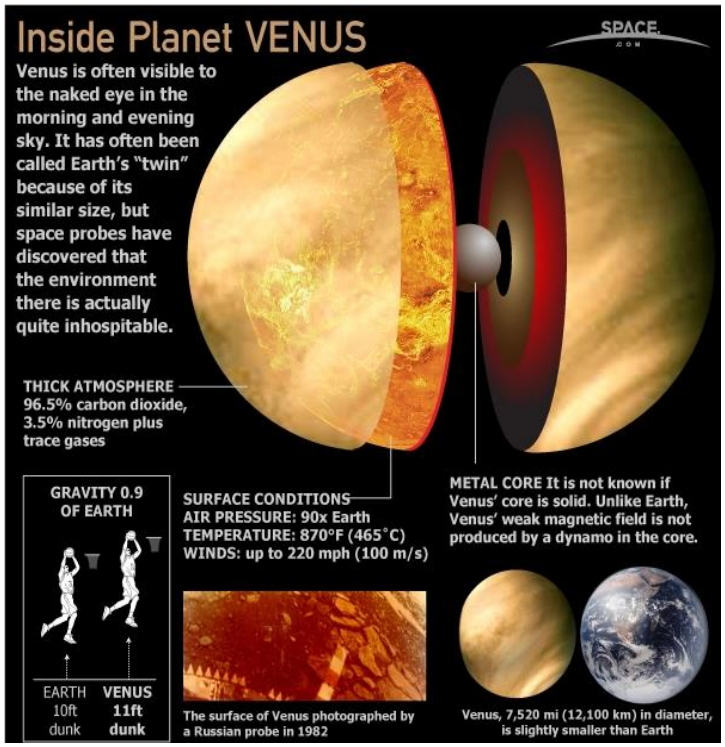
India's Venus Orbiter Mission

Context: *Recently,India's Union Cabinet approved ISRO's first Venus mission, planned for launch in 2028.*

Overview:

- The total approved budget for the Venus Orbiter Mission is Rs. 1,236 crore, with Rs. 824 crore allocated to spacecraft development.
- This will be India's second inter-planetary mission after the Mars Orbiter Mission that was launched in 2013.
- The mission spacecraft, which will orbit Venus, will carry scientific instruments to study the surface, atmosphere, and iono-sphere of the planet, and its interaction with the Sun.



The Venus Orbiter Mission (VOM), also known as Shukrayaan 1

Shukrayaan 1 (Venus Orbiter Mission)

- **Type:** ISRO's first mission to Venus.
- **Weight:** 2,500 kg.
- **Launch Vehicle:** GSLV Mk II.
- **Instruments:**
  - ✓ High-resolution synthetic aperture radar.
  - ✓ Ground-penetrating radar.

Purpose of Shukrayaan 1 launch

- **Geological Composition Analysis:** Shukrayaan 1 will investigate Venus's geological composition, providing insights into its geological history obscured by toxic clouds.
- **Surface and Atmosphere Examination:** The mission aims to penetrate Venus's dense atmosphere to reveal surface secrets, enhancing understanding of weathering, erosion, and geological processes.
- **Solar Radiation Interaction:** The mission will explore how solar radiation interacts with surface particles, contributing to knowledge about planetary evolution.

Significance of Shukrayaan 1

- **Understanding Venus:** The mission will offer valuable data about Venus's conditions, drawing parallels with Earth's past and potential future.
- **Exploring Life Possibilities:** The detection of phosphine in Venus's clouds has sparked interest in the possibility of microbial life in its upper atmosphere.

Challenges for Shukrayaan 1

- **Extreme Temperatures:** With average surface temperatures exceeding 460°C, spacecraft materials must withstand extreme heat.
- **Corrosive Conditions:** Sulfuric acid rain can corrode spacecraft materials, complicating design and durability.
- **Communication Difficulties:** Thick atmosphere and reflective clouds hinder communication with Earth, complicating mission operations.
- **Crushing Atmospheric Pressure:** The atmospheric pressure on Venus is 90 times that of Earth, posing challenges for landers and rovers.
- **Power Supply Issues:** The dense cloud cover limits sunlight for solar panels, necessitating alternative power sources like radioisotope thermoelectric generators.

Other Global Missions to Venus

- **Akatsuki (2010):** Launched by JAXA, this orbiter studies atmospheric circulation patterns using infrared cameras.
- **Magellan (1989):** NASA's mission mapped Venus's surface using radar, providing detailed geological information.
- **Venera Series (1961-1984):** The Soviet Union's pioneering missions included flybys, orbiters, and landers.
- **Pioneer Venus (1978):** This mission included an orbiter and a multiprobe, studying atmospheric composition and surface features.
- **Zond 1:** A Soviet spacecraft that flew by Venus that flew by Venus in 1964 to test onboard systems and units.

Future Missions

- **NASA's Venus Volcano:** Two missions to study Venus's atmosphere and geological features are scheduled to launch between 2028 and 2030
- **VERITAS (2026):** NASA's mission will focus on radar imaging to map Venus's surface and study geology.
- **DAVINCI (2026):** This mission aims to investigate Venus's atmosphere through a descent sphere.
- **EnVision (2030s):** ESA's mission will create high-resolution maps of Venus's surface features and provide geological insights.

Periodic Labour Force Survey (PLFS) Report

Context: *The recently released Periodic Labour Force Survey (PLFS) indicates that unemployment rates remain stable.*

Overview:

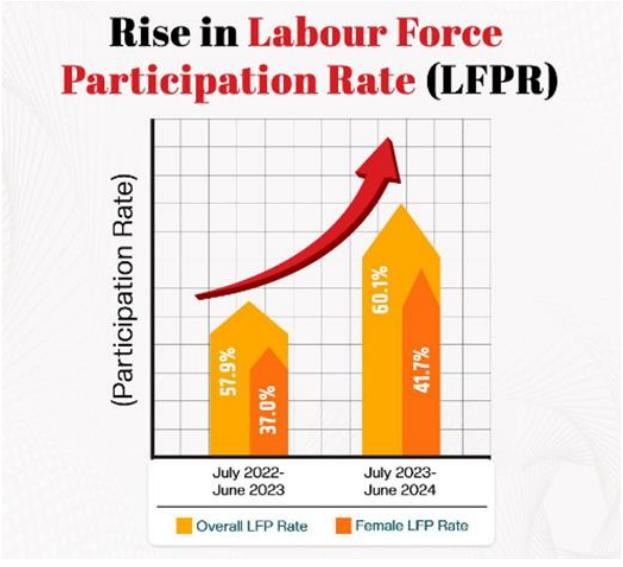
- The PLFS reports no significant change in the unemployment rate from July 2023 to June 2024.
- There is a minor increase in agricultural employment, while the manufacturing sector shows no job growth compared to previous years.

About PLFS

- **Launched:** 2017
- **Released By:** National Sample Survey Office (NSSO)

Objectives of the PLFS

- **Short-term Employment Indicators:** Estimate key indicators like Worker Population Ratio, Labour Force Participation Rate, and Unemployment Rate every three months for urban areas using the 'Current Weekly Status' (CWS) method.
- **Comprehensive Annual Data:** Provide estimates for employment and unemployment indicators in both 'Usual Status' and CWS across rural and urban areas on an annual basis.



Key Indicators	2022-23	2023-24	Trends
Labour Force Participation Rate (LFPR)			
Overall	57.90%	60.10%	Increasing in rural: 50.7% to 63.7%
Male	78.80%		
Female	37.00%	41.70%	Increasing in urban: 47.6% to 52.0%
Worker Population Ratio (WPR)			
Overall	56.00%	58.20%	Increasing in rural: 48.1% to 62.1%
Male	76.30%		
Female	35.90%	40.30%	
Unemployment Rate (UR)			
Overall	3.20%	3.20%	Decreasing in rural: 5.3% to 2.5%
Male	3.30%	3.20%	Decreasing in urban: 7.7% to 5.1%
Female	2.90%	3.20%	

Key Indicators Explained

- **LFPR** percentage of working or seeking work in the population
- **WPR** percentage of employed persons in the population
- **UR** percentage of unemployed persons among those in the labor force

Government Initiatives Related to Employment

- Rozgar Mela
- Start Up India Scheme
- PM-DAKSH (Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi)
- Support for Marginalized Individuals for Livelihood and Enterprise (SMILE)
- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

Types of Unemployment

Type of Unemployment	Description
Disguised Unemployment	More people are employed than necessary, common in agriculture and unorganized sectors.
Seasonal Unemployment	Occurs during specific seasons, affecting agricultural labourers.
Structural Unemployment	Results from a mismatch between available jobs and workers' skills.
Cyclical	Linked to economic cycles; rises during

Unemployment	recessions and falls in growth periods.
Technological Unemployment	Job losses due to technological advancements, notably from automation.
Frictional Unemployment	Temporary unemployment during job transitions; often voluntary.
Vulnerable Employment	Informal, unprotected work leading to unrecorded employment.

Comptroller and Auditor General of India (CAG)

Context: *Recently,The President emphasized the CAG's role in ensuring transparency at the 16th ASOSAI Assembly.*

Overview:

- The President of India graced the opening ceremony of the 16th ASOSAI Assembly, organized by the Comptroller and Auditor General (CAG).
- The President highlighted that public sector audits now assess welfare schemes' effectiveness and adapt to technology.

About the CAG

- **Independent Authority**
- **Constitutional Body:** Ensures financial accountability across the nation.
- **Guardian of the Public Purse:** Heads the Indian Audit & Accounts Department.

Functions

- **Comprehensive Audits:** Conducts audits to ensure compliance with financial laws and regulations.
- Audits accounts from the Consolidated Fund of India and states.
- Submits audit reports to the President, who presents them to Parliament.

Accountability and Transparency

- **Promotes Accountability:** Provides critical insights into government financial operations.
- **Prevention of Mismanagement:** Aids in preventing corruption and ensuring effective use of public funds.

Appointment and Tenure

- Appointment: The CAG is appointed by the President of India.
- Oath: Prior to taking office, the CAG takes an oath to uphold the Constitution and perform duties impartially.
- Term: The CAG serves a term of 6 years or until the age of 65, whichever comes first.

Resignation and Removal

- The CAG can resign by addressing the President.
- Removal is possible by the President, following the same procedure as the removal of a Supreme Court judge.

Roles and Duties

- Ensure adherence to the Constitution and financial laws.
- Secure the accountability of the Executive to Parliament through audit reports.
- Acts as an agent of Parliament, conducting audits of government expenditures.

Constitutional Provisions

- Articles 148 to 151 govern the functions and powers of the CAG:
  - ✓ **Article 148:** Establishment of the CAG.
  - ✓ **Article 149:** Duties and powers of the CAG.
  - ✓ **Article 150:** Form of accounts for the Union and States.
  - ✓ **Article 151:** Submission of audit reports.

Powers

- Inspect offices and departments subject to audit.
- Examine transactions and question relevant personnel.
- Call for records and documents from audited entities.

Reports

- The CAG submits three main audit reports to the President:
  1) Audit Report on Appropriation Accounts
  2) Audit Report on Finance Accounts
  3) Audit Report on Public Undertakings

Types of Audits

Legal and Regulatory	Checks if expenditures are legally permissible and conform to governing authority.
Propriety Audit	Evaluates the wisdom and economy of expenditures, commenting on wastefulness.
Performance Audit	Assesses the efficiency and effectiveness of public fund use, particularly in development programs.

Limitations

- **Post-Facto Role:** The CAG audits after expenditures have occurred, limiting proactive financial control.
- **Limited Scope:** Restrictions in auditing certain expenditures and organizations.
- **Access Challenges:** Practical difficulties in obtaining necessary records for audits.

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25 September, 2024

NEWS IN BETWEEN THE LINES

Exercise AL-NAJAH 5

Recently, the India-Oman joint military exercise AL-NAJAH 5 – 2024 began in Oman.

About the Exercise AL-NAJAH 5:

- AL-NAJAH 5 is a joint military exercise conducted between the Indian Army and the Royal Army of Oman, aimed at enhancing military cooperation and interoperability between the two countries.
- The exercise is taking place at the Rabkoot Training Area in Oman from 13th September to 26th September 2024.
- The Indian Army is represented by a contingent of 60 personnel, which includes a battalion of the Mechanised Infantry Regiment, along with personnel from other arms and services.
- The training covers a wide range of activities, including combat first aid, casualty evacuation, weapon handling, counter-drone drills, reflex firing, close-quarter battle and weapon training with Assault Rifles, Snipers, Pistols, and Light Machine Guns (LMGs).

Urban Poverty

Recently, the Union government announced a programme for urban poverty alleviation, with a pilot set to launch on October 1 in 25 cities, including industrial hubs, migrant centres, aspirational districts, and port cities.

About Urban Poverty:

- Urban poverty refers to the multifaceted issue of poverty in urban areas, characterized not just by low income but also by a lack of access to housing, basic services, infrastructure, employment and social security.
- Urban poverty is often associated with the existence of slums, informal settlements, shelter deprivation and deteriorating living conditions.
- According to UN-HABITAT, 60% of the world's slum population resides in Asia, making it a critical concern in the region.
- Large-scale migration from rural to urban areas in search of better livelihood opportunities leads to overcrowding in cities.
- In India, urban poverty is closely linked to inadequate infrastructure in rural areas, forcing people to migrate to cities in search of work.
- The Government of India has launched initiatives to promote private sector participation in affordable housing such as Deendayal Antyodaya Yojana - National Urban Livelihoods Mission (DAY-NULM), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), Pradhan Mantri Awas Yojana (Housing for All - Urban) and Jal Jeevan Mission Urban ensures universal coverage of water supply to all households in urban areas.

MGNREGS

Recently, over 4,700 MGNREGS workers in West Bengal urged Prime Minister Narendra Modi to resume the scheme, suspended since December 2021.

About MGNREGS:

- Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is one of the largest work guarantee programs in the world.
- The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was launched in 2005 by the Ministry of Ru ral Development.
- It aims to provide a legal guarantee of 100 days of unskilled manual work annually to adult members of rural households willing to do public work.
- It also provides a legal guarantee of work within 15 days, mandates that one-third of beneficiaries be women, and requires a social audit for all executed works.
- To receive MGNREGA benefits, the applicant must be an Indian citizen, at least 18 years old, belong to a rural household, and be willing to do unskilled work.
- The Ministry of Rural Development monitors the entire implementation of MGNREGA in collaboration with state governments.
- Under MGNREGS, the Amrit Sarovar initiative constructs 75 ponds per district, the Jaldoot App measures water levels in Gram Panchayats and the Ombudsperson App addresses grievances related to scheme implementation.
- It provided employment to 11.37 crore households, with 56.19% women, 19.75% Scheduled Castes (SCs), and 17.47% Scheduled Tribes (STs).

Place in News

Israel

Recently, Israel is conducting an eight-day recruitment drive at the Industrial Training Institute in Aundh, Pune, to seek up to 10,000 skilled Indian workers.

Israel (Capital: Jerusalem)

Location: Israel is situated in the Southern Levant region of Western Asia, along the eastern shore of the Mediterranean Sea.

Political Boundaries: Israel shares its borders with Jordan (East), Mediterranean Sea (West), Lebanon (North), Syria (Northeast) and Egypt (Southwest).

Physical Features:

- The highest point in Israel is Mount Hermon, located in the northern part of the country.
- The major rivers in Israel are the Jordan River, which forms part of the border with Jordan, and the Yarkon River, which flows through central Israel into the Mediterranean Sea.
- The country features several mountain ranges, including the Galilee, Carmel and the Golan Heights in the north.

Membership:

Israel is a member of several international organizations, including the United Nations (UN), the World Bank, the International Monetary Fund (IMF) and the Organisation for Economic Co-operation and Development (OECD).

POINTS TO PONDER

- Which rocket will launch the Shukrayaan 1 mission? **– GSLV Mk II**
- What is the name of the Semiconductor Fabrication Plant being established by India and the US? **– Shakti.**
- What is the name of the agreement adopted at the UN Summit for sustainable development? **– Pact for the Future.**
- What initiative announced at the Quad Summit aims to strengthen cancer care in the Indo-Pacific? **– Cancer Moonshot.**
- When was the CGTMSE established? **– 2000**