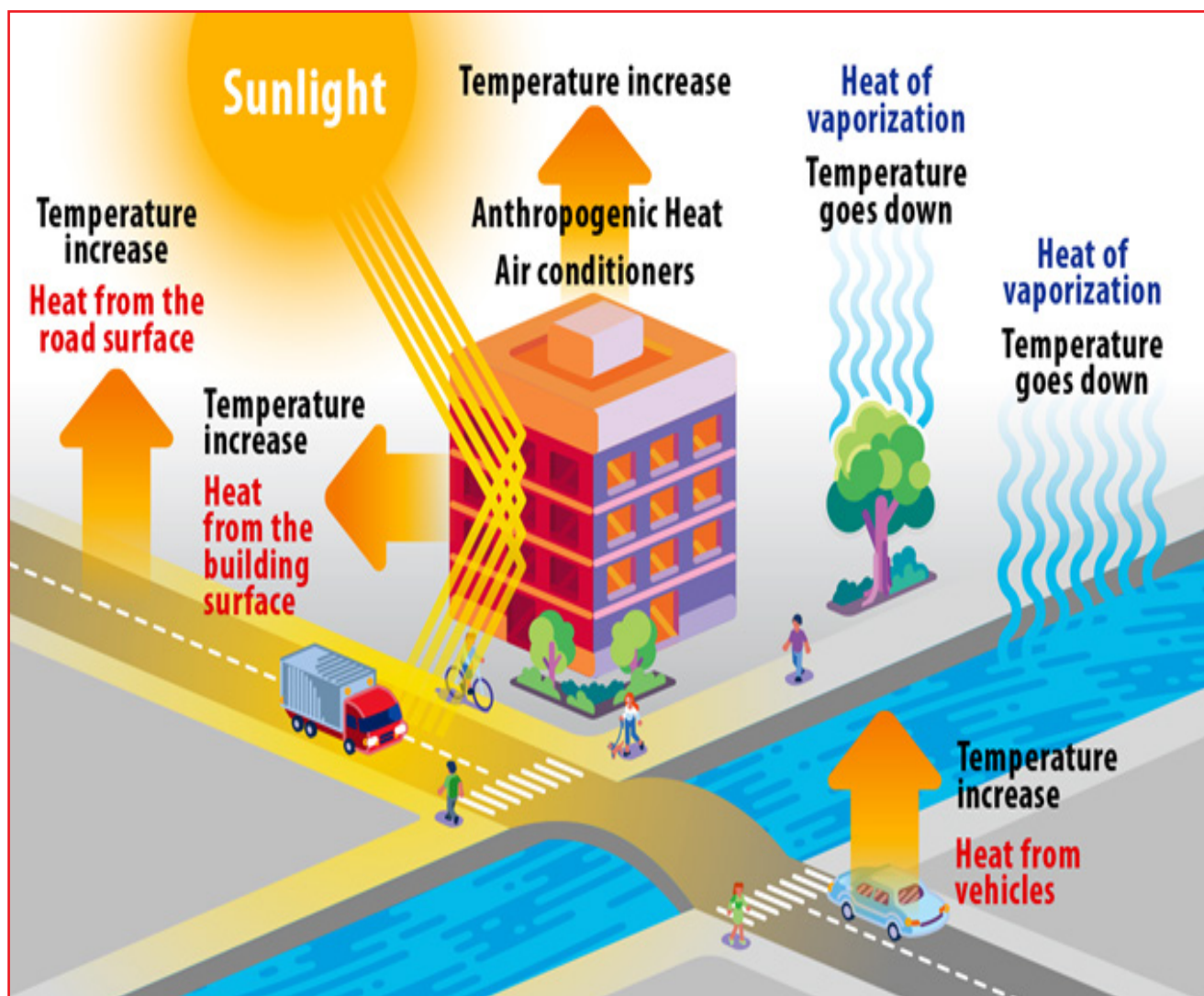
IAS Current
Affairs Module
Course



Drishti
Learning
App



- The World Bank report projects that **annual losses due to flooding could reach USD 5 billion by 2030**. If adequate adaptation measures are not implemented, these losses are expected to surge to **USD 30 billion by 2070**.
- Just **10–20% road flooding** can disrupt over 50% of a city's transport system.
- **Extreme Heat:** The World Bank report highlights the growing intensity of the urban **heat island effect** in Indian cities, where **concrete and asphalt absorb heat during the day and release it at night**, leading to elevated nighttime temperatures.
 - This is expected to lead to **3 lakh heat-related deaths annually by 2050**. Solutions like urban greening, and cool roofs could prevent over **1.3 lakh deaths each year**, underscoring the need for climate adaptation in urban planning.
- **Air Pollution:** In 2023, India was home to **42 of the 50 most polluted cities in the world**, up from 39 in 2022. The primary contributors to poor air quality include **vehicular emissions, construction dust, and biomass burning**.
 - Poor air quality leads to **respiratory diseases**, affecting millions of urban residents, especially in cities like **Delhi, Mumbai, and Bengaluru**.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Challenges of Urban Autonomy in Enhancing Climate Resilience?

- **Weak Devolution to ULBs:** The Urban Local Bodies (ULBs), serve as local self-governments in India, as established by the 74th Constitutional Amendment Act of 1992.
 - This Act empowered the states to devolve the responsibility of functions including urban planning, regulation of land use, water supply, and slum upgradation to ULBs, but many states haven't fully implemented it.
- **Limited Financial Resources:** ULBs often lack the necessary funds to implement climate-resilient infrastructure and policies, hindering their ability to address climate risks effectively.
 - Most cities struggle to **raise revenue**, property tax collection is under **0.2% of GDP** compared to 1.1% in Organisation for Economic Co-operation and Development (OECD) countries.
 - India's devolution of funds to ULBs is significantly lower than in countries like South Africa (2.6%), Mexico (1.6%), the Philippines (2.5%), and Brazil (5.1%).
 - This limited funding reduces **urban productivity and quality of life**. The rollout of Goods and Services Tax (GST) further shrank ULBs' revenue sources, weakening their financial autonomy.
- **Weak Institutional Capacity:** Many ULBs lack the technical expertise and administrative capacity to plan and execute climate adaptation strategies.
- **Data Deficiency:** ULBs often lack access to accurate, up-to-date data on climate risks and urban infrastructure, which is essential for informed decision-making.
- **Fragmented Governance:** Lack of coordination among different urban authorities hampers the integration of climate resilience strategies across various sectors.

What are the Key Strategies for Ensuring Climate Resilience in Indian Cities?

- **Greater Autonomy for Cities:** The World Bank highlights that **cities with more autonomy perform**

better in resource mobilization, climate resilience, and accountability.

- Decentralized governance helps them tackle local challenges and boost revenue, especially for climate adaptation.
- Strengthening municipal revenue has been a consistent priority across Finance Commissions (FC). The 12th FC pushed for a Geographical Information System (GIS) and digitisation to improve property tax collection, while the 14th FC recommended empowering municipalities to **levy vacant land tax**.
- **Urban Planning and Design:** Green infrastructure like **parks, wetlands, and open spaces** helps manage rainwater and reduce urban heat. Schemes like AMRUT 2.0 (Atal Mission for Rejuvenation and Urban Transformation) support this through green space and water-focused projects.
 - Cities also need climate-resilient urban planning by **avoiding construction in floodplains and enforcing climate-aware zoning norms**.
 - Upgrade stormwater drainage by recycling and reusing water for industrial use, and implement the Climate Smart Cities Assessment Framework under the Smart Cities Mission for efficient planning.
- **Risk Evaluation and Adaptation Measures:** Cities should conduct detailed **climate risk assessments and incorporate adaptation measures** (like Ahmedabad Heat Action Plan model) into city development plans.
 - Use geospatial data, climate models, and early warning systems to support real-time risk management and community preparedness.
- **Energy-Efficient and Resilient Buildings:** Under the National Mission for Sustainable Habitat (NMSH), promote climate change **mitigation and adaptation** in the built environment of Indian cities, focusing on areas like **sustainable buildings, efficient waste management**, and low-carbon urban transport systems.
 - The India Cooling Action Plan projects an eightfold rise in cooling demand by **2037**. Energy-efficient buildings can cut emissions, improve comfort, and enhance indoor air quality.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Enhance Investment:** Public-private partnership (PPP) plays a vital role in financing **climate resilience projects**. Encouraging private investment in **climate-adapted infrastructure** can help cities leverage additional funding and technological expertise.

Global Wetland Outlook 2025

Why in News?

The **Global Wetland Outlook (GWO) 2025**, released by the Secretariat of the **Ramsar Convention (1971)**, highlights that **Africa's wetlands are among the most degraded in the world**.

Note: The Ramsar Convention Secretariat is based in **Gland, Switzerland**. The **International Union for Conservation of Nature (IUCN)** supports its operations by providing administrative services to the Convention's member countries.

What are the Key Takeaways from Global Wetland Outlook 2025?

- **Global Wetland Coverage:** Wetlands (Seagrass, Kelp Forests, Coral Reefs, Estuarine Waters, Salt Marshes, Mangroves, Tidal Flats, Lakes, Rivers and Streams, Inland Marshes and Swamps, and Peatlands) cover over **1,800 million hectares** globally, including inland freshwater, coastal, and marine ecosystems.
 - However, data uncertainty persists due to inconsistent methods and gaps in historical data.
- **Loss and Degradation:** Since 1970, the **world has lost about 411 million hectares of wetlands**, marking a 22% global decline at an average annual loss rate of -0.52%.
 - Wetlands in **Africa, Latin America, and the Caribbean** are facing the **worst levels of degradation**, but ecological deterioration is also rising in Europe, North America, and Oceania.
 - Wetlands are in the worst condition in **Least Developed Countries (LDCs)**. In upper-middle-income and developed countries, more wetlands are reported in good condition than poor.
- **Value of Wetlands:** Wetlands provide **food, water filtration, disaster protection, carbon storage, and cultural value**.

- The **ecosystem service value** of global wetlands is estimated at **USD 39 trillion**. Wetlands make up just 6% of Earth's surface but deliver **~7.5% of global GDP in value**.
- Over **60% of GDP in some African countries comes from nature-based sectors**. Wetland loss increases climate risks and lowers productivity. Investing in wetlands is a smart, cost-effective step toward sustainable growth.
- **Wetland Funding Gap:** Biodiversity funding is just 0.25% of global GDP, far too low to meet current needs.
- **Recommendations:**
 - **Wetland Conservation:** It calls for urgent action to align with the **Kunming-Montreal Global Biodiversity Framework (KM-GBF)**, particularly **Target 2** (restoring at least 30% of all degraded ecosystems) and **Target 3** (conserving at least 30% of land, waters, and seas).
 - To meet these goals, around **123 million hectares of wetlands must be restored**, possibly exceeding 350 million hectares if degraded wetlands are included.
 - Additionally, about 428 million hectares need to be effectively managed through protected areas or conservation measures.
 - This effort supports climate goals under the **UN Framework Convention on Climate Change (UNFCCC)**, **Sustainable Development Goal 6.6** on water ecosystems.
 - **Conservation Over Costly Restoration:** Conserving healthy wetlands is far cheaper than restoring degraded ones, which can cost anywhere from USD 1,000 to over USD 70,000 per hectare annually.
 - **Boost Investment in Nature-Based Solutions (NbS):** Encourage both government and private sectors to invest in wetland protection as cost-effective NbS for disaster resilience, climate mitigation, and water security.
 - Build capacity and long-term strategies to scale up wetland investments globally.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are Wetlands?

➤ **About:** The Ramsar Convention defines wetlands as **areas of marsh, fen, peatland, or water natural or artificial, permanent or temporary with static or flowing water** that may be fresh, brackish, or salty, including **shallow marine areas up to six meters deep at low tide**.

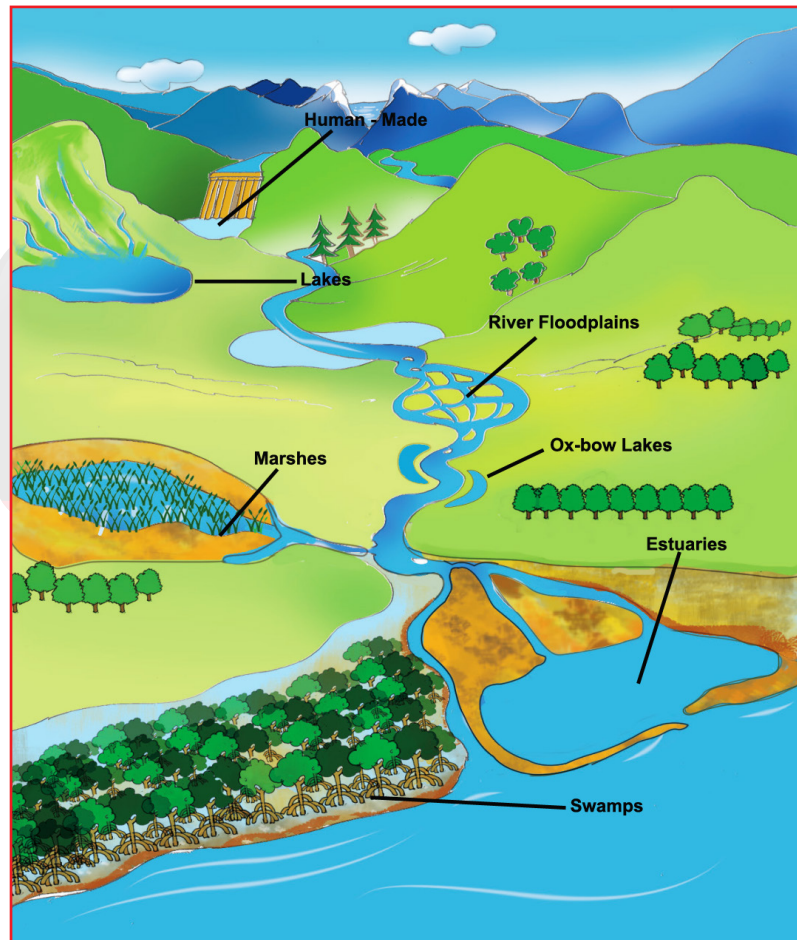
- It also allows inclusion of **nearby riparian or coastal zones and deeper marine areas** if they lie within the wetland system.

➤ Major Types of Wetlands:

- **Human-made Wetlands:** Built for purposes like irrigation, drinking water, fish farming, or recreation. Examples include **reservoirs, aquaculture ponds, salt pans, dams, and barrages**.
 - **Nagi and Nakti Bird Sanctuaries** in Bihar, now Ramsar Sites, are human-made wetlands created for irrigation via the **Nakti Dam**.
- **Lakes and Ponds:** Inland freshwater bodies that support diverse plant and animal life.
- **River Floodplains:** Low-lying areas next to rivers that flood periodically. The Yamuna floodplains, for instance, are Delhi's key water source.
 - **Bakhira Wildlife Sanctuary** is a floodplain wetland in Uttar Pradesh, with the Rapti River flowing through it.
- **Oxbow Lakes:** Crescent-shaped waterbodies formed when river meanders are cut off due to silt or course change.
 - Common in the Ganga, Brahmaputra, and Mahanadi basins (e.g., Ansupa Lake).

- **Kanwar Lake, Bihar** (also known locally as Kabartal) is Asia's largest freshwater oxbow lake.

- **Marshes:** Wetlands with herbaceous plants, fed by sources like runoff, groundwater, or tides. **Example: Kanwar Jheel in Bihar.**
- **Estuaries:** Brackish water zones where rivers meet the sea, like the **Chilika Lagoon in Odisha**. Coastal lagoons form when sandbars separate sea and river water.
- **Swamps:** Tree-dominated wetlands with waterlogged soil. Mangroves are coastal swamps. **Sunderbans is the largest mangrove swamp in the world.**



➤ Ecosystem Services of Wetlands:

- **Water Purification:** Wetlands act as **kidneys of the habitat** by purifying water, sequestering huge amounts of carbon (thereby mitigating climate change) and , supporting irrigation, and improving both surface and groundwater quality.
- **Storm Protection:** Coastal wetlands like mangroves and salt marshes reduce storm surges, flooding, and erosion.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Flood Control:** Absorb excess water during storms, reducing downstream floods and supporting streamflow in drought. **Mangroves can lower flood depths by 15–20%, and up to 70% during major storms.**
- **Erosion Control:** Wetland plants stabilize soil and prevent streambank erosion.
- **Wildlife Habitat:** Wetlands are **ecotones rich** in both aquatic and terrestrial life, supporting amphibians, birds like ducks and cranes, mammals, and migratory species.
 - Wetlands support spawning, feeding, and nursery areas for species like trout, crab, and shrimp.
- **High Productivity:** Some wetlands (e.g. salt marshes) produce more biomass per acre than most crops.
- **Education:** Serve as natural classrooms for ecological and cultural learning.
- **Status of Wetlands in India:** As of August 2024, India has 1,307 identified wetlands covering over 1.35 million hectares, the highest wetland coverage in South Asia.
- **Efforts to Conserve Wetlands:**
 - **Ramsar Convention:** India ratified the **Ramsar Convention in 1982**, naming **Keoladeo National Park** and **Chilika Lake** as its first two Ramsar Sites. With **Khichan and Menar in Rajasthan** added in 2025, India now has **91 Ramsar Sites**, showing its continued focus on wetland conservation.
 - The **Montreux Record** is a list of Wetlands of International Importance under the Ramsar Convention that are facing, or are likely to face, ecological damage.
 - **India currently** has two wetlands on the **Montreux Record: Keoladeo National Park** in Rajasthan and **Loktak Lake** in Manipur.
 - **Wetlands of India Portal (2021):** Provides public access to wetland data, maps, and conservation updates.
 - **National Wetland Decadal Change Atlas:** Tracks changes in wetlands using satellite data.

- **Amrit Dharohar Scheme (2023):** Focuses on eco-tourism, community income, biodiversity enhancement, and carbon storage in wetlands.
- **Integration with Namami Gange:** Aligns wetland conservation with river basin management, especially in the **Ganga basin.**
- **World Wetlands Day:** Observed on 2nd February to mark the adoption of the **Ramsar Convention on Wetlands in 1971 in Ramsar, Iran.**

Just Transition in the Global Plastics Treaty

Why in News?

The negotiations for the **Global Plastics Treaty** initiated under the **United Nations Environment Assembly (UNEA) resolution 5/14** (March 2022), have brought attention to the need for a **Just Transition** ensuring that efforts to end plastic pollution are both environmentally sustainable and socially fair.

- Part one of the 5th session of the **Intergovernmental Negotiating Committee (INC-5.1) on plastic pollution** held in Busan (2024) emphasized the need for stronger legal recognition and protections for informal waste workers and other vulnerable communities.

Note: The INC, set up by **United Nations Environment Programme (UNEP)** under the **UNEA resolution 5/14**, is tasked with creating a **legally binding treaty to tackle plastic pollution across its full life cycle.**

- INC-1 was held in Uruguay (2022), INC-2 in Paris (2023), INC-3 in Nairobi (2023), INC-4 in Ottawa (2024), and INC-5.1 in Busan (2024). INC-5.2 is scheduled for Geneva (August 2025).

Why is the Inclusion of 'Just Transition' Critical in the Global Plastics Treaty?

- **Ensuring Fairness, and Inclusivity:** A just transition **ensures fairness and inclusivity** in the shift to low-carbon, sustainable economies by **protecting workers and vulnerable communities.** It seeks to avoid creating new injustices while trying to fix existing ones.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It promotes **green jobs, retraining, and social protection**, especially for informal waste workers.
- **Protecting Workers in Transition to a Plastic-Free Economy:** Workers across the value chain (from production to disposal) are at **risk of exclusion or economic displacement as countries move towards banning plastics** and promoting sustainable alternatives.
 - Informal waste pickers contribute significantly to plastic recycling (**often over 50% of urban waste recovery in developing nations**), yet lack recognition and legal protection.
- **Gaps in the Draft Treaty on Just Transition:** The draft Global Plastics Treaty recognizes waste pickers' contributions **but lacks binding protections**.
 - It fails to define their roles in informal sectors, and Articles 8 and 9 of the Treaty **merely encourage inclusion without mandating obligations**, excluding informal workers from engagement. Article 11 lacks financial support for just transition programs.
 - A 'Just Transition' ensures waste pickers are not marginalized in the shift to sustainability. Without binding protections, they risk economic displacement. A clear framework is essential for their inclusion, social protection, and retraining for greener jobs.

Where do Countries Stand on Just Transition in the Global Plastics Treaty?

- **India:** It agrees with **Just Transition provisions** but stresses that implementation should align with **national regulations and local contexts**.
 - At INC-5.1 in Busan, India called for a clear scope for the **Global Plastics Treaty**. It urged avoiding overlaps with existing agreements like the **Basel, Rotterdam, and Stockholm Conventions** or the **World Trade Organization (WTO)**.
 - India also stressed the treaty must follow **Rio Declaration (1992) principles**, especially **common but differentiated responsibilities**, national priorities, and the **right to development for developing countries**.

- **European Union (EU):** Advocates for safe working conditions and legal recognition of informal workers, emphasizing fair conditions across the plastics lifecycle.
- **Pacific Small Island Developing States (PSIDS):** Proposes inclusion of indigenous **people and local communities** in the Just Transition process, recognizing their vulnerability to environmental degradation.
- **US and African Group:** Both support existing provisions, with an emphasis on involving children, youth, and waste pickers. The African Group has reservations on the legal recognition of informal workers.
- **Iran:** Calls for financing, technology transfer, and capacity-building, but **disagrees** on terms like '**vulnerable groups**' and '**workers**' and **resists legal recognition** of waste management cooperatives.

Global Plastic Pollution

- According to the **International Union for Conservation of Nature**, over 460 million tonnes of plastic is produced yearly, with 20 million tonnes leaking into the environment, threatening ecosystems, biodiversity, and the climate.
- In 2019, **macro-plastics** made up 88% of the 20 million tonnes of plastic leaking into the environment, mostly from single-use items like bags, bottles, and cups.

Plastic Pollution in India

- **Plastic Pollution:** According to the **UN Development Programme (UNDP)**, India generates **9.46 million tonnes of plastic waste annually**, with 40% uncollected polluting rivers, streets, and contributing **4% to national emissions**.
 - Rapid urbanisation and rising demand for plastic packaging are worsening the problem. Growth of **e-commerce** has led to more non-recyclable plastic waste.
 - Waste management infrastructure is weak, with more **uncontrolled dumpsites than sanitary landfills**. **Open burning** is widespread, causing toxic emissions and health hazards. The **EPR (Extended Producer Responsibility)** system is poorly enforced.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- According to the **FICCI**, India may lose **USD 133 billion** in material value from plastic packaging waste by 2030.

➤ **India's Initiatives to Curb Plastics:**

- **Plastic Waste Management (Amendment) Rules, 2024:** Strengthen plastic waste governance by **mandating annual waste assessments** by local bodies, introducing a centralized registration portal, and requiring online reporting for better monitoring.
- **India Plastics Pact:** It unites stakeholders to cut plastic use through time-bound targets, innovation, and accountability, aligned with global circular economy principles.
- **Project REPLAN (REducing PLastic from Nature):** Initiated by the **Khadi and Village Industries Commission**, focuses on reducing plastic waste by incorporating it into handmade paper production.
- **Un-Plastic Collective:** Voluntary initiative launched by the UNEP-India, CII, and WWF-India, where companies commit to time-bound actions to eliminate, reuse, and replace plastics through a circular economy approach.

Chhattisgarh Forest Department Withdraws CFRR Directive

Why in News?

The Chhattisgarh Forest Department withdrew its directive that had designated itself as the nodal agency for implementing **Community Forest Resource Rights (CFRR)** under the **Forest Rights Act (FRA), 2006**.

- The directive was issued to align CFRR with the **National Working Plan Code (NWPC) 2023**, it tried to override **gram sabhas' authority**, triggering strong grassroots opposition and leading to its withdrawal.

What are Community Forest Resource Rights (CFRR)?

- **About:** CFRR are a key provision under Section 3(1) (i) of the **FRA, 2006**, which empowers **forest-dwelling**

communities to protect, regenerate, conserve, and manage their **customary forests**.

➤ **Key Features of CFRR:**

- **Recognition of Rights:** CFRR gives **Scheduled Tribes (STs)** and **Other Traditional Forest Dwellers (OTFDs)** the legal right to **live, use, and cultivate forest land** they've been dependent on.
- **Gram Sabha as Governing Body:** CFR rights legally empower Gram Sabhas to manage, protect, and regenerate forests.
 - Gram sabhas draft forest management plans focused on local needs like livelihoods, restoration, and biodiversity. These must align with official plans but not be controlled by them, ensuring local knowledge guides adaptive forest management.
- **Sustainable Livelihoods:** Communities can collect and sell **non-timber forest produce (NTFP)** (**Minor Forest Produce**) like bamboo, honey, herbs, etc.
- **Critical Wildlife Habitats (CWH):** CFRR balances **ecological protection** with rights, ensuring **wildlife conservation** without displacing people unfairly.
 - Empowers locals to stop deforestation, illegal mining, and other external threats.

➤ **Importance:**

- **Corrects Historical Injustice:** CFRR challenges the colonial legacy of centralized control over forests by shifting power to local communities, thus rectifying historical injustices where local institutions were replaced by bureaucratic forest departments.
- **Strengthens Conservation:** Recognises the role of traditional knowledge in managing forests and biodiversity, especially in protected areas like national parks and sanctuaries.
- **Empowers Communities:** It places conservation power and responsibility in the hands of those who live closest to the forests.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Forest Rights Act (FRA), 2006

- **About:** The FRA, 2006 (**Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**) recognizes and grants forest rights to forest-dwelling STs and OTFDs who have lived in forests for generations **without formal documentation**.
 - Its aims are to address historical injustices, empower communities by ensuring sustainable access to land, and promote ecological balance.
 - The Act also facilitates the diversion of forest land for public welfare projects with **Gram Sabha** approval.
- **Key Provisions:**
 - **Ownership Rights:** Grants ownership of Minor Forest Produce (MFP) like bamboo and brushwood.
 - **Community Rights:** Includes rights to grazing, fishing, water access, and the protection of customary traditions.
 - **Habitat Rights:** Protects the rights of primitive tribal groups and pre-agricultural communities to their traditional habitats.
 - **Community Forest Resource (CFR):** Empowers communities to manage and regenerate forests sustainably.

What is the National Working Plan Code, 2023 and How does it Conflict with the CFRR?

- **National Working Plan Code, 2023:** Released by the **Ministry of Environment, Forest and Climate Change**, the NWPC 2023 is a revised framework for scientific forest management across India.
 - It builds on the earlier codes of 2004 and 2014 with a more integrated and updated approach.
 - The code aims to guide **state forest departments** in sustainable forest planning, focusing on biodiversity conservation, forest productivity, soil and water management, and **socio-economic benefits**.
- **Concerns Over NWPC in CFRR Management:**
 - **Top-down Approach:** NWPC imposes bureaucratic forest department control over forests that should be managed by **gram sabhas**, as mandated by the FRA, 2006.

- **Colonial Timber Focus:** The NWPC is rooted in colonial forestry, prioritizing **timber extraction over biodiversity and livelihood needs**. It conflicts with FRA's community-based approach, which aims to empower gram sabhas to manage forests for sustainable livelihoods and conservation.
- **Excludes Community Wisdom:** It ignores **traditional ecological knowledge** and lived experience of local forest dwellers in favour of technical, data-heavy methods.
- **Incompatible Planning:** The **rigid formats and technical demands** of NWPC are not suited for the **flexible, context-specific CFR plans** needed at the community level, delaying **grassroots forest governance**.
- **Potential for Misuse:** NWPC can be used by forest departments to **regain control over CFR areas**, undermining the legal authority of gram sabhas.
- **Obstructs Climate Resilience:** Static working plans under NWPC fail to adapt to **climate variability**, while CFR plans led by communities can offer **more adaptive, real-time responses**.

The Sevilla Commitment for Financing Sustainable Development

Why in News?

The **Fourth International Conference on Financing for Development (FfD4)** held in **Sevilla, Spain**, concluded with the **Sevilla Commitment**, outlining steps to boost **sustainable development finance**, address the **global debt crisis**, and reform the **international financial architecture** amidst rising debt and economic instability.

What is the Sevilla Commitment?

- **About:** The **Sevilla Commitment** is a comprehensive framework **developed & adopted** during the **FfD4 conference**, aiming to close the **USD 4 trillion annual SDG financing gap** in developing countries.
 - The **International Conference on Financing for Development (FfD)** is a **UN-led platform** organised **once in a decade** by the **UN Department of Economic and Social Affairs (UNDESA)** and the **UN Economic and Social Council (ECOSOC)**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It focuses on **strengthening domestic resource mobilization and tax systems**, expanding access to **social protection, digital economies**, and **climate resilience**.
- It also places strong emphasis on **gender equality**, with over **60 initiatives** targeting **women's empowerment, financing for women**, and the **redistribution of unpaid care work**.
- **Objective:** It seeks to align **financial flows and policies** with **economic, social, and environmental goals**, ensure **debt sustainability**, expand **climate finance**, and advance the **2030 Agenda and SDGs**.
- **Implementation Mechanism:** The **Sevilla Platform for Action**, comprising **130 initiatives**, serves as the **implementation mechanism of the Sevilla Commitment**.
- **Key Components:**
 - **Catalyzing Investment:** Promotes **sustainable development financing** through **public-private partnerships** and **blended finance** models.
 - **Addressing Debt Crisis:** Proposes tools like **debt swaps, pause clauses**, and **debt-for-development swaps** to ease debt burdens on **low-income countries**.
 - **Reforming Global Financial Architecture:** Calls for restructuring the **international financial system** to make it more **equitable, inclusive**, and **responsive** to the needs of developing nations.
 - These measures align with the **Addis Ababa Action Agenda (2015)** and aim to tackle **global inequality** through urgent reforms in **financing, investment, and debt relief**.

Evolution of the Financing for Development Process

- **Agenda for Development (1997):** The **UN General Assembly** adopted the Agenda for Development, proposing the need for an international conference to address financing challenges in achieving sustainable development.
- **Monterrey Consensus (Mexico), 2002:** The **First FfD Conference** laid the foundation for global cooperation on development finance, focusing on **poverty eradication, sustainable economic growth**, and **mobilization of domestic and international resources**.

- **Doha Declaration (Qatar), 2008:** Convened during the **global financial crisis**, the **Second FfD Conference** reaffirmed the **Monterrey Consensus** and stressed the urgency of **inclusive and stable international financial systems**.
- **Addis Ababa Action Agenda (Ethiopia), 2015:** The **Third FfD Conference** aligned global financing strategies with the **2030 Agenda for Sustainable Development** and the **SDGs**.

What are Key Initiatives Launched under the Sevilla Platform for Action (FfD4)?

- **Debt Initiatives:**
 - **Debt Swaps for Development Hub** (led by Spain & the World Bank): Launched to **scale up debt swaps** and reduce **debt servicing burdens** by enhancing technical capacity and international collaboration.
 - **Debt-for-Development Swap Programme** (led by Italy): Converts **€230 million** in African debt into **investments for development projects**, promoting sustainable financing.
 - **Debt "Pause Clause" Alliance** (led by MDBs & partner countries): Aims to include **crisis-triggered pause clauses** in loan agreements, allowing temporary **suspension of debt payments** during emergencies.
 - **Sevilla Forum on Debt** (led by Spain with UN support): Provides a platform for **knowledge sharing, coordination**, and **inclusive debt restructuring efforts** among developing nations.
- **Investment Initiatives:**
 - **Coalition for Global Solidarity Levies** (led by France, Kenya, Barbados): Proposes taxes on **premium-class air travel and private jets** to mobilize funds for **climate action and sustainable development**.
 - **SCALED Platform** (led by Germany, Canada, France, UK, Denmark, South Africa): Aims to **scale up blended finance** by developing **replicable and impact-oriented financing instruments**.
 - **FX EDGE Toolbox** (led by Inter-American Development Bank and Delta): Provides **currency risk management tools** to promote **local currency lending** in developing countries.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Effective Taxation of High-Net-Worth Individuals Initiative** (led by Brazil and Spain): Seeks to ensure **progressive taxation** by making high-net-worth individuals contribute **fairly** to public finances.

What are the Key Challenges Related to Sovereign Debt in Developing Countries?

- **Debt Burden:** As per Philemon Yang, President of the UN General Assembly, **3.3 billion people live in countries** where debt servicing exceeds public expenditure on essential sectors like health and education.
- **Overlapping Fiscal Demands:** Developing nations are caught between **paying off debt and funding critical**

sectors like **climate adaptation**, infrastructure, and public services, thus hampering their overall development.

- **Debt as a Development and Climate Justice Issue:** **High interest rates and limited access to finance** force countries to make stark choices between debt repayment and investing in climate resilience.
 - This disproportionately impacts countries that are least responsible for climate change but most vulnerable to its effects.

What are the Challenges Related to Climate Finance?

Click Here to Read: [Challenges Regarding Climate Finance](#)

CLIMATE FINANCE

Climate finance refers to local, national or transnational financing—drawn from public/ private/alternative sources of financing—to support mitigation and adaptation actions against climate change.

PRINCIPLES OF CLIMATE FINANCE

- ⓧ Polluter Pays
- ⓧ Common but Differentiated Responsibility and Respective Capability (CBDR-RC)

Multilateral Climate Funds Coordinated by UNFCCC

- ⓧ **Global Environment Facility (GEF):** Operating entity of financial mechanism (1994)
- ⓧ **Kyoto Protocol (2001):**
 - ▶ **Adaptation Fund (AF):** Gives developing countries full ownership of adaptation projects
 - ▶ **Clean Development Mechanism (CDM):** To carry out emission-reduction projects in developing nations
- ⓧ **Green Climate Fund (GCF):** estd. - 2010 (COP 16)
 - ▶ Funds under it - **Least Developed Countries Fund (LDCF)** and **Special Climate Change Fund (SCCF)**
- ⓧ **Long-Term Climate Finance:**
 - ▶ **Cancun Agreements (2010):** Mobilize and provide scaled-up funds in short and long term
 - ▶ **Paris Agreement (2015):** Developed nations agreed to establish new collective goal of at least \$100 billion/year by 2025
- ⓧ **Loss and Damage Fund (2023) (COP27 & COP28):** Financial assistance to nations most vulnerable and impacted by effects of climate change

Climate Investment Funds (CIFs) under World Bank

- ⓧ Clean Technology Fund
- ⓧ Strategic Climate Fund

INDIA'S INITIATIVES REGARDING CLIMATE FINANCE

Fund	Objective
■ National Adaptation Fund for Climate Change (NAFCC) (2015)	■ For vulnerable Indian states
■ National Clean Energy Fund (2010-11)	■ Advancing clean energy (started with initial carbon tax on industrial coal use)
■ National Adaptation Fund (2014)	■ Bridging gap between required and available funds
■ Intended Nationally Determined Contributions (INDCs) (2015)	■ Nationally binding targets adopted under UNFCCC
■ Climate Change Finance Unit (2011)	■ Leads on global climate finance issues

Challenges to Climate Finance

- ⓧ Gap between national needs and climate finance under NDCs
- ⓧ Least Developed Countries receive much less approved funding in per-capita terms from the multilateral climate funds
- ⓧ Slow rate of approvals
- ⓧ Failure in securing viability-gap funding



Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



History

Highlights

- 1,000 Years of Rajendra Chola I's Maritime Expedition

1,000 Years of Rajendra Chola I's Maritime Expedition

Why in News?

The Prime Minister visited Gangaikonda Cholapuram in Ariyalur district, Tamil Nadu, during the Aadi Thiruvathirai festival, and the Brihadisvara Temple ([UNESCO World Heritage Site](#)).

- He highlighted the **Chola Empire's** democratic traditions, and released a commemorative coin marking 1000 years of Rajendra Chola I's Gangetic expedition.
 - The Aadi Thiruvathirai Festival commemorated 1,000 years of Rajendra Chola I's legendary maritime expedition to Southeast Asia and also marked the rich Tamil Shaiva Bhakti tradition.

What are the Key Facts About Rajendra Chola I?

- **About: Rajendra Chola I (1014 to 1044 AD)**, son of Rajaraja Chola I, was one of the greatest rulers of the Chola Empire.
 - He was the first Indian king to lead overseas military expeditions, extending Chola influence across South and Southeast Asia.
- **Titles and Legacy:** He assumed titles like Gangaikonda Cholan (after defeating the Palas in Bengal) and Kadaram Kondan (after naval victories in the Srivijaya Empire), Pandita Cholan, and Mudikondan.
 - Founded a new capital, Gangaikondacholapuram, to commemorate his northern conquests.
 - Built Brihadisvara Temple (Gangaikondachol-eeswaram) and Chola Gangam Lake (Ponneri) in present-day Ariyalur, Tamil Nadu.

- **Military and Naval Prowess:** He reasserted control over Chera and Pandya regions; defeated Jayasimha II of Western Chalukyas, Tungabhadra River became the northern frontier.
 - His conquests included Sri Lanka, Maldives, Nicobar, Lakshadweep, Kedah, Tambralinga, and Burma, establishing one of India's earliest blue-water navies.
- **Trade, Culture, & Administration:** Under his rule, Tamil merchant guilds like Manigramam and Ayyavole thrived, fostering trade and cultural exchange with China and Southeast Asia.
 - Promoted Shaivism, patronized Chidambaram's Nataraja Temple, yet maintained religious tolerance toward Vaishnavism and Buddhism.

Chola Dynasty

- One of the three major Tamil dynasties, alongside Cheras and Pandyas, and among the longest-ruling powers in South India.
- Founded by Vijayalaya Chola in the 9th century AD after defeating the Pallavas.
- The empire expanded across South India, Sri Lanka, and parts of Southeast Asia.
- It reached its peak under Rajaraja Chola I and Rajendra Chola I, known for military conquests and administrative excellence.
- Declined with the resurgence of the Pandyas in the 13th century.
- Key Rulers:
 - **Vijayalaya Chola:** Founder, captured Tanjore.
 - **Aditya Chola I:** Defeated Pallavas, annexed Tondaimandalam.
 - **Parantaka Chola I:** Won battles, forged alliances, but suffered defeat at Takkolam.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Rajaraja Chola I:** Built Brihadeeswara Temple, expanded empire.
- **Rajendra Chola I:** Continued Rajaraja's legacy, including naval conquests.
- **Kulothunga Chola I:** Strengthened administration, promoted trade.
- **Rajaraja Chola II:** Marked the decline of the Chola Empire.

Read More:

- [Chola Dynasty](#)
- [Raja Raja I and Chola Administration](#)



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Features of Chola Administration & Architecture?

Chola Administration

- **Centralised Monarchy with Decentralised Governance:** The Chola Empire maintained a **centralised monarchy, headed by king** and supported by a structured **ministerial council**, with high officials called **Peruntaram** and lower ones as **Siruntaram**.
 - Capitals like **Tanjore** and **Gangaikondacholapuram** symbolised imperial power, and **royal tours** helped improve governance.
- **Provincial and Local Administration:** The empire was divided into **Mandalams (provinces)**, **Valanadus, Nadus** and **Urs (villages)**.
 - Towns or **Nagarams** were run by merchant guilds (**Nagarattar**), while **Nattar** governed Nadus and **Periyanattar** managed Valanadus. **Local self-governance** was strong, especially at the village level.
- **Village Self-Governance & Early Democratic Practices:** Village assemblies- **Sabhas** (Brahmin villages) and **Urs** (non-Brahmin villages) had real power over revenue, justice, irrigation, and temples.
 - A unique **Kudavolai system (palm-leaf ballot)**, where the names of eligible candidates were placed in a pot and drawn by a child in public ensured **transparent village elections**.
 - **Eligibility to contest** included **owning tax-paying land ($\geq \frac{1}{4}$ veli)**, being aged **30–70**, local residency, and knowledge of **Vedas or administration**.
 - **Disqualifications** included **alcoholism, crime, unpaid debts, kinship with officials, or prior misconduct**.
 - **Accountability** was ensured through **annual audits**.
 - However, the system excluded **women, landless labourers, and lower castes**, reflecting its **hierarchical and non-inclusive** nature.
- **Revenue Administration:** The **revenue system** was managed by a department called **Puravuvarithinaikkalam**, with **land surveys and classification**.

- **Temple lands and Ur Nattam** (residential zones) were tax-free. The **main source of revenue** included **land revenue (1/6th of produce)**, paid in cash or kind.
- Other taxes included **tolls, customs, profession tax, marriage dues, salt pans**, etc. **Kulottunga I** abolished tolls and earned the title "**Sungam Tavirtta Cholan**".
- Expenditure included **royal court, army, irrigation, roads, canals**.
- **Military Administration:** Cholas maintained a strong **4-fold army: Infantry, Cavalry, Elephants, Navy** and key forces included **Kaikkolaperumpadai** (royal army) and **Velaikkarar** (bodyguards).
 - Training was held at **Kadagams** (cantonments). The **navy** was powerful, securing **Bay of Bengal dominance** and influence in **Sri Lanka and Southeast Asia**.
- **Trade and Economic Administration:** Internal trade was organized via powerful merchant guilds like **Manigramam, Ayyavole, and Nanadesis**.
 - **Urban merchant bodies (Nagarams)** played a role in civic and economic governance.
 - Chola ports like **Puhar** supported flourishing **maritime trade with West Asia, China, and Southeast Asia**.
 - **Exports** included textiles, spices, gems and **imports** included luxury items, horses. **Urban guilds (Nagarams)** aided civic governance.

Chola Art and Architecture:

- The **Dravidian style** of temple architecture reached its **peak under the Cholas**.
 - The defining feature is the **Vimana** (tower over the sanctum). Temples typically included components like **vimana, ardhamandapa, mahamandapa, and Nandimandapa** (pavilion for Nandi).
- Early examples include temples at **Narthamalai, Kodumbalur, and Srinivasanallur**. Major temples like the **Brihadisvara Temple in Thanjavur** (by Rajaraja I), **Gangaikondacholapuram** (by Rajendra I), **Airavatesvara Temple (Darasuram)**, and **Kampaharesvara Temple (Tribhuvanam)** show their architectural brilliance.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Chola temples like **Tanjore** and **Gangaikondacholapuram** are adorned with **large, finely executed sculptures**.
 - The **Chola bronze sculptures**, especially the image of **Nataraja (dancing Shiva)**, are globally renowned for their **aesthetic beauty, grace, and craftsmanship**.
- **Chola paintings** were found on temple walls at **Narthamalai** and **Tanjore**, reflecting both religious and secular themes.

Brihadeeswarar Temple (Gangaikonda Cholapuram Temple) Ariyalur

- Built by **Rajendra Chola I (1014 to 1044 AD)** to commemorate his **Gangetic expedition**, this temple marked the **shift of Chola capital** from Thanjavur to **Gangaikonda Cholapuram**, which remained the **imperial seat until 1279 AD**.
- Dedicated to **Lord Shiva**, the temple (Gangaikondacholisvarar) reflects **refined Dravidian architecture**, surpassing even the earlier **Brihadisvara Temple** built by his father **Rajaraja Chola I**, symbolising both **military glory and religious devotion**.
- The annual **Aadi Thiruvathirai festival** celebrates Rajendra's **birth star (Thiruvadhirai)** with **Therukoothu performances** and ceremonial offerings, reflecting the dynasty's **cultural legacy**.
- Supported by inscriptions from **1027 & 1068 AD** and the **Esalam copper plates (1036 AD)**, the temple received sustained royal patronage under Chola rulers like **Virarajendra**.
- It was declared a **UNESCO World Heritage Site in 2004**, along with the **Airavatesvara Temple at Darasuram**. **Thanjavur temple** was earlier included in **1987**, all together forming the **Great Living Chola Temples**.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Art and Culture

Highlights

- Sohrai, Pattachitra, and Patua Paintings

- National Flag Day 2025

Sohrai, Pattachitra, and Patua Paintings

Why in News?

Artists from Jharkhand, Odisha, and West Bengal participated in the 2nd edition of Kala Utsav 2025 – ‘Artists in Residence Programme’ at Rashtrapati Bhavan, showcasing traditional paintings like Sohrai Khovar, [Pattachitra](#), and [Patua](#).

- The program honors India’s living art traditions while offering a platform for folk, tribal, and traditional artists to showcase their work.

What are the Key Facts Regarding Sohrai, Pattachitra, and Patua Paintings?

- **Sohrai Painting:** It is a traditional indigenous art form practiced by women from various tribal communities in the Hazaribagh region of Jharkhand, including the Kurmi, [Santhal](#), Munda, Oraon, Agaria, and Ghatwal groups.
 - Known as **harvest art**, it is deeply linked to **agriculture and cattle domestication**. The term ‘Soh’ or ‘Soro’ means *to drive away*, and ‘Rai’ refers to *a stick*.
 - As part of the ritual, **mandalas or aripan are drawn with rice gruel to welcome cattle into homes**, a task performed by **village women using their fingers**.
 - **Sohrai Khovar Painting** has received the [Geographical Indication \(GI\) tag](#) in the year 2020.



- **Patta Chitra:** Originating in Odisha, it is closely associated with the [Jagannath Temple](#) in Puri, where it is traditionally used to **decorate the sanctum sanctorum**.
 - **Pattachitra**, painted on **cloth (Pata)** coated with **chalk powder** and **tamarind seed glue**, uses **natural colors from vegetable, earth, and mineral sources**.
 - Themes include **religious, mythological, and folk stories**, notably **Krishna Leela** and **Lord Jagannath**.
 - Without **pencils or charcoal**, artists start with **borders** and sketch directly with **light red and yellow brushes**, finishing with a **lacquer coating** for **shine and water resistance**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App





- **Patua Painting:** It is a folk art tradition from **West Bengal**, practiced by the **Patua or Chitrakar community** (both Hindu and Muslim).
 - **Patua artisan community** is also found in **Bihar, Jharkhand, Odisha**, and parts of **Bangladesh**.
 - It is painted on **cloth scrolls** called *pati* or *patta*, backed with old sari fabric, using **bamboo-goat hair brushes** and **vegetable dyes** fixed with gum.
 - It is used to narrate **Mangal Katha**, especially by **Hindu Patuas** in **Kalighat** and **Kumartuli**.



National Flag Day 2025

Why in News?

India observed **National Flag Day (Tiranga Adoption Day)**, on 22nd July 2025, to mark the anniversary of the Indian National Flag's official adoption by the **Constituent Assembly** in 1947.

What are the Key Facts About the Indian National Flag?

- **Evolution of the Indian National Flag:**
 - **1904:** Designed by **Sister Nivedita**, it featured red and yellow with a Vajra (strength), a white lotus (purity), and "Bande Mataram" inscribed.
 - **Sister Nivedita** was an **Irish social activist** and a disciple of **Swami Vivekananda**.
 - **1906 (Swadeshi Movement Flag):** Considered the **first tricolour**, it was hoisted in Calcutta with **green, yellow, and red horizontal stripes**. It featured lotuses, a sun, a crescent moon, and the words "**Vande Mataram**".
 - **1907 (Saptarishi Flag):** Hoisted by **Madam Bhikaji Cama** in Germany. It had green, saffron, and red stripes with lotuses, "Vande Mataram", a sun, and a crescent moon.
 - **1917 (Home Rule Movement Flag):** Introduced by **Annie Besant and Tilak**. It had red and green stripes, the Union Jack, crescent and star, and stars in the Saptarishi pattern.
 - **1921: Pingali Venkayya** (an Indian freedom fighter, linguist, and polymath from Andhra Pradesh), proposed a **red, white, and green** flag with a **spinning wheel**, symbolising unity and self-reliance. The design of the present Indian flag is largely attributed to him.
 - In **1931** Saffron replaced red. The **flag had saffron, white, and green** with a **spinning wheel in the centre**. It was adopted by the **Indian National Congress**.
 - **1947 (Present Flag):** Adopted by the Constituent Assembly. The **spinning wheel was replaced with the Ashoka Chakra**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Common name:** Tiranga, meaning *Tricolour*.
- **Design:** Three horizontal stripes: **saffron (kesari) (top)**, **White (middle)**, **Green (bottom)**, with a navy blue **Ashoka Chakra** in the centre.
- **Ashoka Chakra:** The Ashoka Chakra, with **24 spokes**, is based on the wheel from the **Sarnath Lion Capital** made by the **3rd-century BC Mauryan Emperor Ashoka** and fits within the width of the white band.
- **Symbolism:**
 - **Saffron:** Strength and Courage of the Country.
 - **White:** Purity, Truth, and Peace.
 - **Green:** Fertility, growth, and prosperity, reflecting India's agricultural roots and environmental commitment.
 - **Ashoka Chakra (known as the "wheel of law"):** Represents Law, justice, and the cycle of life. The chakra intends to show that there is life in movement and death in stagnation.
- **Flag dimensions:** 3:2 ratio (length to height).
- **Regulation:** Governed by the **Flag Code of India, 2002** which sets rules for display, handling, and respect for the flag.
 - **Article 51A(a) of the Indian Constitution** mandates that it is the fundamental duty of every citizen **to respect the National Flag and National Anthem**.
 - The **Prevention of Insults to National Honour Act, 1971**, punishes offences related to disrespecting the national flag or anthem.

- **Material:** Traditionally made from **hand-spun khadi (cotton)**, symbolising self-reliance. In 2021, the Flag Code of India, 2002 was **amended** to allow the **national flag to be made from other approved materials**, including machine-made and polyester flags.



Note: The **National Flag** in possession of the **Archaeological Survey of India** at **Fort St George Museum** in **Chennai** is known as the oldest surviving Indian national flag. It was hoisted at **Fort St George** in **Chennai** on **15th August 1947**.

What is the Flag Code of India, 2002?

- **About:** The Flag Code of India, 2002, came into effect on 26th January 2002, allowing citizens to hoist the **national flag at their homes**,

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



offices, and factories on any day, not just on national occasions provided they follow the code's rules.

- The Code is divided into three parts: **Part I** describes the flag, **Part II** covers its use by the public and institutions, and **Part III** outlines its display by government bodies.
- Flag Code outlines the **Do's and Don'ts to preserve** the dignity and honour of the national flag.
- The Flag Code of India was amended in 2022 to allow the national flag to be **flown day and night** if displayed in the open or on a private home. Earlier, it was only allowed between **sunrise and sunset**. The change came ahead of the **Har Ghar Tiranga campaign** under **Azadi Ka Amrit Mahotsav**.

- **The Do's:** The flag may be hoisted in schools and other institutions to promote respect.
 - Citizens, private groups, and institutions can display the flag on any day, with dignity.
 - It grants all citizens the right to fly the flag on their premises.
- **The Don'ts:** The flag cannot be used for communal gains, drapery, or clothes.
 - The flag cannot be intentionally allowed to touch the ground or the floor or trail in water. It cannot be draped over the hood, top, and sides or back of vehicles, trains, boats or aircraft.
 - No other flag, object, or decoration should be placed above or on the flag.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Security

Highlights

- Rising Cyber Frauds in India

Rising Cyber Frauds in India

Why in News?

The **Indian Cyber Crime Coordination Centre (I4C)**, a unit under the Ministry of Home Affairs (MHA), has reported a sharp surge in financial cyber frauds targeting Indian citizens, primarily originating from Southeast Asian countries.

What is the State of Financial Cyber Frauds in India as per I4C Analysis?

- **Rising Financial Losses:** In the first half of 2025, India lost an average of Rs 1,000 crore per month to cyber frauds, totaling Rs 7,000 crore.
 - According to the **I4C**, the projected annual loss may exceed Rs 1.2 lakh crore (Rs 1.2 trillion) in 2025, amounting to 0.7% of India's GDP.
- **Origin & Nature of Scams:** Over 50% of cyber frauds targeting Indians originated from **Southeast Asian countries** such as Cambodia, Myanmar, Vietnam, Laos, and Thailand, operated from **high-security compounds allegedly run by Chinese handlers**.
 - These primarily involve **stock trading/investment scams, digital arrest scams** & task-based and investment-based scams.
 - Indian intelligence has identified **45 scam centres in Cambodia, 5 in Laos, and 1 in Myanmar**.
- **Modus Operandi:** Victims, including Indians, are being **trafficked via fake job offers** and routed through countries like **Dubai, China, and Thailand** to operate cyber scams.
 - **Recruitment agents** are active across Indian states (Maharashtra, Tamil Nadu, J&K, Uttar Pradesh, and Delhi).

- **Systemic Gaps & Enforcement Action:** India's cyber fraud ecosystem is exploited due to **loopholes in digital banking transactions**, issuance of **ghost SIM cards by PoS agents** in the telecom sector, and **weak verification processes in immigration**, enabling anonymous and **cross-border cybercrimes**.

Indian Cyber Crime Coordination Centre (I4C)

- **About:** The **Indian Cyber Crime Coordination Centre (I4C)** was launched by the **Ministry of Home Affairs** in **2020** to provide a **comprehensive and coordinated response to cybercrime**, including financial frauds.
- **Key Objectives:**
 - Act as the **national nodal agency to monitor, prevent, and investigate cybercrimes**, especially those targeting **women, children**, and critical infrastructure.
 - Provide an **early warning system** and facilitate **trend analysis, pattern recognition, and data sharing** among law enforcement agencies.
 - Enable **easy reporting of cybercrime** and promote **public awareness** on cyber hygiene and fraud prevention.
 - Assist **States/UTs** in building capacity of police, prosecutors, and judicial officers in areas like **cyber forensics and investigation**.
- **National Cyber Crime Reporting Portal:** A citizen-centric platform under I4C that enables individuals to **report cyber frauds online**. Reported complaints are forwarded to the **relevant law enforcement agencies** for necessary legal action.

What are Cyber Frauds?

- **About:** **Cyber frauds** are **criminal activities** conducted using digital technology (internet) to **deceive individuals or organizations** for financial gain.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It exploits vulnerabilities in **cybersecurity systems**, **digital platforms**, or **human behavior** to **steal money, data, or identities**.

➤ **Types of Cyberfrauds:**

Cyber Fraud/Threats	Description
Digital Arrests	Impersonating authorities (police or income tax officers) to extort money .
Online Job/Task-Based Scams	Fake work-from-home offers with upfront payments.
Malware	Malware is used to steal personal information that allows cyber criminals to gain control of a victim's computer .
Ransomware	Ransomware encrypts a victim's files and demands payment for decryption. E.g., WannaCry attack in 2016
Phishing	Phishing involves emails that appear to be from trusted sources , tricking users into clicking links that lead to fake websites and attackers gaining sensitive details e.g., credit card numbers.
Cyberbullying	Cyberbullying includes any threat to a person's safety, coercion to say or do anything.
Cyber Spying	Cyber Spying targets a public or private entity's network to gain access to classified data, private information, or intellectual property.
Business Email Compromise (BEC)	Scammers hack legitimate email accounts to impersonate suppliers, employees, or tax office members, considered a white-collar crime.
Dating Hoodwinks	Hackers use dating websites, chat rooms, and online dating apps to pose as potential partners and gain access to personal data.
ATM/PoS Frauds	Skimming card details or unauthorized transactions.

➤ **Consequences of Cyber Fraud:**

- **Individuals** face unauthorised financial transactions, **loss of account access**, and **misuse of personal data** for harassment or blackmail.
- **Businesses** risk legal penalties, regulatory fines, and **loss of market value** due to compromised client data.
- **Governments** face threats to **national security** as cyber breaches target **defence and critical information systems**.

➤ **Notable Cyberfraud Incidents:**

- **Aadhaar Data Breach (2018)**: Personal data of **1.1 billion Aadhaar cardholders** was compromised, including **Aadhar numbers, PAN** and bank details.
- **Canara Bank ATM Attack (2018)**: Hackers used **skimming devices** on **300 debit cards**, leading to a theft of over Rs 20 lakh.
- **Pegasus Spyware Case**: The **Israeli spyware Pegasus** was allegedly used to **access data from mobile devices without consent**, affecting over **300 verified Indian phone numbers**.

What are the Key Emerging Cyber Threats Affecting India's Digital Landscape?

Click Here to Read: [Emerging Cyber Threats in India](#)

What are the Key Initiatives Related to Cybersecurity?

➤ **Global Initiatives on Cybersecurity:**

- **Budapest Convention on Cybercrime**: It is the first international treaty to address cybercrime through legal harmonization, investigative cooperation, and capacity building. It came into force on **1st July 2004**.
 - **India is not a signatory of the Budapest Convention.**
- **Internet Governance Forum (IGF)**: **IGF** is a **multi-stakeholder platform** under the UN that facilitates dialogue among **governments, private sector, academia, and civil society** on public policy issues related to Internet governance and cybersecurity.
- **UNGA Resolutions on ICT Security**: The **United Nations General Assembly (UNGA)** has established **2 key platforms** for addressing cybersecurity:

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Open-ended Working Group (OEWG)**, initiated by Russia, focuses on inclusive dialogue and capacity building in ICT security.
- **Group of Governmental Experts (GGE)**, initiated by the USA, works on developing norms of responsible state behaviour in cyberspace and international legal frameworks.

➤ **Indian Initiatives:**

- **Legislative Measures:**
 - **Information Technology Act, 2000 (IT Act)**
 - **Digital Personal Data Protection Act, 2023**
- **Institutional Framework:**
 - **Indian Computer Emergency Response Team (CERT-In)**
 - **National Critical Information Infrastructure Protection Centre (NCIIPC)**
 - **Indian Cyber Crime Coordination Centre (I4C)**
 - **Cyber Swachhta Kendra**
 - **Citizen Financial Cyber Fraud Reporting and Management System** for real-time monitoring, tracking, and resolution of cyber fraud cases.

➤ The **Central Bureau of Investigation (CBI)** registered FIRs against PoS agents for issuing fraudulent SIMs.

○ **Strategic Initiatives:**

- **Bharat National Cybersecurity Exercise 2024**
- **National Cyber Security Policy, 2013:** Provides

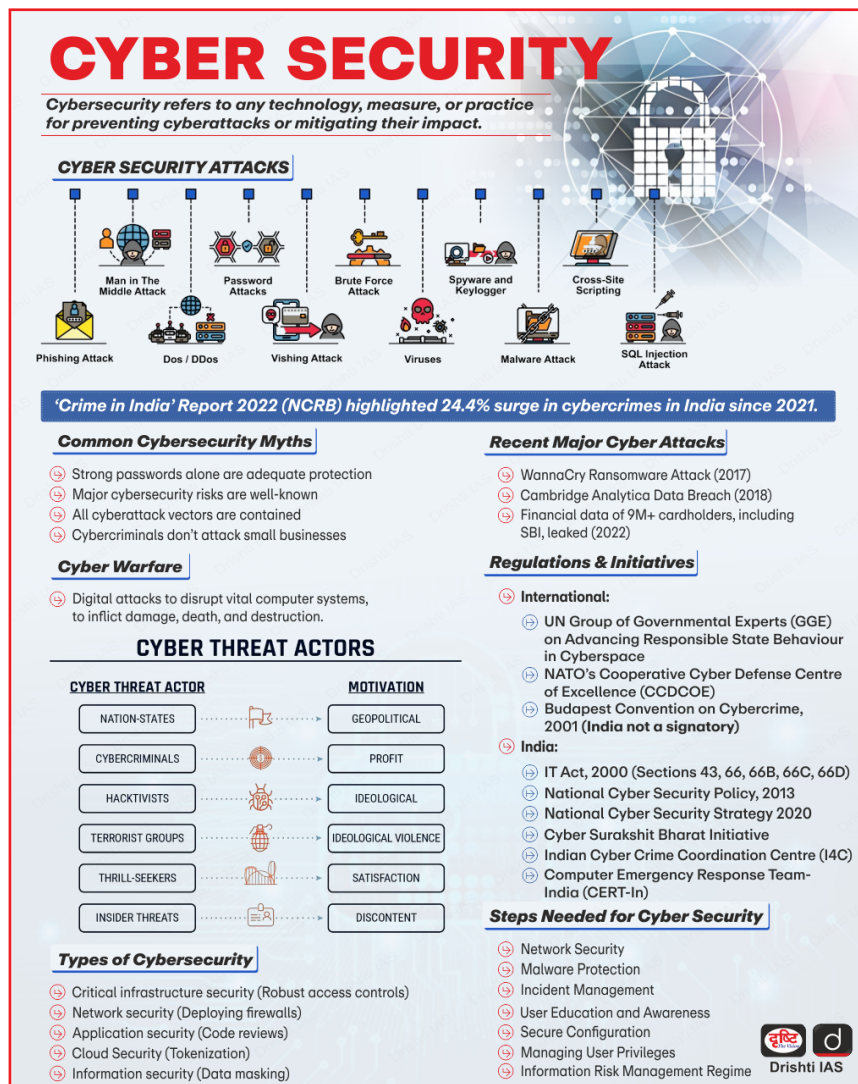
vision and strategies for securing cyberspace and protecting critical information infrastructure.

• **Chakshu & Digital Intelligence Platform by DoT:**

- **Chakshu**, a tool on Sanchar Saathi portal to report fraudulent calls, SMS, or WhatsApp messages related to KYC expiry or bank account updates.
- **Digital Intelligence Platform** to enable real-time coordination to tackle cyber frauds.

○ **Sector-Specific Regulations:**

- **Cybersecurity Framework for SEBI Regulated Entities:** Mandates cybersecurity policies for securities markets.
- **Telecommunications (Critical Telecommunication Infrastructure) Rules, 2024**



Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishiti
Learning
App



Ethics

Highlights

- Ethical Digital Conduct in Public Service

Ethical Digital Conduct in Public Service

Why in News?

The Maharashtra government's recent directive on regulating **social media** use by government employees, focusing on political neutrality and information confidentiality, has reignited the larger debate on **ethical digital conduct in public service**.

- In a parallel development, LBSNAA's April 2025 advisory to newly selected civil servants highlights the same concern, **urging officers to exercise caution and avoid impulsive online behaviour or accepting inducements**.
 - It further emphasizes the importance of maintaining integrity and exercising restraint in the digital realm.

What are the Key Pillars of Ethical Digital Conduct in Public Service?

- **Transparency:** Public servants must foster openness by ensuring all digital communications and decisions are **clear, accessible, and comprehensible to the public**.
 - This builds trust by making government actions visible and accountable to citizens.
- **Accountability:** Civil servants should be **responsible for their digital actions**, both professionally and personally, ensuring that their online behavior aligns with public expectations and institutional standards.
 - This includes answering for any online missteps and maintaining ethical integrity.
- **Impartiality:** Public servants must **avoid any appearance of bias in their digital interactions**.

- This entails ensuring political neutrality on social media and refraining from posting content that could be seen as influencing public opinion unfairly or violating the duty of impartiality required in governance.

- **Integrity:** Public servants should act with honesty, consistency, and fairness in all their digital engagements.
 - They must **avoid engaging in deceptive behavior online**, which could undermine trust in public institutions.

Note: In recent times, there has been a **noticeable increase in the use of digital platforms, particularly social media**, by civil servants for **personal visibility and expression** that has raised concerns.

- While digital platforms enable outreach and transparency, their misuse can affect neutrality, integrity, and public trust in the service and thus necessitates regulation.

How far is Regulation of Civil Servants' Social Media Usage Justified?

- **In Favor of Regulation:**
 - **Preserving Political Neutrality:** Expressing political opinions or endorsing ideologies compromises the apolitical character of the civil service.
 - The **regulation aligns with deontological ethics**, which emphasizes duty over personal opinion, and **Rawls' theory of justice**, advocating **fairness for all citizens, regardless of their political or personal beliefs**.
 - This ensures that **decisions are made impartially and without partisan bias**, focusing on universal principles of justice rather than individual preferences.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Protection of Sensitive Information:** Civil servants' social media activity could lead to **unintended leaks or misinformation**, compromising national security.
 - Regulation helps maintain confidentiality and protect public trust, grounded in **Kantian duty ethics**, where a breach of duty is wrong regardless of intent.
- **Maintaining Institutional Integrity:** Civil servants, especially in uniformed services, **represent the state's image**.
 - For instance, **Somnath Zende**, a police sub-inspector in Pune, **was suspended for violating the police conduct rules** after winning money through an online fantasy league.
 - Unprofessional behavior online can harm the institution's reputation, and regulation aligns with **virtue ethics**, which values dignity, propriety, and restraint in public life.
- **Public Interest First Principle:** As per the Gandhian principle of selfless service, civil servants must prioritize the public good over personal expression.
 - **Utilitarian ethics** supports regulation, arguing the greater public interest should outweigh individual freedom when necessary.

➤ **Against Overregulation:**

- **Violation of Freedom of Expression:** Over-regulation risks violating fundamental freedom under **Article 19(1)(a)** of Indian constitution.
 - **John Stuart Mill's liberty principle** suggests personal freedoms should only be restricted when harm is clearly demonstrated.
- **Erosion of Transparency:** Social media can serve as a tool for transparency, enabling civil servants **to share government insights and updates directly**.
 - Over-regulation could limit this, undermining public access to information.

- Also, the **presence of civil servants on social media has led to increased public scrutiny of their backgrounds, assets, and recruitment-related documents (e.g., Pooja Khedkar Case)**, offering an open platform for citizens to engage with and assess the integrity of public officials.
 - However, over-regulating their online activities could curtail this transparent interaction, ultimately reducing the level of accountability.
- **Generational Disconnect:** Younger civil servants are more familiar with social media dynamics.
 - Over-regulation risks distancing the government from the tech-savvy, younger population, clashing with the ethical principles of **empathy** and **inclusivity**.
- **Morale and Trust:** Excessive restrictions can breed distrust and alienation among civil servants, affecting morale.
 - A balance is needed to avoid creating an atmosphere of suspicion, violating **organizational justice** and **trust**, both crucial for a healthy institutional culture.

What is the Existing Regulatory Mechanism for Civil Servants in India?

Framework/Rule	Key Provisions
Central Civil Services (Conduct) Rules, 1964	Prohibits criticism of government policy and requires political neutrality.
All India Services (Conduct) Rules, 1968	Mandates dignified conduct and prohibits disclosure of information.
RTI Act, 2005 & Official Secrets Act, 1923	Protect sensitive and classified information from being leaked.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Disaster Management

Highlights

- India's Preparedness Against GLOFs
- Parametric Insurance for Disaster Risk Reduction
- National Crisis Management Committee

India's Preparedness Against GLOFs

Why in News?

Frequent **Glacial Lake Outburst Flood (GLOF)** incidents in Nepal have heightened concerns in the **Indian Himalayan Region (IHR)**, home to **thousands of glacial lakes** vulnerable to **climate-induced disasters**.

What is a Glacial Lake Outburst Flood (GLOF)?

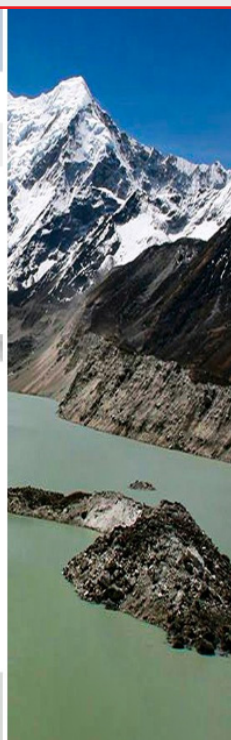
- **About:** GLOF is a **flood** resulting from the **sudden and rapid release of water** from a **glacial lake**, often caused by the **failure of a moraine (loose rock and debris) dam or ice dam**.

What are Glacial Lake Outburst Floods (GLOFs)?

A Glacial Lake Outburst Flood, or GLOF, is **sudden release of water from a lake fed by glacier melt** that has formed at the side, in front, within, beneath, or on the surface of a glacier.

Main Features of GLOFs

- Involve sudden (and sometimes cyclic) releases of water.
- Tend to be rapid events, lasting hours to days.
- Result in large downstream river discharges (which often increase by an order of magnitude).



Causes:

- **Glacial Retreat due to Climate Change:** Accelerated melting in the **Indian Himalayan Region (IHR)** has led to the formation of over **7,500 glacial lakes**, many above **4,500 m**, often dammed by unstable moraines. Eg: **2013 Uttarakhand floods** triggered by glacial melt and heavy rainfall.
- **Cloudbursts & Extreme Rainfall:** Sudden intense rainfall raises lake water levels, stressing weak moraine dams. Eg: **Kedarnath GLOF (2013)**, **North Sikkim GLOF (June 2023)**.
- **Avalanches & Landslides:** Ice/rockfall into lakes causes displacement waves, breaching dams. Eg: **Chamoli (2021)**, **South Lhonak lake (2023)**.
- **Seismic Activity:** The Himalayas fall under **Seismic Zones IV and V**, making the region highly prone to earthquakes. Eg: **2015 Nepal Earthquake** altered lake stability, raising GLOF threats.
- **Internal Seepage & Weak Moraines:** Piping erosion weakens moraine dams, causing sudden breaches. Eg: **1985 Dig Tsho GLOF, Nepal**.
- **Unregulated Infrastructure Development:** Construction of **hydropower projects, roads, and settlements** in glacial and riverine zones destabilizes fragile ecosystems.
 - Eg: The **Teesta-III Dam**, a major hydropower project, was **destroyed during the 2023 Sikkim GLOF**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



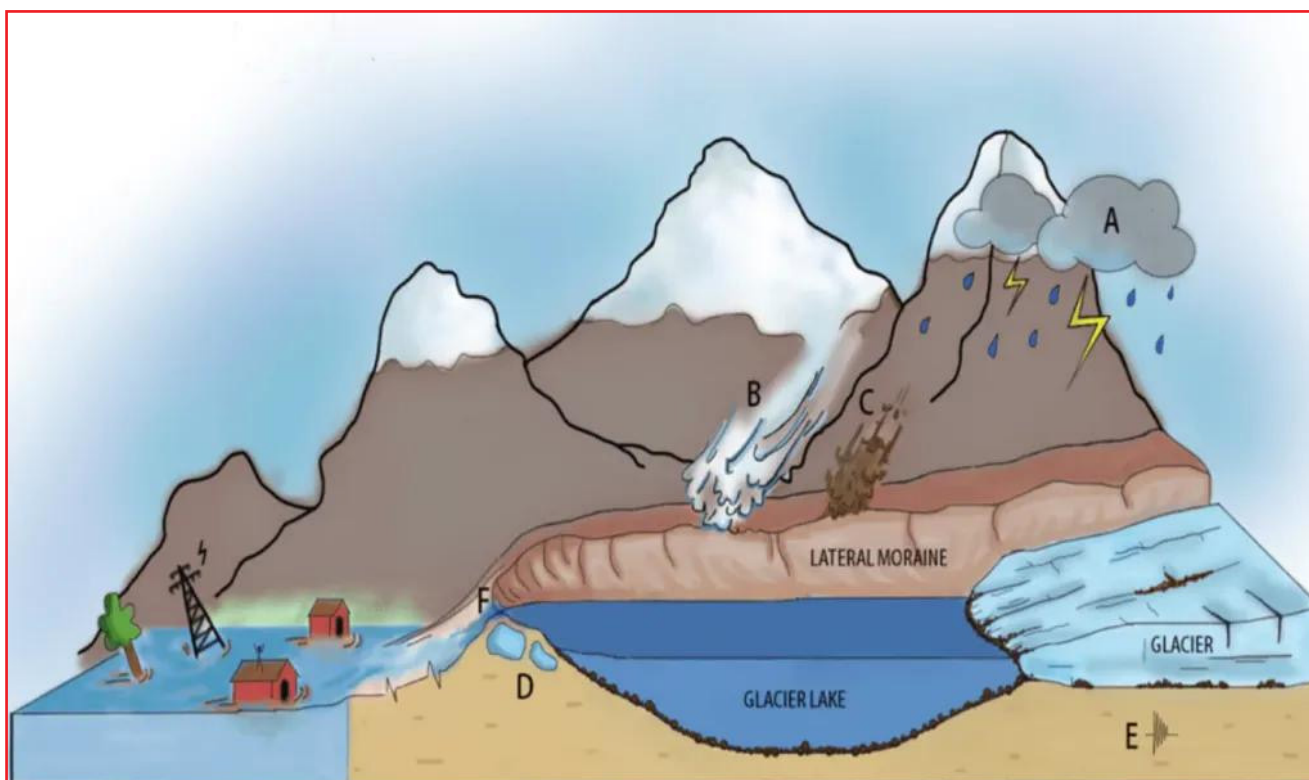


Figure: Illustrative graphic showing various reasons for GLOF occurrence
 (A) Cloudburst (B) Snow avalanche (C) Landslide (D) Melting of ice in moraine
 (E) Earthquake (F) Overflow

Types of Glacial Lakes in Himalayas

- **Supraglacial Lakes:** Form on the **surface of glaciers** due to **meltwater accumulation**; highly vulnerable during summer melting.
- **Moraine-dammed Lakes:** Located near the **glacier snout**, held by **loose debris or ice-core moraines**; **structurally weak** and prone to **sudden failure under external stressors**.

What is India's Vulnerability to GLOFs (Glacial Lake Outburst Floods)?

- **Geographic Extent & Vulnerability:** The Indian Himalayan Region (IHR) spans **11 major river basins** and contains over **28,000 glacial lakes**, of which **7,500 are within India**, mostly located **above 4,500 metres**.
 - These high-altitude lakes are remote and difficult to access, limiting **year-round monitoring** and **physical surveys**.
 - **ISRO's satellite data (1984–2023)** shows that out of **2,431 glacial lakes (>10 ha)** identified in **2016–17**, **676 have significantly expanded**, with **601 more than doubling**, highlighting growing **GLOF vulnerability** in the region.
- **Past GLOF Events:** The **2023 South Lhonak GLOF (Sikkim)** destroyed the **Rs 16,000 crore Chungthang hydropower project**, increased **silting in the Teesta river**, and reduced **riverbed capacity**, raising downstream **flood risk**.
 - The **2013 Chorabari GLOF (Uttarakhand)** triggered a **cascading disaster** involving **cloudbursts, landslides**, and **massive fatalities** during the Kedarnath tragedy.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Climatic Triggers:** GLOF risk is rising due to **climate change, fragile topography, and lack of robust early warning systems**. About **two-third (66%)** of GLOFs are caused by **ice avalanches or landslides**, while others result from **meltwater pressure** on weak moraine dams or **seismic activity**.
 - The record-breaking heat of **2023 and 2024** and the emergence of **localized extreme heat pockets** have further intensified glacial melt and **GLOF susceptibility**.
- **Monitoring Limitations:** India lacks **automated weather and water monitoring systems** in glacial regions due to **high costs and challenging terrain**.
 - Current monitoring relies heavily on **remote sensing**, which tracks **lake surface expansion** but provides **limited predictive capability** and is largely **post-facto**.
- **Risks to Downstream Assets:** GLOFs can cause **widespread destruction of homes, critical infrastructure, and hydropower projects**.
 - They lead to **loss of biodiversity** and increase **sediment load** in river systems, which reduces **riverbed capacity** and raises the risk of **secondary flooding** in downstream regions.

What Measures Have Been Taken by India to Mitigate GLOF Risk?

- **National GLOF Mitigation Programme:** **NDMA (National Disaster Management Authority)** launched a **USD 20 million programme** targeting **195 high-risk glacial lakes** (initially 56), classified into **4 risk categories**.
 - This shift from **post-disaster relief to pre-disaster risk reduction** is coordinated through the **Committee on Disaster Risk Reduction (CoDRR)**, with further **scale-up planned under the 16th Finance Commission (2027–31)**.
- **Scientific & Technological Interventions:** Since 2024, **multi-institutional expeditions in 6 Himalayan States** have used advanced tools like:
 - **Bathymetry** to measure water volume.

- **Electrical Resistivity Tomography (ERT)** to detect **ice-cores** beneath **moraine dams**.
- **UAVs** and **slope stability surveys** for terrain mapping.
- **Indigenous technology** such as **SAR interferometry** is being promoted to detect **micro-slope shifts**, while **Automated Weather and Water Stations (AWWS)** in **Sikkim** relay **real-time data every 10 minutes**, including **daily lake imagery**.
- **Security Forces & Local Participation:** In remote **high-altitude areas** lacking automated systems, **ITBP personnel** are trained for **manual early warning**.
 - Expeditions also involve **local communities**, ensuring **cultural sensitivity** at **sacred sites** and building **trust** through **inclusive planning** and **awareness efforts**.

NDMA's 5-Fold Strategy

- **Hazard Assessment** of all vulnerable glacial lakes.
- Install **Automated Weather & Water Stations (AWWS)** for real-time monitoring.
- **Early Warning Systems (EWS)** in downstream areas.
- **Risk Mitigation** via controlled lake drawdown and structural measures.
- **Community Engagement** through awareness, preparedness, and trust-building.

Parametric Insurance for Disaster Risk Reduction

Why in News?

Himachal Pradesh faced over **20 flash floods** along with **landslides** and **cloudbursts**, highlighting the unpredictability of **extreme weather events** due to **climate change** and rising disaster risks in India.

- Between **2019 and 2023**, India suffered over **\$56 billion** in losses due to weather-related disasters. In this context, **parametric insurance** is emerging as a quick and transparent tool for managing climate-related risks.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



What are the Key Statistics Related to Rising Disaster Risks in India?

- India recorded **764 major natural disasters** since **1900**, with **nearly 50% occurring after 2000**, reflecting increased climate volatility.
 - As per **World Bank**, India's **drought-prone area** has increased by **57%** since 1997, while instances of heavy rainfall have risen by almost **85%** since 2012.
- The **Reserve Bank of India (RBI)** estimates that up to **4.5% of India's GDP could be at risk by 2030**, due to lost labour hours from extreme heat and humidity.
 - India's climate-related losses accounted for **almost 25% of all such losses in the Asia-Pacific** during this period — the **highest in South Asia**.
 - Considering the growing frequency, intensity, and economic burden of such disasters, there is an urgent need to institutionalize innovative insurance solutions.

What is Parametric Insurance?

- **Definition:** A type of insurance where payouts are **triggered automatically** when predefined parameters (**e.g., rainfall, temperature, seismic activity**) cross a set threshold.
 - Unlike **traditional insurance** that requires **physical loss assessment**, parametric insurance provides payouts based on predefined weather triggers (rainfall or wind speed), enabling **faster, hassle-free compensation**, especially useful during large-scale disasters.
- **Related Case Studies:**
 - **Rajasthan and Uttar Pradesh** use a **water balance index** to protect **women small-holder farmers** from drought. Automatic loan support was provided.
 - **Nagaland** became the **first state in India** to purchase a **multi-year parametric cover** using disaster mitigation funds, for landslides and extreme rainfall.
 - Globally, countries in **Africa, the Pacific Islands, and U.K.** have used parametric products to cover

everything from droughts and floods to cyclone winds and flood depths

How Parametric Insurance can be Integrated in Disaster Risk Reduction Framework?

- **Integrate Parametric Models into State Disaster Plans:** Encourage states to adopt **"Smart Cover for Smart States"** using parametric policies under State Disaster Response Fund/ Disaster Management Fund.
- **Expand Sector-Specific Coverage:** Scale up insurance in agriculture (that can help farmers in drought prone as well as flood prone areas), renewable energy, transport, and MSMEs to prevent cascading economic shocks.
- **Develop Climate-Linked Microfinance Products:** Financial institutions can design policies where loans are auto-covered during weather shocks.
 - Promotes **"Insurance that thinks ahead"** for vulnerable borrowers like smallholder farmers.
- **Promote Public-Private Partnerships:** Collaborate with reinsurers, agri-tech firms, and startups for better models and outreach.

Conclusion

Parametric insurance transforms disaster response from **reactive compensation** to **proactive protection** building upon **Sendai Framework for Disaster Risk Reduction**, ensuring both financial resilience and climate justice in a warming world.

Related Keywords for Mains:

- **Climate Change & Disaster Resilience**
 - **"Predictable Unpredictability":** Climate extremes are known risks, not black swans.
 - **"From Rescue to Resilience":** Shift from reactive relief to proactive preparedness.
 - **"Mitigation is investment, not expense":** Climate spending as economic prudence.
- **Parametric Insurance & Climate Finance**
 - **"From Loss Assessment to Loss Anticipation":** Forecast-based financial security.
 - **"Liquidity is the first relief":** Speedy financial flow post-disaster ensures recovery.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



National Crisis Management Committee

Why in News?

The government of India has given **statutory backing** to the **National Crisis Management Committee (NCMC)** under the amended **Disaster Management Act, 2025**, making it the **apex decision-making body** for national disaster response coordination.

What are the Key Facts About the National Crisis Management Committee (NCMC)?

- **Constitution:** Formally constituted by the **Ministry of Home Affairs** under Section 8A(2) of the **Disaster Management Act, 2005**. Earlier, it existed without formal statutory backing.
- **Composition:** The NCMC is headed by the **Cabinet Secretary**. Its members include the Union home secretary, defence secretary, secretary (co-ordination), Cabinet Secretariat and member and head of department, the **National Disaster Management Authority (NDMA)**.
 - The chairperson of the NCMC can co-opt experts or officers from central/state governments or any organisation, **based on the nature of the crisis**.

- **Key Functions:** The NCMC assesses the country's disaster preparedness and issues directions to strengthen it.
 - It coordinates and monitors the response efforts of central and state governments, **NDMA**, and other agencies, ensuring smooth and unified disaster management across the country.

Disaster Management Act, 2025

- The **Disaster Management (Amendment) Act, 2025** aims to bring clarity and convergence among the various disaster management authorities and committees at national and state levels.
- The Act gives statutory status to key pre-existing bodies like the **NCMC** and the **High Level Committee**.
- It empowers NDMA and SDMAs to directly prepare national and state disaster plans, earlier handled by the **National Executive Committee (NEC)** and **State Executive Committees (SECs)**.
- The Act provides for setting up **Urban Disaster Management Authorities (UDMAs)** in state capitals and large municipal cities and enables states to constitute their own **State Disaster Response Forces (SDRFs)**, addressing rising urban disaster vulnerabilities.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Rapid Fire Current Affairs

Highlights

- Indian Naval Ship Satpura at SIMBEX-25
- Anamudi Shola National Park
- India Revives Sawalkote Hydroelectric Project
- Paithani Sarees
- Pralay Missile
- SPUN Atlas Highlights Gaps in Mycorrhizal Fungi Conservation
- The Preah Vihear and Prasat Ta Muen Thom
- India's First Private Test Facility for Heavy Water
- Veer Parivar Sahayata Yojana 2025
- Exercise Bold Kurukshetra 2025
- India Cuts Zero-dose Children by 43%
- Financial Conditions Index
- Kargil Vijay Diwas
- India's First Tribal Genome Sequencing Project
- 2025 Henley Passport Index Q2
- Interstellar Comet 3I/ATLAS
- DHRUVA Policy
- Birth Anniversary of Bal Gangadhar Tilak
- Birth Anniversary of Chandra Shekhar Azad
- RBI's Financial Inclusion Index 2025
- Hornbill Conservation Centre
- UK Issues Sanctions on Global Migrant Smuggling Networks
- Hatti Tribe
- Bitra Island
- AdFalcivax for Malaria
- Kamchatka Peninsula
- National Conference on Good Governance Practices
- Offshore Areas Atomic Minerals Operating Right Rules 2025
- Birth Anniversary of Shaheed Mangal Pandey
- Stablecoins
- Godavari River
- India's Advancements in Ballistic and Air Defence Systems
- Biostimulants
- Gujarat's Banni Grasslands Ready for Cheetah Reintroduction
- SC Overrides Spousal Privilege for Fair Trial
- Noise Effect on Quantum Entanglement
- Right to Peace Over Noise
- Birth Anniversary of Adikabi Sarala Das
- Sanchar Mitra Scheme
- Ranthambore Tiger Reserve
- India's Ayush AI Efforts Recognised by WHO
- ADEETIE Scheme to Boost Industrial Energy Efficiency
- FGD Exemption for Thermal Plants
- India Achieves 50% Non-Fossil Fuel Power Capacity
- Kaziranga Records High Diversity of Grassland Birds

Indian Naval Ship Satpura at SIMBEX-25

Indian Naval Ship **Satpura** has arrived at Singapore to participate in the **32nd edition** of the **Singapore-India Maritime Bilateral Exercise (SIMBEX-25)**.

- **Participation:** The Exercise's **Harbour Phase** includes Subject Matter Expert Exchanges (SMEEs), professional interactions, and operational discussions, with deck familiarization visits aboard the participating ships- **RSN Vigilant** and **RSN Supreme**.
- The Exercise's **Sea Phase** features advanced naval operations, including air defense exercises, cross-

deck helicopter operations, **precision targeting**, complex maneuvering drills, and VBSS operations.

- The Indian Navy's fleet, including the **Destroyer Delhi**, **Frigate Satpura**, **Corvette Kiltan**, and support ship **Shakti** will be visiting the Philippines and Vietnam before returning to Visakhapatnam.
- **Background:** SIMBEX (formerly Exercise **Lion King**), is an **annual maritime exercise** conducted by the **Indian Navy** and the Republic of Singapore Navy (RSN) and is one of **India's longest (started in 1994)** uninterrupted maritime drills.
- The exercise aligns with **India's Vision MAHASAGAR** and the **Act East Policy**, emphasizing strategic engagements with neighboring countries.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Significance:** SIMBEX-25 highlights the robust partnership between [India and Singapore](#) as they mark **60 years of bilateral ties**, further solidifying their dedication to **maritime security** and regional stability in the [Indo-Pacific](#).

Read More: [Major Military Exercises of India](#)

Anamudi Shola National Park

A road project through the **Anamudi Shola National Park** in Kerala's **Idukki** district has been stalled, impacting access to tribal settlements.

Anamudi Shola National Park

- **Location & Geography:** It is a biodiversity hotspot in the southern [Western Ghats](#) designated as a [National Park](#) in 2003, and forms part of the Anamalai sub-cluster, a [UNESCO World Heritage Site](#).
 - It is surrounded by key **protected areas** such as:
 - Eravikulam National Park
 - Mathikettan Shola
 - Pampadum Shola
 - Chinnar Wildlife Sanctuary
 - Kurinjimala Sanctuary
 - It is home to **Anamudi (2,695 m) peak**, (highest in South India), and is **crucial for watershed conservation**, forming the catchment area for rivers like the **Pambar** and **Chinnar**.
- **Biodiversity:** It supports **rich biodiversity** with high **endemism**.
 - The park is home to diverse forest types, including:
 - Southern Subtropical Hill Forests
 - Southern Montane Wet Temperate Forests
 - Moist Deciduous Forests
 - A unique feature of the park is its **dense shola forests**, characterized by **stunted trees** and an **abundant growth of lichens, mosses, and climbers**.
 - **Fauna species:** Leopard, Tiger, Indian Bison (Gaur), Nilgiri Tahr, Lion-tailed Macaque, Nilgiri Marten, Sloth Bear, Giant Grizzled Squirrel, and Hanuman Langur.

Other National Parks in Kerala:

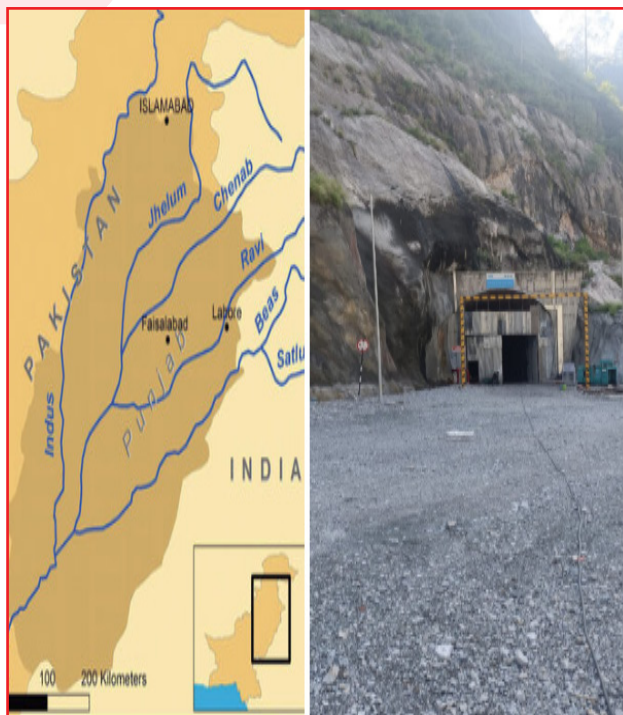
- [Eravikulam National Park](#)
- [Mathikettan Shola National Park](#)
- [Pambadum Shola National Park](#)
- [Periyar National Park](#)
- [Silent Valley National Park](#)

Read More: [Conserving Protected Areas in India](#)

India Revives Sawalkote Hydroelectric Project

The [National Hydroelectric Power Corporation \(NHPC\)](#) has initiated the tendering process for the construction of the **1,856 MW Sawalkote Hydroelectric Project** following the suspension of the [Indus Waters Treaty \(IWT\)](#) with Pakistan.

- It is a [run-of-river project](#) located on the [Chenab River](#) in Sidhu village, Ramban district, Jammu & Kashmir (J&K).
 - **Chenab (or Chandrabhaga river)** is the **largest tributary** of the [Indus River](#), formed by the confluence of the Chandra and Bhaga rivers at Tandi, in Himachal Pradesh.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- It will be developed in two phases with an estimated investment of Rs 22,704.8 crore, benefiting both J&K and India as a whole.
 - The **Forest Advisory Committee (FAC)** has given in-principle approval for diverting 847 hectares of forest land for construction.
- The project **conceived over 40 years ago** and considered of **national importance** aims to **optimize India's use** of the Indus waters while the treaty remains in suspension.
 - The IWT signed in 1960, divides the river systems between India and Pakistan.
 - India has unrestricted access to the three eastern rivers—**Beas, Ravi, and Sutlej**—while Pakistan is allocated the **three western rivers**—Chenab, Indus, and Jhelum.

Read More: [Indus Water Treaty](#), [Chenab River](#)

Paithani Sarees

The Prime Minister of India highlighted the cultural significance and traditional craftsmanship of **Paithani sarees** (known as **Mahavastra of the state of Maharashtra**).

- Paithani sarees originated in Paithan, Chhatrapati Sambhajinagar (Maharashtra) around the 6th century B.C.
- Paithani sarees are handwoven silk sarees with rich zari (**gold or silver thread**) work, known for vibrant pallus and motifs like peacocks and lotuses, inspired by [Ajanta and Ellora caves](#) art and mythology.
- Recognised for their uniqueness and cultural value, Paithani Sarees and Fabrics have been granted **Geographical Indication (GI)** tag in 2010.
- The craft has a 2000-year-old legacy, dating back to the **Satavahana era**, when Paithan was a silk export hub to the **Roman Empire**.
 - Dynasties like the **Vakatakas, Rashtrakutas, Tughlaqs, Mughals, and Marathas** supported its growth.
- The other GI-tagged saree from Maharashtra is **Karvathi Kati Tussar Silk Saree**, handwoven

exclusively in the Vidarbha region. Inspired by **Ramtek temple** architecture, these sarees feature temple-like borders ((like the Vimana).



Read more: [Kanjeevaram Silk Sari: Tamil Nadu](#)

- [Patola Sarees from Gujarat](#)
- [Chendamangalam Saree: Kerala](#)

Pralay Missile

The **Defence Research & Development Organisation (DRDO)** conducted two consecutive successful test flights of the **Pralay missile**, from Dr APJ Abdul Kalam Island off Odisha's coast.

- **Pralay** is an **indigenously developed solid propellant quasi-ballistic missile** with advanced **guidance and navigation systems** for pinpoint accuracy.
- Pralay is a **short-range surface-to-surface missile**, with a payload capacity of **500 to 1,000 kg**, and has a **range of 150 to 500 km**.
 - The missile can carry **multiple types of warheads** and strike **varied targets**, enhancing flexibility and deterrence.
- Pralay was developed by Research Centre Imarat (Hyderabad) with major support from Pune-based DRDO labs.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Quasi-ballistic missiles differ from **traditional ballistic missiles** by flying at **lower altitudes** and performing **in-flight maneuvers**, making them **harder to intercept**.

Read more: [Pralay Missile](#)

SPUN Atlas Highlights Gaps in Mycorrhizal Fungi Conservation

The **Society for the Protection of Underground Networks (SPUN)** has launched the **Underground Atlas**, which shows that **over 90% of mycorrhizal fungi hotspots lie outside protected areas**, despite their key role in **nutrient cycling** and **carbon sequestration**.

- **Role in Ecosystem:** Mycorrhizal fungi form symbiotic relationships with over **80% of plants**, aiding **nutrient absorption** like **phosphorus** and playing a key role in carbon sequestration by utilizing **CO₂** from plant roots.
 - They store around **13 billion tonnes of CO₂ annually**, or one-third of global fossil fuel emissions.
- **Types of Mycorrhizal fungi:**
 - **AM (Arbuscular Mycorrhizal) fungi:** They penetrate root cells, common in crops and grasses.
 - **Hotspots:** Brazilian Cerrado, Southeast Asia, West Africa
 - **EcM (Ectomycorrhizal) fungi:** They wrap around roots, common in forest trees like **oak and pine**.
 - **Hotspots:** Canada, Siberia, Central Europe, Western US.
- Recognising the ecological significance of fungi and other soil organisms, the **FAO** launched the **Global Soil Biodiversity Observatory (GLOBSOB)** at **COP15 of the Convention on Biological Diversity in Canada**, a global effort to monitor, protect, and integrate soil life into environmental policy.

Read More: [Flora Fauna and 'Funga'](#)

The Preah Vihear and Prasat Ta Muen Thom

Thailand and Cambodia have called a **ceasefire** after clashes near **Preah Vihear and Prasat Ta Muen Thom in the Southeast Asian Emerald Triangle**, a region long disputed due to colonial-era borders and cultural claims.

- **Southeast Asian Emerald Triangle:** It refers to a geographically sensitive area where the **borders of Thailand, Cambodia, and Laos meet**, known for its dense **forests** and ancient temples.
- **Preah Vihear:** It is a **Hindu shrine** dedicated to Lord Shiva, located in Cambodia, along the **Thailand-Cambodia border** in the **Dangrek Mountains**.
 - The temple was built around the 11th century by the **Khmer kings Suryavarman I and II**, it is now a **UNESCO World Heritage Site**.
 - The **International Court of Justice (ICJ)** ruled in 1962 (reaffirmed in 2013) that the temple belongs to Cambodia. However, **Thailand has rejected the ICJ's jurisdiction**, keeping tensions alive.
- **Prasat Ta Muen Thom:** It is a 12th-century temple dedicated to Lord Shiva, later adapted for Buddhist use. It is part of a temple group that includes **Prasat Ta Muen (a pilgrim rest house)** and **Prasat Ta Muen Tot (a hospital shrine)**.
 - Built by Khmer kings **Udayadityavarman II and Jayavarman VII**, the complex reflects **Angkorian architecture**.



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Read more: [Angkor City in Cambodia](#)

India's First Private Test Facility for Heavy Water

TEMA India, a firm based in Mumbai, has opened India's first private facility for testing **heavy water upgrade equipment**, marking a new phase of public-private collaboration in the **nuclear sector**.

- The facility will **manufacture and test distillation columns** used to upgrade **depleted heavy water (D₂O)** essential for **Pressurised Heavy Water Reactors (PHWRs)**.
 - Usually, **Bhabha Atomic Research Centre (BARC)** handles the testing, but this move to the private sector aims to **cut project timelines by 1–2 years**.
- **Heavy Water (D₂O)**: Also known as **deuterium oxide**, it consists of two deuterium atoms and one oxygen atom and it is **not radioactive**.
 - Deuterium, a **heavier stable isotope of hydrogen**, present in hydrogen and hydrogen bearing compounds like water, hydrocarbons, etc.
 - Nuclear reactors use heavy water during **construction and refueling**. It acts as both a **coolant and a moderator in nuclear fission** and must be 99.9% pure.
 - During operation, the heavy water gets **depleted and is upgraded through distillation** to restore its purity and maintain efficient reactor performance.
 - India is the **largest global producer of heavy water**.
- **India's Nuclear Power**: The nuclear power contributes about 3% to the total electricity generated in the country. India currently has **24 operational reactors** (with an installed capacity of 8,780 MW), with plans to reach **22.4 GW by 2032** and **100 GW by 2047**.

Read more: [India's Nuclear Energy Roadmap](#)

Veer Parivar Sahayata Yojana 2025

The **National Legal Services Authority (NALSA)** launched the **Veer Parivar Sahayata Yojana 2025**, a

nationwide **legal aid scheme** dedicated to **soldiers, veterans, and their dependents**.

- **Objective**: It aims to provide **free legal aid, advice, and support** to **army and paramilitary personnel and their families**, acknowledging their unique service-related constraints.
 - It will enable **online application filing, video consultations, and dispute resolution through e-Lok Adalats** and online mediation.
- **Pan-India Reach**: The scheme is designed to operate across all Indian states ensuring **inclusive national coverage**.
- **Constitutional Basis**: It is rooted in **Article 39A** of the Constitution, ensuring **equal justice and legal aid**.
- **Legal Aid Infrastructure**: NALSA will set up **legal aid clinics** at the **district, state, and national levels**.

NALSA

- **About**: NALSA is a statutory body established in **1995** under the **Legal Services Authorities Act, 1987**.
 - It **monitors and evaluates legal aid programs**, ensuring **legal services** for eligible groups like **Women, Children, SC, ST, EWS, Industrial Workers, Persons with Disabilities, and Transgender Individuals**, as per **Section 12** of the Act.
- **Tiered Structure**: Legal Services Institutions have been established at **all levels**, ranging from **Taluk Courts to the Supreme Court**.

Read More: [Supreme Court Legal Services Committee](#)

Exercise Bold Kurukshetra 2025

The **14th edition of Exercise Bold Kurukshetra 2025**, a joint military exercise between **India and Singapore**, commenced on **28th July** in Jodhpur.

- **Objective**: It aims to **validate operational procedures**, enhance **interoperability**, and improve **joint training capabilities** of both armies in **UN peacekeeping scenarios**.
- **Joint Participants**: It involves **India's Mechanised Infantry Regiment** and **Singapore's 42 Armoured Regiment** of the **4 Singapore Armoured Brigade**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- First initiated in **2005**, the annual Bold Kurukshetra exercise reflects **deep-rooted military ties** between India and Singapore.
- **UN Chapter VII** authorizes **military/non-military actions** (sanctions, blockades, troop deployment) for international peace enforcement.

Read More: [India-Singapore Ties](#)

India Cuts Zero-dose Children by 43%

India has reduced the number of **zero-dose children** from 1.6 million in 2023 to 0.9 million in 2024, playing a key role in **South Asia's highest-ever immunization coverage**, as reported by **World Health Organization (WHO)** and **United Nations International Children's Emergency Fund (UNICEF)**.

- Zero-dose children are those **who haven't received even the first dose of the DTP (diphtheria, tetanus, pertussis) vaccine**, meaning they are never reached by routine immunization services.
- In 2024, 92% of **South Asian infants** received the **third DTP dose highest ever**, up 2% from 2023. Still, over 2.9 million children remain un- or under-vaccinated.
- **India's Immunization Drive**: India received the **Measles and Rubella Champion Award** in 2024 for its immunization leadership.
 - The **Zero Dose Implementation Plan 2024** aims to vaccinate unvaccinated children. The share of zero-dose children in India dropped from 0.11% in 2023 to 0.06% in 2024.
 - **Mission Indradhanush** (Since 2014) has vaccinated 5.46 crore children and 1.32 crore pregnant women previously unreachable or under-vaccinated.
 - Through **National Vaccination Day** (16th March), India has maintained polio-free status since 2014.

Read more: [World Immunisation Day 2024](#)

Financial Conditions Index

The **Reserve Bank of India (RBI)** has proposed a daily-frequency Financial Conditions Index (FCI) to

assess India's **financial market** health in real-time to aid policymakers and analysts.

- **Objective**: The FCI will serve as a **composite indicator** to measure **tight or easy financial conditions** relative to **historical average since 2012**.
- **Components**: The FCI tracks **20 financial market indicators** across **money markets**, **government securities (G-Secs)**, corporate bonds, equities, and forex markets.
 - **Positive values** of the standardised FCI indicate **tighter conditions**, while **negative values** suggest **easier financial conditions**.
- **Trends**: During the RBI's sample period, the **tightest financial conditions** were recorded in **July 2013** (*taper tantrum*, FCI at **2.826**) driven by **bond and forex market stress**, while the **easiest conditions** occurred in **June 2021** (*post-Covid*, FCI at **-2.197**) due to the **RBI's liquidity measures**.
 - A taper tantrum refers to a **sudden spike in interest rates**, triggered by **investors' concerns** that a central bank may begin **scaling back its bond-buying program (quantitative easing)**.
- **Significance**: This initiative highlights **India's commitment to indigenous macro-financial research and real-time policy planning**.

Read More: [Role of the Financial Sector in India's Development](#)

Kargil Vijay Diwas

India celebrates **Kargil Vijay Diwas** every year on **26th July** to honour the bravery of Indian soldiers who fought in the **1999 Kargil War**.

- On 26th Kargil Vijay Diwas in 2025, the Indian Army launched three initiatives to honour soldiers' bravery.
 - These include an **e-shradhanjali portal**, a **QR code-based audio app** sharing Kargil war stories, and a new **Line of Control (LoC)** viewpoint at Batalik sector.
- The Kargil War began shortly after the **Lahore Declaration (1999)**, when Pakistani troops secretly occupied strategic heights in the Kargil district, Ladakh vacated for winter.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- In response, the Indian Army launched **Operation Vijay** to reclaim the heights in the Kargil region of Ladakh.
- The IAF carried out **Operation Safed Sagar**, targeting enemy positions on rugged peaks, while the Indian Navy launched **Operation Talwar** to exert pressure in the Arabian Sea.
- The war was fought in challenging terrain across key areas like **Tololing, Tiger Hill, Drass, and Batalik**.
- The **Kargil War Memorial in Dras, Ladakh** was built in 2000 to honour the success of **Operation Vijay**.
- The **National War Memorial** in Delhi honours soldiers from major conflicts, including the **Sino-Indian war in 1962, Indo-Pak wars in 1947, 1965, and 1971**, Indian Peace Keeping Force Operations in Sri Lanka 1987-90, and the Kargil Conflict in 1999.

Read more: [Kargil Vijay Diwas](#)

India's First Tribal Genome Sequencing Project

Why in News?

Gujarat has launched India's first Tribal Genome Sequencing Project to map the genetic profile of tribal populations.

Gujarat's Tribal Genome Sequencing Project

- **Aim:** It aims to identify genetic health risks like **Sickle Cell Disease, Thalassemia** and provide precision healthcare tailored to the needs of tribal populations.
- It seeks to bridge the gap between scientific advancements and tribal traditions, fostering a healthier future for these communities.
- **Implementation:** Managed by the **Gujarat Biotechnology Research Centre (GBRC)**.
- **Scope:** The genomes of 2,000 individuals from tribal communities across 17 districts will be sequenced.

Genome Sequencing

- **About:** It is the process of **determining the exact order of nucleotide bases (A, C, G, T)** in an individual's DNA.
 - It reveals a person's genetic makeup, providing insights into traits, health risks, and potential disorders.
- **Types:**
 - **Whole Genome Sequencing (WGS)** maps the entire DNA sequence for comprehensive genetic information.
 - **Partial Genome Sequencing** focuses on specific genome parts.
 - **Targeted Gene Sequencing** sequences specific genes.
- **Applications:**
 - Helps identify **disease-causing mutations**, understand the **genetic basis of diseases**, and discover **new drug targets**.
 - Enables **personalised medicine** by predicting individual responses to drugs, allowing for **optimized drug selection**.
 - Used in crop improvement to identify genes linked to **disease resistance, high yield, and better nutrition**, aiding the development of **improved crop varieties**.

➤ Difference Between Gene Editing and Gene Sequencing:

Characteristics	Gene Sequencing	Gene Editing
Definition	The process of determining the precise order of nucleotides (A, T, C, G) in a DNA or RNA molecule.	The process of making targeted modifications to the DNA sequence of a gene or genes.
Purpose	To obtain the complete or partial sequence of a gene, a set of genes, or an entire genome.	To introduce desired changes, such as correcting genetic defects, modifying gene expression, or introducing new genetic traits.
Techniques	Sanger sequencing, Next-Generation Sequencing (NGS), and others.	CRISPR-Cas9 , zinc finger nucleases, TALENs, and other specialised tools.
Outcome	Provides information about the genetic makeup and composition of an organism.	Allows for the direct manipulation and alteration of the genetic code.
Modification	Does not directly modify the genetic material.	Enables the addition, removal, or alteration of specific DNA sequences.

Read more: [Genome India Project](#)

2025 Henley Passport Index Q2

India ranks 77th in the **Henley Passport Index** 2025 (Q2), up from 85th in January 2025 (Q1), showing a modest but notable improvement in global mobility for Indian citizens.

- Indian passport holders now enjoy **visa-free or visa-on-arrival access to 59 destinations**, up from 57 in 2024. **The Philippines and Sri Lanka** are the two newly added visa-free destinations for Indians.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Singapore ranks first with access to 193 destinations, followed by Japan and South Korea with 190.
- The Henley Passport Index ranks 199 passports based on visa-free access to 227 destinations, using [International Air Transport Association \(IATA\)](#) data and updated quarterly.
 - IATA is the trade body for 300 airlines, covering 83% of global air traffic. Its headquarters is in Montreal, Canada.

Read more: [Henley Passport Index 2025](#)

Interstellar Comet 3I/ATLAS

The NASA-funded ATLAS telescope in Chile reported the discovery of interstellar comet 3I/ATLAS, originating from the constellation Sagittarius.

3I/ATLAS Comet

- **Discovery & Trajectory:** It is the **third confirmed interstellar object** (denoted by 3I) after 1I/ 'Oumuamua(2017) and [2I/Borisov \(2019\)](#).
 - It travels at a speed of **57–68 km/s** in a **hyperbolic orbit**, confirming its **interstellar origin**.
- **Origin and Age:** Likely **originated from the Milky Way's thick disk**, a region of **ancient stars**, making it **distinct from previous interstellar objects**.
 - Simulations using the **Ōtautahi–Oxford model** suggest a **70% probability** that it **predates the Solar System by over 3 billion years**, making it **possibly the oldest comet ever observed**, at over **7 billion years old**.

- **Physical & Chemical Properties:** Shows active **coma** and likely **tail**, with spectral evidence of **water ice and complex organics**.
 - Its estimated nucleus size is **10–30 km**, larger than earlier interstellar comets.
- **Significance:** 3I/ATLAS is the **first ISO** traced to the **Milky Way's thick disk**, unlike earlier ISOs from the thin disk.
 - It offers rare insight into **primordial galactic material**, aiding study of **planet formation, organic chemistry**, and possibly **panspermia**.



Read More: [2I/Borisov: An Interstellar Object](#)

DHRUVA Policy

The Department of Posts has introduced **DHRUVA (Digital Hub for Reference and Unique Virtual Address) Policy**, a geo-coded digital address system to revolutionize **governance, logistics, and service delivery** in India.

DHRUVA Policy

- **About:** It is a pioneering [Digital Public Infrastructure \(DPI\)](#) initiative designed to revolutionize the **structure and management of addresses across India** by assigning a unique digital address to every home.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Based on **Address-as-a-Service (AaaS)**, it enables **secure, consent-based sharing of geo-coded address information** through a seamless digital platform.
- It has been developed entirely in **India**, fostering **indigenous technology** and **domestic innovation**.
- **Objective:** It can reduce **delivery costs** in **e-commerce, postal, and logistics**, and enhances **resource planning** in **telecom, broadband, and urban governance**.
- **Layers:** It consists of 2 key layers:
 - **Digital Postal Index Number (DIGIPIN):** **DIGIPIN** is a **10-digit alphanumeric code** that represents **exact geographic coordinates** (latitude-longitude), created using **4x4 meter grids** across India.
 - It gives every location a **unique identity** using **geospatial data**.
 - **Digital Address Layer:** A **user-friendly, consent-based system** built on DIGIPIN, letting users create **custom labels and descriptive addresses** (e.g., **house numbers, street names etc**) linked to their DIGIPIN.

Read More: [Post Office Act 2023](#)

Birth Anniversary of Bal Gangadhar Tilak

The birth anniversary of **Lokmanya Bal Gangadhar Tilak** was observed on 23rd July 2025.

- **About:** Born on 23rd July 1856 in Ratnagiri, Maharashtra, Bal Gangadhar Tilak is revered as the **Father of Indian Unrest**.
 - He was among the **earliest and strongest advocates of complete independence (Swarajya)**.
 - Tilak, along with **Lala Lajpat Rai and Bipin Chandra Pal**, formed the iconic **Lal-Bal-Pal trio** known for their **extremist nationalist ideology**.
- **Surat Split (1907):** The **Surat Split of 1907** in the **Indian National Congress (INC)** marked a division between the **Extremist and Moderate factions**.
 - The **Extremists**, mainly from the **Bombay Presidency**, backed **Tilak or Lajpat Rai** for the

presidential post, but the **split occurred after Rasbehari Ghose was elected** as president.

- **Contribution in Education:** In 1884, **Tilak**, along with **Gopal Ganesh Agarkar** and others, **co-founded the Deccan Education Society**, which later led to the establishment of **Fergusson College in Pune in 1885**.
- **Newspapers:** **Kesari** (Marathi) and **Mahratta** (English)
- **Books:** **Gita Rahasya, The Orion, and Arctic Home of the Vedas**

Read More: [Bal Gangadhar Tilak](#)

Birth Anniversary of Chandra Shekhar Azad

The Prime Minister paid tribute to **Chandra Shekhar Azad** on his birth anniversary (23rd July 2025), honouring his role in the freedom struggle and his inspiration to the youth.

- **Early Life:** Born in 1906 as **Chandra Shekhar Tiwari** in Bhabhra village (now known as Chandrashekhar Azad Nagar), Madhya Pradesh, he showed revolutionary spirit from a young age. At 15, he joined **Gandhi's Non-Cooperation Movement**.
- **Shift from Satyagraha to Revolution:** Disappointed after Gandhi called off the Non-Cooperation Movement in 1922.
 - Azad turned to revolutionary activities, joined **Hindustan Republican Army (HRA)** and was involved in **Kakori train robbery (1925)** to fund armed resistance.
 - In 1928, **Bhagat Singh, Chandra Shekhar Azad, Sukhdev, Shiv Verma, and Vijay Kumar Sinha** reorganised the HRA with socialism as one of the main objectives, renaming it the **Hindustan Socialist Republican Association (HSRA)**.
- **Major actions:** Bhagat Singh was HSRA's political ideologue, while **Azad led its military wing** (planning actions, training recruits, and organising weapons).
 - He played a key role in planning the 1928 killing of **British officer John Saunders in Lahore**. Bhagat Singh and Rajguru carried out the shooting.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Legacy:** Chandra Shekhar Azad died at Alfred Park, Allahabad, on 27th February 1931, at just 24. The park was later renamed Chandra Shekhar Azad Park in his honour.

Read more: [Chandra Shekhar Azad Birth Anniversary](#)

RBI's Financial Inclusion Index 2025

The [Reserve Bank of India's Financial Inclusion Index \(FI-Index\)](#) rose to **67** in **March 2025**, up from **64.2** in **March 2024**, driven by better access, usage and quality, showing deeper financial engagement and improved literacy.

- **FI-Index** is a comprehensive measure of financial inclusion across **banking, investment, insurance, pension, and postal** sectors, developed with inputs from the government and regulators.
 - It is published **annually in July** and scores range from **0 (exclusion) to 100 (full inclusion)**.
 - The index has **no base year**, reflecting **cumulative progress** over time.
 - It consists of **three parameters: Access (35%), Usage (45%), and Quality (20%)**.
 - The **quality parameter** is a unique feature that includes **financial literacy, consumer protection, and service equity**
- The index has steadily grown from **43.4** in **March 2017** to **53.9** in **March 2021**, now reaching **67** in **March 2025**.
 - Experts credit the rise to digital efforts and sustained financial literacy, marking a shift toward meaningful and inclusive financial empowerment.

Read more:

- [Financial Literacy, Financial Inclusion and Digital Banking Initiatives](#)
- [Building a More Inclusive Financial System](#)

Hornbill Conservation Centre

The **Tamil Nadu** government has announced the establishment of India's first **Centre of Excellence** for **Hornbill** Conservation at the [Anamalai Tiger Reserve \(ATR\)](#).

- **Focus Hornbill Species:** It will focus on conserving **four species** found in the [Western Ghats](#) i.e., **Great Hornbill, Malabar Grey Hornbill, Malabar Pied Hornbill, and Indian Grey Hornbill**.
- **Expansion:** Alongside ATR, it will extend to **Kalakkad Mundanthurai Tiger Reserve, [Sathyamangalam Tiger Reserve](#)**, and parts of Kanyakumari.
- **Broader Conservation Strategy:** This marks another milestone in **Tamil Nadu's conservation journey**, following the [Dugong Conservation Reserve, Nilgiri Tahr Project, Slender Loris Conservation Centre](#), and **AI-powered elephant conservation**.

Hornbill

- **About:** Hornbills are large, wide-ranging, fruit-eating birds that primarily inhabit **tropical forests (tall trees)**.
- **Unique Traits:** Hornbills have **large curved beaks, booming calls, and distinctive wing beats**.
 - During **breeding**, the **female seals a tree cavity**, and the **male feeds her** through a **narrow slit**.
- **Hornbill Species in India:** India hosts **9 species**, with **4 in the Western Ghats**(Nature Conservation Foundation).
 - The **Great Hornbill** is widely distributed, and the [Narcondam Hornbill](#) is **endemic to Narcondam Island**.
- **Ecological Role:** They serve as **vital seed dispersers**, earning the title "**farmers of the forest**," and function as **keystone species**.

Read More: [Anamalai Tiger Reserve](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



UK Issues Sanctions on Global Migrant Smuggling Networks

In a global first, the UK has launched a sanctions regime specifically targeting individuals and networks involved in **illegal migrant smuggling** across the world.

- The regime targets **gangs, middlemen, and enablers** involved in cross-border **illegal immigration** activities. Sanctions include asset freezes, travel bans, and cutting access to the UK financial system.
 - The initiative aims to **disrupt smuggling operations**, though experts remain skeptical about its effectiveness without international cooperation.
- **Migrant Smuggling: UN Protocol against the Smuggling of Migrants by Land, Sea and Air**, defines migrant smuggling as the act of facilitating a person's illegal entry into a country of which they are **not a national or permanent resident**, in exchange for **financial or material benefit**.
 - It is a crime focused on **profit, not humanitarian** reasons, and undermines the sovereignty of states over their borders.
 - **Unlike human trafficking**, which involves exploitation, migrant smuggling focuses on **profiting from illegal border crossings**.
 - Migrant smuggling involves crossing national borders, trafficking can happen within one country.
 - Smuggled migrants can later become trafficking victims if deceived or forced into exploitation.

Read more: [Menace of Illegal Migration](#)

Hatti Tribe

In **Himachal Pradesh**, two brothers from the **Hatti tribe** married one woman in a **polyandrous marriage**, a traditional practice still seen in some Himalayan tribal communities.

- **About: The Hatti** are a **close-knit tribal community** residing along the **Himachal Pradesh–Uttarakhand border**.
 - Their name comes from their **traditional occupation** of selling **crops** and **meat** at local **haats** (marketplaces).
 - The Hattis have two main clans—**Trans-Giri** (in **Himachal Pradesh**) and **Jaunsar Bawar** (in **Uttarakhand**).
 - They were granted **Scheduled Tribe** status in August 2023.
- **Polyandry**: Locally known as “**Jodidara**” or “**Jajda**”, is a traditional practice among the Hatti community where **brothers marry the same woman**.
 - It originally aimed to **prevent land fragmentation** and **maintain family unity**.
 - Though **less common today**, it continues to hold **cultural significance** within the community.
 - **Polyandry** is illegal under Indian law, but the **Himachal Pradesh revenue law** has upheld the **Hatti tribe's tradition of Jodidara**, allowing them to continue the practice under **customary tribal law**.
 - Polyandry is a type of polygamy in which a woman has multiple husbands simultaneously.
- **Traditional Council**: The Hatti community is governed by a local body called the **Khumbli**, which handles **social issues** and **community decisions**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



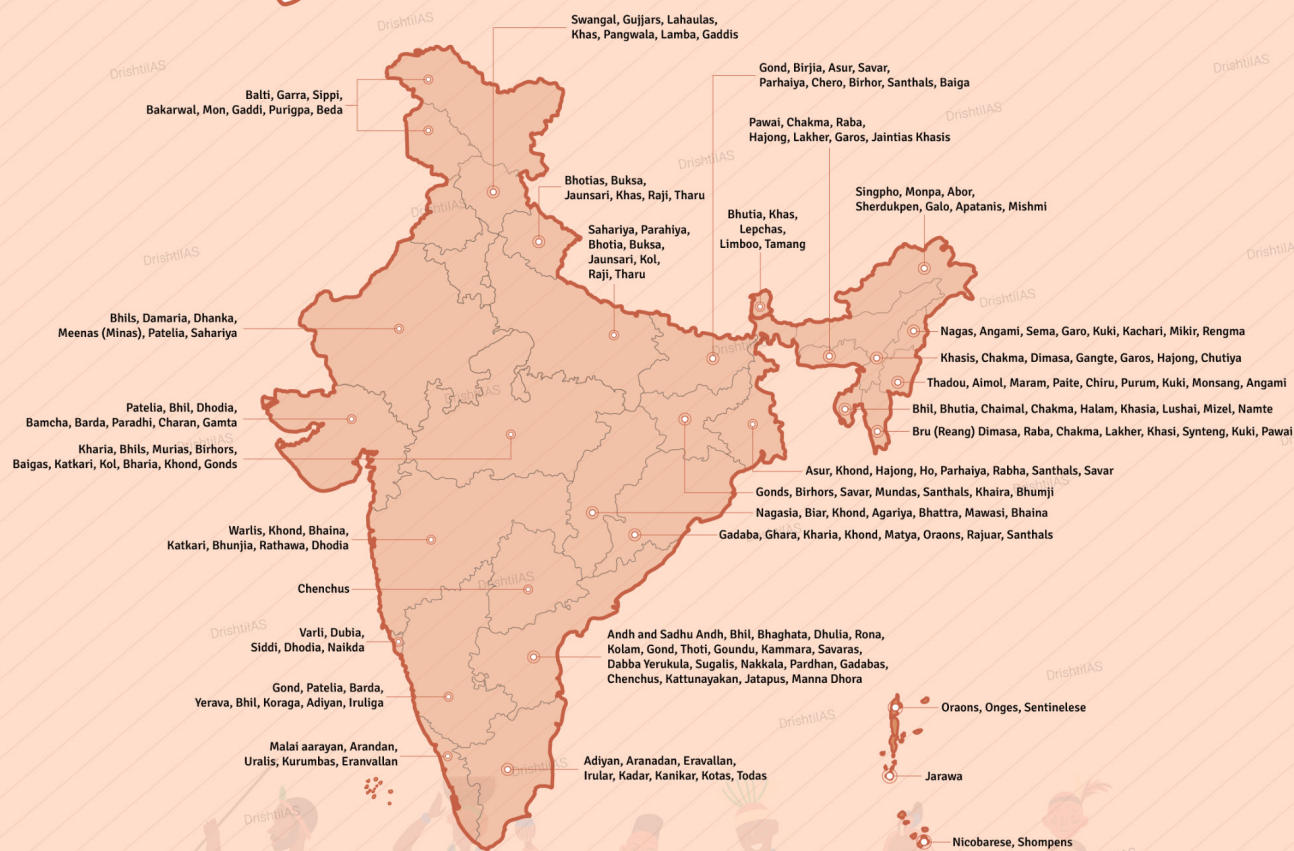
IAS Current
Affairs Module
Course



Drishti
Learning
App



Major Tribes in India



- STs constitute 8.6% of the population of India (Census 2011). Draft National Tribal Policy, 2006 records 698 STs in India.
- Particularly Vulnerable Tribal Groups (PVTGs) are more vulnerable among the tribal groups. Among the 75 listed PVTGs, the highest number is found in Odisha.
- Bhil is the largest tribal group (38% of the total scheduled tribal population of India) followed by the Gonds.
- Madhya Pradesh has the highest tribal population in India (Census 2011).
- The Santhal are the oldest tribes in India. The Santhal system of governance, known as Manjhi-Paragana, can be compared to local self-governance.
- According to the Scheduled Castes and Scheduled Tribes list (modification orders), 1956, the inhabitants of Lakshadweep who and both of whose parents were born in these islands are treated as STs.
- Article 342 of the Constitution prescribes procedure to be followed for specification of STs.
- Article 275 provides for the grant of special funds by the Union Government to the State Government for promoting the welfare of Scheduled Tribes and providing them with a better administration.



Read more: [Securing the Future for Indian Tribes](#)

Bitra Island

The government has initiated the acquisition of Bitra Island in [Lakshadweep](#) for defence purposes.

- **About:** Bitra is the smallest inhabited island in the Union Territory of Lakshadweep.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



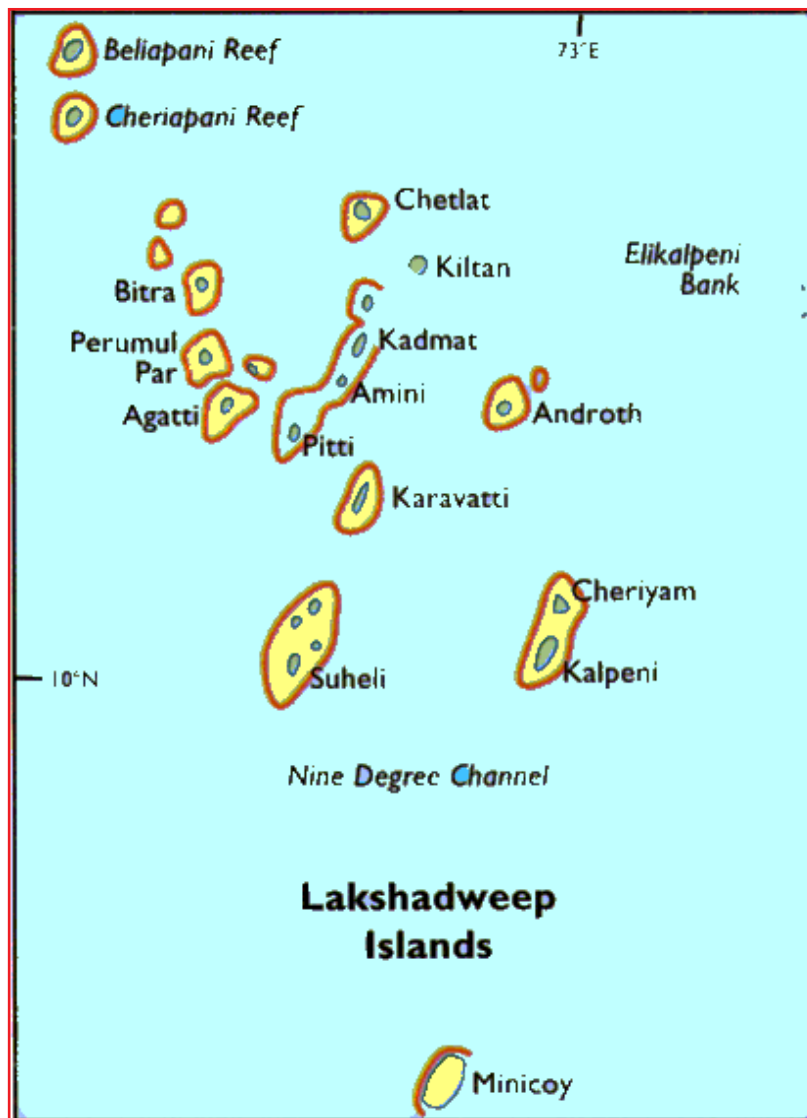
IAS Current
Affairs Module
Course



Drishti
Learning
App



- **Geography and Location:** Situated at $11^{\circ}36'N$, $72^{\circ}11'E$, Bitra lies about 483 km (261 nautical miles) from Kochi, the gateway to Lakshadweep.
 - It is part of the **Aminidivi subgroup** and spans **0.57 km in length** and **0.28 km** at its widest.
- **Climate :** The climate of Bitra closely resembles that of Kerala.
 - **Hot period:** March to May, temperatures range from $25^{\circ}C$ to $35^{\circ}C$.
 - **Annual Rainfall:** 1600 mm.
- **Lagoon and Marine Ecosystem:** It is surrounded by a vast lagoon area of 45.61 sq km, supporting rich marine biodiversity.
- **Population and Lifestyle:** As per the **2011 census**, it has a **population of 271**, mostly dependent on fishing and coconut cultivation.
- **Strategic Significance:** Bitra is strategically located near major shipping lanes and is set to host a **defense establishment**, complementing naval bases at Kavaratti (**INS Dweep prakshak**) and Minicoy (**INS Jatayu**).



Read more: [Lakshadweep Islands](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



AdFalcivax for Malaria

The **Indian Council of Medical Research (ICMR)** is developing a novel chimeric malaria vaccine **AdFalcivax**.

- **AdFalcivax:** It is a multistage malaria vaccine targeting two key stages of *Plasmodium falciparum* (**pre-erythrocytic stage** (liver) and **sexual stage** (that allows transmission via mosquitoes) using **Lactococcus lactis** (a safe, food-grade bacterium).
 - It aims to protect individuals and reduce transmission and supports the Make in India initiative and malaria elimination goals.
 - A “chimeric” vaccine is one that **combines genetic material from different sources to create a hybrid or recombinant structure**.
- **Malaria:** It is caused by the *Plasmodium* parasite, transmitted by infected **female Anopheles mosquitoes**.
 - It's prevalent in **tropical and subtropical regions** like sub-Saharan Africa, Southeast Asia, and South America.
 - Malaria parasites first infect the **liver, then enter red blood cells**. Symptoms include **fever, chills, fatigue, and headache**. Severe cases can lead to organ failure or death. It is both **preventable and curable**.
 - **R21/Matrix-M and RTS,S vaccines** have been shown to be safe and effective in preventing malaria in children, and are expected to have a significant public health impact.
 - Treatment includes drugs like **chloroquine and artemisinin**. **Youyou Tu** received the **Nobel Prize** for discovering artemisinin.
- **Burden on India:** According to the **World Malaria Report 2024**, India saw a major decline in malaria cases from **11.69 lakh in 2015 to 2.27 lakh in 2023**.

- In 2024, India exited the **World Health Organization (WHO) High Burden to High Impact (HBHI)** list, advancing towards its goal of **malaria elimination by 2030**.

Read more: [World Malaria Day 2025](#)

Kamchatka Peninsula

Five earthquakes hit near the east coast of the **Kamchatka Peninsula** in Russia, a tectonically active region, with the strongest measuring 7.4 in magnitude.

- **Kamchatka Peninsula:** It lies on the **Pacific Ring of Fire**, positioned between the **Sea of Okhotsk** to the west and the **Pacific Ocean and Bering Sea** to the east.
 - It sits at the junction of the **Pacific and North American tectonic plates**, making it a **highly active seismic zone**.
 - The region features two main mountain ranges **Sredinny and Vostochny** and is drained by the **Kamchatka River**, its primary waterway.
- **Volcanic and Geothermal Activity:** Kamchatka Peninsula contains the **volcanoes of Kamchatka, a UNESCO World Heritage Site**.
 - Kamchatka is home to over 150 volcanoes, of which 29 are active. **Klyuchevskoy** is the highest and most active volcano on the **Kamchatka Peninsula**.
- **Climate and Environment:** Mostly experiences a Tundra climate. Harsh climate contributes to the low population density.
 - The **Kuril Archipelago** extends from **Kamchatka to Japan** and is a disputed territory between Russia and Japan.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App





Read more: [Shiveluch Volcano of Russia](#)

National Conference on Good Governance Practices

The **National Conference on Good Governance Practices** was held in **Bhubaneswar, Odisha**, jointly organized by the **Department of Administrative Reforms and Public Grievances (DARPG)** and the **Odisha government**, with a focus on **governance innovation** and **grassroots impact**.

- **Theme:** “*Good Governance Practices*” featuring award-winning initiatives under the **Prime Minister’s Awards for Excellence in Public Administration**.
- **Highlighted Innovative Digital Tools:** The conference highlighted **Centralised Public Grievance Redressal and Monitoring System (CPGRAMS)** and **Digital Life Certificate** (also known as **Jeevan Pramaan**) have become global models for innovative governance.
- **CPGRAMS:** It is a 24x7 online platform for citizens to **lodge grievances related to public service delivery**.
 - Launched by the Department of Administrative Reforms & Public Grievances (DARPG) under the Ministry of Personnel, Public Grievances & Pensions, it connects all central ministries and state departments.
 - It also allows appeals if the resolution is unsatisfactory. However, it excludes Right to Information queries, court or sub-judice matters, religious issues, and service-related grievances of government employees.
- **Jeevan Pramaan:** It is a **biometric-enabled digital service** launched in **2014** to simplify life certificate submission for pensioners. Instead of appearing in person, pensioners can now **digitally verify their identity** through a mobile app or online platform.
 - This ensures **continued pension disbursement** while reducing fraud. It is available to **Central, State, and other government pensioners**.
 - Over **10.31 crore digital life certificates** have been submitted through Jeevan Pramaan since its launch in 2014, reflecting its wide adoption among pensioners.

Read more: [Decoding Good Governance](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



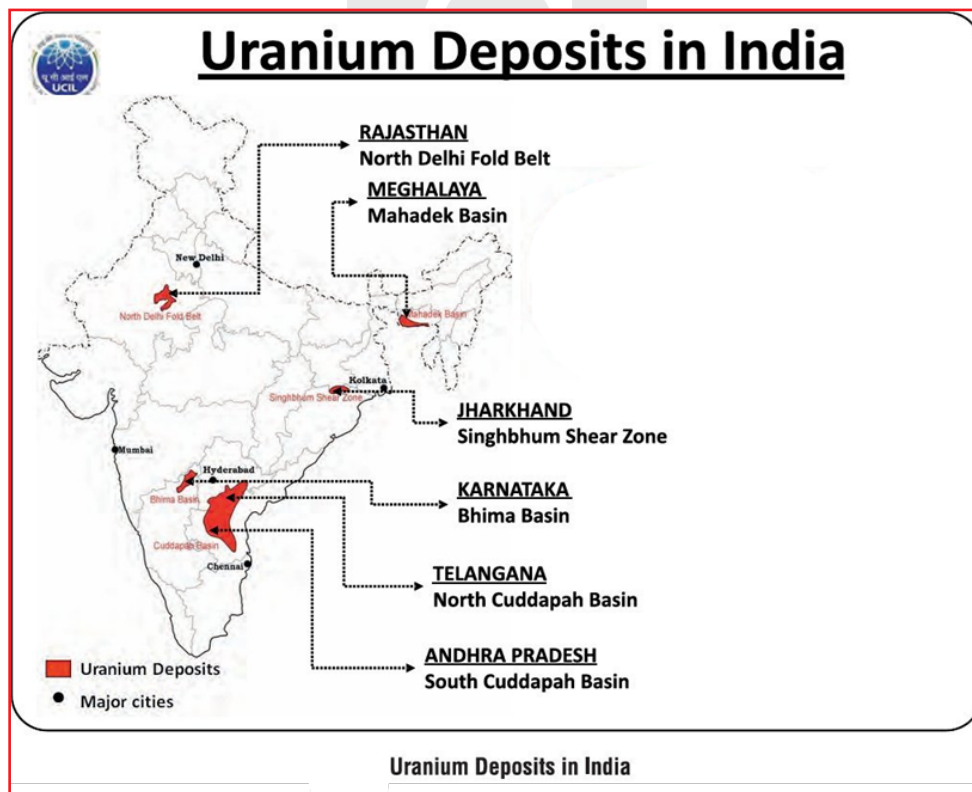
Drishti
Learning
App



Offshore Areas Atomic Minerals Operating Right Rules 2025

The Government of India has notified the **Offshore Areas Atomic Minerals Operating Right Rules, 2025** under the **Offshore Areas Mineral (Development and Regulation) Act, 2002**, introducing strict regulations for the exploration and mining of atomic minerals like **uranium** and **thorium** in offshore areas.

- **2025 Rules:** Only **government entities and private firms nominated by the Centre** are allowed to explore or mine atomic minerals offshore.
 - **Foreign entities or contractors** require **prior government approval** for any involvement in offshore atomic mineral operations.
 - **Licensing is limited to CPSEs or Centre-nominated agencies** for areas within India's **Exclusive Economic Zone (EEZ)**.
 - The 2025 rules apply only when **uranium or thorium concentrations exceed a minimum "threshold value"** in the offshore region. If below the threshold, the **Offshore Areas Operating Right Rules, 2024** will apply instead.
 - **Environmental and marine restoration is mandatory** post-exploration, with rehabilitation of affected seabeds required within six months.
- **Atomic Minerals:** Atomic minerals like uranium and thorium are used in **nuclear energy production**. India has limited uranium but abundant thorium, mainly found in monazite sands along coastal states. **Kerala and Odisha** have rich beach sand reserves, with monazite containing **8–10% thorium**.
 - **Jaduguda, Jharkhand** is the first mine in the country to produce **uranium ore on a commercial scale**.



Read more: [Strengthening India's Mineral Exploration Sector](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Birth Anniversary of Shaheed Mangal Pandey

The Prime Minister paid tribute to the great freedom fighter Mangal Pandey on his birth anniversary on 19th July.

Mangal Pandey

- **Early Life:** He was born on 19th July, 1827, in the Ballia district of Uttar Pradesh.
 - He joined the 34th Bengal Native Infantry of the East India Company's army at the age of 22.
- **Mutiny:** He refused to use the newly introduced Enfield Pattern 1853 rifle-musket, as sepoys believed its cartridges were greased with beef and pork fat, which offended Hindu and Muslim religious sentiments.

- On 29th March, 1857, he mutinied and fired at his Senior Sergeant Major.
- **Impact of His Actions:** The movement of protest and rebellion came to be known as the Sepoy Mutiny of 1857, also known as the **First War of Independence**.
- **Soldiers of the 7th Awadh Regiment** revolted but were suppressed, while discontent spread to Ambala, Lucknow, and Meerut.
- On 10th May, 1857, Meerut sepoys rebelled, marched to Delhi, and declared Bahadur Shah Zafar II as Shah-en-shah-i-Hindustan, giving the **1857 revolt** a symbolic national leadership.
- **Execution & Legacy:** He was hanged on 8th April, 1857, at Barrackpore, and his regiment was disbanded for showing resentment.
 - He symbolized Indian resistance against British rule, reflected the grievances of sepoys and peasants, and is recognized as a key figure in **India's First War of Independence**.

REVOLT OF 1857

The first expression of organised resistance against the East India Company (EIC), occurred when Lord Canning was Governor General of India (tenure - 1856-62)

Centre of Revolt	Leader	British Officials (suppressed the revolt)
Delhi	Bahadur Shah Zafar	John Nicholson
Lucknow	Begum Hazrat Mahal	Henry Lawrence
Kanpur	Nana Saheb	Sir Colin Campbell
Jhansi & Gwalior	Rani Lakshmbai & Tantia Tope	General Hugh Rose
Bareilly	Khan Bahadur Khan	Sir Colin Campbell
Bihar	Kunwar Singh	William Taylor
Allahabad & Banaras	Maulvi Liyakat Ali	Colonel O'Neill

FAILURE OF REVOLT

- Limited uprising - princely states, southern provinces didn't join
- No effective leadership
- Limited resources - men, money and arms
- English-educated middle class, rich merchants, traders and zamindars of Bengal helped suppress the revolt

CONSEQUENCES

- EIC's rule in India ended
- Direct rule of British crown in India
- Viceroy replaced Governor General
- Doctrine of Lapse abolished - adoptive sons approved as legal heirs
- Ratio of British officers to Indian soldiers increased

CAUSES OF REVOLT

- Political - British expansion policy (Doctrine of Lapse)
- Military - Inferior treatment of Indian soldiers who mainly had farmer background
- Economic - Heavy tax imposition on farmers, stringent revenue collection ways, ruin of local industries by introducing British goods
- Socio-Religious - Rapidly spreading Western Civilisation, abolition of Sati pratha and female infanticide, introduction of western education methods, belief about converting Indians to Christianity
- Immediate Cause - Rumours about cartridges of new enfield rifles being greased with cow and pig fat violating religious beliefs

Books written on the Revolt of 1857

- The Indian War of Independence by Veer Savarkar
- Rebellion, 1857: A Symposium by Puran Chand Joshi
- The Indian Mutiny of 1857 by George Bruce Malleson
- Great Mutiny by Christopher Hibbert
- Religion and Ideology of the Rebels of 1857 by Iqbal Hussain
- Excavation of Truth: Unsung Heroes of 1857 War of Independence by Khan Mohammad Sadiq Khan



Read More: [Revolt of 1857](#)

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Stablecoins

US President Donald Trump signed the **GENIUS Act (Guiding and Establishing National Innovation for US Stablecoins)**, establishing a formal regulatory framework for payment stablecoins, marking a new phase of government engagement with digital assets.

- The law boosts user confidence with consumer protections and aims to make the US a global crypto leader.
- **Stablecoins:** The **Stablecoins** are **cryptocurrencies** that aim to maintain a stable value by being **pegged to traditional assets like the USD or gold**.
 - The definition excludes digital national currencies, deposits (including tokenized deposits), and securities.
 - Stablecoins are **designed for everyday use, offering price stability unlike volatile cryptocurrencies like Bitcoin**. They enable easy value transfer, support financial services, and maintain stability through collateral reserves or algorithmic supply control.
 - Popular stablecoins like **Tether** and **USD Coin** are backed by the US dollar.
- **India and Stablecoins:** India does not currently recognise stablecoins, treating all cryptocurrencies as **Virtual Digital Assets (VDAs)** under Section 2(47A) of the **Income Tax Act, 1961**. In 2023, VDAs were brought under the **Prevention of Money Laundering Act, 2002**, to curb misuse and enhance oversight.
 - **Central Bank Digital Currency (CBDC) (Digital Rupee)** is India's official alternative to stablecoins, with growing adoption with Rs 1,016 crore in circulation as of March 2025.
 - CBDC allows **programmable payments** (e.g., Direct Benefit Transfer (DBT) schemes), tracking usage by expiry, location, or purpose.

Read more: [Stablecoins](#)

Godavari River

Floods in **Godavari River** have displaced many people in **Eluru district**, Andhra Pradesh, leading to large-scale evacuations and the establishment of relief camps.

Godavari River

- **About:** Known as **Dakshin Ganga** (Ganges of the South), the Godavari is India's **second-longest (1465 km) river (after Ganga)** and the **largest river system in Peninsular India**.
- **Source & Drainage Basin:** It originates from **Trimbakeshwar near Nasik** in Maharashtra and **flows eastward** before draining into the **Bay of Bengal**.
 - Its basin spans **Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, and Odisha**, with minor parts in **Madhya Pradesh, Karnataka, and the Union Territory of Puducherry**.
 - The **Godavari basin is roughly triangular** in shape, with the **Godavari River** flowing near the **base of the triangle**.
 - It is **bounded by the Satmala Hills, Ajanta Range, and Mahadeo Hills in the North**, the **Eastern Ghats in the South and East**, and the **Western Ghats in the West**.
- **Major Tributaries:** Purna, Pranrita, Indravati, and Sabari, Wainganga, Wardha, Penganga (Left-Bank) and Pravara, Manjira, and Manair (Right Bank).
- **Cultural Significance:** Hosts the **Kumbh Mela at Nashik**, one of **4 sacred sites** in India for the event. Other Kumbh Mela sites include the **Shipra in Ujjain**, the **Ganges in Haridwar**, and the **Ganga-Yamuna-Saraswati confluence at Prayag**.
- **Major Projects:** **Polavaram Irrigation Project, Kaleshwaram Lift Irrigation Project, Sriram Sagar Project (SRSP), Sadarmatt Anicut & Inchampalli Project**

Read More: [Kaleshwaram Lift Irrigation Project](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



India's Advancements in Ballistic and Air Defence Systems

India has successfully test-fired its indigenously developed ballistic missiles **Prithvi-II** and **Agni-I** from the Integrated Test Range in **Chandipur, Odisha**.

- The development comes after the Indian Army carried out successful trials of the **indigenously developed Air Defence System "Akash Prime"** in **Ladakh**.

Prithvi-II

- It is a short-range, surface-to-surface ballistic missile developed by **Defence Research and Development Organisation (DRDO)** under the **Integrated Guided Missile Development Programme**.
- It has a **range of 250–350 km**, can carry **conventional or nuclear warheads**, and uses a **liquid propulsion system** with **inertial navigation** for accurate targeting.

Agni-I

- Developed by the DRDO, Agni-I is a **nuclear-capable, short-to-medium range ballistic missile** with a range of 700–900 km.
- It can carry a 1,000 kg payload, is road and rail mobile, and fills the gap between the **Prithvi series** and **longer-range Agni missiles** in India's credible minimum deterrence strategy.

Akash Prime

- It is an upgraded version of the **Akash missile system**, now featuring an **indigenous active Radio Frequency (RF) seeker** for better accuracy across terrain and weather.
- First used in **Operation Sindoor** against Pakistani aerial threats, it's a **medium-range, surface-to-air system** designed to defend mobile and static assets.
 - The Akash system features high automation, cross-country mobility, and simultaneous multi-target engagement using real-time multi-sensor data.

- It operates at altitudes up to **4,500 m** and targets threats **25–30 km** away.

Ballistic Missiles

- Ballistic missiles are rocket-propelled weapons that follow a **free-fall trajectory** after launch. They can carry **conventional or nuclear warheads** and be launched from **land, sea, or air**.
- Based on range, they're classified as short (< 1,000 km), medium (1,000–3,000 km), intermediate (3,000–5,500 km), or long-range or intercontinental ballistic missiles (ICBMs) (> 5,500 km). **Agni-V** is India's longest-range missile, an ICBM with a range of over 5,000 km.

Read more: [Strategic Defence Technologies in India](#)

Biostimulants

In the **recently held 'Viksit Krishi Sankalp Abhiyan'**, the Union Agriculture Minister emphasized the issue of unregulated sale of **biostimulants** and announced that **only those biostimulants that meet all necessary criteria and are scientifically proven to be beneficial to farmers will be approved**.

- These approvals will be granted solely based on scientific validation.

Biostimulants

- **About:** Biostimulants are **substances or microorganisms** (such as beneficial bacteria, fungi, or plant extracts) that, when applied to seeds, plants, or soil, stimulate natural plant processes.
 - Biostimulants **enhance nutrition efficiency, abiotic stress tolerance, crop quality**.
- **Contribution to Sustainable Agriculture:**
 - Improving **plant tolerance to abiotic stress** on plants, including **drought**, extreme temperatures (cold, frost, and heat), and salinity
 - Enhancing uptake and **efficient use of nutrients**, both applied and existing
 - **Improving soil health** by enhancing beneficial soil microorganisms

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Enhancing **crop quality** through plant health and vigor
- Increasing **harvestable yields**

Classification of Biostimulants

Biostimulants	Description	Examples
Humic and Fulvic Acids	Soil organic matter from plant, animal, and microbial residues.	Peat, leonardite, soft coal
Seaweed Extracts	Derived through different extraction processes.	Soluble powders or liquid extracts
Liquid Manure Composting	Manure mixed with proprietary materials to promote microbial growth.	Liquid biofertilizer from composted manure
Beneficial Bacteria and Fungi	Bacteria and fungi that aid in root growth.	Bacillus, Rhizobium fungi

- **Market Outlook in India:** The biostimulants market in India was valued at approximately USD 355-362 million in 2024 and is projected to reach between USD 1.13 billion and USD 1.2 billion by 2032.
- **Related Provisions:** In India, the biostimulants are regulated via the **Fertiliser (Inorganic, Organic or Mixed) Control Order (FCO), 1985**, amended recently in 2024 and 2025.
 - The Fertilizer (Control) Order, 1985, administered by the Department of Agriculture Cooperation, has been **issued under the Essential Commodities Act, 1955**.

Initiatives Related to Organic Farming

- National Project on Organic Farming (NPOF) - introduced in 2004
- **Paramparagat Krishi Vikas Yojana (PKVY)**
- **Mission Organic Value Chain Development for Northeastern Region (MOVCDNER)**

Gujarat's Banni Grasslands Ready for Cheetah Reintroduction

Banni Grasslands in Gujarat, a designated site under **Project Cheetah**, is now ready for **cheetah** reintroduction with a **600-hectare enclosure**, rising **herbivore populations**, and necessary **infrastructure**.

Banni Grasslands

- **About:** Banni is **Asia's largest grassland**, located near the **Great Rann of Kutch** in Gujarat.
 - The Banni Grasslands **emerged from the sea** due to **tectonic activities**.
- **Vegetation:** Vegetation is **sparse** and largely **rainfall-dependent**. It is dominated by **low-growing plants**, **forbs**, and **graminoids**, many of which are **halophytic** (salt-tolerant), along with **scattered trees** and **scrublands**.
 - It is also known for the mysterious **"Chir Batti"** or **ghost lights** that appear at night.
- **Ecosystem:** Banni features a unique blend of **wetlands** and **grasslands**, coexisting side by side.
 - Key species include **Banni buffalo**, **Kankrej cattle**, **Indian wild ass**, **camel**, and **horse**.
- **Cultural Significance:** Banni is home to **several semi-nomadic communities**, such as the **Maldharis** (silvipastoralists).
 - **Maldharis (keeper of animal stock)** are a **tribal herdsmen community** living in **Banni** and **Gir Forest** regions. They rear **sheep**, **goats**, **cows**, **buffaloes**, and **camels**.
- **An Ideal Habitat for Cheetah:** The grasslands closely resemble the cheetah's natural habitat in Africa, with vast expanses of **grasslands**, **savannahs**, and **scrublands**, making it a perfect site for the big cats.
 - The Gujarat Forest Department has set up a breeding center and enhanced the prey population (chital and sambar) to support the cheetahs.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



GRASSLAND OF THE WORLD



FACTS

- There are **two main kinds of grasslands**: tropical and temperate. Examples of **temperate grasslands** include Eurasian **steppes**, North American **prairies**, and Argentine **pampas**. **Tropical grasslands** include the hot **savannas** of sub-Saharan Africa and northern Australia.
- Tropical grasslands have dry and wet seasons that remain warm all the time (**temperature: 25°C to 30°C**). Temperate grasslands have cold winters and warm summers with some rain (**below 0°C in winters to 32°C in summers**).
- **Wildfires are vital for grasslands' existence**; they prevent woody plants from spreading and enable the grass to re-grow thicker and healthier.



Read More: [One Year of Project Cheetah](#)

SC Overrides Spousal Privilege for Fair Trial

The **Supreme Court**, in a landmark judgment, has ruled that **secretly recorded conversations between spouses are admissible as evidence** in matrimonial disputes, including divorce proceedings.

- This judgment has significantly **impacted the interpretation of spousal privilege in Indian law** and emphasizes the **balance between the right to privacy (Article 21) and the right to a fair trial**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Spousal Privilege

- Spousal privilege, as codified under **Section 122 of the Indian Evidence Act, 1872**, safeguards communications between married individuals.
 - The law prevents one spouse from being compelled to testify **against the other or disclose any communication made during the marriage**, unless the other spouse consents.
- However, **it is not absolute and can be waived in specific circumstances**, such as in criminal and divorce cases, where the claims are supported by evidence, including electronic communication.

Right to Privacy & Fair Trial

- The court's interpretation of Section 122 of the Evidence Act recognizes that **privacy cannot be an absolute right**, especially when it impedes the pursuit of justice in matrimonial matters.
- The court acknowledged the **balance between privacy and the right to a fair trial**. It noted that while secret recordings infringe upon privacy rights, a **fair trial may require the admission of such evidence**, especially when it is crucial to determining the facts.

Read More: [Right to Privacy, Supreme Court's Role in Upholding Civil Liberties](#)

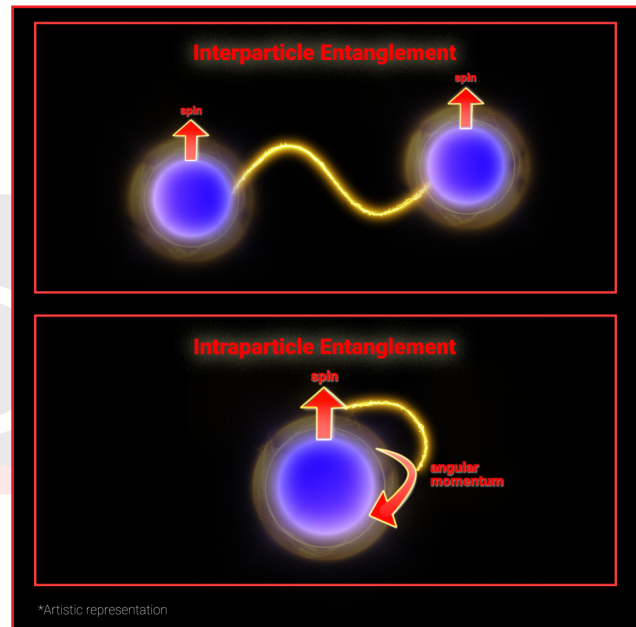
Noise Effect on Quantum Entanglement

Scientists from **Raman Research Institute (RRI), IISc Bangalore, IISER Kolkata** have found that **quantum noise** can sometimes **enhance, revive, or even create entanglement**, challenging earlier beliefs that it only disrupts quantum systems.

Quantum Entanglement

- **Quantum entanglement** refers to a phenomenon in quantum mechanics where **two or more particles** become **interlinked**, such that the **state of one particle instantly determines the state of the other**, regardless of the distance.

- It forms the basis of advanced technologies like **quantum computing, quantum cryptography, and quantum communication**,
- **Types of Quantum Entanglement:**
 - **Intraparticle entanglement**, where different properties (e.g., **spin** and **path**) of a **single particle** are entangled.
 - **Interparticle entanglement**, the more common form, involving entanglement between **separate particles**.



Quantum Noise

- **About:** Quantum noise refers to **random disturbances** arising from a **system's interaction with its environment**, often leading to **loss of coherence (decoherence)** and **degradation of quantum properties** like entanglement.
- **Types:** **Amplitude damping** (energy loss), **Phase damping** (loss of phase coherence), and **Depolarizing noise** (randomization of the quantum state).

Noise Effects on Entanglement

- The study found that **amplitude damping can create, preserve, or revive entanglement in intraparticle**

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



systems, while **phase damping** and **depolarizing noise** are less effective.

- Also, **intraparticle entanglement** was found to be **more resilient to noise** compared to **interparticle entanglement**, which showed only **steady decay** with **no revival or generation under noise**.
- The study introduced a realistic **Global Noise Model** and developed a **precise analytical formula** to predict **entanglement behavior** under various noise types, providing a valuable tool for designing **resilient quantum systems** suited for real-world, noisy environments.

Read More: [Quantum Entanglement, Ultra-Secure Communication Using Quantum Technology](#)

Right to Peace Over Noise

The **Madras High Court** has ruled that religious gatherings, which include loud public prayers, cannot be held in **residential premises** without prior permission from the **District Collector**.

- The respondents argued they **had neighbours' consent** and protection under **Article 25 (freedom of religion)**, claiming the chants promoted peace.
 - However, the court ruled that **religious freedom cannot override others' right to peace**, stressing that prayer should be personal and not cause public disturbance.
- This ruling echoes an earlier **Supreme Court of India judgment** that prioritized the **right to peace and protection from noise pollution**.
 - In 2005, the Supreme Court ruled that **noise pollution violates Article 21**, which ensures the right to life and peaceful living. It clarified that **using loudspeakers, even for religious purposes, is not a fundamental right**.
 - The Court made it clear that it's not about religion, but about **protecting others from being a forced audience to noise**.

- Article 21 ensures the right to peace, and no one has a right to create noise that disturbs others, even in their own home.

- Under the **Air (Prevention and Control of Pollution) Act, 1981**, "**air pollutant**" includes noise if present in harmful concentrations that can harm humans, animals, plants, property, or the environment.

Read more: [Regulating Right to Freedom of Religion](#)

Birth Anniversary of Adikabi Sarala Das

The **President** of India participated in the **birth anniversary celebrations of Adikabi Sarala Das** (15th July 2025).

Adikabi Sarala Das



- Adikabi Sarala Dasa, **originator of Odia literature**, was born around the **15th century A.D.**
 - He was the **first scholar to write in Odia language**.
- His **early name was Siddheswara Parida** and was a contemporary of Gajapati king Kapilendra Dev.
- He wrote his epic poems at a **religious establishment known as Munigosain**.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- Besides the three epics for which he is best known — *the Mahabharata, Vilanka Ramayana, and Chandi Purana* — he also wrote the *Laxmi Narayana Vachanika*.

Odia Language

- Oldest of the eastern group of the Indo-Aryan family, Odia is **derived from Ardhamagadhi Prakrit**.
 - Odia has also been **influenced by the Dravidian languages** as well as Arabic, Persian, and English.
- In 2014, **Odia became the 6th language of the country to get 'classical language' status**, after Sanskrit, Tamil, Telugu, Kannada, and Malayalam.
 - In 2024, **Marathi, Pali, Prakrit, Assamese, and Bengali** were included in the category of classical languages.
- **Odia is one of the 22 official languages** included in the **Eighth Schedule** of the Indian Constitution.

Read More: [5 New Classical Languages and Change in Criteria](#)

Sanchar Mitra Scheme

The **Department of Telecommunications (DoT)** has launched the **Sanchar Mitra Scheme** as a **nationwide initiative** to promote **digital literacy**, cyber hygiene, and telecom awareness among citizens.

Sanchar Mitra Scheme:

- **About:** It is a **volunteer-based digital outreach programme** that engages university students, designated as **Sanchar Mitras** to raise awareness on telecom safety, cyber fraud prevention, responsible mobile usage, and **electromagnetic field (EMF) radiation** concerns.
- **Key Features:**
 - **Students** from relevant **technical backgrounds** (telecom, electronics, computer science, cybersecurity) are **nominated** in collaboration with local DoT units.
 - **Structured training** is provided by **National Communications Academy–Technology (NCA-T)** and **DoT's Media Wing** in emerging areas like **5G, 6G, AI, EMF safety, and cybersecurity**.
 - **Exceptional volunteers** may gain access to **internships, national telecom projects, India Mobile Congress, and international forums** like **International Telecommunication Union (ITU)**.

Key Components of Digital Literacy



Read More: [Strengthening India's Cyber Defence](#)

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



Ranthambore Tiger Reserve

India is building its **first large-scale animal overpasses** on the Delhi-Mumbai Expressway under the **Bharatmala Pariyojana**, allowing wildlife to cross safely through the **Ranthambore Tiger Reserve's (RTR) buffer zone**.

- The overpasses are camouflaged with vegetation, and noise barriers to reduce traffic noise, helping protect animal behaviour and movement.
- **Ranthambore Tiger Reserve:** It is located in the Sawai Madhopur district, Rajasthan, nestled between the **Aravalli** and **Vindhya** hill ranges.
 - RTR includes **Ranthambore National Park, Sawai Madhopur Sanctuary, Keladevi Sanctuary, and part of the National Chambal Gharial Sanctuary.**
 - It is named after the historic **Ranthambore Fort**, a UNESCO World Heritage Site within the reserve.
- **Rivers:** RTR is bound by the **Banas River** in the north and the **Chambal River** in the south.
- **Lakes:** There are many lakes in the RTR named **Padam Talab, Raj Bagh Talab and Malik Talab.**
- **Vegetation:** Predominantly dry deciduous forest and tropical spike type.
- **Fauna:** Home to the **Royal Bengal tiger, leopards, caracals, sambar, chital, chinkara, wild boars**, and several species of birds like sarus crane, serpent eagle, and painted spurfowl.
 - As per the **2023 tiger census**, RTR shelters **71 tigers and cubs**, making it the **third most densely populated tiger reserve** after **Corbett** and **Kaziranga**.
- **Fauna:** Dominated by the **Dhok tree (*Anogeissus pendula*)**, and other are **Babul (*Acacia nilotica*)**, **Gurjan (*Lannea coromandelica*)**, **Gum (*Sterculia urens*)**, and **Khair (*Acacia catechu*)**.

Read more: **Ranthambore Tiger Reserve**

India's Ayush AI Efforts Recognised by WHO

The **World Health Organization (WHO)** released a technical brief titled **"Mapping the Application of Artificial Intelligence in Traditional Medicine,"** which acknowledged India's leadership in integrating **Artificial Intelligence (AI)** with traditional systems like **Ayurveda, Siddha, Unani, Sowa-Rigpa, and Homeopathy.**

- India's vision of **'AI for All'** complements its global leadership in digital health innovation and the integration of traditional medicine.
- **Recognized Initiatives:**
 - **Ayurgenomics:** It merges **Ayurveda and genomics** to personalise health recommendations and predict disease markers.
 - **Traditional Knowledge Digital Library (TKDL):** India was the first to launch **TKDL** in 2001. It is a unique digital database developed by the **Council of Scientific and Industrial Research** and the Department of Indian Systems of Medicine and Homeopathy (now Ministry of AYUSH).
 - It protects traditional knowledge from misuse and helps global patent offices prevent wrongful patents.
 - **Ayush Grid:** It is a digital platform enabling AI-driven citizen services like the **Showcase of Ayurvedic Historical Imprints (SAHI)**, National Ayush Morbidity and Standardized Terminologies Electronic (NAMASTE), and Ayush Research Portals.
- **Applications of AI in Traditional Medicine:** In India AI is used to **map drug action pathways**, and analyse traditional concepts like Rasa (taste), Guna (properties), and Virya (potency) using artificial sensors.

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



AYUSH Systems of Medicine

AYUSH encompasses Ayurveda, Yoga & Naturopathy, Unani, Siddha, Sowa Rigpa, and Homeopathy, with Ayurveda having a documented history of 5000+ years.

Ayurveda

- ➔ **Samhita Period (1000 BC):**
Emerged as mature medical system
 - ➔ **Charaka Samhita:** Oldest and most authoritative text
 - ➔ **Sushruta Samhita:** Gives fundamental principles and therapeutic methods in eight specialties
- ➔ **Main Schools:**
 - ➔ **Punarvasu Atreya** - School of physicians
 - ➔ **Divodasa Dhanvantari** - School of surgeons

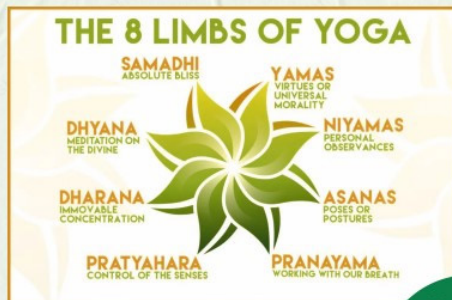
Lord Brahma is believed to be the 1st proponent of Ayurveda

Branches of Ayurveda:

- | | |
|--|--|
| ■ Kayachikitsa (internal medicine) | ■ Agada Tantra (toxicology) |
| ■ Shalya Tantra (surgery) | ■ Bhootavidya (psychiatry) |
| ■ Shalakya Tantra (disease of supra-clavicular origin) | ■ Rasayana Tantra (rejuvenation and geriatrics) |
| ■ Kaumarabhritya (paediatrics) | ■ Vajikarana (eugenics & science of aphrodisiac) |



Yoga & Naturopathy



- ➔ **Naturopathy:** Healing with help of 5 natural elements - Earth, Water, Air, Fire and Ether
 - ➔ Based on theories of self-healing capacity of body and principles of healthy living
 - ➔ Encourages a **person-centred approach** rather than disease-centred

Yoga first propounded by Maharishi Patanjali in systematic form Yogsutra

Unani

Pioneered in Greece, developed by Arabs as 7 principles (Umoor-e-Tabbiya)

- ➔ Based on the framework of teachings of **Buqrat** (Hippocrates) and **Jalinoos** (Galen)
 - ➔ Hippocratic theory of **four humors** viz. blood, phlegm, yellow bile, and black bile
- ➔ **Recognised by WHO** and granted official status by India as an alternative health system

Siddha

Dates back to 10000 – 4000 BC; Siddhar Agasthiyar - Father of Siddha Medicine

- ➔ Preventive, promotive, curative, rejuvenative, and rehabilitative health care
- ➔ **4 Components:** Latro-chemistry, Medical practice, Yogic practice & Wisdom
- ➔ Diagnosis based on 3 humors (**Mukkuttram**) and 8 vital tests (**Ennvagai Thervu**)

Sowa Rigpa

Origin: Lord Buddha in India before 2500 years

- ➔ Traditional medicine in Himalayan regions of Ladakh, Himachal Pradesh, Arunachal Pradesh, etc.
- ➔ Recognised in India by Indian Medicine Central Council Act, 1970 (As amended in 2010)

Homeopathy

German physician Dr. Christian F. S. Hahnemann codified its fundamental principles

- ➔ Medicines prepared mainly from natural substances (plant products, minerals, animal sources)
- ➔ Brought in India by European missionaries - 1810; official recognition - 1948
- ➔ **3 Key Principles:**
 - ➔ *Similia Similibus Curentur* (let likes be cured by likes)
 - ➔ Single Medicine
 - ➔ Minimum Dose



Read more: [AI in Healthcare](#)

Prepare with Drishti IAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



ADEETIE Scheme to Boost Industrial Energy Efficiency

The Union Ministry of Power in collaboration with the **Bureau of Energy Efficiency (BEE)** has launched the **Assistance in Deploying Energy Efficient Technologies in Industries & Establishments (ADEETIE)** scheme.

ADEETIE Scheme:

- **Objective:** It aims to accelerate the adoption of advanced **energy-efficient technologies across India's Micro, Small, and Medium Enterprises (MSME) sector.**
 - It can help MSMEs reduce energy consumption by **30–50%, improve efficiency, and contribute to green energy corridors.**
 - It will be **implemented for three years** (FY 2025-26 to FY 2027-28) and will also cover **14 energy-intensive sectors**, including chemicals, food processing, textiles, and steel re-rolling.
- **Key Features:** MSMEs can avail **5% interest subvention for Micro & Small Enterprises** and **3% for Medium Enterprises** on loans for adopting energy-efficient technologies.
 - The scheme is **structured to provide end-to-end hand holding through** subvention on loans, Investment Grade Energy Audits (IGEA), Detailed Project Reports (DPRs), and post-implementation Monitoring and Verification (M&V).
 - ADEETIE portal was **launched to facilitate the financing process** for the beneficiaries

Bureau of Energy Efficiency (BEE):

- It was established in **March 2002** under the provisions of the **Energy Conservation Act, 2001.**
- The mission is to develop policies and strategies based on self-regulation and market principles, **aiming to reduce the energy intensity of the Indian economy.**

Read More: [Decarbonizing MSME and Energy Sector, Reducing Industrial Emissions in India](#)

FGD Exemption for Thermal Plants

The **Ministry of Environment, Forest and Climate Change** has exempted 78% of India's **thermal power plants** from installing **Flue Gas Desulphurisation (FGD) systems**, raising air pollution and public health concerns.

- **FGD Role:** These are used to cut **sulphur dioxide (SO₂)** emissions from coal-based thermal power plants. FGD systems commonly use **limestone (CaCO₃), lime (CaO), or ammonia (NH₃)** as reagents to neutralize SO₂ in flue gases
- **Policy Shift:** In 2015, it was notified that all thermal power plants must install FGD systems by 2017 to reduce SO₂ emissions. However, only about 8% of the plants have complied.
 - As per the new notification, **Only 11% of units (Category A)** located in densely populated areas or within **10 km of National Capital Region** are mandated to install FGD.
 - Another 11% (Category B) near critically polluted areas or non-attainment cities may be required to install FGD, depending on expert committee review.
- **Key Reasoning Behind Rollback:** A panel led by Principal Scientific Adviser stated that **Indian coal has low sulphur content** and that ambient SO₂ levels are already below permissible limits (10–20 µg/m³ vs 80 µg/m³ limit).
 - It also found **no significant difference in air quality between areas with or without FGD units.**
 - High installation costs, limited vendors, and delays due to Covid-19 were also cited as key reasons for exempting most thermal plants.
- **Expert Critique:** SO₂ contributes to fine **particulate matter (PM_{2.5})**, impacting health up to 200 km away. Lack of FGD could increase risk of respiratory and cardiovascular diseases.
 - Tall chimneys only spread, not reduce, emissions. Coal combustion contributes around **15% of India's PM_{2.5} levels.**

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



- The decision lacks public debate, sets location-based standards, and risks harming air quality and health.

Read more: [Reviewing FGD Rules for Coal Power Plants](#)

India Achieves 50% Non-Fossil Fuel Power Capacity

India's non-fossil fuel power capacity has reached 242.78 GW out of 484.82 GW total installed capacity, 5 years ahead of its 2030 target under the [Paris Agreement's Nationally Determined Contributions \(NDCs\)](#).

Non-Fossil Fuels:

- **Non-fossil fuels** refer to energy sources that are not derived from fossilized organic matter such as coal, oil, or natural gas.
 - It includes both **renewable energy sources** ([solar](#), [wind](#), and [hydropower](#)) and **non-renewable energy sources** ([nuclear](#)) energy sources.
- As of **June 2025**, India's **total installed electricity capacity** stands at **484.82 GW**, with **50% coming from non-fossil fuel sources**, which includes:
 - **Renewable energy:** 184.62 GW (**38.08%**)
 - **Large hydropower:** 49.38 GW (**10.19%**)
 - **Nuclear energy:** 8.78 GW (**1.81%**)

Installed Electricity Capacity by Source as on 30.06.2025 (RE + Large Hydro Combined)

Sector	Capacity (in GW)	Percentage
Thermal	242.04 GW	(49.92%)
Nuclear	8.78 GW	(1.81%)
RE (including Large Hydro)	234.00 GW	(48.27%)
Total	484.82 GW	(100%)

Key Initiatives Driving the Growth of India's Renewable Energy Capacity:

- **PM Surya Ghar Yojana** promotes **rooftop solar installations** enhancing decentralised clean energy access.

- **National Wind-Solar Hybrid Policy** enabled **hybrid power projects** for optimal land use, grid stability, and cost-effective renewable generation.
- **PM-KUSUM** provides **solar-powered pumps** for agriculture
- **PLI Scheme for Solar PV Modules** encourages domestic manufacturing of high-efficiency solar modules.
- **Green Energy Corridor Scheme** strengthens transmission infrastructure for renewable energy.
- **National Green Hydrogen Mission** promotes production and use of **green hydrogen** as an alternative fuel.
- **National Bioenergy Programme** supports **biogas**, **biomass**, and **waste-to-energy** projects.

Read More: [India's Renewable Energy Revolution](#)

Kaziranga Records High Diversity of Grassland Birds

[Kaziranga National Park, Assam](#) best known for its **one-horned rhinos**, has now emerged as a biodiversity hotspot for grassland birds.

- First dedicated grassland bird survey conducted in Kaziranga recorded 43 species across its three wildlife divisions. Includes rare and threatened species like:
 - **Critically Endangered:** *Bengal florican*
 - **Endangered:** *Finn's weaver*, *Swamp grass babbler*
 - **Vulnerable (6 species):** *Black-breasted parrotbill*, *Marsh babbler*, *Swamp francolin*, *Jerdon's babbler*, *Slender-billed babbler*, *Bristled grassbird*
 - **Finn's weaver** found to be **breeding successfully**, indicating **healthy grassland ecosystems**.
 - Kaziranga's 1,174 sq. km habitat supports rich birdlife, with grassland bird diversity comparable to **Gujarat and Rajasthan**.
 - The study marks as a key step in **avian conservation in Northeast India**.
- **Kaziranga National Park:** It was established as a **Reserve Forest in 1908** to protect the Indian rhinoceros, it became a **Wildlife Sanctuary** in 1950,

Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App



National Park in 1974, and a [UNESCO World Heritage Site](#) in 1985. And it was declared as a [Tiger Reserve](#) in 2007 due to high tiger density.

- It is known for the **Big Five: Rhinoceros, Tiger, Elephant, Asiatic Wild Buffalo, and Eastern Swamp Deer**. Nearly the entire population of Eastern Swamp Deer is found here.
- It is located along the [Brahmaputra River](#), which brings rich nutrients but also causes habitat loss through erosion.



Read more: [Golden Tiger in Kaziranga National Park](#)



Prepare with DrishtiIAS

UPSC
Mains
Test Series
2025



UPSC
Classroom
Courses



IAS Current
Affairs Module
Course



Drishti
Learning
App

