

# Factly Weekly

**Compilation**

2024

**For UPSC CSE Prelims  
Exam**

**1<sup>st</sup> Week  
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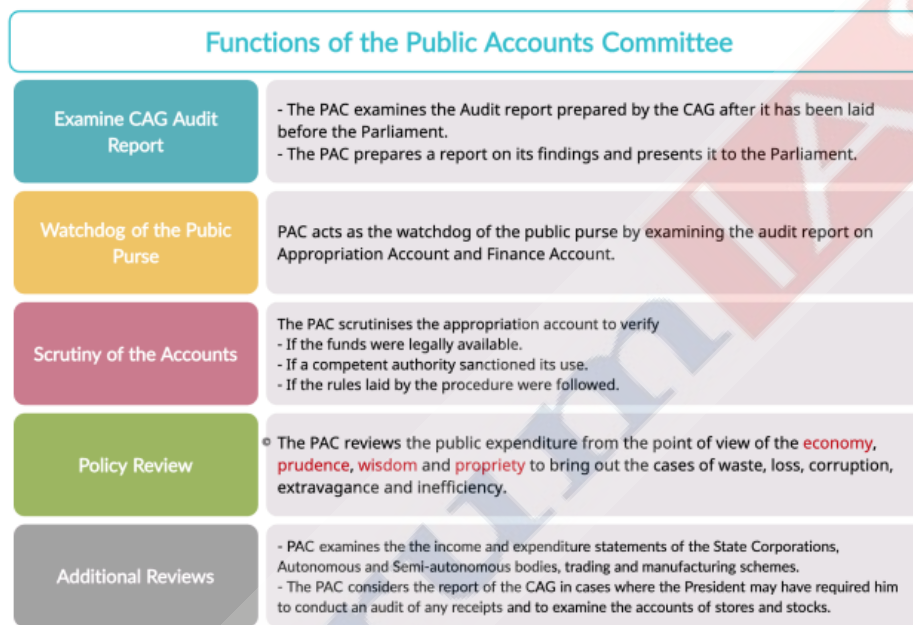
## UPSC Syllabus: Polity and Nation

### Public Accounts Committee (PAC)

#### Why in the News?

Senior Congress leader and Lok Sabha member K.C. Venugopal, who heads the Public Accounts Committee (PAC), will conduct a performance review of regulatory bodies established by Acts of Parliament, including the Securities and Exchange Board of India (SEBI).

#### About the Public Accounts Committee (PAC)



Source: Forum IAS

### 23rd Law Commission of India

#### Why in News?

The Union government has established the 23rd Law Commission of India which is effective from September 1. It will serve for the term of three years.

#### Constitution of the 23rd Law Commission (2024)

1. The 23rd Law Commission was notified on September 2, 2024 and will serve until August 31, 2027.
2. It will consist of a chairperson, four full-time members, and five part-time members. The chairperson and members have not yet been named.

#### Terms of Reference for the 23rd Law Commission

1. **Identify Obsolete Laws:** Review and recommend laws that should be repealed immediately.
2. **Standard Operating Procedures (SoP):** Develop a system for periodic review and simplification of legal language and processes.

**3. Laws and Economic Needs:** Identify laws that need amendment to align with the economic needs of the time.

**4. Directive Principles:** Propose laws or amendments that implement the Directive Principles of State Policy set out in the Indian Constitution's Preamble.

#### **About the Law Commission of India**

1. The Law Commission of India is a non-statutory body formed by the Union Ministry of Law and Justice.
2. It is established through a gazette notification to help the government review existing laws, recommend the repeal of outdated laws, and suggest reforms.
3. The Commission's recommendations often influence legal changes, though the government is not obligated to adopt them.

**4. Members of the Law Commission:** The Law Commission typically consists of:

- i) A Chairperson, usually a retired Supreme Court or High Court judge.
- ii) Four full-time members, including a member-secretary, who may be serving judges or legal experts.
- iii) Up to five part-time members.
- iv) The Secretaries of Legal Affairs and Legislative Departments as ex officio members.

**5. Appointment:** The Chairperson and members are appointed by the Appointments Committee of the Cabinet, chaired by the Prime Minister.

#### **Role of the Law Commission**

1. The Commission reviews the current laws in India to ensure they remain relevant and effective.
2. It suggests the removal of laws that are no longer needed.
3. The Commission suggests reforms to align laws with modern economic and social needs.
4. The Commission can propose new laws to address evolving legal and societal issues, including the Directive Principles of State Policy.
5. It evaluates the impact of socio-economic legislation after they have been implemented.

### **Vertical Fiscal Imbalance (VFI)**

#### **Why in News?**

The issue of Vertical Fiscal Imbalance (VFI) in India has recently gained attention due to increasing concerns over the financial relationship between the Union government and the States.

#### **Vertical Fiscal Imbalance (VFI)**

## Estimation of VFI after devolution of taxes

The 15th Finance Commission had noted that India has had a larger, and rising, vertical fiscal imbalance (VFI) than most other federations

Year	VFI after tax devolution (as a ratio)	The desired share of tax devolution to eliminate VFI (%)
2015-16	0.12	47.82
2016-17	0.13	48.24
2017-18	0.12	47.59
2018-19	0.11	47.38
2019-20	0.18	51.17
2020-21	0.28	56.87
2021-22	0.14	47.90
2022-23 (RE)	0.20	51.42
Average (excluding 2020-21 and 2021-22)		48.94



SOURCE: COMPUTED FROM UNION BUDGET DOCUMENTS, AND STATE FINANCES: A STUDY OF THE BUDGETS, RBI.

Source: The HINDU

1. VFI happens when different levels of government (national and state) do not have balanced financial powers.
2. In India, the central government collects most of the taxes, but the state governments handle most of the spending, like providing public services. **For example-** State governments are responsible for 61% of public spending but only collect 38% of the revenue. This makes states rely heavily on money transfers from the central government, highlighting a challenge in how finances are shared.

### Why Reducing VFI is Important

Since the central government controls tax collection but states are responsible for delivering many public services, states need more money to meet their responsibilities efficiently.

Reducing VFI helps ensure states have enough funds to provide better services to the public.

### How VFI is Calculated

1. **Own-Source Revenue (OSR):** The revenue states generate themselves, excluding central government transfers.
2. **Total Expenditure:** The total spending responsibilities of states.
3. **Intergovernmental Transfers:** The money states receive from the central government.

**Formula:**  $VFI = 1 - (\text{Own-Source Revenue} / \text{Total Expenditure})$

A result below 1 means states' revenues are not enough to cover their spending, even with central transfers.

**Role of the Finance Commission:** The Finance Commission helps address VFI by deciding how central taxes are shared with states. This is done through tax devolution and grants.

**Eliminating VFI:** To fix VFI, the share of taxes given to states needs to be increased. The 14th and 15th Finance Commissions recommended shares of 42% and 41%, but experts suggest 49% is needed.

### Recommendations for the 16th Finance Commission

- 1. Increase Tax Devolution:** Raising the share of taxes for states to 49% would help reduce VFI.
- 2. Excluding Cesses and Surcharges:** These should not be part of the tax revenue calculation as they reduce the funds available for states.
- 3. Promote Fiscal Federalism:** Giving states more resources would help them manage their responsibilities better, leading to improved governance and services.

## UPSC Syllabus: Indian Economy

### Centralized Pension Payment System (CPPS)

#### Why in News?

The Union Minister of Labour and Employment and the Chairperson of the EPF's Central Board of Trustees have approved the proposal for a new Centralized Pension Payment System (CPPS) for the Employees' Pension Scheme, 1995. This initiative will bring several benefits to EPS pensioners across India.

#### About centralized pension payment system (CPPS)

Aspects	Description
About	It is an initiative to modernize pension disbursements under the Employees' Pension Scheme.
Operational From	The CPPS will be operational from January 1, 2025, as part of the Employees' Provident Fund Organization's (EPFO) Centralized IT Enabled System (CITES 2.01), which is part of an ongoing IT modernization initiative.
Key Features	<ol style="list-style-type: none"><li>1. The CPPS provides a unified system that allows pension payments to be made through any bank or branch in India.</li><li>2. Pensioners will no longer need to visit their bank branch for verification. Once the benefits are released, the pension will be credited immediately to the pensioner's account, enhancing convenience and efficiency.</li><li>3. The new system eliminates the need for pensioners to transfer their Pension Payment Orders (PPO) if they relocate or switch banks or branches, ensuring uninterrupted pension delivery across India.</li><li>4. The CPPS will eventually facilitate a smooth transition to an Aadhaar-based payment system, further streamlining the pension disbursement process.</li></ol>
Eligibility Criteria for EPS Pension	<ol style="list-style-type: none"><li>i) Must be a member of the Employees' Provident Fund Organization (EPFO).</li><li>ii) Must have completed at least 10 years of service.</li><li>iii) Should have reached the age of 58 to start receiving a full pension.</li><li>iv) Can opt for a reduced pension starting from age 50.</li><li>v) Can defer the pension up to age 60, with an additional 4% pension for each year deferred.</li></ol>
Benefits to EPS Pensioners	<ol style="list-style-type: none"><li>1. Pensioners can access their pensions from any bank or branch nationwide, providing flexibility and reducing administrative burdens.</li><li>2. Leveraging advanced IT and financial technology, the CPPS will offer a more efficient, seamless, and user-friendly experience for over 78 lakh EPFO EPS pensioners.</li><li>3. The EPFO anticipates significant cost savings in pension payouts due to the centralized approach.</li></ol>

4. This system is particularly beneficial for pensioners who move to a different location after retirement, ensuring they continue receiving their pensions without any disruptions.
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Read more: [Unified Pension Scheme \(UPS\)](#)

## MoU to Promote Energy Efficiency in India

### Why in News?

A Memorandum of Understanding (MoU) was signed recently between the National Test House (NTH) under the Department of Consumer Affairs and the Bureau of Energy Efficiency (BEE) under the Ministry of Power.

### About the MoU:



Source: PIB

**1. Aim:** The MoU aims to strengthen the Standards & Labelling (S&L) Program to enhance energy efficiency across India.

**2. Purpose:** To enhance collaboration between NTH and BEE in promoting energy efficiency and ensuring product reliability in the market.

**3.** MoU also supports the S&L Program, which aims to encourage energy efficiency and conservation across various sectors in India.

### Salient Features of the MoU:

1. NTH will be recognized as a referral laboratory by BEE for consulting on technical disputes related to test results.

2. NTH officers will be nominated to BEE's various Technical Committees, leveraging their expertise.

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3. NTH will conduct capacity-building training programs for BEE officers at its regional laboratories and BEE headquarters in Delhi.
4. A complete review of the existing S&L Program, including check testing procedures, will be conducted.
5. The MoU allows for collaboration on any other technical matters related to the S&L Scheme with mutual consent.

### Impact of the MoU

1. This collaboration will contribute significantly to the sustainable development goals by promoting energy conservation and reducing carbon footprints.
2. The MoU is seen as a major step towards achieving self-reliance (Atmanirbhar Bharat) in energy efficiency and sustainability in India.

### About National Test House (NTH):

1. National Test House (NTH) is a subordinate office under the administrative control of Department of Consumer Affairs.
2. It was established in 1912 at Alipore in Kolkata.
3. National Test House has its Headquarters at Kolkata and has a network of 6 regional offices at Kolkata, Mumbai, Chennai, Ghaziabad, Jaipur and Guwahati.
4. It provides technical consultancy, testing, calibration, and quality evaluation services across various sectors. It adheres to both national and international standards.
5. It plays a pivotal role in the development of indigenous industries and serves as a vital link between industrial research and manufacture of finished products under rigid quality control.

### About Bureau of Energy Efficiency (BEE):

1. Bureau of Energy Efficiency (BEE) was set up under the provisions of Energy Conservation Act, 2001. It functions under the Ministry of Power with a mission to reduce the energy intensity of the Indian economy.
2. Its mission is to assist in developing policies with the primary objective of reducing energy intensity of the Indian Economy.
3. It is responsible for the Star Rating system for electrical appliances and products, promoting energy efficiency in the market.
4. BEE is responsible for (a) Create awareness and disseminate information on energy efficiency and conservation (b) Promote innovative financing of energy efficiency projects (c) Give financial assistance to institutions for promoting efficient use of energy and its conservation (d) Prepare educational curriculum on efficient use of energy and its conservation and (e) Implement international co-operation programmes relating to efficient use of energy and its conservation.

## Digital Agriculture Mission

### Why in News?

The Union Cabinet Committee recently approved the Digital Agriculture Mission.

### About Digital Agriculture Mission



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Aspects	Description
<b>About</b>	<ol style="list-style-type: none"> <li>1. The Digital Agriculture Mission is an umbrella scheme supporting digital agriculture initiatives in India.</li> <li>2. It focuses on developing Digital Public Infrastructure, implementing the Digital General Crop Estimation Survey (DGCES), and advancing IT projects by government bodies and research institutions.</li> <li>3. It is aligned with the “Viksit Bharat@2047” vision.</li> <li>4. It aims to create a sustainable and digitally empowered agriculture sector.</li> </ol>
<b>Aim</b>	It aims to create Digital Public Infrastructure (DPI) for agriculture, facilitating data-driven decision-making and digital services for farmers.
<b>Components of Digital Public Infrastructure (DPI)</b>	<ol style="list-style-type: none"> <li>1. AgriStack: A comprehensive digital platform to provide efficient, faster, and easier services to farmers. It includes three foundational registries: the Farmers’ Registry, Geo-referenced village maps, and the Crop Sown Registry.</li> <li>2. Krishi Decision Support System (Krishi-DSS): A geospatial system that integrates data on crops, soil, weather, and water resources to support decision-making in agriculture.</li> <li>3. Soil Profile Mapping: Detailed soil profile mapping at a 1:10,000 scale covering approximately 142 million hectares of agricultural land in India.</li> </ol>
<b>Digital Identity for Farmers</b>	<ol style="list-style-type: none"> <li>1. Under AgriStack, a digital identity (Farmer ID) will be provided to farmers, similar to Aadhaar, called ‘Kisan ki Pehchaan’.</li> <li>2. This ID will link dynamically to various data points such as land records, livestock ownership, crops sown, and demographic details.</li> </ol>
<b>Benefits for Farmers and Stakeholders</b>	<ol style="list-style-type: none"> <li>1. Farmers can access services and schemes digitally, reducing the need for physical visits to government offices and minimizing paperwork.</li> <li>2. The digital infrastructure will facilitate efficient service delivery mechanisms, such as paperless MSP-based procurement, crop insurance, credit-linked crop loans, and balanced fertilizer use.</li> <li>3. The Digital Agriculture Mission will enable the development of efficient value chains for agricultural inputs and post-harvest processes.</li> <li>4. The mission is expected to generate both direct and indirect employment in the agriculture sector.</li> </ol>

### **About Digital General Crop Estimation Survey (DGCES)**

1. The Digital General Crop Estimation Survey (DGCES) is a nationwide effort to accurately measure crop yields for various crops in India.
2. It is a component of the Digital Agriculture Mission which seeks to establish a strong Digital Public Infrastructure (DPI) for the agriculture sector.
3. It aims to make reliable agricultural production estimates, supporting policy formulation and resource allocation.
4. The DGCES will provide accurate yield estimates using scientifically designed crop-cutting experiments.

## Launch of AgriSURE Fund and Krishi Nivesh Portal

### Why in News?

The Union Minister of Agriculture and Farmers' Welfare and Rural Development recently launched the AgriSURE Fund and the Krishi Nivesh Portal at PUSA, New Delhi. The launch aims to enhance agricultural investment and infrastructure through the AgriSURE Fund and provide a comprehensive platform for agricultural investments via the Krishi Nivesh Portal.

### About AgriSURE Fund

1. The AgriSURE Fund is a new initiative by the Indian government aimed at supporting agricultural start-ups and rural enterprises.

2. **Objective-** To provide comprehensive support to agripreneurs by establishing a financing ecosystem that offers both equity and debt options, enhancement of the farm produce value chain, creating rural infrastructure, generating employment, and supporting farmers' producer organizations.

3. **Funding Pattern-** The initial corpus of ₹750 crore, funded by the Ministry of Agriculture, NABARD, and other financial institutions, is managed by NABVENTURES, a wholly owned subsidiary of NABARD.

### 4. Significance:

i) Using information technology in agriculture will boost labor productivity and increase income and profits for small and marginal farmers, who constitute 85% of the farming population.

ii) As food prices have been a major factor in inflation, boosting agricultural productivity will enhance food availability at affordable prices and ease pressure in macroeconomic management.

### About Krishi Nivesh Portal

Aspects	Description
About	The Krishi Nivesh Portal serves as a centralized, one-stop platform for agricultural investors to access various government schemes and benefits.
Launched	It was launched on December 5, 2022.
Aim	To streamline the investment process and enhance transparency, making it easier for both domestic and international investors to contribute to India's agricultural growth
Key features	i) Investors can find information and apply for multiple government schemes related to agriculture and allied sectors. ii) The portal provides guidelines for market entry strategies, regulatory frameworks, and steps to set up operations in India. iii) Special provisions and training programs are available to empower women in agriculture.

### About Agriculture Infrastructure Fund (AIF)

1. The AIF scheme is to provide medium to long-term debt financing for developing post-harvest management infrastructure and community farming assets.

2. **Aim:** This initiative seeks to enhance agricultural productivity, reduce post-harvest losses, and improve farmers' income by supporting the creation of modern infrastructure facilities across the agricultural value chain.

**3. Objectives:** To mobilize investment in agricultural infrastructure projects that are crucial for post-harvest management, including cold storage, packaging, logistics, warehousing, and more.

By providing financial incentives and support, the scheme seeks to encourage private sector investment in these critical areas, ultimately leading to improved efficiency and profitability for the agriculture sector.

### Key features

1. The scheme provides subsidized loans to agri-entrepreneurs, FPOs, SHGs, cooperatives, and state agencies for infrastructure development.
2. Eligibility has been expanded to include APMCs, federations of FPOs, SHGs, and state agencies.

## Rule 170 of the Drugs and Cosmetics Act

### Why in News?

The Supreme Court has recently put a hold on a Central government notification that aimed to remove Rule 170 from the Drugs and Cosmetics Rules of 1945.

### About Rule 170 of the Drugs and Cosmetics Act

1. It was introduced in 2018 as part of the Drugs and Cosmetics Act.
2. **Purpose:** Its primary purpose is to regulate and prevent misleading advertisements of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy) products.
3. **Key Provisions of Rule 170:** The rule prohibits advertisements without proper approval. Advertisements can be rejected if:
  - i) The manufacturer does not provide contact details.
  - ii) The content is deemed obscene or vulgar.
  - iii) It includes claims about enhancing sexual organs.
  - iv) It features celebrities or government officials, references any government organization, or makes false, misleading, or exaggerated claims.
4. **Requirements Under Rule 170:** AYUSH product manufacturers must obtain approval and a unique identification number from the state licensing authority before advertising their products.
5. Manufacturers are required to provide detailed information, including textual references, rationale for the medicine based on authoritative books, intended use, and evidence of safety, effectiveness, and quality.

### Challenges in Regulating AYUSH Drugs

1. **Licensing Requirements:** Like allopathic (modern) medicines, AYUSH drugs also require a license from the drug controller.
2. **Clinical Trials:** Unlike allopathic drugs, AYUSH products generally do not require phase I, II, or III trials for approval. Most AYUSH drugs are approved based on the rationale provided in authoritative texts from their respective disciplines.
3. **Safety Trials:** Safety trials are mandatory only for formulations that use about 60 specific ingredients listed in the act, such as snake venom, heavy metals (e.g., arsenic, mercury), and compounds like copper sulfate.

4. Proof of Effectiveness: For licensing drugs containing these ingredients or traditional drugs used for new indications, proof of effectiveness must be provided as per the Act.

### Why did the AYUSH Ministry Recommend Ignoring Rule 170?

1. The Ayurvedic, Siddha, and Unani Drugs Technical Advisory Board (ASUDTAB) which is an expert body for regulating AYUSH drugs, suggested in a May 2023 meeting that Rule 170 could be omitted.
2. This suggestion was made because amendments to the Drugs and Magic Remedies Act, another law aimed at preventing misleading advertisements, were also being considered by the health and AYUSH ministries.
3. In light of ASUDTAB's recommendation and ongoing legislative changes, the AYUSH Ministry advised state licensing authorities to disregard Rule 170.

## Global Navigation Satellite System (GNSS)-based Software

### Why in News?

The Ministry of Road Transport & Highways (MoRTH) has announced the implementation of a Global Navigation Satellite System (GNSS)-based Electronic Toll Collection (ETC) system in India.

### About GNSS-Based Software for Electronic Toll Collection (ETC) system

Aspects	Description
About	This GIS-based software for real-time monitoring of waiting times at toll plazas is developed by the Indian Highways Management Company Limited (IHMCL) under the guidance of the Ministry of Road Transport & Highways (MoRTH).
Aim	To address the congestion issues at toll plazas by providing NHAI officials with live data on traffic conditions at specific lanes, enabling a more streamlined flow of vehicles.
Features	<ol style="list-style-type: none"><li>1. The software provides real-time traffic updates at toll plazas, alerting officials when congestion exceeds limits and recommending lane adjustments to ease jams, especially during peak times or unexpected surges.</li><li>2. It analyzes traffic trends over various periods (hourly, daily, weekly, monthly) to improve planning and congestion management.</li><li>3. The software also incorporates external factors like weather and local events to anticipate disruptions.</li><li>4. Each toll plaza is mapped using GIS technology, offering a clear view of traffic dynamics for effective management.</li></ol>
Benefits of the GIS-Based Software	<ol style="list-style-type: none"><li>1. Real-time updates and congestion alerts help reduce delays at toll plazas, speeding up vehicle passage.</li><li>2. Detailed data enables NHAI officials to manage traffic proactively and prevent congestion.</li><li>3. Faster toll processing improves the experience for highway users, reducing frustration.</li><li>4. The software's provide detailed traffic reports and analytics helping officials to make data-driven decisions.</li></ol>

### About Current Toll Collection System

1. The current Electronic Toll Collection (ETC) in India uses Radio Frequency Identification (RFID) technology known as FASTag, mandatory since February 2021.

2. FASTag has been widely adopted, with over 98% of user fees paid through this method by March 2024.

## UPSC Syllabus: World Geography

### Nazca Ridge

#### Why in News?

Recently, a team of oceanographers identified and charted a new seamount on the Nazca Ridge, located 900 miles off the coast of Chile in international waters.

#### About Nazca Ridge

**1. Location:** The Nazca Ridge is a prominent submarine geological feature located in the southeastern Pacific Ocean.

**2. Area:** It extends over 1,100 kilometers (about 680 miles) from the coast of Peru towards the west.

**3. Geology:** The ridge is part of the Nazca Plate, which is an oceanic tectonic plate that underlies much of the southeastern Pacific Ocean.

**4. Formation:** The Nazca Ridge formed over a hotspot, where rising magma created volcanic islands and underwater mountains made mostly of basalt.

6. Geologically, the Nazca Ridge is notable for its interaction with the South American Plate. As the Nazca Plate moves eastward, it subducts beneath the South American Plate along the Peru-Chile Trench.

This subduction influences regional earthquakes, volcanic activity, and the uplift of the Andes. The ridge's presence also affects the subduction angle, leading to unique geological phenomena.

7. The unique underwater topography of the ridge creates a range of habitats for marine life, supporting diverse ecosystems. It is home to a variety of marine species, including many that are unique to the area.

#### About Nazca plate

1. It is located in the eastern Pacific Ocean, near the western coast of South America. It interacts with the South American Plate.

2. Its collision with the South American Plate contributes to the creation of the Andes Mountains. This interaction also leads to significant volcanic activity in the region.

3. The Nazca Plate is being pushed under the South American Plate in a process called subduction. This subduction affects the region's geology, including earthquakes and volcanic eruptions.

## UPSC Syllabus: Environment

### Aralam Wildlife Sanctuary

#### Why in News?

Recently, four monkeys were discovered dead in the Aralam Wildlife Sanctuary in Kerala.

#### About Aralam wildlife sanctuary

Aspects	Description
About	<ol style="list-style-type: none"><li>1. Aralam is the northern most wildlife sanctuary of Kerala. It was declared a Sanctuary during 1984.</li><li>2. It is located on the western slopes of Western Ghats.</li><li>3. The sanctuary is linked with several other protected areas, including the Wayanad-Brahmagiri region, the northern slopes of Wayanad, and the Brahmagiri Wildlife Sanctuary in Karnataka. It also borders the forests of Coorg.</li><li>4. The highest peak within the sanctuary is Katti Betta.</li></ol>
Drainage	The Cheenkannipuzha forms the main drainage system on the southern side. Narikkadavu thodu, Kurukkathodu and Meenumuttithodu from the northern upper reaches flow southwards to join Cheenkannipuzha.
Forest Type	The forest types include West Coast tropical evergreen forest, West coast semi-evergreen forests, South Indian moist deciduous forest, Southern hilltop evergreen forest and plantations.
Flora	The sanctuary features a rich variety of tree species, including <i>Artocarpus heterophyllus</i> , <i>Bischofia javanica</i> , <i>Calophyllum elatum</i> , <i>Canarium strictum</i> , <i>Cullenia exarillita</i> , <i>Dipterocarpus</i> species and various <i>Terminalia</i> species.
Flora	<ol style="list-style-type: none"><li>1. The sanctuary supports a diverse array of wildlife. It is home to 23 mammal species, including the Elephant, Gaur, Tiger, Panther, Sambar, Spotted Deer, Barking Deer, Wild Boar, Sloth Bear, Nilgiri Langur, Bonnet Macaque, Common Langur, Wild Dog, Common Otter, and Malabar Giant Squirrel.</li><li>2. Birdlife is also abundant, with 188 species recorded.</li><li>3. The sanctuary hosts 22 reptile species, 16 species of amphibians, and 39 species of fish.</li></ol>

Read more: [Mpox \(Monkeypox\) outbreak](#)

### Last-chance tourism

#### Why in News?

Recently, a frozen arch collapsed in an ice cave within one of Europe's largest national parks, killing an American tourist and injuring his girlfriend. It shows the risk associated with **last-chance tourism**.

#### About Last-chance tourism

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1. Due to disappearing glaciers and many other natural places, a new form of adventure has emerged, known as Last-chance tourism. It is a type of travel where people visit places that are believed to be at risk of disappearing or changing forever.

2. This trend is growing because many destinations around the world are facing threats from climate change, environmental damage, or human activities. Travelers want to see these places before they are gone or altered beyond recognition.

**Concerns:** More tourists to such places can cause further damage to already fragile environments. Also, traveling to such destinations increases carbon emissions, which contribute to climate change.

### Reason behind Last-Chance Tourism

**1. Environmental and Climate Changes:** Many natural wonders, like glaciers and coral reefs, are rapidly changing due to global warming. For example, the Great Barrier Reef in Australia is experiencing coral bleaching, which is damaging its colorful corals. Similarly, glaciers like France's Mer de Glace are melting faster than expected. People want to visit these sites now because they fear these beautiful places might not look the same in the future.

**2. Fear of Losing Destinations:** There is a fear that some famous places might disappear altogether. Venice, Italy, for instance, is known for its canals and historic buildings, but it faces frequent flooding and is sinking slowly. This makes tourists rush to see Venice before it changes drastically or becomes less accessible.

**3. Economic Benefits for Local Communities:** Last-chance tourism can bring economic benefits to local communities, especially in places that rely heavily on tourism. However, this increase in tourism can also put extra pressure on the environment and local resources.

**4. Desire for Unique Experiences:** Many travelers want to have special experiences that are rare or may not be possible in the future. Visiting a place that might soon change or vanish provides a sense of uniqueness and adventure. This idea of being among the "last" to see a place is a powerful motivator for many people.

Read more: [ongoing sixth mass extinction](#)

## Access to the Loss and Damage Fund (LDF)

### Why in the News?

The devastating landslides that struck Kerala's Wayanad district in August 2023 have sparked a discussion on whether subnational entities like Kerala can access compensation from the United Nations Framework Convention on Climate Change (UNFCCC)'s Loss and Damage Fund (LDF).

### India's Role in Climate Finance

1. India faced over \$56 billion in weather-related damages from 2019 to 2023 but has focused on mitigation over adaptation, limiting its involvement in Loss and Damage dialogues at COP.

2. A clear legal and policy framework is needed to streamline climate finance for adaptation and loss and damage, helping vulnerable communities access funds efficiently.

3. The introduction of a climate finance taxonomy raises hopes for more international funds, but specific guidelines for accessing loss and damage funds are still lacking.

### State-Level Interventions and Challenges

## Factly Compilation September (First Week) 2024

1. Kerala and other state governments often bear the financial burden of disaster recovery due to acute loss and damage impacts.
2. After the 2018 floods, Kerala's Rebuild Kerala Development Programme is funded by loans from the World Bank and KfW, highlights the importance of international climate finance for recovery.
3. A key barrier to accessing LDF funds is the lack of standardized methods for assessing disaster damages, especially from slow-onset events, leading to unrecognized needs.

### About Loss and Damage Fund

Specifications	Details
What is it	It is a fund created to provide financial assistance to nations most vulnerable and impacted by the effects of climate change.
Hosted by	The World Bank will be the interim host of the fund for a period of four years.
Funding	All countries can contribute to the fund voluntarily. Countries have already committed at least \$450 million for the fund.
Eligibility to get funding	1) All developing countries are eligible to apply for the fund. 2) A certain percentage of the fund has been set apart for Least Developed Countries and Small island developing states.
Criticism	There is no clear plan on how the money will be added to the fund regularly. This raises serious questions over the fund's long term sustainability.

Read more: [Loss and Damage Fund](#)

## Valley fever

### Why in News?

Recently, there has been a rise in cases of Valley fever across California.

### About Valley fever (coccidioidomycosis)

Aspects	Description
About	1. Valley fever (coccidioidomycosis) is a lung infection caused by breathing in spores from the <i>Coccidioides</i> fungus. It is endemic to the western United States. 2. The fungus lives in the soil, especially in the Pacific Northwest and southwestern United States, and parts of Mexico, Central America, and South America.
Causes	1. It is caused by inhaling spores of <i>Coccidioides immitis</i> (in California) and <i>Coccidioides posadasii</i> (in other regions). 2. Spores are released when the soil is disturbed, such as during dust storms or construction.
Symptoms	1. Most cases of Valley fever either show no symptoms or resolve on their own. 2. Only about 1% of symptomatic individuals develop serious disease, which may result in



	<p>complications such as</p> <ul style="list-style-type: none"> <li>i) Pneumonia</li> <li>ii) Fluid or pus buildup in the lungs (pleural effusion or empyema)</li> <li>iii) Acute respiratory distress syndrome (ARDS)</li> <li>iv) Ruptured pockets of fluid or air in the lungs (hydropneumothorax)</li> <li>v) Disseminated coccidioidomycosis, where the infection spreads beyond the lungs. If it reaches the brain, it can cause coccidioidal meningitis, a life-threatening condition.</li> </ul>
Transmission	<ul style="list-style-type: none"> <li>1. It is non-contagious, but spores can spread through the air.</li> <li>2. In extremely rare cases, the spores can enter the skin through a wound and cause a skin infection.</li> </ul>
Who are at greater risk	<ul style="list-style-type: none"> <li>1. Valley fever can affect anyone living in or traveling to areas with <i>Coccidioides</i> in the environment.</li> <li>2. Adults aged 60 and older are at greater risk.</li> <li>3. People who have weakened immune systems, for example, people who have HIV/AIDS, have had an organ transplant, are taking medications such as corticosteroids or TNF-inhibitors, pregnant women, people who have diabetes and people who are Black or Filipino</li> </ul>
Treatment	<p>Many people recover on their own within weeks or months without treatment. Severe or spreading infections need antifungal medication and may require hospitalization.</p>

## UPSC Syllabus: Science and technology

### OpenAI's Project Strawberry

#### Why in News?

OpenAI is expected to release its most powerful AI model under Project Strawberry.

#### About OpenAI's Project Strawberry

Aspects	Description
About	Project Strawberry is a secret project of OpenAI. The project, previously known as Project Q.
Aim	It aims to enhance AI's reasoning capabilities and is seen as a step towards developing Artificial General Intelligence (AGI) with human-like capabilities.
Role	Its key roles are to generate high-quality training data for future AI models, such as the upcoming Project Orion.
Features	<ul style="list-style-type: none"> <li>1. Project Strawberry is significantly better at mathematics and programming compared to any existing chatbot.</li> <li>2. It is anticipated to be integrated into ChatGPT-5, enhancing the chatbot's overall performance and making it the most powerful AI chatbot available. This integration will substantially improve the model's ability to solve complex problems and engage in advanced reasoning.</li> <li>3. It also features capabilities for autonomous Internet research, allowing it to independently gather and analyse data. The model's enhanced reasoning skills could enable it to solve intricate puzzles and challenges.</li> </ul>

### About Project Orion

1. Project Orion is designed to surpass the capabilities of GPT-4 by using a combination of high-quality synthetic data and the innovations from Project Strawberry.
2. This approach aims to reduce errors and hallucinations in AI outputs, improving the overall accuracy and reliability of the model.
3. OpenAI is exploring the use of synthetic data generated by AI models, to improve AI training processes.
4. The synthetic data is designed to test and enhance Orion's reasoning, logic, and problem-solving skills by presenting challenging tasks.

### 5. Benefits of Synthetic Data in AI Development:

- i) The use of synthetic data can help mitigate biases, correct errors, and ensure more complete and accurate information in training datasets.
- ii) It also promises to make future AI models more neutral, fair, and efficient, enhancing both the training process and the accuracy of AI predictions.

## Genome mapping of Chandipura virus

### Why in News?

Researchers at the Gujarat Biotechnology Research Centre (GBRC) in Gandhinagar have published a comprehensive genome map of the Chandipura Vesiculovirus (CHPV). This viral infection, which causes [Acute Encephalitis Syndrome \(AES\)](#), was responsible for a significant number of encephalitis cases during the July-August outbreak in Gujarat.

### Key Findings from Chandipura Virus Genome Mapping

- 1. Minimal Genetic Changes:** The Chandipura virus has not evolved significantly since the 2003-04 outbreak, showing only minor changes in its glycoprotein gene, indicating no strong pressure to escape immunity due to a lack of widespread antibodies and vaccine.
- 2. Low Viral Load, High Severity:** Despite a low viral load (high Ct values in tests), the virus caused severe symptoms and high fatality rates, underscoring its potency even with minimal presence.
- 3. Local Origin Confirmed:** The virus strain from the current outbreak closely matches previous Indian strains and differs from European and African strains, confirming it is not imported but locally circulating.

### About Genome Mapping

1. Genome refers to an organism's complete set of DNA which includes all its genes and mapping these genes means finding out the location of these genes in a chromosome.
2. Genetic mapping offers evidence that whether a disease transmitted from parent to child is linked to one or more genes. It also provides clues about which chromosome contains the gene and precisely where the gene lies on that chromosome.

### Significance of Genome Mapping

1. It can be used to find out genes that are responsible for relatively rare, single-gene inherited disorders such as cystic fibrosis and Duchenne muscular dystrophy.

2. It may also point out scientists to the genes that play a role in more common disorders and diseases such as asthma, cancer and heart disease among others.

Read more: [Chandipura Virus](#)

## Key Programmes Approved by the Union Cabinet

### Why in News?

The Government of India has launched seven major programmes to drive the holistic growth of the agriculture and allied sectors, with a total budget of nearly ₹14,000 crore. The initiatives aim to enhance farmers' income and promote sustainable agricultural practices.

### Key Programmes Approved by the Union Cabinet

Aspects	Description
Digital Agriculture Mission	Aim: To enhance the efficiency, transparency, and effectiveness of agricultural processes and services by leveraging digital public infrastructure (DPI) and modern digital technologies.
Crop Science Programme for Food and Nutritional Security	1. Aim: To focus on enhancing agricultural productivity and ensuring access to nutritious food. 2. Goal: To prepare farmers for climate-resilient crop sciences and ensure food security by 2047.
Strengthening Agricultural Education and Research	1. This programme is under Indian Council of Agricultural Research (ICAR). 2. Aim: To modernise agricultural research and education in alignment with the New Education Policy 2020, incorporating advanced technologies like AI, big data, and remote sensing, and promoting natural farming and climate resilience.
Sustainable Livestock Health and Production	Aim: Improve the health and productivity of livestock through sustainable practices.
Sustainable Development for Horticulture	Aim: To enhance the growth and development of the horticulture sector
Strengthening Krishi Vigyan Kendra	Aim: To bolster the network of Krishi Vigyan Kendras to provide agricultural extension services and support to farmers.
Natural Resource Management	Aim: To promote sustainable management and conservation of natural resources in agriculture.

## UPSC Syllabus: Programme and schemes

### Poshan Maah 2024

#### Why in News?

Recently, the 7th Rashtriya Poshan Maah 2024 was launched. Anemia is one of the major theme through which this year Poshan Maah is being celebrated.

#### About Rashtriya Poshan Maah 2024

1. The 7th Rashtriya Poshan Maah 2024 was launched on August 31, 2024, at Mahatma Mandir in Gandhinagar, Gujarat.
2. Mission Poshan 2.0 focuses on combating malnutrition among children, adolescent girls, pregnant women, and lactating mothers.
3. Key themes for this year's Poshan Maah includes Anaemia, Growth Monitoring, Complementary Feeding, Poshan Bhi Padhai Bhi (Nutrition Alongside Education) and Technology for Better Governance
4. A nationwide plantation drive, "Ek Ped Maa Ke Naam," was held to promote both nutrition and environmental sustainability.

#### Anemia as a major focus for Rashtriya Poshan Maah 2024

1. Anaemia is a major focus area, particularly affecting young children, adolescent girls, pregnant and postpartum women, and women of reproductive age.
2. Adolescence is highlighted as a crucial period for addressing nutritional deficiencies to prevent anemia's intergenerational effects. Engaging adolescent girls is a key strategy to promote a malnutrition-free India, aligning with the Anemia Mukht Bharat program.
3. Over 35 crore sensitization activities were conducted during Poshan Maah 2023, with around 4 crore focused on anemia.
4. The initiative directly reached 69 lakh pregnant women, 43 lakh lactating mothers, and 22 lakh adolescent girls under the Scheme for Adolescent Girls (SAG).
5. The program impacts over 10 crore beneficiaries nationwide through biannual nutrition-centric campaigns (Jan Andolans).
6. A special initiative in five Utkarsh Districts, in collaboration with the Ministry of Ayush, uses Ayurveda interventions (Drakshavleh and Punarnavamandoor) to improve nutritional status among adolescent girls.

#### About Anemia

**1. About:** Anemia is a condition with low red blood cell count or hemoglobin, leading to reduced oxygen supply to the body.

#### 2. Types of Anemia

**i) Iron-Deficiency Anemia:** Caused by insufficient iron, often due to poor diet or blood loss.

**ii) Vitamin-Deficiency Anemia:** Due to lack of vitamins B12 or folate.

**iii) Hemolytic Anemia:** Red blood cells are destroyed faster than they are produced.

**iv) Aplastic Anemia:** Bone marrow fails to produce enough RBCs.

**v) Sickle Cell Anemia:** It is a genetic disorder causing abnormally shaped RBCs.

## Factly Compilation September (First Week) 2024

**3. Symptoms:** Fatigue, weakness, pale skin, shortness of breath, and dizziness.

**4. Causes:** Nutritional deficiencies, chronic diseases, genetic disorders, or blood loss.

**5. Treatment:** Depends on the type. It may include dietary changes, supplements, medications, or procedures like blood transfusions.

**Read more:** [Anaemia Mukht Bharat Programme](#)

