

Factly Monthly

Compilation

2024

**For UPSC CSE Prelims
Exam**

January 2024

Index

Subject: Polity and Nation	5
Gangster Goldy Brar Designated as a Terrorist under UAPA	5
SC Legal Services Committee	5
Registered Unrecognised Political Parties (RUPPs)	6
Debating India's new hit-and-run law	7
Recent judgement by HC held that foreigner cannot claim right to reside in India under Constitution	7
Civil Aviation Requirements (CAR): Addressing Passenger Attacks on Pilots	8
What is 'prior approval' before probing corruption allegations against public officials?	9
PM launched multiple technological initiatives for courts in India	10
Subject: International Relations	11
Free Movement Regime to end at Myanmar border	11
UN's Genocide Convention: South Africa files genocide case against Israel at ICJ	11
FAO's Committee on Fisheries (COFI)	12
Alliance for Global Good-Gender Equity and Equality	13
Subject: Indian Economy	13
Domestic Systemically Important Banks (D-SIBs) for 2023	13
RBI's Revised Guidelines for Customers with Inoperative and Unclaimed Accounts	14
Why in the News?	14
Green Cover Index - NHAH signs MoU with NRSC	15
RBI clarifies Framework for acceptance of Green Deposits	16
First Inland Waterways Development Council Meeting	17
India Club: what it means for our shipping firms	18
SBI Report on Income inequality in India	19
Bharat Tex 2024	20
Tea Industry in India	20
Lentil Production at an all-time high	22
Multidimensional Poverty discussion Paper by NITI Aayog	23
Total expense ratio	24
Investment Forum for Advancing Climate Resilient Agrifood Systems in India launched	24
RBI guidelines on State guarantees	25
Foreign Portfolio Investors (FPI) disclosure norms deadline extended	26

Subject: Science & Technology	27
XPoSat Mission launched by ISRO	27
Kochi-Lakshadweep Islands Submarine Optical Fiber Connection	28
Zosurabalpin: New antibiotic identified to target a drug-resistant bacterium.....	29
Researchers engineer plant cells to produce drug for cancer	29
Square Kilometre Array (SKA) Project	30
ISRO successfully tests Polymer Electrolyte Membrane Fuel Cell on PSLV-C58's orbital platform POEM3	31
LK-99: South Korea superconductivity claim revived with new data	32
Tricolime: IISR develops new granular lime-based trichoderma bio-pesticide, fertilizer ..	33
Amaterasu: Super-energetic particle from outer space	34
ANEEL: New nuclear fuel that can guarantee India's green energy transition.....	35
Ministry notifies revised rules to ensure quality of medicines.....	36
Spiral Galaxy: MCG-01-24-014	37
New Species of Sauropod Dinosaur Discovered in Argentina	38
Thylakoids	39
India Meteorological Department Marks 150 years of serving the nation	40
Paramyothecium indicum – Scientists discover new species of fungus in Kerala	40
Distress Alert Transmitter of ISRO	42
Centre for Fourth Industrial Relation.....	43
Mpemba effect	44
Havisure: India's first indigenously developed Hepatitis A vaccine.....	44
Pandemic treaty and disease X.....	45
End-to-end encryption (E2E).....	46
Subject: Environment	47
Eurasian Otter Spotted at Chinnar Wildlife Sanctuary in Kerala	47
Wetland City Accreditation: MoEFCC nominates first 3 cities from India	48
IISc study revealed how logging and climate change impact montane birds.....	49
Denmark announces alliance on green fuels in India.....	50
Himalayan Wolf.....	51
Pench Tiger Reserve Marked as India's first International Dark Sky Park.....	52
Vulture restaurant in Jharkhand	53
Punganur cows	55

Factly Compilation for the Month of January 2024

Chandaka – Dampara wildlife sanctuary	56
Elusive binturong and the small-clawed otter	57
Gir and Kankrej cows	58
kumki elephant	60
Odisha to Set Up World’s First Melanistic Tiger Safari	62
Rare golden tiger snapped in Kaziranga	62
Laughing Gull Spotted for the First Time in India	63
Humboldt’s Enigma	64
Snow Leopard	65
Subject: Schemes & Programmes.....	66
Ayodhya Dham Railway Junction and Amrit Bharat Express	67
National Transit Pass System	68
PRERANA Program	68
PRITHvi Vlgyan (PRITHVI) Scheme	69
PRASADAM: India’s First Healthy & Hygienic Food Street	70
Khelo India Youth Games (KIYG) 2023	71
Pradhan Mantri Suryodaya Yojana – Solar rooftop scheme announced for 1 crore households	72
VAIBHAV Fellowship Scheme	73
PM Young Achievers Scholarship Award Scheme for Vibrant India (YASASVI)	74
Subject: Reports & Indices	75
Corruption index: India ranks 93 among 180 nations.....	75
Subject: Art & Culture	76
10th century Kadamba Inscription found in Goa	76
How are the tableaux are selected for Republic Day?	77
India’s oldest living city found in Vadnagar, Gujrat.....	78
Veerabhadra temple in Lepakshi	79
PM Modi visits Guruvayur Temple	80
Nagara style of temple architecture.....	81
Madhika Language	82
Srirangam Temple.....	82
Maratha Military Landscapes: India’s UNESCO World Heritage Nomination for 2024-25 ...	83
Subject: Geography & Places in News.....	85

Factly Compilation for the Month of January 2024

India-Argentina Agreement on Lithium Mines	85
Why Kashmir and Ladakh are without snow this winter, its implications	86
Zaskar River	87
Chancay Port: China's new mega port project in South America	88
Soligas and Yeravas tribes	89
Wadge Bank Threatened by Hydrocarbon Exploration	90
Lake Retba	91
Soda Lakes	92
Subject: Defence Exercises	93
DESERT CYCLONE: India-UAE Joint Military Exercise	93
Exercise CYCLONE: India-Egypt Joint Special Forces Exercise	93
SADA TANSEEQ: India-Saudi Arabia Joint Military Exercise	94
Subject: Miscellaneous	95
National Landslide Susceptibility Map	95
Swachh Survekshan Awards 2023	95
Dragon babies	96
Late former Bihar CM Karpoori Thakur to be awarded Bharat Ratna	97

Subject: Polity and Nation

Gangster Goldy Brar Designated as a Terrorist under UAPA

Why in the News?

The Centre has declared Gangster Goldy Brar a designated terrorist under the Unlawful Activities (Prevention) Act (UAPA).

Who is a 'Terrorist'?

The UAPA doesn't define "terror" or "terrorist," but it defines a "terrorist act" as any action intended to threaten India's unity, integrity, security, economic security, or sovereignty, or to instill terror in the people domestically or internationally.

The 2019 Amendment to UAPA allowed the Central Government to designate an individual a "terrorist" if they are found committing, preparing for, promoting, or involved in an act of terror.

How does the Government Declare Individuals as Terrorists?

- 1) The central government can designate an individual as a terrorist by publishing a **notification in the official gazette** and adding their name to the **Fourth Schedule of the UAPA**.
- 2) The government is not required to give an individual an opportunity to be heard before such a designation.

What Happens When an Individual is Declared a Terrorist?

- 1) The 2019 Amendment to UAPA **does not provide any details on the consequences associated** on being designated a terrorist.

Note- This is unlike the case of an individual being designated as a global terrorist by the United Nations which comes with sanctions including travel bans, freezing of assets and an embargo against procuring arms.

- 2) It granted the Centre the **authority to remove a name from the schedule** upon individual application. If the government rejects an application, the individual can seek a review within one month of the rejection.
- 3) The amendment established a **review committee**, led by a retired or sitting High Court judge and three members. The committee will have the authority to order the removal of an individual's name from the "terrorists" schedule if it deems the government's order flawed.
- 4) Individuals also have the option to challenge the government's order in court.

SC Legal Services Committee

Why in the News?

Justice BR Gavai has been nominated as the Chairman of the Supreme Court Legal Services Committee (SCLSC), replacing Justice Sanjiv Khanna.

What is the Supreme Court Legal Services Committee (SCLSC)?

Aspect	Details
What is it?	1) The SCLSC was established under Section 3A of the Legal Services Authorities Act ,

Factly Compilation for the Month of January 2024

	1987. 2) It aims to offer “ free and competent legal services to the vulnerable sections of society ” in cases under the Supreme Court’s jurisdiction.
Composition	1) The committee comprises a sitting Supreme Court judge as the Chairman and 9 other members appointed by the Chief Justice of India (CJI) 2) The Centre prescribes the qualifications for membership. 3) The CJI can also appoint the Secretary to the Committee.
Features	The Committee has the authority, as per the Center’s prescription and in consultation with the CJI, to appoint officers and employees.

What are the constitutional provisions governing the provision of legal services?

- 1) **Free Legal Aid: Article 39A** underscores the imperative of making justice accessible by providing free legal assistance to the impoverished and vulnerable segments of society.
- 2) **Articles 14 and 22(1):** Advocating for equality and ensuring well-informed rights for all.

What is the Legal Services Authorities Act, 1987?

- 1) The Act established a **statutory foundation** for legal aid programs.
- 2) **Aim**– To offer free and competent legal services to various eligible groups, such as women, children, SC/ST and EWS categories, industrial workers, disabled persons, etc.
- 3) **Section 27 of the 1987 Act** empowers the Centre, in consultation with the CJI, to make rules through notification for implementing the Act.
- 4) In 1995, **NALSA** was constituted under the Act to monitor and evaluate the implementation of legal aid programs and to formulate policies for ensuring the availability of legal services.
- 5) In every state, **State Legal Services Authorities (SLSA)** were established to implement NALSA’s policies and directions, give free legal services to people, and conduct Lok Adalats.
- 6) Similarly, **District Legal Services Authorities (DLSAs)** and Taluk Legal Services Committees were established in districts and most taluks.

Registered Unrecognised Political Parties (RUPPs)

Why in the news?

Recently, the Election Commission of India brought in new rules for the allocation of symbols to **Registered Unrecognised Political Parties (RUPPs)**.

What are the new rules?

- 1) RUPPs (Registered Unrecognized Political Parties) are now required to **furnish audited accounts for the last three fiscal years**.
- 2) They are mandated to **submit expenditure reports for the two preceding elections**.
- 3) The application process for symbols, along with the authorized party official’s signature, has been integrated into a unified format.

Factly Compilation for the Month of January 2024

- 4) **Annexure No. 3**, which is a declaration that they have submitted the requisite reports, has been added to the application.
- 5) These updated regulations are set to be **enforced starting January 11, 2024**.
- 6) These modifications aim **to streamline the process and improve transparency in the allocation of symbols to RUPPs**.

What are Registered Unrecognized Political Parties?

- 1) RUPPs are those parties which are either **newly-registered parties** or those which **have not secured enough percentage of votes in the Assembly or general election to become a State party** or those that have **never contested elections after being registered**.
- 2) Common symbols are provided to RUPPs based upon an undertaking that they would put up **“at least 5% of total candidates with regard to said Legislative Assembly election of a State”**.
- 3) The EC receives the applications from RUPPs in prescribed proforma for allotment of symbol under **Provisions of Para 10B of the Election Symbols (Reservation & Allotment) Order, 1968**.
- 4) In September 2022, the **EC had de-listed 86 non-existent RUPPs** and declared another **253 as ‘Inactive RUPPs’**.

Debating India's new hit-and-run law

Why in the News?

Transporters and commercial drivers from various States are protesting against the **Section 106 (2) of the Bharatiya Nyaya Sanhita, 2023 (BNS)**, which imposes stringent penalties for hit-and-run incidents.

What is Section 106 (2) of the Bharatiya Nyaya Sanhita, 2023 (BNS) ?

- 1) This section outlines a maximum punishment of 10 years and a fine in hit-and-run cases. There is no provision which specifies the exact amount of fine to be imposed. Hence, the rumours of the fine being Rs. 7 lakh are untrue.
- 2) It is a **non - bailable section**.
- 3) If the driver escapes to protect himself from the bystanders but reports the incident to the police or magistrate shortly thereafter, then the offence will be registered under section 106(1). However, if the driver escapes without reporting the incident to the police or magistrate shortly thereafter, then an offence will be registered, under Section 106(2) of BNS.

Note- The maximum punishment is 10 years under **Section 106(2)** while the maximum punishment under **section 106(1)** is 5 years.

- 4) Section 161 of the 2019 Motor Vehicles (Amendment) Act offers compensation for hit-and-run victims, unlike Section 106(2) of BNS, **under which the drivers are not obligated to pay this compensation**.

Recent judgement by HC held that foreigner cannot claim right to reside in India under Constitution

Why in news?

Factly Compilation for the Month of January 2024

Recently, Delhi HC held in a judgement that foreigners cannot claim the right to reside in India under **Article 19(1)(e) of the Constitution of India**.

What is the judgement?

- 1) Delhi HC hearing a **habeas corpus petition** filed by a man claiming that his nephew, Azal Chakma, suspected to be a Bangladeshi national, was unlawfully detained by the Foreign Regional Registration Office.
- 2) Delhi HC dismissing the petition observed that **foreigners cannot claim the right to reside and settle in India in terms of Article 19 (1) (e) of the Constitution of India** as their fundamental rights are limited to the protection of life and liberty under **Article 21 of the Constitution of India**.
- 3) The bench made it clear that the prayer in the present writ petition is confined to habeas corpus relief. There is no indication that the detention of Mr. Azal Chakma is deemed illegal.
- 4) The bench also emphasized that **his movement restrictions are imposed to facilitate his availability for deportation, and such restrictions cannot be considered unlawful**.
- 5) The high court cited the **Supreme Court's ruling in Hans Muller of Nurenburg Vs. Superintendent, Presidency Jail, Calcutta**, highlighting that the apex court had emphasized the **absolute and unlimited power of the Indian government to expel foreigners**. The court noted that **there is no provision in the Constitution restraining such discretion**.

What does Article 19 (1) (d) and Article 19 (1) (e) states?

- 1) **Article 19(1)(d)** ensures the right to move freely within the country, encompassing the right to use roads and highways.
- 2) **Article 19(1)(e)** affirms the fundamental right of every citizen to reside and settle in any part of India.
- 3) **Article 19(1)(d) and (e) complement each other**, granting citizens the right to move freely and reside anywhere in India.
- 4) **Article 19(5)** allows reasonable restrictions on the right to freedom of movement and residence for the interests of the general public or the protection of any Scheduled Tribe.

What is illegal detention?

- 1) It is the **unjustifiable imprisonment or the unlawful deprivation of liberty** by the way of "arrest" for a wrongful cause or suspicion and continued restriction of freedom by such person in custody.
- 2) If a person is unlawfully detained by the police, the Constitution allows redressal by the filing of a habeas corpus petition under **Article 32 or 226**.
- 3) Habeas Corpus writ acts as **a remedial measure for the person who is illegally detained**.

Civil Aviation Requirements (CAR): Addressing Passenger Attacks on Pilots

Why in the News?

Recently, a passenger assaulted an IndiGo airline pilot following a prolonged delay caused by heavy fog in Delhi. This article explores the responses of airlines to such incidents of unruly passenger behavior.

How are airlines supposed to respond to incidents of unruly passenger behaviour?

The DGCA has issued guidelines known as 'Civil Aviation Requirements (CAR)' to all airlines. It outlines procedures to be followed in handling varying degrees of unruly passenger behavior during and after incidents.

- 1) The airline should **first notify passengers** that unruly behavior, as per guidelines, may lead to possible arrest.
- 2) If the pilots and central control determine that cabin crew cannot manage the unruly passenger, they must promptly **land at the nearest airport**.
- 3) Upon landing, **an airline representative will file an FIR (First Information Report)** with the relevant security agency at the aerodrome, where the unruly passenger will be handed over.
- 4) There are different levels of unruly passenger behavior outlined in the guidelines:

Level 1	Unruly behaviour, including physical gestures, verbal harassment, and unruly inebriation.
Level 2	Physically abusive behaviour, including pushing, kicking, hitting, and grabbing or inappropriate touching or sexual harassment.
Level 3	Life-threatening behaviour, including damage to aircraft operating systems, physical violence such as choking, eye gouging, murderous assault, and attempted or actual breach of flight crew compartment.

What penalties can unruly behaviour by a flight passenger attract?

- 1) The airline can **ban the unruly passenger for up to 30 days** immediately after the incident.
- 2) If the Internal Committee doesn't reach a decision within 30 days, the passenger will be **allowed to fly**.
- 3) Airlines must keep a database of unruly passengers, sharing it with the DGCA and other airlines to maintain a **No-Fly List**.
- 4) **Level 1 and 2 offenses** may result in flying **bans of up to three months and six months, respectively**.
- 5) **Level 3 offense** incurs a **minimum 2-year ban with no maximum limit**.
- 6) **Appeal**- Banned individuals can appeal **within 60 days to an Appellate Committee** led by a retired High Court judge. An appeal against the appellate panel's decision shall be made to a High Court.

What is 'prior approval' before probing corruption allegations against public officials?

Why in the News?

Recently, the Supreme Court issued a divided verdict on ex-Andhra Pradesh CM Chandrababu Naidu's plea to dismiss an FIR in a purported skill development scam. Now, the matter has been **referred to the Chief Justice of India** to form a three-judge bench for a decisive ruling on corruption charges against Naidu.

What does the Supreme Court held?

- 1) Justice Bose held that **prior approval was necessary** before conducting an inquiry into the allegations against Naidu, which the CID did not have when it opened the inquiry.

Factly Compilation for the Month of January 2024

2) Justice Trivedi held it was necessary to seek approval under Section 17A of the PCA Act **only to investigate offences committed after 2018**, the year this requirement was introduced.

What is the 'Prior approval' requirement?

1) In 2003, an amendment to the Delhi Special Police Establishment Act, 1946 (specifically Section 6A) was made.

2) It mandated that agencies like the CBI are **required to seek central government approval** before probing alleged offenses under the **Prevention of Corruption Act (PCA), 1988**, if the implicated employee held a rank higher than joint secretary.

3) The Supreme Court **eliminated** this requirement in 2014.

4) **In 2018, the PCA underwent an amendment**, incorporating a comparable provision as **Section 17A**.

5) **According to section 17A**, if a public servant commits an offense under the Act **during official duties**, investigators **must receive approval from the central/state government** or a competent authority to initiate an inquiry or investigation.

What are the similar cases in which the Supreme Court addressed the prior approval issue?

CBI v R R Kishore- A Constitution Bench ruled that officials cannot assert immunity under Section 6A, even if the offense occurred prior to the annulment of this provision.

PM launched multiple technological initiatives for courts in India

Why in the News?

Recently PM Modi inaugurated the Diamond Jubilee celebration of the Supreme Court and unveiled several technology initiatives.

What are the various technology initiatives launched?

Aspect	Details
Digital Supreme Court Reports (Digi SCR)	1. It will provide Supreme Court judgments to the citizens of the country free of cost and in electronic format . 2. The Key features of digital SCR include access to all 519 volumes of Supreme Court reports since 1950 in a user-friendly, open access digital format.
Digital Courts 2.0 application	1. It is a recent initiative under the e-Courts project which aims to provide district court judges with electronic access to court records . 2. It also uses artificial intelligence (AI) to transcribe speech into text instantly.
New website of the Supreme Court	The new website offers bilingual English and Hindi formats , along with a user-friendly interface redesign.

Subject: International Relations

Free Movement Regime to end at Myanmar border

Why in the News?

The Union government is poised to terminate the Free Movement Regime (FMR) along the Myanmar border.

What is Free Movement Regime (FMR) with Myanmar?

- 1) The FMR is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side **to travel up to 16 km inside the other country without a visa.**
- 2) They can cross the border on production of a border pass, usually valid for a year, and can stay for up to two weeks per visit.
- 3) The FMR is a reflection of the strong **ethnic and familial ties** across the border.
- 4) It was **implemented in 2018** as part of the India's Act East policy.
- 5) **India suspended the FMR in September 2022** following the 2021 Myanmar coup and the resultant migrant influx. Over 40,000 refugees took shelter in Mizoram, and around 4,000 refugees are said to have entered Manipur.

Note- The persecution of **Kuki-Chin-Zo ethnic groups** by the ruling junta in Myanmar has pushed them towards India through the unfenced, porous borders.

About India-Myanmar Border



Figure 1 Source- Indian Defence Review

- 1) India shares a **1,643 km-long border** with Myanmar.
- 2) It passes through the States of **Arunachal Pradesh** (520 km), **Nagaland** (215 km), **Manipur** (398 km), and **Mizoram** (510 km).
- 3) The border remains largely unfenced and is protected by **Assam Rifles**.

UN's Genocide Convention: South Africa files genocide case against Israel at ICJ

Why in news?

Recently, South Africa approached the International Court of Justice (ICJ) to seek an immediate order affirming that Israel had violated its commitments under the **1948 Genocide Convention**.

What is the UN Convention on the Prevention and Punishment of the Crime of Genocide?

- 1) The Convention is an instrument of international law that codified the crime of genocide for the first time.
- 2) It was the first human rights treaty adopted by the General Assembly of the United Nations on 9 December 1948.
- 3) According to the Genocide Convention, genocide is a crime that can take place both in time of war and in time of peace.

Definition of Genocide: In the present Convention, genocide means any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such:

- a. Killing members of the group.
- b. Causing serious bodily or mental harm to members of the group.
- c. Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in part
- d. Imposing measures intended to prevent births within the group.
- e. Forcibly transferring children of the group to another group.

5) The convention also states that any country involved in the agreement can request the relevant United Nations organs to take necessary actions to prevent and suppress acts of genocide.

6) It puts obligation on state parties to take measures to prevent and to punish the crime of genocide, including by enacting relevant legislation and punishing perpetrators.

FAO's Committee on Fisheries (COFI)

Why in the News?

Recently, India has been appointed as the first vice-chair of the UN Food and Agriculture Organization (FAO) Committee on Fisheries (COFI) Sub-Committee on Fisheries Management, marking the first time in 59 years.

What is Committee on Fisheries (COFI)?

Aspect	Details
About	<ol style="list-style-type: none">1. It stands as the sole global inter-governmental platform dedicated to the examination of significant international fisheries and aquaculture problems and issues.2. It is a subsidiary body of the FAO Council.
Established in	1965
Membership & Voting	<ol style="list-style-type: none">1. COFI membership is open to FAO Members and non-Members are eligible to be an observer of the Organization.2. Representatives from the UN, its bodies, specialized agencies, regional fishery bodies, and international non-governmental organizations participate in debates without voting rights.
Functions	<ol style="list-style-type: none">1. COFI assesses the FAO work program related to fisheries, conducts regular reviews of global fishery issues, and puts forth potential solutions.2. COFI has also been used as a forum in which global agreements and non-

Factly Compilation for the Month of January 2024

	binding instruments regarding global fisheries have been negotiated. 3. It has two subsidiary bodies: the Sub-Committee on Aquaculture and the Sub-Committee on Fish Trade.
Significance	COFI played a key role in negotiating the Code of Conduct for Responsible Fisheries and the Agreement on Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.

Alliance for Global Good-Gender Equity and Equality

Why in the News?

India has recently launched the 'Alliance for Global Good- Gender Equity and Equality' at the 2024 World Economic Forum (WEF) in Davos.

What is the Alliance for Global Good- Gender Equity and Equality?

Aspect	Details
Aim	The alliance strives to promote global development led by women.
Stakeholders	1. Supported by- The Bill and Melinda Gates Foundation 2. Housed and anchored by- The CII Centre for Women Leadership 3. Network Partner- The World Economic Forum 4. Institutional Partner- Invest India
Features	1. The alliance emphasizes adopting global best practices , sharing knowledge, and making investments in women's health, education, and enterprises. 2. The concept for this alliance originated from the G20 Leaders' Declaration , emphasizing India's commitment to women-led development.
Significance	It strengthens India's dedication to global cooperation and aligns with the overarching WEF theme, ' Rebuilding Trust '.

Note- The launch was accompanied by the introduction of a **women's leadership lounge (We Lead Lounge)** at **WEF**, which hosted discussions and showcased products from women entrepreneurs.

Subject: Indian Economy

Domestic Systemically Important Banks (D-SIBs) for 2023

Why in news?

Recently, the Reserve Bank of India (RBI) issued the list of Domestic Systemically Important Banks (D-SIBs).

Which banks are on the list of Domestic Systemically Important Banks (D-SIBs)?

Factly Compilation for the Month of January 2024

Bucket	Banks	Additional Common Equity Tier 1 requirement as a percentage of Risk Weighted Assets (RWAs)
5	-	1%
4	State Bank of India*	0.80%
3	-	0.60%
2	HDFC Bank*	0.40%
1	ICICI Bank	0.20%

Source- RBI

- 1) The RBI has retained the **State Bank of India, HDFC Bank and ICICI Bank** as Domestic Systemically Important Banks (D-SIBs).
- 2) **SBI has been shifted from bucket 3 to bucket 4**, and **HDFC Bank from bucket 1 to bucket 2**. ICICI Bank continues to maintain its previous categorization of bucket 1.
- 3) The higher D-SIB surcharge for SBI and HDFC Bank will be applicable from **April 1, 2025**. The **additional Common Equity Tier 1 (CET1) requirement** will be in addition to the capital conservation buffer.

What are the Domestic Systemically Important Banks (D-SIBs)?

- 1) D-SIB are banks whose **potential failure might seriously disrupt the financial system** due to the bank's size, cross-jurisdictional activities, complexity, lack of substitutability and interconnectedness.
- 2) Systemically Important Banks (SIBs) are hence considered **'Too Big to Fail (TBTF)'**.
- 3) The **framework for handling Domestic Systemically Important Banks (D-SIBs)** was published by RBI in **2014** and was effective from 2015.
- 4) **RBI places these banks in appropriate buckets** depending upon their Systemic Importance Scores (SISs). Based on the bucket in which a D-SIB is placed, an **additional common equity requirement** has to be applied to it.
- 5) In case a foreign bank having a branch presence in India is a **Global Systemically Important Bank (G-SIB)**, it has to maintain additional **CET1 capital surcharge** in India as applicable to it as a G-SIB, proportionate to its **Risk Weighted Assets (RWAs)** in India.

RBI's Revised Guidelines for Customers with Inoperative and Unclaimed Accounts

Why in the News?

The Reserve Bank of India (RBI) has revised guidelines for classifying accounts and deposits as inoperative accounts and unclaimed deposits by banks.

What are the Revised Guidelines?

Factly Compilation for the Month of January 2024

- 1) **Annual review**- The RBI has instructed banks to conduct an annual review for accounts with no customer-initiated transactions for over a year.
- 2) **Alert messages**- Banks should notify account holders via letters, email, or SMS if there has been no activity in their accounts in the past year. The message should mention that the account would become 'inoperative' if no operations are carried out during the next one year
- 3) **Account which can be classified as inoperative**- To classify an account as inoperative, only transactions initiated by the customer will be taken into account, excluding those initiated by the bank. **Note**- Bank-induced transactions are transactions in the account initiated by the bank such as charges, fees, interest payments, penalties and taxes.
- 4) **Accounts cannot be classified as inoperative accounts**- The stipulation of 'inoperative' accounts is not applicable on zero balance accounts for beneficiaries of Central/State government schemes and for students who receive scholarships.
- 5) The classification of an account as inoperative will only be for a particular account of the customer and not with reference to the customer.
- 6) **Inoperative accounts reactivation**- The RBI has instructed banks to **offer KYC updation** for activating inoperative accounts and unclaimed deposits **at all branches**, including non-home branches. **No charges should be levied** for activation of inoperative accounts.
- 7) Banks **cannot impose penalties for not maintaining minimum balances** in accounts classified as inoperative.
- 8) **Interest on savings accounts should be regularly credited**, regardless of the account's operational status.

What are Inoperative Accounts and Unclaimed Deposits?

- 1) A savings or current account is treated as inoperative, if there are no '**customer induced transactions**' in the account for a **period of over two years**.
- 2) Unclaimed deposits on the other hand are those savings/ current accounts with **no activity for 10 years** or term deposits unclaimed for a decade after maturity

Green Cover Index - NHAI signs MoU with NRSC

Why in the News?

NHAI has signed a three-year MoU with the National Remote Sensing Centre to develop and report a "Green Cover Index" for India's National Highways.

What is the aim of 'Green Cover Index' project?

Factly Compilation for the Month of January 2024

1) Aim: to capture the **Green Cover Index region-wise for National Highways** in the initial assessment cycle, with subsequent annual cycles focusing on estimating growth patterns using scientific techniques.

2) Agencies involved: NRSC in collaboration with NHAI will conduct a nationwide assessment for National Highways.

3) Technology: It will be done with the help of high-resolution satellite imagery.

4) Feature: It will provide an estimate of green cover for every 1 km length.

Note- As a demonstration of its capabilities, NRSC has already executed successful pilot projects to estimate green cover along National Highways.

What are the Significances of the project?

1) It will provide an efficient and cost-effective solution for generating a macro-level estimate of greenery along National Highways.

2) It will enable focused interventions in areas identified as lacking sufficient green cover.

What is the National Remote Sensing Centre(NSRC)?

1) NRSC is one of the primary **centers of the Indian Space Research Organization (ISRO)**, Department of Space (DOS).

2) **Headquarter** – Hyderabad

3) Mandate: To set up ground stations for **satellite data reception**, produce data products, and **develop techniques for remote sensing applications**, including geospatial services contributing to good governance.

RBI clarifies Framework for acceptance of Green Deposits

Why in the News?

Recently, the RBI released updated guidelines to clarify key provisions related to the RBI's Green Deposits Framework.

What are Green Deposits?

1) Green deposits are similar to regular bank deposits, with the key distinction being that banks commit to **allocating the funds from these deposits to support environmentally friendly initiatives**.

2) For instance, a bank might specify that green deposits will be directed towards financing projects such as renewable energy initiatives to combat climate change.

What are the updated RBI guidelines for the acceptance of Green Deposits within the framework?

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- 1) RBI clarified that it is not mandatory for the financial institutions such as banks and non-banking financial corporations (NBFCs) to raise green deposits.
- 2) Green deposits can be **invested in short-term liquid instruments**, limited to a one-year maturity. However, this restriction applies until the funds are allocated to green activities or projects.
- 3) The framework applies to green deposits raised by banks from June 1, 2023, onward. Banks **cannot secure green deposits after financing green activities/ projects**.
- 4) Banks **must pay interest on green deposits, with no restriction on premature withdrawal**, subject to guidelines. Early withdrawal does not impact activities funded by green deposits, and there is no penalty for non-allocation to green projects.
- 5) **Banks can provide overdraft facilities** against green deposits, following guidelines outlined in the RBI circular dated April 19, 2022.
- 6) The framework permits green deposits to be **denominated in Indian Rupees only**.
- 7) Deposits obtained within this framework fall under the protection of the **Deposit Insurance and Credit Guarantee Corporation**.
- 8) Given that the activities specified in the green deposits framework align with those outlined in sovereign green bonds, **investments in sovereign green bonds are consequently included within the framework**.

First Inland Waterways Development Council Meeting

Why in the news?

The Inland Waterways Authority of India is set to host the inaugural 'Inland Waterways Development Council' meeting on January 8, 2023, in Kolkata.

What are the Key Initiatives to be unveiled during the meeting?

- 1) This will be the **first meeting of the Inland Waterways Development Council**.
- 2) The Inland Waterways Development Council (IWDC) meeting boasts a comprehensive agenda that aims **to tackle pivotal issues concerning the advancement of inland waterways in India**.
- 3) As part of the agenda, several initiatives, including the **"Harit Nauka – Guidelines for Green Transition of Inland Vessels"** and the **"River Cruise Tourism Roadmap 2047"** will also be launched at the event.
- 4) The meeting's focus will encompass crucial aspects such as fairway development, private sector engagement, and optimizing cargo transport efficiency in **Inland Water Transport (IWT)**.
- 5) The agenda also includes promoting eco-friendly vessels for passenger transportation, exploring economic advantages in river cruise tourism, and advocating for sustainable practices in inland waterways development.

What is Inland Waterways Development Council?

- 1) It was **established in October 2023** by the Government of India.

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2) It was established to focus on **comprehensive development of inland waterways and the associated Inland Water Transport (IWT) ecosystem** for improved cargo efficiency, passenger movement, and river cruise tourism, with active participation from States and Union Territories.

What are growth Targets for Cargo and Cruise Sectors?

1) The Ministry aims to raise inland waterways' cargo modal share **from 2% currently to 5% under Maritime India Vision 2030.**

2) The 2047 goals envision cargo volumes to rise from **120 million tonnes per annum presently to over 500 million tonnes.**

India Club: what it means for our shipping firms

Why in the News?

India plans to create its own protection and indemnity (P&I) entity, the India Club, to provide insurance for ships in Indian waters thereby reducing reliance on global firms.

What is a P&I entity or club?

1) It is a **mutual insurance association** offering risk-pooling, information, and representation exclusively for its members, including ship owners, operators, charterers, freight forwarders, and warehouses.

2) Unlike traditional insurers, P&I clubs **reports only to their members, cover third-party open-ended risks** such as cargo damage, war, and environmental issues like oil spills which are often avoided by conventional insurers.

How many such clubs operate globally?

1) The **London-based International Group of P&I Clubs** consists of 13 clubs, covering around 90% of global ocean-going ships.

2) **Member clubs**- The UK, US, Korea, Singapore, Japan, the Netherlands, China, Bermuda, Norway, and Sweden.

3) Club members contribute to the club's common risk-pool according to the pooling agreement rules.

Why is India looking to set up its own P&I entity?

A locally focused Indian entity could **diminish the nation's susceptibility to global sanctions**, as it ensures coverage for ships operating in regions facing sanctions. The events surrounding the Russia-Ukraine war underscore the importance of having such coverage.

What difficulties might confront such an entity?

1) The move will only benefit players like the Shipping Corporation of India and some small shipping lines as **90% of Indian-owned ships are operating under foreign flags** of countries like Panama, Liberia and Kazakhstan.

2) The India Club might encounter challenges if global traders do not accept its cover.

SBI Report on Income inequality in India

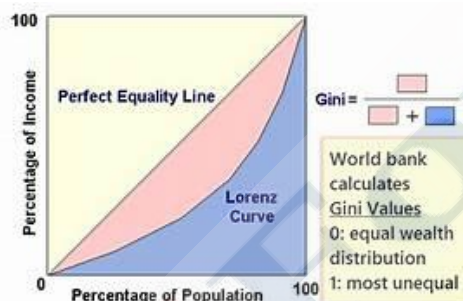
Why in the News?

According to SBI Research latest report, there has been a reduction in income inequality in India, signaling a favorable shift towards upward mobility and the expansion of the middle class.

What are the findings of the report?

- 1) **Increasing tax base**- The report, citing CBDT data, notes a continuous expansion in the Income Tax base. The number of tax filers increased to 74 million in AY 2022-23 from 70 million in AY 2021-22.
- 2) **Decline in Gini Coefficient**- Gini Coefficient(a measure of income inequality) has declined from 0.472 during Assessment Year 2014-15 to 0.402 for AY 2022-23.
- 3) **Share of Top earners declined** – The share of top earners with incomes exceeding Rs 10 crores and Rs 100 crores has decreased from 2013-14 to 2020-21.
- 4) **Improving upward mobility** – The drop in income inequality stems from significant upward mobility. More than 36% of individuals originally in the lowest income bracket in FY14 have transitioned to higher income levels. It led to a notable 21% increase in their earnings from FY14 to FY21.
- 5) The report indicates **rising female labour force participation**.
- 6) Evident shifts in income levels for MSMEs and evolving consumption patterns in the aftermath of the Covid-19 pandemic debunk the myth of **K-shaped growth**.

What is Gini coefficient?



- 1) The Gini coefficient, **derived from the Lorenz curve**, serves as an indicator of income or wealth inequality.
- 2) The coefficient **ranges from 0 (0%) to 1 (100%)**, 0 representing perfect equality (where every resident in a country has the same income) and 1 representing perfect inequality (one resident earned all income and the rest earned nothing). Higher the value of Gini coefficient, higher the inequality.

Bharat Tex 2024

Why in news?

India's textile industry, in collaboration with industry associations, is gearing up to host "Bharat Tex 2024."

What is Bharat tex 2024?

- 1) Bharat Tex 2024 is a global textile mega event **organised by** a consortium of 11 **Textile Export Promotion Councils** and **supported by the Ministry of Textiles**.
- 2) It is to **held in New Delhi** from February 26-29, 2024,
- 3) The **aim of the event** is to position and showcase India's entire textile value chain and also highlight strengths in fashion, traditional crafts and sustainability initiatives.

What are the salient feature of the event?

- 1) The event will be in line with **India's 5F vision**, which represents the journey from **Farm to Fibre to Factory to Fashion to Foreign**, encompassing the whole textile production process from raw resources to worldwide markets.
- 2) The event will showcase pavilions on **Sustainability and Recycling**, discussions on **global supply chain resilience and digitization**, **fabric testing zones**, **product demos**, and **masterclasses**.
- 3) It will also provides a platform for **knowledge exchange**, **information dissemination**, and **Government to Government and Business to Business interactions**.

Tea Industry in India

Why in the News?

Recently the Tea Association of India (TAI) has cautioned about challenges reminiscent of the "dark phase" observed in the country's tea industry from 2002-07.

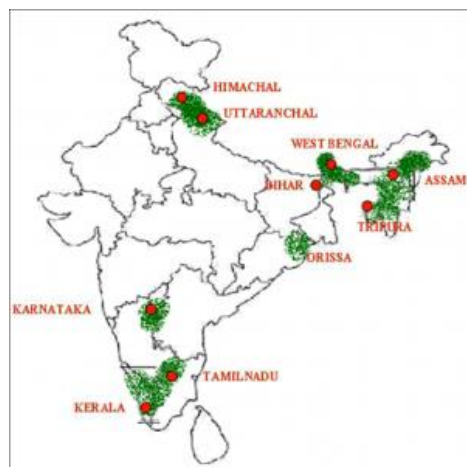
What are the factors contributing to the current crisis in Tea industry in India?

- 1) Stagnant prices
- 2) Oversupply
- 3) Widening gap between demand and supply
- 4) Intense competition from other nations like Sri Lanka and Kenya.

Note– Over the past decade, the costs of essential inputs increased by 9-15%, while tea prices only saw a 4% rise.

What are the key details about tea & its production in India?

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Source- ResearchGate

Specifications	Details
What is it?	1. Tea is a popular beverage made by infusing cured or fresh tea leaves of Camellia sinensis , in hot water. 2. It is the second most consumed drink in the world.
Origin	Tea is believed to have originated in ancient China , northeastern India, north Myanmar
International Day	May 21 every year (Designated by UN General Assembly in 2019)
Growth Conditions	1. Temperature – 16-32 degree C 2. Rainfall – 15-300 cm per annum 3. Relative humidity should be around 80% most of the time and should never be less than 40 %. 4. The area should not be prone to frost . 5. The soil should be acidic (around PH 5.0) with good drainage facility.
GI Tag	Darjeeling Tea known as the 'Champagne of Teas' was the first 'GI product'
Production	1. India is the second largest producer of tea after China globally (Largest black tea producer) 2. The majority of its annual production comes from Assam (55%) and West Bengal
Consumption	India is among the world's top tea consuming countries, with 80 % of its production consumed domestically
Regulator	Tea Board of India

What is Tea Board of India?

- 1) It is a **statutory body** set up under section 4 of the Tea Act, 1953 was constituted on 1st April 1954.
- 2) The present Tea Board is functioning as a statutory body of the Central Government **under the Ministry of Commerce**.
- 3) **Head office**- Kolkata.
- 4) **Overseas offices** – Dubai and Moscow.

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5) **Functions-** Rendering financial and technical assistance for the cultivation, manufacture and marketing of tea, export promotion, aiding Research and Development activities for augmentation of tea production and improvement of tea quality.

Lentil Production at an all-time high

Why in the News?

India is anticipated to lead global lentil (masoor) production in 2023-24, due to increased cultivation.

Why is this significant for India?

- 1) Since reaching its highest output of **1.62 million tonnes in 2017-18, India's lentil production decreased**. Official data for the 2022-23 crop year indicates a production of 1.56 million tonnes.
- 2) As per the **Food and Agriculture Organization (FAO)**, the leading lentil-producing countries in 2022 included **Canada, India**, Australia, Turkey, and Russia.
- 3) Although **India ranks as the second-largest lentil producer**, it has **predominantly imported** from Australia, Canada, Russia, Singapore, and Turkey until now.
- 4) During the current year, it also imported some quantities of lentil from UAE, USA, Sri Lanka and Nepal.
- 5) The projected lentil production figures for 2023-24 could potentially **contribute to a reduction in crop imports**.

What are the distinctive characteristics of the lentil crop?

- 1) It is a valuable human food, mostly consumed as dry seeds.
- 2) Lentils are small, lens-shaped seeds that come in various colors, with red and green being popular varieties in India.
- 3) Lentil is also called Masur and Malka (bold seeded).

Specifications	Details
Worldwide Cultivation	It is extensively grown across Europe, Asia, and North Africa.
Cultivation in India	Madhya Pradesh, Uttar Pradesh, Bihar, Chhattisgarh, Haryana, Punjab, Maharashtra, Rajasthan, and others in India.
Nutritional Value	Cooked lentils consist of approximately 70% water, 20% carbohydrates, 9% protein, and 0.4% fat.
Climatic conditions	<ol style="list-style-type: none">a) It requires a cold climate.b) It is very hardy, withstanding frost and severe winter conditions to a significant degree.c) It requires cold temperature during its vegetative growth and warm temperature at the time of maturity.d) Temperature: The ideal growth temperature falls within the range of 18-30°C. It is cultivated at altitudes up to 3,500 meters in the north-western hills.e) Soil: Optimal lentil cultivation occurs in well-drained loam soils with a neutral pH. Acidic soils are unsuitable for lentil growth.

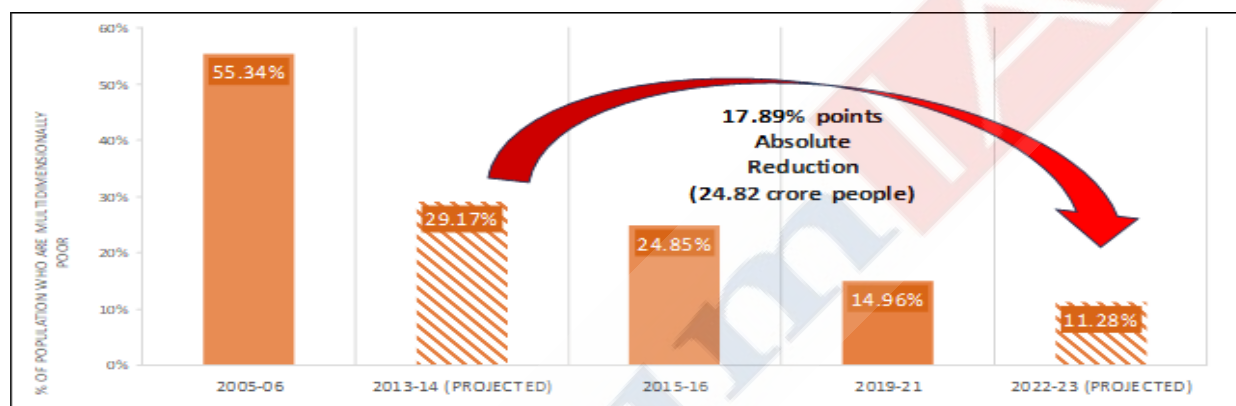
Multidimensional Poverty discussion Paper by NITI Aayog

Why in the News?

Recently, NITI Aayog has released a discussion paper 'Multidimensional Poverty in India since 2005-06'.

What are the key findings of the NITI Aayog discussion paper?

Note: The discussion paper utilizes MPI data (MPI, 2023, released in July 2023) derived from the National Family Health Surveys (NFHS) conducted in 2015-16 and 2019-21, along with **NFHS-3 data** from 2005-06, to **analyze long-term poverty trends**. You can also say that it is an updated version of previously released **Multi-Dimensional Poverty Index 2023**.



Source- PIB

- 1) India has registered a significant decline in multidimensional poverty in India from **29.17% in 2013-14 to 11.28% in 2022-23** (a reduction of 17.89 percentage points).
– In numbers about 24.82 crore people escaped multidimensional Poverty in last 9 years.
- 2) **Uttar Pradesh** topped the list with 5.94 crore people escaping poverty followed by Bihar and Madhya Pradesh.
- 3) The paper reveals a faster decline in the poverty **headcount ratio** from 2015-16 to 2019-21 (10.66% annual rate) **compared** to the period 2005-06 to 2015-16 (7.69% annual rate).
- 4) **All 12 indicators** of MPI have recorded significant improvement during the entire study period.
- 5) India is poised to achieve **single-digit poverty rates by the year 2024**.
- 6) India is likely to achieve **Sustainable Development Goals (SDGs) 1.2** (reducing multidimensional poverty by at least half) much ahead of 2030.

What is National Multidimensional Poverty Index(MPI)?

- 1) The National MPI is a metric used to evaluate poverty in a country by considering multiple dimensions beyond income or consumption expenditure.
- 2) **Indicators**- The index is based on three equally weighted dimensions – health, education and standard of living – which in turn are represented by **12 indicators**.
– However, the National MPI covers 12 indicators while **global MPI covers 10 indicators**.

3) **Methodology**– The National MPI by Niti Aayog uses the **Alkire Foster methodology** to assess the decline in poverty rates.

Total expense ratio

Why in the news?

The market regulator SEBI had announced to tweak total expense ratio.

What is Total expense ratio?

The total expense ratio (TER) is a measure of the total costs associated with managing and operating an investment fund, such as a **mutual fund**. It consists of **management fees, trading fee, legal fee etc.**

What is the importance of TER?

- 1) It is a measure of a fund's operational efficiency.
- 2) Investors pay attention to the expense ratio to understand if a fund is an appropriate investment for them after fees are considered.

What was the need for tweaking?

- 1) The intent of altering TER norms last year was to improve **transparency** and pass on the benefit of scale to investors.
- 2) The expense ratio eats into returns. The **higher the expense ratio, the lower are the returns** on the investment. Hence, there was a need to rationalize it.

Mutual Fund Advisory Committee

The committee is mandated to advise **SEBI (securities and Exchange Board of India)** on issues related to **regulation** and **development** of mutual fund industry.

Securities and Exchange Board of India

The Securities and Exchange Board of India was established as a **statutory body** in the year **1992** under the Securities and Exchange Board of India Act, 1992 (SEBI Act, 1992).

Investment Forum for Advancing Climate Resilient Agrifood Systems in India launched

Why in the News?

Recently, the 'Investment Forum for Advancing Climate-Resilient Agrifood Systems in India' was launched in New Delhi.

What is Investment Forum for Advancing Climate Resilient Agrifood Systems in India?

- 1) **Aim**– This initiative aims to **create a strategy for advancing climate-resilient Agrifood systems** through investment and partnerships among the Indian government, private sectors, farmers' organizations, and financial institutions.

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2) It is a **joint initiative** of NITI Aayog, Ministry of Agriculture & Farmers' Welfare and Food and Agriculture Organisation (FAO).

3) The Forum will enable discussions and considerations across **six crucial domains**:

- (i) Climate-resilient agriculture (experiences and pathways)
- (ii) Digital infrastructure and solutions
- (iii) Financing climate-resilient agri-food systems (domestic and global)
- (iv) Climate-resilient value chains
- (v) Production practices and inputs for climate resilience
- (vi) Gender mainstreaming and social inclusion for climate resilience.

RBI guidelines on State guarantees

Why in the News?

A working group formed by the Reserve Bank of India (RBI) put forth recommendations to tackle issues regarding guarantees provided by State governments.

What defines a 'state guarantee'?

- 1) A state guarantee is a **commitment by a government entity**, like a state government, to cover the repayment of a debt or fulfil an obligation if the borrower or obligated party cannot do so.
- 2) The recipient of the guarantee is the '**creditor**,' the defaulting entity on whose behalf the guarantee is given is called the '**principal debtor**' (State owned enterprises, cooperative institutions, urban local bodies in case of state borrowing) and the entity providing the guarantee (State governments in this context) is the '**surety/guarantor**'

What are the recommendations of the working group?

The RBI working group has pointed out that while guarantees may seem safe during stable times, they can create significant financial risks and stress for the government during economic downturns. This could lead to unexpected cash outflows and higher debt levels. To address this issue, the following recommendations have been made:

- 1) **Expanded Definition of Guarantee**– The Working Group proposes a broader definition of 'guarantee' to encompass all instruments which create an obligation on the guarantor to pay. There **must not be any distinction between conditional or unconditional, financial or performance guarantees** while evaluating fiscal risk.
- 2) **Government Guarantee Restrictions**– RBI working group has recommended certain restrictions which are as follows-
 - a. Government guarantees **should not be used to obtain finance through state owned entities** like State owned enterprises, cooperative institutions, urban local bodies.
 - b. Government guarantees **should not create direct liability/de-facto liability** on the State.
 - c. Guarantees must be **given only for the principal amount and normal interest component** of the underlying loan.
 - d. Guaranteed **must not be extended for external commercial borrowings, must not be extended for more than 80% of the project loan** and **must not be provided to private sector companies**.

3) Risk Determination–

a. States should **assign appropriate risk weights like high, medium or low risk** before extending guarantees.
b. The states must also manage the potential stress which will emerge in case of invocation of guarantee. Hence, RBI working Group has proposed that the maximum incremental guarantees (additional guarantees) issued during a year should be capped to either **5% of Revenue Receipts or 0.5% of GSDP- which ever is lesser.**

4) **Disclosure of Guarantees-** The RBI Working Group has proposed that the **RBI may consider advising banks/NBFCs** to disclose the credit extended to State-owned entities, backed by State-government guarantees. The Group has also called for a **comprehensive database** to capture all extended guarantees.

Foreign Portfolio Investors (FPI) disclosure norms deadline extended

Why in the News?

The **Securities and Exchange Board of India (SEBI)** has extended the timeframe for Foreign Portfolio Investors (FPIs) to reveal details about all entities with ownership, economic interest, or control in the FPI.

What are FPIs and How are they different from FDI?

Aspect	Foreign Portfolio Investors (FPIs)	Foreign Direct Investment (FDI)
Definition	FPIs are investors like mutual funds, hedge funds, pension funds, and other institutions that invest in foreign financial assets such as stocks, bonds, and securities.	FDI involves a foreign entity investing long-term in a business abroad, gaining significant control or ownership in the company.
Investment timeframe	Short to medium-term	Long term
Investment concentration	Financial assets, such as stocks and bonds.	Business or physical assets of a company.
Risk involved	Volatile	Stable

Why has SEBI asked FPIs to provide additional disclosures?

SEBI's initiative intends to deter potential **round-tripping** and misuse of the FPI channel.

1) SEBI requests supplementary details from FPIs with **over 50% of their Indian equity assets under management (AUM)** concentrated within a single corporate group or **exceeding Rs 25,000 crore in Indian equity markets.**

2) Sovereign wealth funds, companies listed on specific global exchanges, public retail funds, and other regulated pooled investment vehicles are **excluded** from the heightened disclosure requirements.

What is round tripping?

1) Round tripping refers to **money that leaves the country through various channels and makes its way back into the country** often as foreign investment.

2) There are various reasons that promote round tripping. Mainly, Tax concessions allowed in the foreign country encourages individuals to park money there and then reroute it.

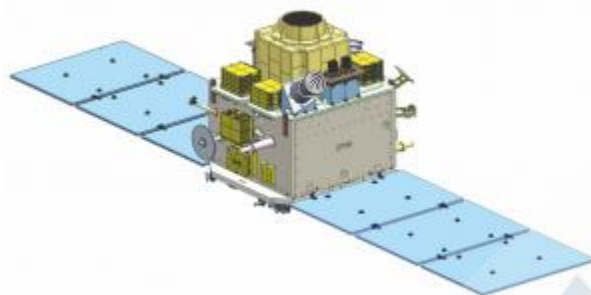
Subject: Science & Technology

XPoSat Mission launched by ISRO

Why in the News?

The Indian Space Research Organisation (ISRO) has successfully launched the **PSLV-C58 X-ray Polarimeter Satellite (XPoSat) mission on January 1, 2024.**

What is XPoSat Mission?



Source- Wikipedia

Specifications	Details
What is it?	XPoSat is ISRO's inaugural scientific satellite solely dedicated to space-based polarization measurements of X-ray emissions from celestial sources.
Launched on	1 January 2024
Rocket	PSLV-C58
Payloads	1) POLIX (Polarimeter Instrument in X-rays)- it will measure the polarimetry parameters (degree and angle of polarization) in medium X-ray energy range of 8-30 keV photons of astronomical origin. 2) XSPECT (X-ray Spectroscopy and Timing)- it will give spectroscopic information and observe several types of sources such as X-ray pulsars, blackhole binaries, low-magnetic field neutron star etc.
Significance	1) It is India's first and the world's second polarimetry mission , after NASA's Imaging X-ray Polarimetry Explorer (IXPE). 2) XPoSat will become India's third space-based observatory after the recently launched solar mission Aditya-L1 and AstroSat launched in 2015.

What are the other 10 Payloads onboard PSLV C58 Rocket?

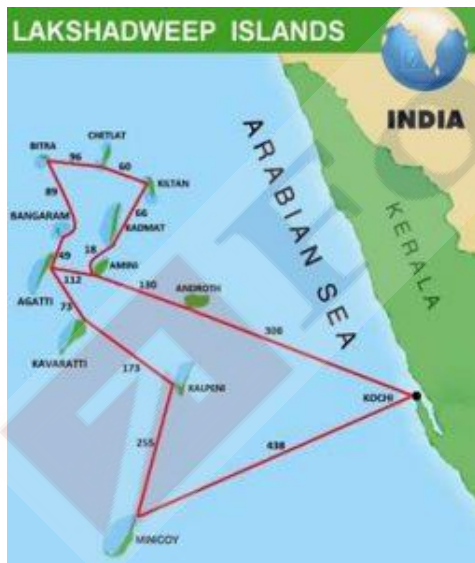
- 1) ISRO has utilized the **PSLV Orbital Experimental Module (POEM)** platform for the **third time** to achieve the objectives of 10 other payloads.
- 2) Under this, after injecting XPoSat in its orbit, the **fourth stage of the launch vehicle** was fired twice to bring it down to 350-km orbit where it will be **used as a platform for experiments**.
- 3) Among these 10 payloads the **Fuel cell Power System (FCPS) payload** (designed by ISRO's Vikram Sarabhai Space Centre) is significant as it has **potential applications in India's space station** which is proposed to come up by 2035.
- 4) POEM's experiments include the **Women Engineered Satellite (WESAT)** by LBS Institute of Technology for Women, which examines solar irradiance and UV index.
- 5) Additional experiments cover radiation shielding, amateur radio, three propulsion systems by space start-ups, an inter-planetary dust count experiment by Physical Research Laboratory, and a **silicon-based high-energy cell** by VSSC.

Kochi-Lakshadweep Islands Submarine Optical Fiber Connection

Why in the News?

PM Narendra Modi inaugurated the Kochi-Lakshadweep Islands Submarine Optical Fiber Connection (KLI-SOFC) project in Kavaratti, Lakshadweep.

What is Kochi-Lakshadweep Islands Submarine Optical Fiber Connection (KLI-SOFC) project?



Source- PIB

Specifications	Details
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What is it?	1) The KLI project extended submarine cable connectivity from Kochi to eleven Lakshadweep Islands , including Kavaratti, Agatti, Minicoy etc. 2) Previously, communication with the Islands relied solely on satellite, with limited bandwidth capacity unable to meet the growing demand. 3) Population of Lakshadweep Islands will be provided high speed wireline broadband connectivity through FTTH and 5G/4G Mobile network .
Funded by	Universal Services Obligation Fund (USOF) , Department of Telecommunication
Total link distance	1,868 kms
Implementing Agencies	1) BSNL, as the Project Executing Agency 2) M/s NEC Corporation India Pvt Ltd received the contract for work.
Major activities related to the project	Marine Route Survey, Submarine Cable laying, Civil Construction of CLS stations, Installation, Testing and Commissioning of End Terminals (SLTE).

Zosurabalpin: New antibiotic identified to target a drug-resistant bacterium

Why in news?

Researchers have identified a new class of antibiotics called 'Zosurabalpin' with the potential to tackle a drug-resistant bacterium, *Acinetobacter baumannii*.

What is Zosurabalpin?

- 1) Zosurabalpin is an **antibody** that is effective against **CRAB (carbapenem-resistant *Acinetobacter baumannii*)-induced pneumonia and sepsis in mouse models**.
- 2) Scientists identified a **tethered macrocyclic peptide (MCP)** that selectively kills *A. baumannii* which was **further optimised** for efficacy and tolerability, resulting in zosurabalpin.
- 3) The antibiotic kills *A. baumannii* through a previously unknown mode of action. It **inhibits the transport of the molecule lipopolysaccharide (LPS)** by inhibiting a complex of proteins.
- 4) This complex was essential for transporting LPS to the bacterial surface to create the outer-membrane structure of Gram-negative bacteria. However, the blocking of the LPS transport **results in an abnormal build-up of LPS in the cell which kills the bacterium**.
- 5) The antibiotic demonstrated efficacy against over 100 clinically tested samples of CRAB in the laboratory.

Researchers engineer plant cells to produce drug for cancer

Why in News?

Researchers at the Indian Institutes of Technology Madras and Mandi have metabolically engineered plant cells to increase the production of **anti-cancer drug camptothecin (CPT)**.

What was Done in the Research?

1) Camptothecin, an allopathic medicine, is **produced using Nathapodytes nimmoniana**, a native, **endangered plant**.

Note- The IUCN has red-listed this plant as in the past decade alone there has been a 20% decline in the plant's population.

2) The Plant Cell Technology Lab of IIT Madras researchers have developed a **genome-scale metabolic model for N. Nimmoniana plant cells using computational tools**.

3) Researchers have grown cultures of the plant in the lab and extracted cells from the plant. These cells are then **genetically engineered to augment the production of CPT**.

4) In 2021, researchers at IIT Madras identified a microbe as a sustainable and highly productive alternative source for CPT.

What is the Significance of this Research?

1) It offers an **alternative and sustainable source for Camptothecin**, thereby contributing to the **production of vital cancer-treating drugs**.

2) The technology employed for model-based rational metabolic engineering of plant cells can also be adapted to **enhance the production of many other high-value phytochemicals** (chemicals produced from plants).

3) This will help to **conserve natural resources** and reduce dependency on nature.

What is Camptothecin (CPT)?

1) **Camptothecin (CPT)** is an important **anti-cancer drug lead molecule** for high-value drugs like Topotecan and Irinotecan.

2) It is extracted mainly from **Camptotheca acuminata** (native to Eastern Asia) and **Nothapodytes nimmoniana** (native to India).

3) The Chinese variety of the plant used to extract the cell is listed as critically endangered. There are only 4,000 of the species left. In India the plant is a **native of western ghats** and in the last decade there was a **20% decline in population**.

Square Kilometre Array (SKA) Project

Why in the News?

The Union Cabinet has granted approval for the Square Kilometre Array (SKA) project, with a financial sanction of Rs 1,250 crore.

What is the Square Kilometre Array (SKA) project?

Factly Compilation for the Month of January 2024



Source- Deccan Herald

Specifications	Details
What is it?	1) This project is dedicated to the development of the world's largest radio telescope . 2) The SKA project will consist of a group of radio telescopes operating out of South Africa and Australia in two frequency ranges and a Square Kilometre Array Observatory headquartered at UK .
Objective	Explore galaxies in the cosmos, intricately map visible galaxies, furnish detailed data on our galaxy's evolution, seek signs of extraterrestrial life, and identify gravitational waves.
Participating Countries	Australia, Canada, China, India, Italy, New Zealand, South Africa, Sweden, the Netherlands, UK
India's Role	1) India's primary contribution to the SKA lies in the development and operation of the Telescope Manager element —the neural network or software orchestrating the telescope's functions. 2) It has been built by Pune-based National Centre for Radio Astrophysics (NCRA) along with some other international institutes. 3) India is also making significant financial contributions to the project.
Construction Phases	The SKA will be constructed in two phases , with SKA1's first phase construction commencing in December 2022 and operations expected to start by 2029.
Significance	It will offer profound insights into the initial stages of our galaxy's evolution, and will actively explore the possibility of life beyond Earth.

ISRO successfully tests Polymer Electrolyte Membrane Fuel Cell on PSLV-C58's orbital platform POEM3

Why in the News?

ISRO successfully tested a 100 W Polymer Electrolyte Membrane Fuel Cell Power System (FCPS) on the orbital platform POEM3, which was launched onboard PSLV-C58 on January 1, 2024.

What did ISRO Observe in the Conducted Experiment?

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- 1) **Objective-** To evaluate the functioning of Polymer Electrolyte Membrane Fuel cells in space and gather data to support the design of systems for upcoming missions.
- 2) During a brief test on POEM, the system **generated 180 W of power** by utilizing hydrogen and oxygen gases stored in high-pressure vessels.
- 3) It offered extensive data on the performance of diverse static and dynamic systems within the power system, as well as the underlying physics involved.
- 4) Hydrogen fuel cells **generate electricity directly from hydrogen and oxygen gases**, producing pure water and heat as byproducts. It is an **electric generator which works on electrochemical principles**, as in batteries, as against the combustion reactions employed in conventional generators.
- 5) Producing electricity directly from fuels makes fuel cells **highly efficient**, and being **emission-free** with only water as a byproduct further enhances their environmental benefits.
- 6) India is proposing to establish a **space station by 2035**, and the FCPS payload could potentially find applications in it.

What is Polymer Electrolyte Membrane Fuel Cell?

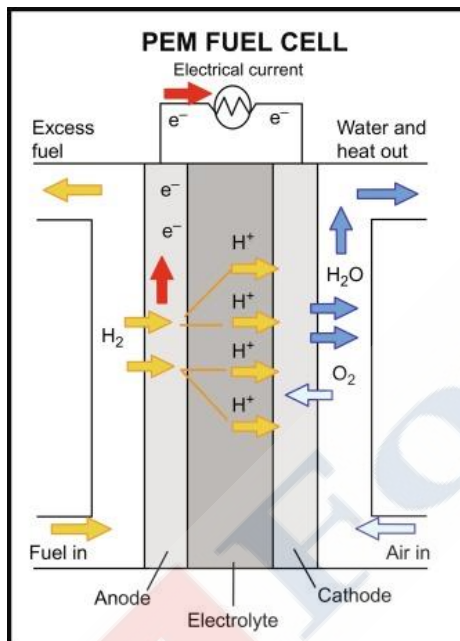


Figure 2Source- ScienceDirect

- 1) Polymer electrolyte membrane (PEM) fuel cells, also called proton exchange membrane fuel cells, **use a proton-conducting polymer membrane as the electrolyte**. Hydrogen is typically used as the fuel.
- 2) These cells **operate at relatively low temperatures** and can quickly vary their output to meet shifting power demands.
- 3) They are being **developed mainly for transport applications**, as well as for stationary and portable fuel-cell applications.

LK-99: South Korea superconductivity claim revived with new data

Why in the News?

Chinese and Japanese scientists have found signs of superconductivity in the controversial material LK-99, which was under scrutiny for similar claims last year.

What is LK-99?



Source- Wikipedia

- 1) LK-99 is a mixture of powdered compounds of lead, oxygen, sulfur, and phosphorus.
- 2) When heated at very high temperatures, it forms a **dark grey solid**.
- 3) Korean researchers have proposed it as a **potential room temperature and pressure (RTP) superconductor**, claiming its superconducting properties up to 400 K at ambient pressure.
- 4) Later Independent researchers identified issues in the group's data and rejected the assertion.

What were the findings reported in the new study?

- 1) It observed an indication of near-room-temperature superconductivity in LK-99.
- 2) The researchers observed the **Meissner effect** in LK-99.
- 3) Researchers look for **hysteresis loop** during the experiment.

Note- A hysteresis loop shows how a material's magnetization responds to changes in an applied magnetic field. The loop shape is due to the material retaining magnetization even after the external magnetic field is reduced to zero.

What is the Meissner effect?

- 1) The Meissner effect in **superconductors** is the **expulsion of a magnetic field** when the material transitions to the superconducting state below the critical temperature, causing repulsion of nearby magnets.
- 2) The effect is **only observable with a direct current (DC)** used to generate the magnetic field.
- 3) If an alternating current is employed, the material won't exhibit the effect as the magnetic field continuously changes directions.
- 4) It is utilized in various **technological applications**, such as in the development of levitating magnetic trains and superconducting magnets.

Tricolime: IISR develops new granular lime-based trichoderma bio-pesticide, fertilizer

Why in news?

ICAR-Indian Institute of Spices Research, Kozhikode has developed a new granular lime-based Trichoderma formulation which is a fungal bio-control agent.

What is Tricolime?

- 1) Trichoderma is a **fungal biocontrol agent** present in all soils. In simple term, it is a genus of fungi that can be found in most soils.
- 2) Tricolime integrates **Trichoderma and lime** into a single product, making the **application easier for the farmers**.



What is the significance of Tricolime?

- 1) Tricolime serves as a **bio-pesticide and bio-fertiliser in crop production**.
- 2) Being a bio pesticide, it promotes plant growth and shields crops from soil-borne pathogens, all in a single application.
- 3) Functioning as bio fertiliser, tricolime **improves the physical condition of the soil**, enhances **secondary nutrient availability** and boosts **soil microbial activity**.

Amaterasu: Super-energetic particle from outer space

Why in the News?

Japanese scientists found a powerful cosmic ray on Earth named 'Amaterasu,' the **second-highest-energy cosmic ray** ever discovered.

What is Amaterasu?

- 1) It is one of the **high-energy cosmic ray**, named after the Japanese Sun goddess.
- 2) It appears to have arrived from a void in space where nothing is known to exist.
- 3) The Amaterasu particle possesses an **energy surpassing 240 exa-electron volts (EeV)**, making it **millions of times more powerful than particles produced by the Large Hadron Collider**, the world's most powerful particle accelerator.
- 4) It **ranks second only to the Oh-My-God particle**, another ultra-high-energy cosmic ray detected in 1991, which registered at 320 EeV.

What are cosmic rays?

- 1) They are high-energy particles, moving at nearly the speed of light, originate from the Sun, our galaxy, and distant galaxies.

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- 2) These particles can **include protons, alpha particles (helium nuclei), and heavier ions.**
- 3) Ultra-high-energy cosmic rays are subatomic particles from extragalactic sources with energies greater than 1 EeV.

Significance– They are crucial for studying astrophysical phenomena and understanding the properties of particles at very high energies.

ANEEL: New nuclear fuel that can guarantee India's green energy transition

Why in news?

Clean Core Thorium Energy, a Chicago-based company, developed **ANEEL (Advanced Nuclear Energy for Enriched Life)**, a fuel that combines **Thorium and High Assay Low Enriched Uranium (HALEU)** (named after India's scientist, Dr Anil Kakodkar).

What is High Assay Low Enriched Uranium (HALEU)?

HALEU is defined as **uranium enriched to greater than 5% and less than 20% of the U-235 isotope.**

Most of the current reactors run on uranium fuel **enriched up to 5 percent Uranium-235.**

HALEU is needed for many of the advanced nuclear reactor designs under development. But **HALEU is not yet widely available commercially.**

How ANEEL can be a game-changer for green energy transition?

- 1) ANEEL **can be used in the existing Pressurized Heavy-Water Reactors (PHWRs)** which is an indigenous reactor system.
- 2) ANEEL provides an **easier and quicker alternative** for the deployment of thorium leveraging imported HALEU, especially for nations which lack the infrastructure to install natural gas, wind or solar or hydro.
- 3) By utilising this fuel, the **operation cost and nuclear waste can be reduced** significantly as compared with the currently used natural uranium.
- 4) ANEEL fuel bundle **lasts much longer and burns more efficiently.**
- 5) The spent ANEEL fuel **cannot be used for weapons.**
- 6) With this, **India** can guarantee **green energy security** for the subcontinent by fast-tracking the use of **Thorium** in nuclear reactors.

What is the status of Thorium in India?

- 1) Thorium is contained in, and produced from, the natural mineral monazite, occurring often as a sand deposit.
- 2) Department of Atomic Energy (DAE) has established **11.93 million tonnes of in situ resources Monazite**

State	Monazite (Million tonnes)
Odisha	2.41
Andhra Pradesh	3.72
Tamil Nadu	2.46
Kerala	1.90
West Bengal	1.22
Jharkhand	0.22

(Thorium bearing mineral) in the country, which contains **about 1.07 million tonnes of thorium.**

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Figure 3 Source: PIB

3) India has the **world's largest reserves of Thorium**, which is estimated at **1.07 million tonnes**, enough to last over a century.

2) If India uses this thorium, it can then produce enough green energy and easily turn **net-zero by its target date of 2070**.

Ministry notifies revised rules to ensure quality of medicines

Why in the News?

The Ministry of Health and Family Welfare has notified revised rules under **Schedule M of the Drugs and Cosmetics Rules, 1945**. This was done to ensure the production of high-quality drugs meeting international standards.

What are the updated rules notified by the Ministry?

Five new categories of drugs	Pharmaceutical products containing hazardous substances such as: 1. Sex hormones 2. Steroids (anabolic and androgenic) 3. Cytotoxic substances (used to destroy cancer cells) 4. Biological products 5. Radiopharmaceuticals (used in nuclear medicine for diagnostic and therapeutic purposes)
Additional sections under Schedule M	1. Introduction of a pharmaceutical quality system (PQS) 2. Quality risk management (QRM) 3. Product quality review (PQR) 4. Qualification and validation of equipment 5. Computerized storage system for all drug products
Other revised guidelines	1. The manufacturer is obligated to take responsibility for the quality of pharmaceutical products, ensuring their suitability for use. 2. They also need to comply with license requirements and prevent any risks to patients arising from inadequate safety, quality, or efficacy. 3. Companies are required to market a finished product only upon obtaining 'satisfactory results' from ingredient tests. 4. They must also retain sufficient samples of intermediate and final products for potential retesting or batch verification.
Implementation	The updated rules apply to companies based on their turnovers 1. Small and medium manufacturers (annual turnover < Rs. 250 crore) must comply within 12 months of publication. 2. Large manufacturers (annual turnover > Rs. 250 crore) have a six-month deadline.

What is Schedule M of the Drugs and Cosmetics Rules, 1945?

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- 1) Schedule M of the Drugs and Cosmetics Rules, 1945, pertains to the **Good Manufacturing Practices (GMP)** for the manufacture of drugs.
- 2) The revised Schedule M has **13 parts**.
- 3) Schedule M originated from the recommendations of the **Hathi Committee** in 1975, which proposed making Good Manufacturing Practices (GMP) **mandatory** for all drug manufacturers.

Spiral Galaxy: MCG-01-24-014

Why in the News?

The Hubble Space Telescope has recently captured an image of the spiral galaxy MCG-01-24-014, unveiling the mysterious allure of the so-called '**forbidden**' light.

What is MCG-01-24-014?

- 1) It is a **galaxy** located about 275 million light-years distant from Earth within the **Hydra constellation**.
- 2) It features a clearly defined structure and possesses a highly energetic core, categorized as an **active galactic nucleus (AGN)**.
- 3) It falls under the category of **Type-2 Seyfert galaxies**.
- 4) **Seyfert galaxies** are a class of galaxies known to have **active nuclei**, characterized by **extremely bright, compact centers**.
- 5) The distinction between Type-1 and Type-2 Seyfert galaxies lies in their **spectral lines**-the unique fingerprints of light that reveal the chemical composition and physical conditions within these celestial objects.
- 6) Type-2 Seyfert galaxies, such as MCG-01-24-014, are characterized by their '**forbidden**' emission lines.

What is a Spiral Galaxy?



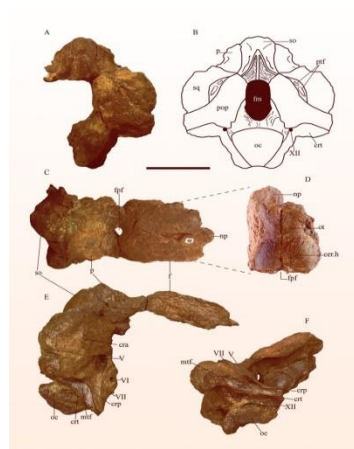
Figure 4 Source- Wikipedia

- 1) Spiral galaxies are **twisted collections of stars, dust and gas** that often have beautiful shapes and are **made up of hot young stars**.
- 2) Most of the galaxies that scientists have discovered so far are spiral galaxies, as opposed to the other two main categories of galaxy shapes -elliptical and irregular.
- 3) **Example of spiral galaxy** – The Milky Way – the galaxy that includes Earth and our solar system.
- 4) According to a survey conducted in 2010 with Hubble Space Telescope, **approximately 72 percent of the galaxies observed by scientists are spiral galaxies**.

New Species of Sauropod Dinosaur Discovered in Argentina

Why in news?

Recently, a new species of dinosaur has been discovered in **Argentina**.



Sidersaura marae fossil Source: Sci News

What was discovered?

Specifications	Details
Species	Dinosaurs
Discovery Location	Patagonia, Argentina .
Scientific name	<i>Sidersaura Marae</i>
Period	Cenomanian age of the Late Cretaceous epoch , between 96 and 93 million years ago.
Distinctive Features	<ol style="list-style-type: none"> 1) The animal belongs to Rebbachisauridae, a large family of sauropod dinosaurs. 2) It is known from fragmentary fossil remains from South America, Africa, North America, Europe and Asia. 3) These dinosaurs have long neck, duck-beak, and had a very long tail. 4) They are up to 20 m in length and had an estimated mass of 15 tons. 5) These dinosaurs are identified by unique teeth, some with tooth batteries, like hadrosaurs and ceratopsians. 6) Sidersaura marae is distinguished by its star-shaped hemal arches, a unique characteristic.

Who are sauropod dinosaurs?

1) Sauropod dinosaurs were large, long-necked, herbivorous dinosaurs that lived from the **Late Triassic to the Late Cretaceous periods**.

- 2) They are the **largest animals to have ever lived on land**.
- 2) The sauropods' most distinctive feature was their **enormous body size** and their **signature long sauropod necks**.
- 3) Sauropod dinosaurs are also known for **having spines on their necks and backs**.

Thylakoids

Why in news?

Researchers at the **University of Liège, Belgium** have identified microstructures in fossil cells that are **1.75 billion years old**.

What are the recent findings related to Thylakoids?

- 1) The oldest known fossil thylakoids date back approximately 550 million years.
- 2) However, researchers have identified thylakoid membranes in fossil cells that are 1.75 billion years old.
- 3) These findings suggest a minimum age for the divergence between cyanobacteria with and without thylakoids.
- 3) It presents a possibility that the development of thylakoids might have significantly contributed to the phenomenon known as the '**Great Oxygenation**'.

What is 'Great Oxygenation' event?

- 1) Around **2.4 billion years ago on earth the oxygen released by cyanobacteria** filled the ocean and made its waters oxygen rich.
- 2) Over time, this **oxygen started escaping into the atmosphere**, where it **reacted with methane**.
- 3) As more oxygen escaped, **methane was eventually displaced**, and oxygen became a major component of the atmosphere.
- 4) This event is known as the **Great Oxidation Event**.

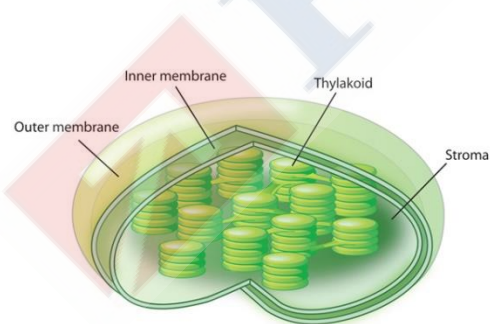


Figure 5. Source: Animalia

What are thylakoid?

- 1) Thylakoids are little pouches located in the **chloroplasts of plants**.
- 2) They are found in **ancient, light-sensitive bacteria** called **cyanobacteria**.

Note: Cyanobacteria are **photosynthetic bacteria** that obtain energy through photosynthesis. They are often referred to as **blue-green algae**, although they are not classified as true algae.

- 3) They **store chlorophyll**, the substance in plants that reacts to sunlight and triggers photosynthesis.

4) The **thylakoid's function** is to **perform light-dependent reactions in photosynthesis**.

India Meteorological Department Marks 150 years of serving the nation

Why in the News?

Recently, the India Meteorological Department (IMD) celebrated its 150th year of establishment and service to the nation.

Which significant services of the IMD were launched on this occasion?

Services	Details
Weather Analysis and Forecast Enabling System (WAFES)	<ol style="list-style-type: none">1. It is a Web-GIS-based integrated Decision Support System (DSS) platform for visualizing meteorological observations and prediction models, thus facilitating decision-making regarding severe weather events.2. It provides real-time information for various sectors such as Urban, Power, Hydrology, Health, Energy, Agriculture, Transport and Tourism under the 'UPHHEATT' initiative.
Panchayat Mausam Seva Portal for farmers	<ol style="list-style-type: none">1. Developed by- India Meteorological Department, Ministry of Earth Sciences, Ministry of Panchayati Raj and Green Alert Mausam Sewa.2. Purpose- This portal will deliver weather forecasts in English, Hindi, and 12 regional languages to every village by providing access to each panchayat head and panchayat secretary.
IMD's Mobile App	<ol style="list-style-type: none">1. It is an integrated GIS-based mobile app providing a range of weather services.2. It supports 12 Indian languages for diverse users.
National Framework of Climate Services (NFCS)	<ol style="list-style-type: none">1. It is a strategic initiative to establish a comprehensive and integrated system for delivering climate services and information.2. Purpose- To offer crucial climate-related data and insights to diverse sectors such as agriculture, energy, disaster management, health, and water resource management.

What is India Meteorological Department (IMD)?

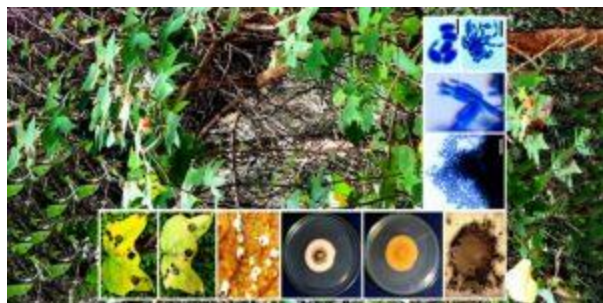
IMD or the India Meteorological Department was **established in 1875**. It is responsible for meteorological observations, weather forecasting and seismology in India.

Paramyrothecium indicum – Scientists discover new species of fungus in Kerala

Why in the News?

Scientists have recently discovered a new species of fungus in Kerala, named 'Paramyrothecium indicum'.

What is 'Paramyrothecium indicum'?



Source- Newscareer360

1. It is a new species of **phytopathogenic fungus**.

Note– phytopathogenic fungus is associated with emerging leaf spots on the wild hibiscus plants near **Peechi-Vazhani Wildlife Sanctuary** in Thrissur district of Kerala.

2. Phytopathogens are **parasites** that thrive on a host plant.

3. The **majority of Paramyrothecium** species are considered phytopathogens.

4. Phytopathogen fungi are responsible for **serious plant diseases** which might negatively affect crop productivity.

5. **Leaf spots** caused by Paramyrothecium represent a fungal disease capable of affecting various plant species.

6. Certain Paramyrothecium species **generate secondary metabolites** with bio-herbicidal potential, suggesting their **potential use in weed control**.

What is Fungi?



Figure 6. Source- Earth.com

1) They are a diverse group of organisms that belong to the biological kingdom Fungi.

2) They include a wide range of organisms, such as **mushrooms, molds, yeasts, rusts, smuts, mildews**.

3) Fungi are distinct from plants, animals, and bacteria, forming their own kingdom.

4) They are **eukaryotic organisms**, meaning their cells possess membrane-bound organelles and well-defined nuclei.

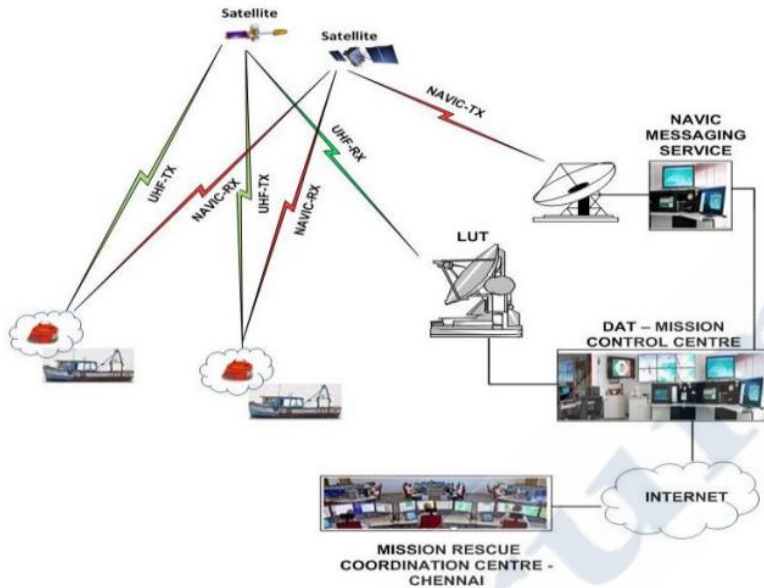
5) **Reproduction:** Fungi usually **reproduce both sexually and asexually**.

Distress Alert Transmitter of ISRO

Why in the News?

Recently the Indian Space Research Organisation (ISRO) has developed an improvised distress alert transmitter (DAT-SG) with advanced capabilities for fishermen at sea to send emergency messages from boats.

What is Distress alert transmitter (DAT)?



Source- Space application centre

Specifications	Details
About	<p>It is a device used for sending emergency messages from fishing boats.</p>  <p style="text-align: right;">Source- NewSpace India Limited</p>
Developed by	ISRO

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First Version	Operational since 2010
Latest Version	Second generation DAT (DAT-SG)
Functions	<ol style="list-style-type: none">1. Conventionally, using DAT, messages are transmitted via a communication satellite to the Indian Mission Control Centre, where alert signals are decoded for the fishing boat's identity and location.2. The information is then relayed to maritime rescue coordination centers (MRCCs) of the Indian Coast Guard, which coordinates search and rescue operations for distressed fishermen.
DAT-SG with additional features	<ol style="list-style-type: none">1. Real-Time Acknowledgments- Besides sending distress signals, the DAT-SG has the facility to send back acknowledgement to the fishermen who activate the distress alert from sea. This will provide them with assurance that help is on the way.2. Two-way communication- In addition to sending distress signals, it can also receive messages from control centers. It will help in providing advance warnings about adverse weather, cyclones, tsunamis, or emergencies.3. Potential Fishing Zones (PFZs) updates- DAT-SG transmits regular updates on Potential Fishing Zones (PFZs) to fishermen, aiding them in maximizing catches and saving time and fuel.4. Bluetooth connectivity- It can connect to mobile phones via Bluetooth, allowing messages to be read in the native language through a dedicated app.

Note- The central control center (INMCC) utilizes the web-based network management system 'SAGARMITRA' to keep a database of registered DAT-SGs. This aids MRCCs in accessing immediate information about distressed boats, allowing the Indian Coast Guard to carry out swift Search & Rescue operations.

Centre for Fourth Industrial Relation

Why in the news?

The World Economic Forum has agreed to set up its Centre for **Fourth Industrial Revolution (C4IR) in Hyderabad**.

What is Centre for fourth industrial relation?

C4IR stands for the Centre for Fourth Industrial Revolution. It is an initiative by the **World Economic Forum (WEF)** to establish centers that focus on harnessing the potential of technological progress for **human-centric** transformation of industries, economies and societies.

The agreement between **Telangana government** and **WEF** aims to use technology for improvement in the **life sciences** and **healthcare sector**. **The focus of C4IR** is to provide the best healthcare services to small towns and villages.

What is meant by the 4th Industrial Revolution?

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The Fourth Industrial Revolution is the current and developing environment in which disruptive technologies and trends such as the **Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI)** are changing the way modern people live and work.

World Economic Forum

The World Economic Forum (WEF) is an international non-governmental organization for public-private sector collaboration based in Switzerland. It was founded on 24 January 1971 by Klaus Schwab.

Mpemba effect

Why in the News?

The Mpemba effect has recently captured the attention of scientists. After many experiments, we still don't have a clear agreement, on what causes this puzzling phenomenon.

What is Mpemba effect?

- 1) It is a phenomenon in which **hot water freezes faster than cold water under certain conditions.**
- 2) It is **named after Tanzanian student Erasto Mpemba**, who observed it in the 1960s.

What are the recently proposed causes for this phenomenon by scientists?

- 1) **Presence of Microbubbles-** One of the proposed causes is the **presence of microbubbles** that remain suspended in water after boiling. These microbubbles **promote convection** and **facilitate faster heat transfer.** Hence, the warm water cools down more quickly.
- 2) **Evaporation-** Another cause is attributed to **evaporation.** As warmer water evaporates more, it takes away the heat more quickly. Thus, warm water cools down more quickly as compared to cold water.
- 3) **Presence of Frost in Cold Water-** The **presence of frost in cold water acts as an insulator** which impedes/slow down the process of heat loss. This raises the freezing point of cold water.
- 4) **Presence of Calcium carbonate and other impurities-** Compounds like **calcium carbonate** precipitate in warm/hot water, and it lowers down the freezing point of warm water. On the other hand, in cold water, **calcium carbonate and other impurities remain dissolved in the cold water**, which increases the freezing point of cold water.

Havisure: India's first indigenously developed Hepatitis A vaccine

Why in the News?

Recently, Indian Immunologicals Ltd (IIL), a wholly owned subsidiary of the **National Dairy Development Board (NDDB)**, has launched India's first domestically developed Hepatitis A vaccine, named 'Havisure.'

What is Havisure?

Specifications	Details
About	It is India's first indigenously developed vaccine for Hepatitis A.

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Dosage	<ol style="list-style-type: none"> 1. It is a two-dose vaccine. 2. The first dose given to those above 12 months of age and the second dose is administered at least six months later.
Who is eligible for the vaccine?	<ol style="list-style-type: none"> 1. The vaccine is advised for routine immunization in children and individuals at risk due to exposure or travel to regions with high hepatitis A prevalence. 2. Additionally, individuals with occupational infection risks and those suffering from chronic liver diseases can also receive Hepatitis A vaccination.
Significance	This vaccine is expected to play a significant role in preventing Hepatitis A. Hepatitis A is a highly contagious liver infection transmitted through contaminated food or water.

What is Hepatitis A?

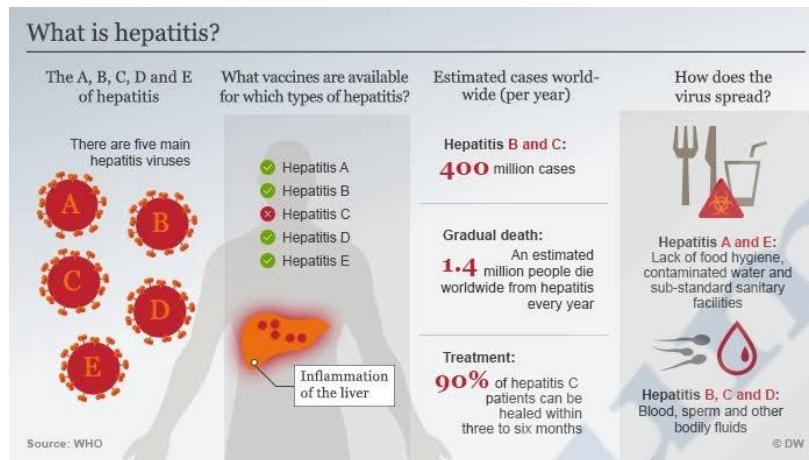


Figure 7. Source- DW

1) It is a **viral infection** that primarily causes **inflammation of the liver**.

2) It can be an acute (short-term) infection or a chronic (long-term) infection.

3) **Transmission**- It is transmitted through the consumption of contaminated food or water or through close contact with an infected person.

4) **Symptoms**- fever, fatigue, nausea, abdominal pain, and

jaundice (yellowing of the skin and eyes).

5) **Treatment**- As per WHO there is **no specific treatment for hepatitis A**. Recovery from symptoms following infection may be slow and can take several weeks or months.

Pandemic treaty and disease X

Why in the news?

The World Health Organization (WHO) is urging its member nations to sign a pandemic treaty to strengthen global preparedness for future health crises.

What is Pandemic treaty?

Origin-In March 2021, a group of world leaders announced an initiative for a new treaty on pandemic preparedness and response.

This initiative was taken to the World Health Organization (WHO) and will be negotiated, drafted, and debated by a newly-established Intergovernmental Negotiation Body.

Objective-

1) to foster an all government and all society approach, strengthening national, regional and global capacities

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and resilience to future pandemics.

2) to enhance **international co-operation** in data-sharing, research and local, regional and global production and distribution of medical and public health counter-measures such as **vaccines, medicines, diagnostics and personal protective equipment**.

3) The deadline for this agreement is set for the 77th World Health Assembly in May 2024.

About disease X

1) It is a hypothetical pathogen or threat that may cause a major pandemic in future.

2) It could be a new agent, **a virus, a bacterium, or a fungus** without any known treatment.

3) The disease could be any of the 25 families of viruses that have the capability to cause illness in people.

4) Disease X was included in the **WHO's updated Blueprint list of diseases back in 2018**.

5) Disease X could be 20 times more deadly than SARS-Covid virus that caused pandemic recently.

6) It is an illness which is currently unknown but could pose a serious microbial threat to humans in the future.

End-to-end encryption (E2E)

Why in the News?

This article explores End-to-end encryption (E2E), detailing its operational mechanisms and examining implementation challenges and complexities.

What is End-to-end encryption (E2E)?

1) Encryption serves as a method to **safeguard data against unauthorized access or manipulation**.

2) It functions by **converting the data into a confidential code that only the designated recipient can decode**. This proves beneficial in numerous scenarios, including securing online correspondence, safeguarding sensitive data, and authenticating digital identities.

3) Encryption primarily falls into two categories:

a. **Symmetric**: This method **employs a single key for both encryption and decryption**. In symmetric encryption, the key utilized to encode data is identical to the one needed for decoding it.

b. **Asymmetric**: Asymmetric encryption **relies on a pair of keys: a public key and a private key**. The public key can be distributed openly, whereas the private key must remain confidential.

4) The concept of encryption typically pertains to safeguarding stored data, whereas **end-to-end encryption ensures the protection of data during its transmission between locations**, particularly in scenarios involving rapid information exchange.

5) In an application equipped with end-to-end encryption (E2EE), only the individuals at each end—namely, the sender and recipient—have the ability to access exchanged messages.

Subject: Environment

Eurasian Otter Spotted at Chinnar Wildlife Sanctuary in Kerala

Why in News?

Recently, Eurasian Otter (*Lutra lutra*) was spotted for the **first time in Kerala**. They were found at **Chinnar Wildlife Sanctuary in Idukki**.



Figure 8. Eurasian Otter

What is Eurasian Otter?

- 1) Eurasian Otter is a **semi-aquatic carnivorous mammal**.
- 2) They are **shy and nocturnal**.
- 3) The Eurasian otter lives in a **wide variety of aquatic habitats** including highland and lowland lakes, rivers, streams, marshes, swamp forests and coastal areas independent of their size, origin or latitude.
- 4) The species holds a conservation status of **“Near Threatened” on the IUCN list**.

5) It is classified under **Schedule I of the Indian Wildlife (Protection) Act of 1972** and falls under **Appendix I of the CITES**.

6) There are **three species of otters found in Kerala**, including **Eurasian Otter (*Lutra lutra*)**, **Smooth-coated Otter** and **Small-clawed Otter**.

What is the Chinnar Wildlife Sanctuary?

Specifications	Details
Location	Idukki District, Kerala
Geographical Features	1) It is a prominent chunk of the block of protected forests growing in the Annamalai hills in the Kerala-Tamil Nadu border. 2) The sanctuary's landscape is characterized by rocky terrains, hillocks, and valleys.
Wildlife Sanctuary	Kodaikanal Wildlife Sanctuary is to its East and Indira Gandhi Wildlife Sanctuary is to the north.
Vegetation	Dry Deciduous Forests, Wet Grasslands, High Sholas, Dry Thorny Scrub Forests, and Riparian Forests.

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Rivers	Chinnar and Pambar are the major rivers flowing through it.
Flora	Among the 1000 species of flowering plants, some of the rarely found species include Elaeocarpus recurvatus, Arabica, Acacia leucophloea, Santalum album, Neelakurinji , etc.
Fauna	<p>1) The Chinnar Wildlife Sanctuary provides a home to endangered species such as Grizzled Giant Squirrel, Gaur, Rusty-Spotty Cat, Sambar, Nilgiri Tahr, Bonnet Macaques, Tufted Grey Langur, Spotted Deer, etc.</p> <p>2) It is also famous for preserving a diverse range of birds such as Black Eagle, Yellow-throated Bulbuls, Grey Heron, Serpent Eagle, Little Egret, etc.</p> <p>3) The sanctuary also houses 156 species of butterflies, 42 species of fishes and several other reptiles along with some notable insects.</p> <p>4) It is the only rehabilitation centre for the Indian Star Tortoise in India.</p>

Wetland City Accreditation: MoEFCC nominates first 3 cities from India

Why in the News?

MoEF&CC has nominated Indore (Madhya Pradesh), Bhopal (Madhya Pradesh), and Udaipur (Rajasthan) for **Wetland City Accreditation (WCA)** under the Ramsar Convention on Wetlands.

What is Wetland City Accreditation (WCA) Scheme?



Source- Ramsar.org

Specifications	Details
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What is it?	It is a voluntary system under the Ramsar Convention to acknowledge cities that have taken exceptional measures to conserve and protect urban and peri-urban wetlands . It was introduced in 2015.
Aim	To enhance the conservation and sustainable utilization of urban and peri-urban wetlands, providing socio-economic benefits for local communities.
Accreditation criteria	The Operational Guidance for WCA of the Ramsar Convention on Wetlands encompasses six international criteria that a city must meet to qualify.
Significance for India	1) The WCA allows cities to gain international recognition for their efforts in protecting their wetlands. 2) It will also raise public awareness about urban wetland conservation. 3) Further, it will aid in nationwide implementation of Amrit Dharohar initiative by MoEF&CC.

Important wetlands of these three nominated cities:

Indore	Bhopal	Udaipur
The city has 2 Ramsar sites- Sirpur Lake and Yashwant Sagar .	Bhoj Wetland , a Ramsar Site	The city is surrounded by five major wetlands, namely, Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai

IISc study revealed how logging and climate change impact montane birds

Why in news?

Recently, researchers at the Indian Institute of Science (IISc.) in Bengaluru have found that logging and climate change pose a threat to montane birds.

What was done in research?

- 1) The team collected data from the **Eaglenest Wildlife Sanctuary, Arunachal Pradesh** which is home to over 500 bird species.
- 2) Researchers studied the **effects of forest logging and climate change on bird communities** in tropical mountains by examining over 10 years of data.
- 2) **Mist netting and bird ringing data** were used to understand how the composition of the mid-elevation Eastern Himalayan understory bird community changed in primary (undisturbed) forests as well as in logged forests.

Note- Understorey bird community is the community of birds that remain beneath the main canopy of a forest

What are the findings of the research?

- 1) **Forest loss and climate change are major threats** to the ecosystem of Tropical montane forests on mountains.

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- 2) Many bird species have started **shifting to higher elevations due to rising temperatures.**
- 3) Logging can lead to the **loss of large-bodied, old, growth-dependent species, and decrease the overall biodiversity.**
- 4) Logging has a **detrimental impact on understorey insectivores**, which are typically confined to specific niches, leading to a significant decline in their numbers.
- 5) Logged forests also **experience decreased densities of foliage-dwelling insects**, diminishing the available resources for birds.
- 6) The study highlights the need to **safeguard primary forests** in order to **mitigate the effects of climate change.**

What is Eagle Nest Wildlife Sanctuary?

Specifications	Details
Location	Arunachal Pradesh
Geographical Features	It is situated in the biodiversity hotspot of Eastern Himalayas.
National Park	It conjoins Sessa Orchid Sanctuary to the northeast and Pakhui Tiger Reserve across the Kameng river to the east.
Significance	Eagle Nest's Wildlife Sanctuary is considered amongst the topmost birding destinations in the World.
Flora	Dense strands of bamboo & patches of broadleaved evergreen forest covers the large altitudinal range.
Fauna	1) It is also home for many species of amphibians, snakes & lizards, mammal species like Bengal Tiger, Clouded leopard, Red Panda, Arunachal Macaque, Gaur & endangered capped Langur. 2) More than 160 species of butterflies have been recorded. 3) The rare Bugun Liocichla bird (IUCN status: Critically Endangered) is found only in the Eaglenest Wildlife Sanctuary.
Tribes	This Sanctuary is inhabited by two tribes, Bugun and Sherdukpen.

Denmark announces alliance on green fuels in India

Why in news?

Recently, the Danish government, in collaboration with A.P. Moller-Mersk and other partners, has announced the formation of the Green Fuels Alliance India (GFAI) to advance their **joint global goal towards carbon neutrality.**

The alliance is underpinned by the **Green Strategic Partnership (GSP)** signed between India and Denmark in 2020.

What is Green Fuels Alliance India (GFAI)?

Specifications	Details
What is it?	Green Fuels Alliance India (GFAI) is an alliance between the Denmark and India to boost collaborative efforts in the sustainable energy solutions sector.

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Led by	Danish Embassy and the Consulate General of Denmark in India.
Aim	to advance the green fuels sector, including green hydrogen, through innovation and partnerships.
Objective	To promote sustainable energy growth in India by establishing an ecosystem that encourages collaboration among businesses, government entities, research institutions, and financial stakeholders.
Founding members of the GFAI	Nine prominent Danish organisations such as Maersk, Topsoe, Umwelt Energy, Mash Makes, European Sustainable Solutions, Novozymes, Danfoss, Brdr. Christensen, and Hydrogen Denmark.
Advisory board members of the GFAI	India Hydrogen Alliance, Energy Consortium at the Indian Institute of Technology Madras, the Danish Energy Agency and State of Green.

Himalayan Wolf

Why in the News?

The Himalayan Wolf (*Canis lupus chanco*) has been **assessed for the first time** on the International Union for Conservation of Nature (IUCN) Red List.

About Himalayan Wolf



Source- Think wildlife Foundation

Specifications	Details
What is it?	It is a subspecies of the gray wolf found in the Himalayan region, spanning areas such as Nepal, India, and the Tibetan Plateau.
Conservation Status	IUCN: Vulnerable CITES: Appendix I Wildlife Protection Act, 1972: Schedule I
Distribution	1. The Himalayan wolf resides on the Tibetan Plateau in China, particularly in Gansu, Qinghai, Tibet, and western Sichuan provinces. 2. In Northern India, the Himalayan wolf is found in Ladakh and the Lahaul-Spiti region in northeastern Himachal Pradesh.

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	Note- India is also home to the Indian/Common/Peninsular Wolf (<i>Canis lupus pallipes</i>) found in the plains and the Deccan Plateau.
Population	The assessment estimates that there are 2,275-3,792 mature individuals scattered throughout the Himalayan region, encompassing Nepal, India, and the Tibetan Plateau.
Threats	1. Illegal hunting for the illicit trade of its fur and body parts, including paws, tongues, heads, and other components. 2. Encroachment 3. Depletion of prey populations
Features	1. Himalayan wolves are smaller and more compact than other subspecies, characterized by shorter legs and snouts. 2. Well-adapted to the harsh mountainous terrain, they possess strong limbs and a stout body, enabling them to navigate and survive in challenging environments.

What measures are recommended in the assessment?

1. Ensuring the well-being of prey populations.
2. Enhancing livestock guarding techniques.
3. Addressing feral dog populations.
4. Implementing transboundary conservation initiatives.
5. Integrating the Himalayan Wolf into **conservation programs** for increased protection.

Pench Tiger Reserve Marked as India's first International Dark Sky Park

Why in News?

Recently, the Pench Tiger Reserve (PTR) in Maharashtra has been marked as **India's first international Dark Sky Park**.

Why Pench Tiger Reserve (PTR) marked as Dark Sky Park?

- 1) A **night observatory has been established** and the area near Bagholi is designated for stargazing.
- 2) The **park has replaced over 100 street and community lights** with **downward-facing lights** in various villages, minimizing their impact on the night sky.
- 3) All these efforts help in **protecting the night sky, preventing light pollution and promoting astronomy**.

The IUCN emphasizes preserving natural darkness for **nature conservation, maintaining ecological integrity in protected areas, and ensuring the well-being of communities in healthy cities**.

What is a Dark Sky Park?

- 1) Dark sky Park is an area surrounding a park or observatory that **restricts artificial light pollution**.
- 2) **Purpose:** Protection of night skies from light pollution, promote astronomy
- 3) **Certified by:** The International Dark-Sky Association
- 4) **DSP certification focuses on** lighting policy, dark sky-friendly retrofits, outreach, education, and night sky monitoring.

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5) **India's first dark-sky preserve:** Indian Astronomical Observatory (IAO)

- **Situated at:** Hanle, Ladakh
- **Operated by:** The Indian Institute of Astrophysics
- **Significance:** world's highest located sites for optical, infrared and gamma-ray telescopes.

6) The **Pench Tiger Reserve (PTR) in Maharashtra** is **India's first Dark Sky Park** and **Asia's fifth Dark Sky park**.

What is Pench Tiger reserve?

Specifications	Details
Location	Maharashtra
Geographical Features	1. The sanctuary is located across two states of Madhya Pradesh and Maharashtra . 2. The portion of the reserve that is in Madhya Pradesh is located in the Satpura ranges.
National Park	1. The reserve comprises the Indira Priyadarshini Pench National Park, the Pench Mowgli Sanctuary and a buffer . 2. The reserve is also among the sites notified as Important Bird Areas (IBA) of India .
Significance	1. Typical representation of the wilderness of great Central Indian Highland . 2. Excellent habitat to harbor the Tiger , the highly endangered species. 3. Catchment of river Pench that ultimately affects the storage of water in the Totladoh reservoir – the main source of water supplies to Nagpur and generation of electricity for Madhya Pradesh.
Rivers	The Pench river flows through the middle of the park.
Flora	1) Combination of Southern dry broadleaf teak forests and tropical mixed deciduous forests . 2) Various shrubs, climbers, and trees , some of which are unique with medicinal and healing properties . 3) Bamboo plantations are also found near the water banks.
Fauna	1) It includes various mammals such as sloth bear, jackal, nilgai, wild dog etc. 2) Birds like peafowl, magpie robin, pintail, drongo, unia, myna etc. are also found.

Vulture restaurant in Jharkhand

Why in the News?

In Jharkhand, a 'Vulture Restaurant' has been established in Koderma district as part of conservation efforts to conserve the diminishing vulture population.

Why has this initiative been taken?

1) **Aim-** The initiative aims to **mitigate the negative effects of veterinary drugs**, especially **diclofenac**, on vultures.

Note- Exposure to diclofenac-contaminated tissues leads to kidney failure in vultures.

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2) It serves as a designated **feeding site for the Vultures**. To prevent interference from other animals, bamboo fencing has been erected around the feeding site.

3) The Jharkhand Forest Department also **plans to establish a center** for vulture interpretation and rescue, incorporating **geo-tagging** for enhanced monitoring.

About Vulture



Source-Wildlife SOS

Specifications	Details
What is it?	<ol style="list-style-type: none"> 1. It belongs to the category of 22 large scavenging birds, primarily inhabiting tropical and subtropical regions. 2. They are known for their role in cleaning up carrion (the flesh of dead animals).
Vultures in India	India is home to 9 species of Vulture namely the Oriental white-backed, Long-billed, Slender-billed, Himalayan, Red-headed, Egyptian, Bearded, Cinereous and the Eurasian Griffon.
Conservation Status	<ol style="list-style-type: none"> 1. CITES: Appendix II 2. Wildlife Protection Act, 1972: <ol style="list-style-type: none"> a. Schedule I- Bearded, Long-billed, Slender-billed, and Oriental white-backed vultures b. Schedule IV- Himalayan, Red-headed, Egyptian, Cinereous, Eurasian Griffon.
Distribution	Vultures are widely distributed, but they are absent from Australia and most oceanic islands.

Punganur cows

Why in the News?

Recently, the Prime Minister was observed personally providing fodder to several Punganur cows at his residence in New Delhi.

About Punganur Cow



Source- Cow connection

Aspect	Details
About	It is an indigenous breed of cattle, native to Punganur village in the Chittoor district of Andhra Pradesh .
Features	<ol style="list-style-type: none"> Size-They're a distinctive dwarf breed, recognized as the world's shortest humped cattle (Standing at just around 70-90 cm tall and weighing less than 200 kg). Coat Color- Ranging from white, grey, and light brown to dark brown or red, some individuals may exhibit a combination of white with patches of red, brown, or black. This breed is well-suited to hot and arid climates. They are valued for their high-fat A2 type milk, perfect for ghee production, yielding 1 to 3 liters per day with 8% milk fat, surpassing other native breeds with 3 to 4% fat.
Population Distribution	Punganur cows are currently present not just in Andhra Pradesh but also in Telangana, Karnataka, Kerala, Maharashtra, and Tamil Nadu .
Conservation efforts	<ol style="list-style-type: none"> The Andhra Pradesh government has launched "Mission Punganur" to boost the cattle population using IVF technology. Centre has also sanctioned funds for the promotion of Punganur and other indigenous breeds of cattle in Telangana.

What are the other indigenous breeds of cattle in India ?

- In 2019, India had 192.49 million cattle population, out of which 50.42 million belonged to exotic breeds and crossbreeds.
- The remaining **larger chunk of 142.11 million belongs to the Indigenous breeds**.
- Gir, Sahiwal, Bargur, Onglore, and Kaangayam** represent some other well-known indigenous cow breeds in India.

Significance of Punganur breed:

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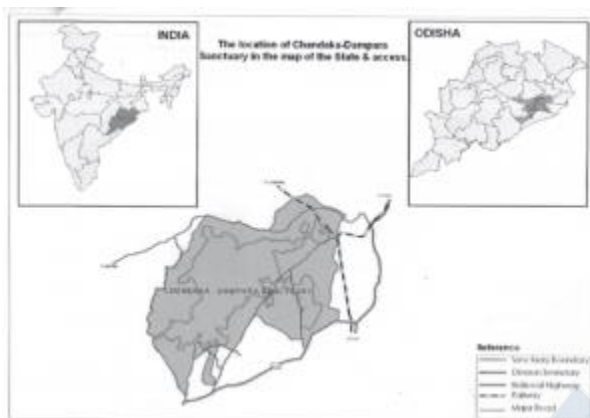
- 1) Beyond their economic and indigenous importance, these cows are revered as a 'goldmine' in the region, playing a crucial role in **local temple ceremonies**.
- 2) The **Vijayanagar Emperors** supported this breed, and it has a **historical connection to wealth and prosperity**.

Chandaka - Dampara wildlife sanctuary

Why in the News?

The Odisha state government is planning to introduce Sambar and Gaur (bison) to the Chandaka-Dampara wildlife sanctuary.

About Chandaka-Dampara wildlife sanctuary



Source- ResearchGate

Aspect	Details
Location	<ol style="list-style-type: none">1. It is located in the Odisha's Khurda district.2. It marks the northeastern edge of the Eastern Ghats.
Sanctuary Status	It designated as a sanctuary in 1982 .
Vegetation	<ol style="list-style-type: none">1. This landscape experiences a tropical climate characterized by distinct summer, rainy season, and winter periods.2. The flora is moderately diverse, blending evergreen and deciduous elements.3. Despite falling under the semi-evergreen forest zone, the interplay of biotic factors has altered the original vegetation character.
Flora	Bankapasia (Kydia calycina), Gandhana (Premna mucronata), Dhaman (Grewia Tiliaefolia) ,Kansa (Hymenodictyon excelsum),Jamu (Syzygium Cuminii), Kusum (Schleichera oleosa) , Sidha (Lagerstroemia parviflora), Karanja, Thorny bamboo etc.
Fauna	Elephants , barking deer, Wild Boar, Rhesus Monkey , Pangolin, Sloth Bear, Indian Wolf, Hyena and other mammals.

About Indian Gaur or Bison

- 1) Indian Gaur or Bison is the largest species among the wild cattle and the Bovidae.

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2) **Habitat:** Indian Bisons are mostly found in the **hilly parts of the Western Ghats region** such as Bandipur, Wayanad and Mudumalai.

3) **State Animal:** Gaur is the state animal of Goa and Bihar.

4) **Conservation Status:**

a. IUCN Status: **Vulnerable**

b. Wildlife Protection Act,1972: **Schedule I**

Elusive binturong and the small-clawed otter

Why in the news?

Elusive binturong and the small-clawed otter have recently been added to the list of mammals in Assam's Kaziranga National Park and Tiger Reserve.

About the Binturong



Source-Wikipedia

Aspect	Details
About	The binturong, is also known as bearcat. It is native to South and Southeast Asia.
Characteristics	Size- The binturong is long and heavy, with short, stout legs. The binturong is one of only two carnivores that has a prehensile tail. (The other is the kinkajou). A prehensile tail is the tail of an animal that has adapted to grasp or hold objects Family- It belongs to the same family as other small carnivores including Civets, Genets, Mongooses, and Fossa Behaviour- The binturong is active during the day and at night. Diet- The binturong is omnivorous which feeds on small mammals, birds, fish, earthworms, insects and fruits.
Conservation status	IUCN: Vulnerable Wildlife Protection Act of 1972: Schedule I CITES: Appendix III
Population Distribution	China, India, Thailand, Cambodia, Laos, Malaysia, Indonesia, the Philippines and on the island of Borneo.
Threats	It is threatened by habitat loss due to logging and agribusiness, especially the oil palm industry. It is also hunted for bushmeat, traditional medicine and the pet

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	trade.
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About Small-clawed otter



Source- Wikipedia

Aspect	Detail
About	The Small-Clawed otter is also known as Asian small clawed otter/Oriental Small Clawed Otter. The small-clawed otter is an otter species native to South and Southeast Asia.
Characteristics	Size -Body length-730 to 960 mm and maximum weight can be 5kg. It has short claws that do not extend beyond the pads of its webbed digits. It is the smallest otter species in the world. Behaviour -It is nocturnal in nature as it is mostly active after the dark. Diet -It feeds mainly on crabs, mudskippers and Trichogaster fish.
Conservation status	IUCN: Vulnerable Wildlife Protection Act of 1972: Schedule I CITES: Appendix I
Population Distribution	South East Asian Distribution - The Asian small-clawed otter's native range comprises parts of India to Southeast Asia, including the islands of Sumatra, Java, Borneo and Palawan. India - It is mainly found in West Bengal, Assam and Arunachal Pradesh, and in coastal regions of Odisha and Karnataka. It is also found in the Nilgiri and Palni hills in Tamil Nadu.
Threats	Habitat destruction, deforestation, illegal pet trade etc.

Gir and Kankrej cows

Why in the news?

India has imported 40,000 doses of bull semen from Brazil for the first time to boost milk output via artificial insemination.

About Gir cow

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Source-GIRORGANIC

Aspect	Detail
About	The Gir or Gyr is an Indian breed of zebuine cattle . It originated in the Kathiawar peninsula in the state of Gujarat, and the name of the breed derives from that of the Gir Hills. Other names include Bhodah, Desan, Gujarati, Kathiawari, Sorthi and Surti.
Features	<ol style="list-style-type: none">1. Size- Average weight of Gir Cow is 385 kg with 130 cm in height; Gir bull weighs 545 kg on average, with a height of 140 cm.2. Harsh Climate adaptability- It is suited to hot and arid climate.3. Milk Yield- Indian breed of Gir cows can give 6-10 litres.
Population Distribution	They have originated in west India in the state of Gujarat . It has since spread to neighbouring Maharashtra and Rajasthan .

About Kankrej cow



Source-wikipedia

Aspect	Details
About	It originated from Southeast Rann of Kutch of Gujarat and adjoining Rajasthan (Barmer and Jodhpur district). It is also called as Wadad or Waged and Wadhia .

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Features	Colour- Coat colour of the animal varies from silver grey to iron grey and steel black. Harsh climate adaptability- It is suited to hot and arid climate. Resistance to disease- It is resistant to tick fever, heat stress, very little incidence of contagious abortion and tuberculosis.
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kumki elephant

Why in the news?

Odisha government has deployed Kumki elephant (domesticated, trained elephants) to reduce human-animal conflict.

About Kumki elephant

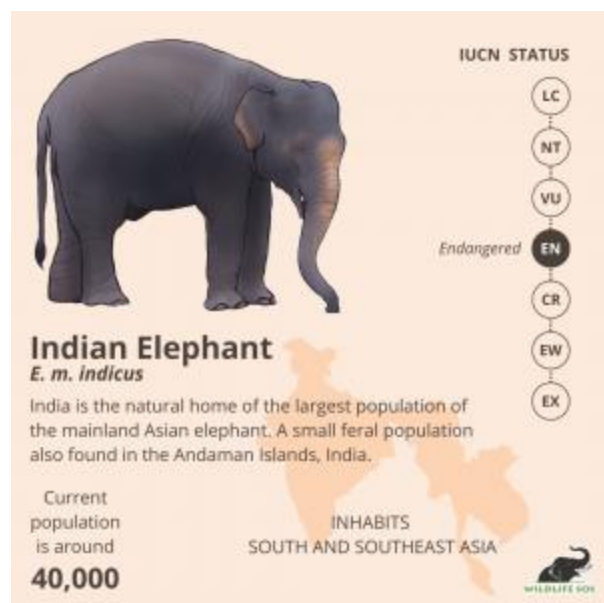
- 1) "Kumki" comes from the Persian word "kumak," which means "aid." This name is used all over India, from Bengal to Tamil Nadu.
- 2) These are trained captive Asian Elephant.
- 3) They help in patrolling and rescue operation. For example-when any wild elephant gets hurt, Kumki elephant provide medical support.
- 4) They would help in minimizing conflicts and safeguard both human and wildlife interest.

Why was there a need to employ kumki elephant in odisha?

- 1) There have been 994 human fatalities and 660 injuries due to elephant attacks in Odisha from 2013-14 to 2022-23, as per government estimates.
- 2) Crops covering 33,822 acres have been damaged by elephants. This has threatened the livelihood of farmers.

About Asian Elephant

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Source-Wildlifesos

Aspect	Detail
About	The Asian elephant is the largest living land animal in Asia.
Population Distribution	<ol style="list-style-type: none"> It is distributed throughout the Indian subcontinent and Southeast Asia, ranging from India in the west, Nepal in the north, Sumatra in the south, and to Borneo in the east. India is home to about 29,964 elephants as per last census conducted in 2017. Karnataka has the highest number of elephants in India.
Conservation Status	Wildlife (Protection) Act, 1972: Schedule I IUCN Red List- Endangered . CITES-It is listed in Appendix I of the Convention.
Conservation Efforts	<ol style="list-style-type: none"> Project Elephant: Launched by- the Government of India in 1992 as a Centrally Sponsored Scheme. Aim-for the protection of elephants, their habitats and corridors. Asian Elephant Specialist Group (AsESG): AsESG is an integral part of the Species Survival Commission (SSC) of the IUCN. Aim- to promote the long-term conservation of Asia's elephants and recovery of their populations to viable levels. Gaj Yatra: Launched by- Wildlife Institute of India (WII) Aim-to celebrate elephants and highlight the necessity of securing elephant corridors. Monitoring the Killing of Elephants (MIKE): It is an international collaboration that tracks trends in information related to the illegal killing of elephants from across Africa and Asia to monitor effectiveness of field conservation efforts. Convention on the Conservation of Migratory Species of Wild Animals, COP 13- adopted the Gandhinagar declaration where the Asian elephant was added to the Global Wildlife Agreement.

Threats	Habitat loss, habitat degradation, habitat fragmentation, and poaching.
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Odisha to Set Up World's First Melanistic Tiger Safari

Why in the News?

The Odisha government has recently announced the establishment of the world's first melanistic tiger safari.

About the Melanistic tiger safari

- 1) The safari is set to be developed near Baripada, the district headquarter of **Mayurbhanj**.
- 2) A 200-hectare site adjacent to **National Highway-18** has been earmarked for this initiative.
- 3) It is located near the **Similipal Tiger Reserve(STR)** in Mayurbhanj.

What are Melanistic tigers?



Source- Indian Express

Aspect	Details
About	Black tigers (also known as Melanistic Royal Bengal Tiger) are a rare colour variant of the Bengal tiger . These are not a distinct species or geographic subspecies.
Location	They have been recorded only in the Similipal Tiger Reserve in Odisha .
Population	In the 2022 All India Tiger Estimation, in Similipal Tiger Reserve, 10 melanistic tigers were reported out of the total 16 tigers in the reserve.
Conservation Status	IUCN: Endangered

Rare golden tiger snapped in Kaziranga

Why in the News?

A wildlife photographer recently captured an image of a tiger with a golden coat during a safari in Assam's Kaziranga National Park.

What is a Golden Tiger?



Source- The Hindu

- 1) A golden tiger (also known as a golden tabby tiger) is a **Bengal tiger exhibiting a color variation resulting from a recessive gene.**
- 2) The golden tiger's coloring originates from a recessive trait known as 'wideband,' which influences the production of black pigments during the hair growth cycle.
- 3) Golden tigers are **not a separate subspecies** but rather a result of genetic variation within Bengal tigers.
- 4) They are exceptionally **rare in the wild and even rarer in captivity.**

About Kaziranga National Park

- 1) **Location:** It is located in the State of **Assam**. It is the single largest undisturbed and representative area in the **Brahmaputra Valley floodplain.**
- 2) **UNESCO World Heritage Site:** The Park was declared as a **National Park in 1974**. In 1985, the park was designated as a World Heritage Site by UNESCO. Further, it was also declared as a **Tiger Reserve in 2006.**
- 3) **Important Bird Area:** It is also recognized as an **Important Bird Area by Bird Life International** for the conservation of avifaunal species.

Laughing Gull Spotted for the First Time in India

Why in the News?

The laughing gull, a migratory bird originating from North America, has been observed for the first time in the country at the Chittari estuary in Kasaragod district of Kerala.

What is a laughing gull?



Source-The Hindu

Aspect	Details
About	<ol style="list-style-type: none">1. The laughing gull (<i>Leucophaeus atricilla</i>) is a species of bird belonging to the family Laridae.2. The name “laughing gull” comes from its distinctive call, which sounds like laughter.
Habitat	These birds are most commonly found along the Atlantic and Gulf coasts of North America, as well as the Caribbean and parts of Central America.
Conservation Status	IUCN: Least Concern
Characteristics	<ol style="list-style-type: none">1. It is a medium-sized gull with a distinctive appearance characterized by its black head, black legs, long drooping bill white body, and long wings.2. They take 2-3 years to reach adult plumage.3. They often nest in colonies on beaches, islands, and marshes4. They are known for their adaptability and opportunistic feeding habits. They feed on a variety of prey, including fish, insects, and scavenged food.

Note– This discovery elevates the total count of bird species discovered in India to **1,367. The Kasaragod district alone contributing 400 species** to the state’s total count of 554.

About Chittari estuary

- 1) The Chittari estuary refers to a coastal area where a river meets the sea, forming a brackish water environment.
- 2) It is located in the Kasaragod district of Kerala, India.
- 3) Chittari estuary encompasses a wide variety species of birds including **lesser black-backed gull, slender-billed gull, brown-headed gull, great crested, lesser crested tern, Caspian tern** and others.

Humboldt’s Enigma

Why in the News?

The article explores Humboldt’s enigma, a concept introduced by Alexander von Humboldt during the 19th century. This concept **suggests a correlation among temperature, altitude, humidity, and biodiversity.**

What is Humboldt's enigma?

- 1) Humboldt's enigma proposes that **biodiversity isn't confined solely to Earth's tropical regions.**
- 2) It suggests that various regions beyond the tropics, such as **mountainous areas, also exhibit significant biodiversity.**
- 3) For example- In case of India, the biodiversity isn't confined only to the tropical regions of MP, Chhattisgarh and Western Ghats but also the regions like **eastern Himalayas also serve as regions of abundant biodiversity**, where variations in climate and a diverse geological makeup contribute to abundant biodiversity.

What are the different drivers of biodiversity?

- 1) **The history of the earth, its geography, and the climate** – These factors are **primary drivers** of biodiversity.
- 2) **Geological process of Mountains**– Mountains act as “**cradles**” for new species, stemming from geological processes such as uplifts that create novel habitats.
- 3) **Climatic Stability**– Climatologically stable mountains have turned these locations into ‘**museums**’ that accumulate diverse species over time.
- 4) **Coastal tropical sky islands**- The **Shola Sky Islands** in the Western Ghats demonstrate features of both a cradle and a museum for biodiversity. This is why some of the oldest bird species in the Western Ghats, like the **Sholicola and Montecincla**, reside on the Shola Sky Islands.

Note– The northern Andes range, which includes Chimborazo, is recognized as the **world's most biodiverse location.**

Snow Leopard

Why in the news?

Union Minister of Environment, Forest, and Climate Change, Shri Bhupender Yadav has recently released the report on the Status of Snow leopards in India.

About The Snow Leopard Population Assessment in India (SPAI)

- 1) This is the **first-ever scientific exercise**, which took around 4 years to complete.
- 2) **The Wildlife Institute of India (WII)** is the National Coordinator for this exercise.
- 2) As per the assessment, India has an estimated **718 snow leopards** in the wild.
- 3) **Ladakh (477) has the highest number** of snow leopard, followed by Uttarakhand (124), Himachal Pradesh (51), Arunachal Pradesh (36), Sikkim (21), and Jammu and Kashmir (nine).
- 4) India has around 10-15% of global population of snow leopard.

About Snow Leopard

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Source-BBC Wildlife

Aspect	Details
About	<ol style="list-style-type: none">1) It is a species of large cat in the genus Panthera of the family Felidae.2) It is native to the mountain ranges of Central and South Asia.3) It is a top predator in mountain ecosystem.
Characteristics	<ol style="list-style-type: none">1) It shows several adaptations for living in a cold, mountainous environments.2) Its small, rounded ears help to minimize heat loss.3) Its broad paws distribute the body weight for walking on snow, and have fur on their undersides to enhance the grip on steep and unstable surfaces.4) Its long and flexible tail helps to balance the cat in the rocky terrain.
Habitat	They are distributed across the mountainous landscape of Central Asia that covers different parts of the Himalayas such as Ladakh, Himachal Pradesh, Uttarakhand, and Sikkim.
Conservation Status	IUCN List of Threatened Species: Vulnerable . CITES: Appendix I . Indian Wildlife (Protection) Act, 1972: Schedule-I .
Conservation efforts	<ol style="list-style-type: none">1) The Government of India has identified the snow leopard as a flagship species for the high-altitude Himalayas.2) India is also party to the Global Snow Leopard and Ecosystem Protection (GSLEP) Programme since 2013.3) HimalSanrakshak: It is a community volunteer programme, to protect snow leopards, launched in October 2020.4) Project Snow Leopard (PSL): It was launched in 2009 to promote an inclusive and participatory approach to conserve snow leopards and their habitat.5) Snow Leopard is included in the list of 21 critically endangered species for the recovery programme of the Ministry of Environment Forest & Climate Change.
Threats	<ol style="list-style-type: none">1) Loss of natural prey species2) conflict with humans3) illegal trade of its fur and bones.

Subject: Schemes & Programmes

Ayodhya Dham Railway Junction and Amrit Bharat Express

Why in the News?

PM Narendra Modi has unveiled the revamped Ayodhya Railway Station, launched new Amrit Bharat and Vande Bharat trains, and dedicated numerous other railway projects to the nation.

What are the different railway projects inaugurated by the PM?

1) **Inaugurated Phase 1 of Ayodhya Dham Junction Railway Station** with modern amenities such as elevators, escalators, food plazas etc. The station is 'accessible for all' and holds an 'IGBC certified green station building' status.

Note- The IGBC Green Railway Stations rating system stands as the first comprehensive rating system in India, addressing environmental sustainability specifically in Indian railway stations.

2) **PM flags off two new Amrit Bharat trains:** Darbhanga-Ayodhya-Anand Vihar Terminal and Malda Town-Sir M. Visvesvaraya Terminus (Bengaluru) Express.

3) **PM launches six new Vande Bharat Trains**, including routes such as Shri Mata Vaishno Devi Katra-New Delhi, Amritsar-Delhi, Coimbatore-Bangalore Cantt, Mangalore-Madgaon, Jalna-Mumbai, and Ayodhya-Anand Vihar Terminal.

4) **PM dedicates three railway projects** worth Rs. 2300 crore for regional rail infrastructure strengthening. Projects involve Roama Chakeri-Chanderi third line, sections of Jaunpur-Ayodhya-Barabanki doubling, and Malhaur-Daliganj doubling and electrification.

What is Amrit Bharat Express?



Source- Wikipedia

1) The Amrit Bharat Express, formerly known as Vande Sadharan, is a **non-air-conditioned, cost-effective sleeper cum unreserved service** express trains run by the Indian Railways.

2) They will connect cities over 800 km apart or requiring more than ten hours of travel with existing services.

3) **Manufactured by:** Integral Coach Factory at Chennai.

4) **First service:** 30 December 2023

5) **Features:**

- a. This train runs on “**push-pull**” **technology featuring locomotives at both ends** for better acceleration.
 - b. The trains will operate at a **maximum speed of 130 km/h**.
 - c. Each train-set consists of **22 coaches**.
 - d. It provides improved facilities for rail passengers like comfortable seats, better luggage rack, mobile charging point with suitable mobile holder, LED lights, CCTV, public information system, among others.
- mechanism.

National Transit Pass System

Why in News?

Recently, the central government has launched the **National Transit Pass System (NTPS)**.

What is the National Transit Pass System?

- 1) The National Transit Pass System (NTPS) was launched to facilitate the **seamless transit of timber, bamboo, and other forest produce** across the country through a single permit.
- 2) The NTPS is envisioned as a “**One Nation-One Pass**” regime.
- 3) With this permit, individuals involved in the forest and agroforestry sector will no longer need permits from multiple states to facilitate the transit of their goods.
- 4) The **QR coded transit permits** generated under NTPS will allow check gates across various states to verify the validity of the permits and allow seamless transit.
- 5) **Transit permits will be issued for tree species which are regulated**, while the users can self-generate “No Objection Certificates” for exempted species.
- 6) As of now, **25 States and Union Territories** have adopted the unified permit system, simplifying interstate business operations for producers, farmers, and transporters.

PRERANA Program

Why in the News?

The Ministry of Education launched ‘Prerana: An Experiential Learning Program’ empowering participants with leadership qualities.

What is PRERANA program?

Specifications	Details
What is it?	It is a week-long residential program for selected students, combining heritage with innovation through experiential and inspirational learning, enhanced with cutting-edge technology.

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Eligibility	Students of Class IX to XII from any recognised school of the country.
Selection process	1) Students can register on the portal by providing necessary details. 2) Alternatively, applicants can join the School/block-level selection on ' Prerana Utsav ' day, through activities aligned with Prerana's ethos. 3) Two students (01 boy and 01 girl) will be selected for Prerana program from each district .
Features	1) A batch of 20 selected students (10 boys and 10 girls) will attend the program, every week from various parts of the country . 2) It will take place in a Vernacular School, founded in 1888 , located in Vadnagar, Gujarat. PM Modi is an alumnus of this School. 3) Curriculum of Prerana School prepared by IIT Gandhi Nagar.
Activities under the Program	1) The daily schedule includes yoga, mindfulness, and meditation, followed by experiential learning, themed sessions, and hands-on activities. 2) Evenings feature visits to ancient sites, inspirational films, creative missions, talent shows, promoting holistic learning. 3) Students also participate in diverse activities, integrating indigenous knowledge, cutting-edge technologies, and insights from inspirational figures.
Significance	1) Participants will take Prerana's ethos back to their communities, becoming catalysts for positive change and inspiring others. 2) It will incorporate the principles of the Indian education system and the value-based education philosophy, a cornerstone of the National Education Policy (NEP) 2020 .

PRITHvi Vigyan (PRITHVI) Scheme

Why in the News?

The Union Cabinet has approved the "PRITHvi Vigyan (PRITHVI)" scheme. The scheme will be implemented from 2021-26 with a total cost of Rs. 4,797 crore.

What is PRITHvi Vigyan (PRITHVI) Scheme?

Aspect	Details
What is it?	It is a comprehensive scheme that will address all five components of the Earth system (atmosphere, hydrosphere, geosphere, cryosphere, and biosphere), enhancing the understanding of Earth System Sciences and delivering reliable services for the country.

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Objectives	<ol style="list-style-type: none">1. Enhancing and maintaining long-term observations of the atmosphere, ocean, geosphere, cryosphere, and solid earth to monitor essential indicators of Earth System dynamics and changes.2. Creating modeling systems to comprehend and forecast weather, ocean conditions, and climate risks while studying the science behind climate change.3. Exploring polar and high seas regions for the discovery of new phenomena and resources.4. Developing technology for sustainable exploration and utilization of oceanic resources for societal applications.5. Translation of knowledge and insights from Earth systems science into services for societal, environmental and economic benefit.
Nodal Ministry	Ministry of Earth Science
Implemented from	2021-26
Components	<ol style="list-style-type: none">1. It will subsume five existing schemes of the Ministry of Earth Sciences (MoES) namely-<ol style="list-style-type: none">a. ACROSS (Atmosphere & Climate Research-Modelling Observing Systems & Services)<ul style="list-style-type: none">– It focuses on long-term observations and advanced modelling systems for weather and climate predictionsb. O-SMART (Ocean Services, Modelling Application Resources and Technology)<ul style="list-style-type: none">– It targets sustainable exploration and utilization of marine resources, utilizing cutting-edge technologyc. PACER (Polar Science and Cryosphere Research)<ul style="list-style-type: none">– It aims to explore the mysteries of the Earth’s poles and glacial regions, contributing to a deeper understanding of global climate changesd. SAGE (Seismology and Geosciences)<ul style="list-style-type: none">– It strives to strengthen earthquake monitoring and research on the Earth’s solid componentse. REACHOUT (Research, Education, Training, and Outreach)<ul style="list-style-type: none">– It fosters talent development and ensures effective translation of research into services directly benefiting society

PRASADAM: India’s First Healthy & Hygienic Food Street

Why in the news?

Recently, the Union Minister for Health & Family Welfare, inaugurated India’s first Healthy & Hygienic Food Street, ‘**PRASADAM,**’ at Neelkanth Van, Mahakal Lok, in Ujjain, **Madhya Pradesh.**

What are the objectives of the initiative?

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Source- The Indian Express

- 1) Prasadam aims to connect people in every corner of the country with pure and safe local and traditional food.
- 2) It is in line with the **vision of 'Viksit Bharat'**.
- 3) The food street is designed to provide various facilities including a kids' play area, drinking water facility, CCTV surveillance, parking, public conveniences and seating spaces.
- 4) The 'Prasadam' initiative strives **to enhance Ujjain's tourism allure and safeguard its culinary heritage** while also playing a role in fostering economic development.
- 5) The initiative is provided with financial support which is extended to states and Union Territories (UTs) with a **funding distribution ratio of either 60:40 or 90:10, under the National Health Mission**.
- 6) Standard branding of these food streets will be done as per FSSAI guidelines.

Note- The food street at Neelkanth Van, Mahakal Lok in Ujjain, will be the first of 100 food streets that will come up in as many districts across the country.

What is 'Viksit Bharat' Vision?

- 1) **Viksit Bharat@2047** is the vision to make India a **developed nation by 2047**, the 100th year of its independence.
- 2) The vision **encompasses various aspects of development**, including economic growth, social progress, environmental sustainability, and good governance, among others.

Khelo India Youth Games (KIYG) 2023

Why in the News?

The Prime Minister recently inaugurated the opening ceremony of the Khelo India Youth Games 2023 in Chennai, Tamil Nadu.

What are Khelo India Youth Games(KIYG)?

Aspect	Details
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About	<ol style="list-style-type: none">1. These are annual national-level multidisciplinary sports events held in India.2. KIYG is a part of the Khelo India Programme.
Objective	To revive India's grassroots sports culture by building a strong framework for all sports and establish the country as a great sporting nation.
Edition	The first edition was held in 2018 in Delhi.
Features	<ol style="list-style-type: none">1. The event includes two categories: under-17 school students and under-21 college students.2. Talented players in priority sports identified by the High-Powered Committee will receive INR 5 lakh annually for 8 years.
KIYG 2023	<ol style="list-style-type: none">1. This is the 6th edition of Khelo India Youth Games.2. Mascot- VeeraMangai Velu Nachiyar(first Indian queen to wage war with the East India Company in India).3. The games logo integrates the image of the poet Thiruvalluvar.4. The event will include 26 sports disciplines and 1 demo sport.5. Archery, athletics, badminton, and squash have been introduced first time in this edition.6. Silambam, a traditional martial art sport of Tamil Nadu, is also being introduced as a demo sport for the first time in KIYG history.

Pradhan Mantri Suryodaya Yojana – Solar rooftop scheme announced for 1 crore households

Why in the news?

Prime Minister Narendra Modi announced **Pradhan Mantri Suryodaya Yojana** to electrify one crore households with solar electricity.

Pradhanmantri Suryodaya Yojana

Aspect	Detail
Aim	To install rooftop solar on 1 crore houses.
Target	To reduce electricity charges of poor and middle class. To make India self-reliant in the field of energy.
Significance	This would help India in meeting the target of generating 500 GW of renewable energy capacity by 2030.

What is the Rooftop Solar Programme?

Launched in: 2014

Aim: The scheme aims to expand India's rooftop solar installed capacity in the residential sector by providing Central Financial Assistance — the financial assistance to the eligible projects as per MNRE Guidelines — and incentives to DISCOMs (distribution companies).

Target: To increase rooftop solar installed capacity to 40GW by March 2026.

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What is India's current solar capacity?

According to the **Ministry of New and Renewable Energy's website**, solar power installed capacity in India has reached around 73.31 GW as of December 2023.

VAIBHAV Fellowship Scheme

What is the News?

Government of India has launched the Vaishvik Bhartiya Vaigyanik(VAIBHAV) fellowship programme.

What is VAIBHAV Fellowship?

Aspect	Details
Aim	To connect the Indian Science, technology, engineering, mathematics and medicine (STEMM) diaspora with academic and R&D institutions in India for collaborative research.
Nodal Ministry	Department of Science and Technology (DST), Ministry of Science and Technology
Eligibility applicants) (for	<ol style="list-style-type: none">1. The applicant should be a Non-Resident Indian (NRI), Person of Indian Origin (PIO) and Overseas Citizen of India (OCI), currently living abroad.2. The applicant must have obtained a Ph.D/M.D/M.S degree from a recognized University.3. Applicant must be a researcher engaged in an overseas academic / research / industrial organization with proven track record of research & development working in the top500 QS World University Ranking.
Eligibility Institutions) (for	Higher Educational Institutions / Universities ranked in the top 200 in NIRF overall rankings and having NAAC 'A' grade (3.0 and above) and scientific institutes.
Funding	Fellowship would include a fellowship grant (INR 4,00,000 per month), international and domestic travel, accommodation and contingencies.
Features	<ol style="list-style-type: none">1. Under this, 75 VAIBHAV fellowships would be awarded to outstanding scientists/technologists of Indian origin (NRI/OCI/PIO) who are engaged in research activities in their respective countries.2. The selected fellows would be invited to work in 18 identified knowledge verticals including quantum technology, health, pharma, electronics, agriculture, energy, computer sciences, and material sciences amongst others.3. The VAIBHAV Fellow would identify an Indian Institution for collaboration and may spend up to two months in a year for a maximum of 3 years.

PM Young Achievers Scholarship Award Scheme for Vibrant India (YASASVI)

Why in the news

PM Young Achievers Scholarship Award Scheme for Vibrant India, The government has recently released Rs 32.44 Crore for Pre-matric Scholarship and Rs 387.27 Crore for Post-Matric Scholarship to States/UTs under PM YASASVI scheme.

About PM-YASASVI(PM YOUNG ACHIEVERS' SCHOLARSHIP AWARD SCHEME FOR VIBRANT INDIA)

Aspect	Details
About	PM YASASVI is a Scholarship scheme for Other Backward Class (OBCs), Economically Backward Class (EBC) and Denotified Nomadic Tribes (DNT) Students
Concerned Ministry	Ministry of Social Justice and Empowerment, Government of India
Objective	To provide financial assistance to the OBC, EBC and DNT students studying at post-matriculation or post-secondary stage to help them complete their education.
Eligibility	<ol style="list-style-type: none">1. Applicant students must be a permanent resident of India to get benefits under the PM Yashasvi Scheme.2. Candidate students should belong to any one of OBC, EBC, DNT SAR, NT or SNT community.3. Only students studying in class 9 or class 11 will be considered eligible to get this scholarship.4. The family annual income of the applicant students should be maximum 2.5 lakh rupees to get this scholarship.5. Students of all genders will be eligible to get the benefits under PM Yashasvi Scheme 2023.
Benefits	Financial assistance of Rs 75,000 per year is provided to the eligible students of class IX in the form of scholarship. An amount of Rs 125,000 per year is provided to the students of class 11th as financial assistance.
Selection	To get the benefits of this scheme, the candidate students have to pass the computer based entrance test.
Testing Agency	National Testing Agency has been entrusted with the responsibility of conducting the YASASVI ENTRANCE TEST
Sub-scheme	There are five sub-Schemes under the Scheme. 1. Pre-Matric Scholarship for OBC, EBC and DNT Students Eligibility- for students studying in class IX and X on a full-time basis in Government Schools only. Benefit-The students shall be given a consolidated academic allowance of Rs. 4000/- per annum 2. Post-Matric Scholarship for OBC, EBC and DNT Students. Eligibility- for students studying at post-matriculation or post-secondary stage to enable them to complete their education. Benefits-allowance from Rs.5000 to Rs.20000 is awarded to students as per category of course. 3. Top Class School Education for OBC, EBC and DNT Students

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	<p>Eligibility-for meritorious students belonging to OBC, EBC and DNT categories from Class 9 onwards till they complete Class 12.</p> <p>Benefits-Scholarship is awarded for tuition fee, hostel fee and other charges subject to a maximum of Rs. 75,000/- per annum per student of class 9 and 10 and Rs. 1,25,000/- per annum per student of class 11 and 12.</p> <p>4. Top Class College Education for OBC, EBC and DNT Students</p> <p>Eligibility-for students belonging to OBC, EBC and DNT categories.</p> <p>Benefits-by providing full financial support that include tuition fee, living expenses, books and stationaries etc.</p> <p>5. Construction of Hostel for OBC Boys and Girls</p> <p>Aim-To provide hostel facilities to students belonging to socially and educationally backward classes, especially from rural areas, to enable them to pursue secondary and higher education in the Govt. schools, universities, institutions and institutes located at a reasonable distance.</p>
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Subject: Reports & Indices

Corruption index: India ranks 93 among 180 nations

Why in the News?

According to the latest report by Transparency International, India secured the 93rd position out of 180 countries on the Corruption Perceptions Index (CPI) for 2023.

What is Corruption Perceptions Index (CPI)?

Aspect	Details
Purpose	To rank 180 countries and territories by their perceived levels of public sector corruption according to experts and business people.
Released by	Transparency International annually since 1995.
Scoring	The index uses a scale of 0 to 100 to rank Corruption Perception Index(CPI), where 0 is highly corrupt and 100 is very clean .

What are the key findings of the Corruption Perceptions Index (CPI) for 2023?

- 1) **India's rank worsened**– In 2023, India **secured the 93rd position among 180** countries, whereas **in 2022, it held the 85th rank**. India attained an overall score of 39 in 2023, slightly down from its score of 40 in 2022.
- 2) **Top performer in Asian region**– **Singapore** topped the Asian region with a score of 83, ranking fifth in the Index.
- 3) **Other South Asian countries**– **Pakistan is ranked 133**, While **Sri Lanka is ranked 115** and **Afghanistan is ranked 162**.
- 4) **Top rankers**– **Denmark at the top**, followed by Finland, New Zealand and Norway.
- 5) **Lowest rank** – At rank 180 was **Somalia** with the lowest score of 11.

Subject: Art & Culture

10th century Kadamba Inscription found in Goa

Why in news?

A 10th century A.D. Kadamba inscription written in Kannada and Sanskrit has been found in Goa.

What are the Findings?



Kadamba Inscription

- 1) The Kadamba Inscription has been found in the **Mahadeva temple at Cacoda in southern Goa.**
- 2) The epigraph is engraved in **Kannada and Nagari characters of the 10th century AD.**
- 3) The record is composed as a **vocal statement on the death of his son from the mouth of a grieving father.** It records that when Talara Nevayya was administering the mandala, his son Gundayya having taken a vow to fulfil his father's desire of capturing a gopura of the port of Goa, fought and died after fulfilling his father's wish.
- 4) It is in the **literary style of the Talangre inscription of Jayasimha I** of the same period.

Who were the Kadambas of Goa?

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- 1) The Kadambas of Goa served as **subordinates to the Chalukyas of Kalyana**.
- 2) They ruled Goa from the **10th to the 14th century CE**.
- 3) Chandor, formerly known as Chandrapur, was the capital of this Kadamba dynasty, and also an important port.
- 4) Emperor **Tailapa II of the Chalukyan dynasty** appointed Kadamba Shasthadeva as **Mahamandaleshwara of Goa** in recognition of his assistance in **dethroning the Rashtrakutas**.
- 5) In 960 AD, **Kadamba Shasthadeva successfully captured the city of Chandavara from the Shilaharas**.
- 6) Subsequently, he **conquered the port of Gopakapattana**, known as present-day Goa.

How are the tableaux are selected for Republic Day?

Why in news?

Recently, the Defence Ministry proposed a new three-year rotation plan for the Republic Day parade tableau selection.

Theme of Republic Day 2024 parade: 'Viksit Bharat' (Developed India) and 'Bharat-Loktantra ki Matraka' (India-Mother of Democracy).

How are the tableaux selected?

- 1) The selection process of tableaux for the Republic Day parade is carried out by **the Ministry of Defence**.
- 2) Expert committee (appointed by MoD) of prominent people** from art, culture, painting, sculpture, music, architecture, choreography do the shortlisting of the tableaux.
- 2) They hold **six to seven rounds of meetings** to examine the proposals before shortlisting and making the ultimate decision.
- 3) Firstly, the submitted sketches or designs of the proposals are **scrutinised by this committee**. Committee can make suggestions for any modifications in the sketch or design.
- 4) In the next stage, three-dimensional models of their proposals are again examined by the expert committee for final selection.
- 5) The final selection is dependent upon a **combination of factors** such as visual appeal, impact on the masses, idea or theme of the tableaux, degree of detail, accompanying music, and use of local resources.

What are the guidelines for tableau models and performers?

- 1) **Writing or use of logos on tableaux is not allowed** except the name of states or Union Territories that are presenting it.
- 2) The **names of the states should be written in Hindi in the front, in English on the back** and in **regional language on the sides of the tableau**.
- 3) The number of performers on the trailer will **not be more than 10 persons** and artists performing on or along the tableau should be from the concerned state/UT only.

India's oldest living city found in Vadnagar, Gujrat

Why in the News?

Recently an archaeological excavation at Gujarat's Vadnagar has discovered evidence of human settlement dating back to 1,400 BCE.

What are the findings of the excavation?



Source- The Hindu

- 1) The excavation has revealed characteristic archaeological artefacts, potteries, copper, gold, silver and iron objects and intricately designed bangles.
- 2) One of the oldest **Buddhist monasteries** also has been discovered.
- 3) The study suggests that **climate-induced changes**, such as rainfall or droughts, played a key role in the rise and fall of various kingdoms over 3,000 years and recurring invasions of India by Central Asian warriors.
- 4) Radiocarbon dates reveal the **successive rulers** of Vadnagar:
 - a. Indo-Greeks (until 100 CE)
 - b. Indo-Scythian or Shakas, known as Kshatrapa kings (until 400 CE)
 - c. Maitrakas (Gupta kingdom), Rashtrakuta-Pratihara-Chawada kings (until 930 CE)
 - d. Solanki kings (Chalukya rule until 1,300 CE)
 - e. Sultanate-Mughals (1680 CE)
 - f. Gaekwad/British

What is the Significance of the study?

- 1) This discovery is crucial as it **fills a gap in Indian archaeological history between 1,500 BCE and 500 BCE**, revealing a **continuity in human settlement in India** spanning over 5,500 years.
- 2) No advanced city-like settlement was recorded before 500 BCE.
- 3) The team suggests the settlement might date back to 1,400 BCE, aligning with the late phase of the post-urban Harappan period. If accurate, it challenges the notion of a **Dark Age**, indicating a cultural continuity in India for the past 5,500 years.

Dark Age- The time frame from the **decline of the Indus Valley Civilization around 4,000 years ago (early 2nd millennium BCE) until the rise of the Iron Age and Mahajanapada cities** like Gandhar, Koshal, and Avanti (6th-5th century BCE).

About Excavation

- 1) **Conducted by-** A joint team of scientists from IIT Kharagpur, **Archaeological Survey of India**, Physical Research Laboratory, Jawaharlal Nehru University, and Deccan College.
- 2) **Funded by-** Infosys Foundation and the Gujarat government's Directorate of Archaeology & Museums, responsible for developing India's inaugural experiential digital museum in Vadnagar.

Veerabhadra temple in Lepakshi

Why in the News?

The Prime Minister recently visited the Veerabhadra temple in Lepakshi, Andhra Pradesh. He is completing the 11-day special ritual for the consecration of the idol of Lord Ram at the Ayodhya Ram temple.

What is the significance of Lepakshi in the Ramayana?

- 1) 'Lepakshi' in Telugu means 'Rise, oh bird.' It is **named in honor of Jatayu**, the legendary bird that bravely fought Ravan while he was transporting Sita to Lanka on his Pushpaka Vimana after kidnapping her.
- 2) According to the Ramayana, Lepakshi is believed to be the **place where the wounded Jatayu fell** during his fight with Ravan.
- 3) The Lepakshi temple is also believed to have **preserved footprints of Goddess Sita**.

About Veerabhadra temple, Lepakshi



Source- Wikipedia

Aspect	Details
About	It is a Hindu temple situated in Lepakshi, in the state of Andhra Pradesh , India
Built by	Vijayanagara rulers in 1530 AD
Features	1. The temple is dedicated to the Virabhadra, a fierce incarnation of Lord Shiva . 2. The primary deity of the main shrine is Lord Shiva, and there are additional shrines dedicated to Ganesha and Durga . 3. The temple exhibits Vijayanagara-style architecture , adorned with intricate carvings

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	and paintings on nearly every visible surface. 4. The vibrant fresco paintings showcase intricate details in bright colors, depicting scenes from the Ramayana, the Mahabharata, and the Puranas. 5. According to the Skanda Purana , the temple is a significant divyakshetra, a pilgrimage site dedicated to Lord Shiva.
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What are the latest temple visits of PM Modi?

- 1) Recently, PM Modi also visited **Kalaram temple** in Panchavati, Nashik (Maharashtra).
- 2) It is believed that Lord Ram, Sita and Laxman settled here first during their 14-year exile in the forest of which Panchavati was a part.
- 3) The temple, **crafted from black basalt stone**, features 14 steps representing Lord Ram's 14 years of exile. The black idols of Lord Ram, Laxman, and Sita, situated within, **depict Lord Ram without a bow and arrow**, positioned to convey blessings.

PM Modi visits Guruvayur Temple

Why in the News?

The Prime Minister recently visited the Sreekrishna Temple in Guruvayur, Kerala to offer prayers.

About Guruvayur Temple



Source- TripAdvisor

Aspect	Details
About	1. It is a Hindu temple, often referred to as the Southern Dwarka. 2. It is dedicated to Lord Vishnu in the youthful form of Lord Krishna.
Location	It is located in the town of Guruvayur in Kerala, India.
Construction	The earliest temple records date back to the 17th century, yet other literary texts and legends suggest that the temple may be approximately 5000 years old.
Features	1. The Chief deity here is Lord Krishna , also known as Guruvayoorappan. 2. The chief deity is portrayed standing with four hands, grasping Shankh, Sudarshana Chakra, Lotus, and Mace, all carved from a stone known as Patala Anjana. 3. It follows the traditional Kerala architectural style. 4. The temple has structures like the Nalambalam (temple structure surrounding the

	<p>sanctum sanctorum), Balikkal (sacrificial stone), and Deepastambam (pillar of lights).</p> <p>5. A prominent feature is the Dwajasthamba, a 70-foot-tall flagstaff completely coated in gold.</p> <p>6. In 1931-32, Sathyagraha was initiated by Kelappan (known as Kerala Gandhi) to advocate for the inclusion of untouchables into the temple. It resulted in the Travancore Temple Entry Proclamation of 1936.</p> <p>7. The temple is known for housing a significant number of captive male Asian elephants. The nearby Punnathur Kotta elephant sanctuary is home to 56 elephants.</p>
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Nagara style of temple architecture

Why in the news?

The Ram temple in Ayodhya is going to be inaugurated on January 22.

What is the Nagara style of temple architecture?

Originated from the word Nagar meaning town or city. It's the style of temple in the northern India. This style developed in the 5th century, characterized by a curvilinear or convex shikhara. The shikhara is topped by a larger round cushion-like element called an Amalaka.

What are the features of Nagara style of temple?

1. It does not have elaborate boundary walls or gateways.
2. The entire temple is built on a stone platform with steps leading up to it.
3. The garbhagriha (sanctum sanctorum) is always located under the tallest tower. Garbhagriha is the place where main deity is placed. It is the most sacred part of the temple.
4. Shikharas are human-made representations of the natural and cosmological order, as imagined in Hindu tradition. For example; Meru, Mandara, and Kailasaa are the three mountains which are believed to be axis of world. Example-Kandariya Mahadev Temple in Khajuraho, M.P.
5. Amalaka or Kalash installed on Shikhara is one of the features of this temple style.
6. It also consists of a circumambulatory path around the garbhagriha.
7. Other examples of Nagara style of temples in India are- Sun temple, Konark, Sun temple at Modhera, Gujarat and Osian temple, Gujarat.

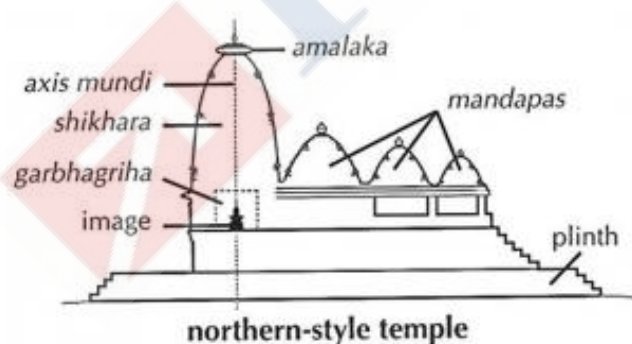


Image based on EB

Havell's The ancient and Medieval Architecture of India.

What are the modes of nagara architecture?

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Adam Hardy, who is author of book *The Temple Architecture of India* (2007) identifies five modes of Nagara temple architecture — Valabhi, Phamsana, Latina, Shekhari, and Bhumiya.

What is the difference between Dravida and Nagara Style of Architecture?

Area of difference	Dravida style	Nagara style
Location	Southern India	Northern India
Mandapa towers	Single tower	Multiple tower
Central towers	Shaped like a pyramid	Curvilinear in shape
Boundaries	Boundaries are given great importance.	Boundaries are not given great importance.

Madhika Language

Why in the news?

Kerala's Chakaliya community is facing the threat of extinction of its unique language Madhika as just 2 speakers remaining.

About the madhika language

1. The language is spoken by Chakaliya community.
2. It is a **blend of Telugu, Tulu, Kannada, and Malayalam**.
3. It may sound like Kannada but it has its own uniqueness due to diverse influences.
4. It is largely influenced by **Havyaka Kannada**, an old form of Kannada.
5. The language does not have its own script thus it faces the threat of extinction.

Facts about Chakaliya Community

Origin-They have a nomadic origin. They worship gods like Thiruvengktramana and Mariamma.

Location- Kannur district (Kerala)

Migration to Kerala- They have migrated to northern Malabar from the hilly regions of Karnataka centuries ago.

Status-Initially they were given the S.T. status, but later they were brought under S.C. category. The mention of the community can be found in the book **Caste and Tribes of Southern India**

Social position- They were considered untouchables.

Srirangam Temple

Why in the news?

The Prime Minister has recently visited Srirangam temple also called the Sri Ranganathaswamy Temple.



Source- Wikipedia

About the temple

1. Sri Ranganathaswamy Temple is a Hindu temple dedicated to **Ranganatha** (a form of Vishnu), located in **Srirangam, Tiruchirapalli, Tamil Nadu, India**.
2. The temple has the **unique distinction of being the foremost among the 108 Divya Desams** dedicated to the god Vishnu.
3. The Srirangam temple is the **largest temple compound in India** and one of the largest religious complexes in the world
4. In 2017 the temple won the **UNESCO Asia Pacific Award of Merit 2017** for cultural heritage conservation, making it the first temple in Tamil Nadu to receive the award from the UNESCO.

What is the historical and cultural significance of the temple?

- 1) The main deity of the temple is mentioned in various Sanskrit literature and epics such as the Ramayana, Mahabharata, Padma Purana, Brahmanda Purana and Garuda Puranam.
- 2) Medieval scholars like Nathamuni, Ramanuja, Pillai Lokacharya, Vedanta Desika and Manavala Mamunigal are associated with the temple.
- 3) Bhakti movement- Ranganathaswamy temple is the **only one** out of the 108 temples that was sung in praise by all the Alvars (follower of Vaishnavism).

Maratha Military Landscapes: India's UNESCO World Heritage Nomination for 2024-25

Why in the News?

The "Maratha Military Landscapes of India" will be India's nomination for recognition in the **UNESCO** World Heritage List for the year 2024-25.

What are the 'Maratha Military Landscapes of India'?

Aspect	Details
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Factly Compilation for the Month of January 2024

About	It refers to the historical regions, fortifications, military architecture , and associated cultural elements related to the Maratha Empire's military history.
Developed in	These were developed between the 17th and 19th centuries .
Selected forts for Nomination	There are more than 390 forts in Maharashtra out of which only 12 are chosen for the Maratha Military Landscapes of India. a. Shivneri Fort, Lohagad, Raigad, Suvarnadurg, Panhala Fort, Vijaydurg, Sindhudurg, and Gingee Fort are protected by the Archaeological Survey of India . b. Salher Fort, Rajgad, Khanderi Fort, and Pratapgad are protected by the Directorate of Archaeology and Museums, Government of Maharashtra .
Categorization of selected forts	In the Maratha Military Landscapes of India these forts are categorized as: a. Hill forts – Salher fort, Shivneri fort, Lohgad, Raigad, Rajgad and Gingee fort. b. Hill-forest fort – Pratapgad c. Hill-plateau fort – Panhala d. Coastal fort – Vijaydurg e. Island forts – Khanderi fort, Suvarnadurg and Sindhudurg

What are the categories of nomination for UNESCO World Heritage List?

- 1) There are **two categories of nomination**– cultural and natural criteria.
- 2) There are **six criteria (i to vi) for cultural sites** and **four criteria (vii to x) for natural sites** for inclusion in the World Heritage List.
- 3) The Maratha Military Landscapes of India is **nominated under**:
 - a. Criterion (iii)**- Unique or exceptional testimony to a cultural tradition or civilization, either living or extinct.
 - b. Criterion (iv)**- To exemplify a significant stage in human history through outstanding architecture, technology, or landscape.
 - c. Criterion (vi)**- To be closely linked with significant events, traditions, beliefs, and works of universal significance.

What are the World Heritage sites in India, particularly in Maharashtra, and how are they categorized?

- 1) At present in India there are **42 World Heritage sites**, out of which **34 are cultural sites, seven are natural sites** whereas **one is mixed site**.
- 2) **In Maharashtra there are six World Heritage Sites**, five cultural and one natural:
 - a. Cultural Sites**– Ajanta Caves (1983), Ellora Caves (1983), Elephanta Caves (1987), Chhatrapati Shivaji Maharaj Terminus (formerly Victoria Terminus) (2004), Victorian Gothic and Art Deco Ensembles of Mumbai (2018).
 - b. Natural Site**– Western Ghats of Maharashtra, Karnataka, Tamil Nadu and Kerala is serial property in natural category (2012).
- 3) The Maratha Military Landscapes of India, listed in the 2021 Tentative List of World Heritage sites, is **Maharashtra's sixth cultural property** nominated for the World Heritage List.

Subject: Geography & Places in News

India-Argentina Agreement on Lithium Mines

Why in news?

Recently, India signed an agreement to acquire five lithium brine blocks for exploration and development in Argentina.

What is this agreement?

- 1) **Agreement Signed Between** – India and Argentina
- 2) **Enterprises involved** – Khanij Bidesh India Ltd (KABIL) and Catamarca Minera Y Energética Sociedad Del Estado (CAMYEN)
- 3) **Aim:** Bringing sustainable development to the mining sector, ensuring a resilient and diversified supply chain for critical and strategic minerals essential for various industries.

What is the significance of the agreement?

- 1) This is the **first-ever lithium exploration and mining project** signed by a state-owned company.
- 2) By securing lithium blocks in Argentina, India will propel its **quest for self-reliance in meeting clean energy demand**.
- 3) It will also **help in bringing in technical and operational experience for brine type lithium exploration**, exploitation and extraction.
- 4) This agreement will also aid India's objective **to attain net-zero emissions by 2070** and establish itself as a **manufacturing hub for electric vehicles**.

What is the status of lithium in India?

- 1) India's first major lithium reserve has been found in the **Salal-Haimana area of Reasi District in Jammu and Kashmir**. Some small reserves are also present in **Karnataka**.
- 2) Currently, the country lithium demand is met through **100% import**.
- 3) In the fiscal year 2023, India witnessed a surge in lithium imports, reaching **around \$3 billion (approximately ₹24,900 crore)**, reflecting a 58% rise compared to the figures in FY22.
- 4) Over **95 per cent of India's lithium imports** originate from **China and Hong Kong**.

Where are the world's lithium reserves?

- 1) **Worldwide Reserves** – 89 million tonnes at the start of 2022
- 2) **Mineable parts out of reserves** – 22 million tonnes.
- 2) **Half of the world's lithium resources** are concentrated in **Latin America (mostly Bolivia, Chile, and Argentina), Australia, and China**.
- 4) **Argentina holds 20 per cent of the world's 98 million tonnes of lithium resources**, second only to Bolivia.

Factly Compilation for the Month of January 2024

5) Argentina is also part of the “**Lithium Triangle**” along with Chile and Bolivia, which together hold more than half of the world’s total lithium resources.

Note: The Lithium Triangle is a **region of the Andes that is rich in lithium reserves**

3) Argentina has **second-largest lithium resources, third-largest lithium reserves and fourth largest production in the world.**

Why Kashmir and Ladakh are without snow this winter, its implications

Why in the News?

Jammu & Kashmir and Ladakh which are the key tourist destinations in India have seen little rainfall or snow this winter, leading to a decline in tourist numbers this season.

What has been observed this year?

1) According to data from the India Meteorological Department (IMD), Jammu and Kashmir recorded an **80% rainfall deficit in December** and a **100% deficit (no rain at all) in January** thus far. **Note-** Typically, the region experiences its initial snowfall in the first half of December, extending through most of January.

2) The decline in snowfall is **associated with reduced western disturbance events** and rising temperatures, signaling the impact of climate change.

3) Scientists propose that the ongoing **El Niño event in the eastern Pacific Ocean** may also contribute to this year’s observed conditions.

What are the Western Disturbances and its Impact on India?



Sources- GeeksforGeeks

1) These are large **eastward-moving wind systems** carrying rain that originate beyond Afghanistan and Iran.

2) They **gather moisture** from regions as distant as the **Mediterranean Sea and the Atlantic Ocean.**

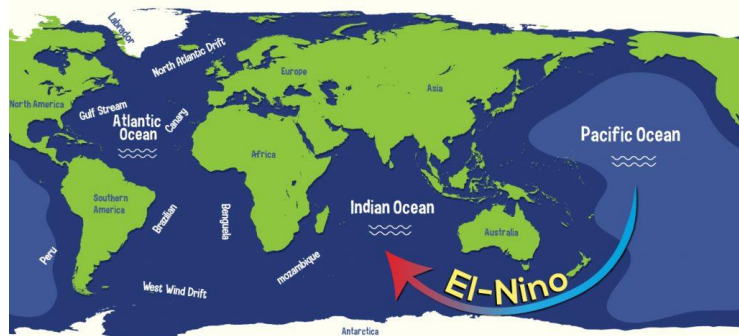
3) These are the **primary source of winter precipitation** in the Himalayan region.

4) During the post-monsoon and winter months, Western Disturbances serve as the **main rainfall source** for north and northwest India.

5) Alongside the southwest monsoon (June to September) and the northeast monsoon affecting Tamil Nadu and other areas, they constitute the **three major contributors** to India’s annual rainfall.

What is El Nino and its impact on India ?

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Source- Research & Ranking

- 1) It is a climate phenomenon characterized by the **periodic warming of sea surface temperatures in the central and eastern equatorial Pacific Ocean**.
- 2) This warming typically occurs every 2 to 7 years and can have significant impacts on weather patterns around the world.
- 3) El Niño is **part of the larger El Niño-Southern Oscillation (ENSO)** climate pattern, which also includes its counterpart, La Niña.

What are the implications of Less Snowfall in Kashmir and Ladakh region?

- 1) **Long-term implications** such as reduced hydroelectricity generation, accelerated glacier melting, and a negative effect on drinking water supply due to diminished snowfall for groundwater recharge.
- 2) **In the short term**, it can lead to more forest fires, agricultural drought, and a decline in crop production.

Zaskar River

Why in the News?

The Chief of the Naval Staff recently inaugurated the Indian Navy's Chadar Trek expedition at **INS Shivaji**. It takes place on the frozen Zaskar River in Ladakh.

What is the Significance of this Expedition?

- 1) The expedition embodies the adventurous spirit of the Indian Navy and aims to cultivate a robust and resilient workforce **capable of facing challenges and adverse weather conditions**.
- 2) The team comprising 14 members would scale the summit at a height of 11,000 ft and **unfurl the National flag and Naval Ensign**.

About Zaskar River



Source- Wikipedia

Specifications	Details
What is it?	1. The Zaskar River is the Left-bank tributary of the Indus River , either surpassing or equaling the main river in volume. 2. It flows entirely within Ladakh , India.
Origin	1. Originating northeast of the Great Himalayan range, it drains both the Himalayas and the Zaskar Range in the Zaskar region. 2. It flows northeast to join the Indus River near Nimo .
Tributaries	The Doda and Tsrappingti Chu (Lungnak river) are the two significant tributaries that join together at Padam village in the upper valley, forming the Zaskar River.

What is INS Shivaji?

- 1) INS Shivaji is an **Indian naval station located in Lonavala, Maharashtra**. It is located close to the Bhushi Dam.
- 2) It houses the Naval College of Engineering, which trains officers of the Indian Navy and the Indian Coast Guard.
- 3) It was **commissioned in 1945** as HMIS Shivaji

Chancay Port: China's new mega port project in South America

Why in the News?

China has constructed a mega deep-water port in the Chancay city, Peru (a South American country). Operations are scheduled to commence in late 2024.

About Chancay Port

Specifications	Details
Location	1. Chancay town of Peru 2. Chancay is 80 km north of Peru's capital city, Lima .
Objective	To transform Peru into a key commercial and port hub connecting South America and Asia.
Owned by	1. It is primarily owned by the Chinese state-owned company Cosco Shipping , which holds 60% stake in the port. 2. It signifies China's first control of a port in South America .

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Construction	<ol style="list-style-type: none">1. Its construction commenced in full in 2018.2. It is built as part of China's Belt and Road Initiative investments in Latin America.3. The first phase of Chancay is set to be completed in November 2024
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Soligas and Yeravas tribes

Why in the News?

A newly released book "Forgotten Trails: Foraging Wild Edibles," documents the wild foods gathered by the Soligas and Yeravas tribes from the forests.

About Soligas



Source- Institute of Public health Bangalore

Aspect	Details
About	<ol style="list-style-type: none">1. The Soligas are an indigenous community residing in the Cauvery Basin and the surrounding hills of peninsular India.2. They are the original inhabitants of Karnataka, primarily residing in the Chamarajanagar and Mandya districts.
Language	They speak Sholaga , which belongs to the Dravidian family.
Religion	<ol style="list-style-type: none">1. The Soliga people adhere to a blend of naturism, animism, and Hindu practices.2. Their primary deity is Madeshwara.
Characteristics	<ol style="list-style-type: none">1. Honey plays a vital role in the Soliga diet.2. The community continuing to forage a significant portion of their food from the biodiversity-rich Ghats.3. They live in the forest outskirts near Biligiri Rangana Hills and Male Mahadeshwara hills in Chamarajanagar district.4. They have become the first tribal community residing within the core region of an Indian tiger reserve to have their forest rights formally acknowledged by a court of law.5. Soligas eat Silver cockscomb as a healthy leafy green, rich in beta-carotene, folic acid, vitamin E, calcium, and iron.

Note- The scientific community has named a new genus of **wasp (Soliga ecarinata)** in honor of this community.

About Yeravas



Source-Wikipedia

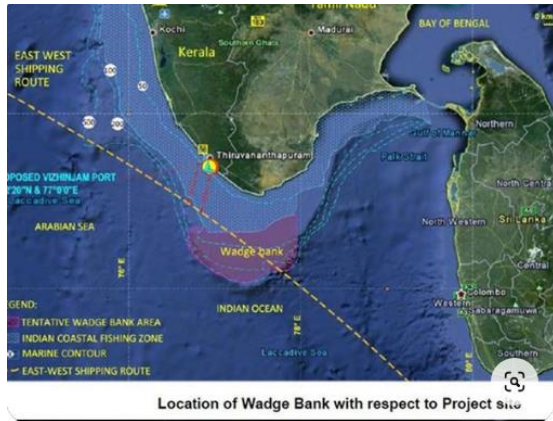
Aspect	Details
About	<ol style="list-style-type: none">1. They are also an indigenous community residing in the Cauvery Basin and the surrounding hills of peninsular India.2. They migrated from the Wayanad district in Kerala and established their settlement in the Kodagu district of the state.
Language	They speak Revula language.
Religion	The Yeravas people practice Hinduism while they also believe in spirits residing in natural elements like trees, mountains, and rivers.
Characteristics	<ol style="list-style-type: none">1. They are mostly agricultural laborers in coffee plantations and tea estates.2. Yeravas incorporate a higher quantity of tubers into their diet compared to Soligas.3. Yeravas include mushrooms in their diet during the monsoon season.4. Their settlements are called 'Kunju'.

Wadge Bank Threatened by Hydrocarbon Exploration

Why in the News?

Wadge Bank faces a potential threat as the Indian government considers offering three oil and gas blocks for exploration and development. The blocks designated for exploration coincide with the Wadge Bank.

About Wadge Bank



Source- Pinterest

Aspect	Details
Location	It is a 10,000 square kilometers area, located approximately 50 kilometers south of Kanyakumari.
Features	It features shallow waters, a nearly flat bottom topography, and a continental shelf.
Significance	<ol style="list-style-type: none"> 1. This area is rich in biodiversity and is considered India's most valuable fishery resource. 2. The low intensity of currents, waves, and tides makes it an ideal location for the accumulation of nutrients and fish food.

Lake Retba

Why in the news?

Lake Retba, located in Senegal, is under threat of extinction due to increase in Nitrate level and pollution.

About the lake Retba

Location– Lake Retba is also known as Lac Rose (meaning “pink lake”). It is located in Senegal.

Nearest ocean– Lake Retba is separated only by some narrow dunes from the **Atlantic Ocean**

Salinity– The lake has high salinity content (comparable to that of the Dead Sea)

World heritage listing– It is under consideration by **UNESCO** for World Heritage Site Status.

Aquatic life– Due to high salinity, many living organisms are **not** able to survive (Exceptions being a few microscopic algae and bacteria).

Why is the colour of lake pink?

- 1) Its distinct pink colour is caused by the **Dunaliella salina** bacteria. This is attracted by the lake's salt content.
- 2) The bacteria produces a red pigment to absorb the sunlight, thus giving the lake its unique colour.
- 3) The Dunaliella salina bacteria is harmless to humans, and swimming in the lake is possible.

Some Other important lakes in West Africa

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Lake Bosumtwi in Ghana is the **largest natural lake** in West Africa.

Lake Volta in Ghana is the **largest man-made reservoir** in the world.

Lake Chad is a man-made reservoir located in Chad.

Soda Lakes

Why in the News?

Recently, researchers have found that a shallow 'soda lake' in western Canada bears resemblance to Darwin's concept of "warm little ponds,". It is believed to be a potential environment where life originated on early Earth.

What is a Soda lake?

Aspect	Details
About & Characteristics	<ol style="list-style-type: none">1. It is a lake typically characterized by a pH level ranging between 9 and 11.2. The alkalinity of the water is primarily due to the high concentration of carbonate, particularly sodium carbonate.3. It may also have lots of sodium chloride and other salts, making it a salty or hypersaline lake.4. These ecosystems are notably productive compared to freshwater lakes.5. It represent some of the Earth's most productive aquatic environments due to the abundance of dissolved carbon dioxide.6. They naturally occur in both arid and semi-arid regions.
Biodiversity	<ol style="list-style-type: none">1. Biodiversity in soda lakes is primarily led by prokaryotes like bacteria and archaea, particularly in lakes with elevated alkalinity levels.2. Multicellular organisms like brine shrimp and fish are abundant in many soda lakes.
Examples	<ol style="list-style-type: none">1. Africa and Asia host the largest number of soda lakes due to their extensive desert conditions, which favor the formation of such lakes.2. The majority of soda lakes in Africa are situated in Eastern Africa, notably in Kenya, Tanzania, and Ethiopia.3. Lake Natron in Tanzania stands out as one of the most remarkable soda lakes in Africa.4. In Asia, India and China boast the highest count of soda lakes.5. Notable soda lakes in Asia include Lake Van, Tso Kar Salt Lake, Pangong Salt Lake, and Lake Zabuye.

Subject: Defence Exercises

DESERT CYCLONE: India-UAE Joint Military Exercise

Why in the News?

A 45-member UAE Land Forces group has arrived in India for the inaugural India-UAE Joint Military Exercise, 'DESERT CYCLONE.'

What is 'DESERT CYCLONE'?

Aspect	Details
What is it?	It is a joint military exercise between India and UAE.
Aim	1) To improve interoperability in Sub-conventional Operations, including Fighting in Built-Up Area (FIBUA) in desert/semi-desert terrain under Chapter VII of the UN Charter on Peacekeeping Operations. 2) To achieve shared security objectives and foster bilateral relations between two friendly nations.
Started in	2024 (First Edition)
Participating contingents	1) Indian Army - Represented by a Battalion from the Mechanised Infantry Regiment. 2) UAE - Represented by troops from the Zayed First Brigade.
Significance	1) It will enhance cooperation and interoperability between both the sides during Peace Keeping Operations. 2) It will also foster collaborative partnership and help in sharing best practices between the two sides.

Exercise CYCLONE: India-Egypt Joint Special Forces Exercise

Why in the News?

A 25-member Indian Army contingent has arrived in Egypt for the 2nd edition of India-Egypt Joint Special Forces Exercise, CYCLONE. It will be **conducted at Anshas, Egypt from January 22 to February 1, 2024.**

What is Exercise CYCLONE?

Aspect	Details
About	It is a Joint Special Forces exercise between India and Egypt.
Aim	To enhance mutual understanding of operational protocols for desert/semi-desert Special Operations under Chapter VII of the United Nations Charter.
First Edition	2023 (India)
Features of 2nd	1. The Indian contingent is being represented by troops from The Parachute

Factly Compilation for the Month of January 2024

Edition	Regiment (Special Forces). 2. Egyptian contingent is being represented by Egyptian Commando Squadron and Egyptian Airborne Platoon. 3. The Exercise will involve planning and execution of special operations in sub conventional domain and will be conducted in three phases.
Significance	1. It will provide an opportunity to both the contingents to strengthen their bond and share best practices. 2. It will serve as a platform to achieve common security goals and enhance ties between two friendly nations.

SADA TANSEEQ: India-Saudi Arabia Joint Military Exercise

Why in the News?

The first edition of India-Saudi Arabia Joint Military Exercise 'SADA TANSEEQ' has commenced at Mahajan, Rajasthan.

What is Exercise 'SADA TANSEEQ'?

Aspect	Details
About	It is a joint Joint Military Exercise between India-Saudi Arabia.
Aim	To train troops of both sides for Joint Operations in Semi Desert terrain under Chapter VII of the United Nations Charter.
Edition	First
Features	1. The Exercise allows both sides to share their best practices in the tactics, techniques and procedures of conducting operations in sub-conventional domain. 2. The Exercise includes setting up Mobile Vehicle Check Posts, conducting Cordon & Search Operations, House Intervention Drills, Reflex Shooting, Slithering, and Sniper Firing.
Significance	1. It will aid in the development of interoperability, camaraderie, and goodwill among troops from both sides. 2. It serves as a platform to achieve shared security objectives, enhance defense cooperation, and foster bilateral relations between friendly nations.

Subject: Miscellaneous

National Landslide Susceptibility Map

Why in the News?

In the wake of severe monsoon triggered heavy floods and landslides, IIT Delhi team has developed India's first national landslide susceptibility map.

What are the features of the National Landslide Susceptibility Map?

- 1) The map has been devised using **1.5 lakh known landslides event** from sources like Geological Survey of India (GSI) along with **16 landslide conditioning factors** such as soil cover, the number of trees covering the area, and how far it is from any roads or mountains, etc.
- 2) The team used **ensemble machine learning** methods to analyse the data. **Note-** Ensemble machine learning is when multiple machine learning models are used together to average out an oversize impact from any one model.
- 3) **High resolution mapping-** The map offers a detailed (100 sqm. resolution) overview of landslide susceptibility across India, including previously unrecognized areas.
- 4) **Revealing new risk zones-** It identified high landslide susceptibility in familiar areas like the Himalayan foothills, Assam-Meghalaya region, and Western Ghats. Additionally, it uncovered new high-risk zones, including parts of the Eastern Ghats north of Andhra Pradesh and Odisha.
- 5) **Map available online-** The map is accessible to the public, and anyone can engage with the data without requiring technical expertise.

What is the National Landslide Susceptibility Mapping (NLSM) Programme ?

- 1) The Geological Survey of India initiated the Macro Scale (1:50,000) National Landslide Susceptibility Mapping (NLSM) program in **2014**.
- 2) The goal is to **map the 0.42 million sq. km landslide-prone areas** across the country.
- 3) **Aim and objectives:**
 - a. To create a dynamic National Landslide Susceptibility Geodatabase for India.
 - b. To prepare GIS – based seamless Landslide Susceptibility Maps of India on 1:50,000 scale.
 - c. To prepare a nationwide repository on GIS-based Landslide Inventory.

Swachh Survekshan Awards 2023


Why in the News?

The President of India has announced the results of the Swachh Survekshan Awards 2023.

What are the Swachh Survekshan Awards?

Specifications	Details
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Factly Compilation for the Month of January 2024

What is it?	1. Swachh Survekshan is an annual survey of cleanliness, hygiene and sanitation in cities and towns across India. 2. It was launched in 2016 as part of the Swachh Bharat Abhiyan , which aimed to make India clean and free of open defecation by 2nd October 2019.																				
Conducted by	Ministry of Housing and Urban Affairs (MoHUA) with Quality Council of India (QCI) as its implementation partner.																				
Parameters	The cities have been ranked based on three broad parameters - service level progress, citizen's voice and certification.																				
Theme	2023- Waste to wealth 2024- Reduce, reuse and recycle																				
2023 Awards	 <p>The image shows a table of awards for Swachh Survekshan 2023. The awards are listed in two columns. The first column lists the award category, and the second column lists the winning city or organization.</p> <table border="1"> <thead> <tr> <th>Award Category</th> <th>Winner</th> </tr> </thead> <tbody> <tr> <td>All India Clean City Rank 1</td> <td>Indore & Surat</td> </tr> <tr> <td>All India Clean City Rank 3</td> <td>Navi Mumbai</td> </tr> <tr> <td>All India Clean City Rank 1 (Population < 1 Lakh)</td> <td>Sasvad</td> </tr> <tr> <td>All India Clean City Rank 2 (Population < 1 Lakh)</td> <td>Patan</td> </tr> <tr> <td>All India Clean City Rank 3 (Population < 1 Lakh)</td> <td>Lonavala</td> </tr> <tr> <td>Cleanest Cantonment Board</td> <td>Mhow Cantonment Board</td> </tr> <tr> <td>Best SafaiMitra Surakshit Sheher</td> <td>Chandigarh</td> </tr> <tr> <td>Cleanest Ganga Town Rank 1</td> <td>Varanasi</td> </tr> <tr> <td>Cleanest Ganga Town Rank 2</td> <td>Prayagraj</td> </tr> </tbody> </table> <p>Source- PIB</p> <ol style="list-style-type: none"> In the State rankings, Maharashtra came first, followed by Madhya Pradesh and Chhattisgarh. Indore has been adjudged the cleanest city for the seventh time in a row. 	Award Category	Winner	All India Clean City Rank 1	Indore & Surat	All India Clean City Rank 3	Navi Mumbai	All India Clean City Rank 1 (Population < 1 Lakh)	Sasvad	All India Clean City Rank 2 (Population < 1 Lakh)	Patan	All India Clean City Rank 3 (Population < 1 Lakh)	Lonavala	Cleanest Cantonment Board	Mhow Cantonment Board	Best SafaiMitra Surakshit Sheher	Chandigarh	Cleanest Ganga Town Rank 1	Varanasi	Cleanest Ganga Town Rank 2	Prayagraj
Award Category	Winner																				
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Note- The Swachh Survekshan, initially assessing 73 major cities in 2016, has expanded its scope to include 4,477 cities.

Dragon babies

Why in the news?

Financial Times has recently released a report on population decline of China.

What are "Dragon Babies"?

In Chinese astrology, babies born in the year of the dragon are considered to be especially fortunate and lucky. They are called dragon babies. The eagerly awaited year will officially begin on February 10. There is a higher hope that more births will be recorded during this time rather than in any other year in 12-year Chinese calendrical cycle.

Background

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Factly Compilation for the Month of January 2024

Gloomy economic outlook, ageing society and the coronavirus pandemic pushed China's population to a decline for second consecutive year in 2023.

What is the current status of China's population rate?

1. The national death rate is accelerating, reaching 7.87 per 1,000 people in 2023, the highest level since the early 1970s.
2. The population decline has more than doubled from the previous year.

What is the ramification of this trend?

1. An aging population would demand more expenditure on health.
2. There would be a decline in economic growth

However, experts doubt if such superstitions about dragon year will improve the situation in China. Due to the high cost of living and fierce competition, couples are not willing to have children.

Late former Bihar CM Karpoori Thakur to be awarded Bharat Ratna

Why in the News?

Recently Government of India has announced that Late former Bihar chief minister Karpoori Thakur will be posthumously awarded the Bharat Ratna.

Who was Karpoori Thakur?



Source- India Today

Aspect	Details
About	<ol style="list-style-type: none">1. He was an Indian politician who served two terms as the Chief Minister of Bihar.2. He was born on January 24, 1924, in the village of Pitaunjhia (now Karpuri Gram) in the Samastipur District of Bihar.3. He passed away in February 1988.4. He was popularly known as Jan Nayak. He was also known as the champion of the poor.5. He drew inspiration from Mahatma Gandhi and Satyanarayan Sinha.
Political career	<ol style="list-style-type: none">1. He began his political journey with the Praja Socialist Party and later aligned himself with the Janata Party.2. He was elected as a member of the Bihar Vidhan Sabha in 1952 from the Tajpur constituency as a candidate of the Socialist Party.

Factly Compilation for the Month of January 2024

	<p>3. He served as a minister and Deputy Chief Minister of Bihar, before becoming the first non-Congress socialist Chief Minister of Bihar in 1970.</p> <p>4. He also enforced total prohibition of alcohol in Bihar.</p> <p>5. He served as the President of Samyukta Socialist Party.</p>
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What is Bharat Ratna?

- 1) Bharat Ratna is the **highest civilian award** of India.
- 2) The award, initially focused on arts, literature, science, and public services. It was broadened to encompass **'any field of human endeavor'** in December 2011.
- 3) The provision of Bharat Ratna was **introduced in 1954**.
- 4) The **first recipients** of the award were scientists Chandrasekhara Venkata Raman, C. Rajagopalachari and Sarvapalli Radhakrishnan.
- 5) The award has also been given to **non-Indians** – Khan Abdul Ghaffar Khan and Nelson Mandela.
- 6) The number of Bharat Ratna Awards is restricted to a **maximum of three** in a particular year.