



Unemployment Rate in Urban Areas

For Prelims: [Periodic Labour Force Survey](#), National Sample Survey Office, [Unemployment](#), Labour Force Participation Rate, Worker Population Ratio, Support for Marginalized Individuals for Livelihood and Enterprise, PM-DAKSH, Mahatma Gandhi National Rural Employment Guarantee Act, Pradhan Mantri Kaushal Vikas Yojana, Start Up India Scheme, Rozgar Mela

For Mains: Major Issues Related to Unemployment in Urban Areas, Periodic Labour Force Survey.

[Source: TH](#)

Why in News?

The [Periodic Labour Force Survey \(PLFS\)](#), conducted by the [National Sample Survey Office \(NSSO\)](#), recently released data for **July-September 2023**, shedding light on India's [unemployment](#) rate in urban areas.

What are the Major Highlights of the Recent PLFS?

- **Urban Unemployment Rate:** The unemployment rate in urban areas showcased a decline from **7.2% (July-September 2022) to 6.6% (July-September 2023)**.
 - **Male:** Decreased from 6.6% to 6% in the given time period.
 - **Female:** Witnessed a more positive trend, marking a decrease from **9.4% to 8.6%** in the given time period .
- **Worker-Population Ratio:** The **worker population ratio**, percentage of employed persons in the population, in urban areas increased from **44.5% in July-September, 2022 to 46% in July-September, 2023** for persons of age 15 years and above.
 - **Male:** Increased from 68.6% to 69.4% during the given time period.
 - **Female:** Increased from 19.7% to 21.9% during the given time period.
- **Labour Force Participation Rate:** The LFPR in urban areas increased from **47.9% in July-September, 2022 to 49.3% in July-September, 2023**
 - **Male:** Saw a marginal uptick from **73.4% to 73.8% during this period**.
 - **Female:** Exhibited a more **substantial increase from 21.7% to 24.0%**.

What is the Periodic Labour Force Survey?

- **About:**
 - Considering the importance of availability of labour force data at more frequent time intervals, **NSSO** launched **Periodic Labour Force Survey** in April 2017.
 - PLFS defines unemployment rate as the percentage of persons unemployed among the persons in the **labour force**.
- **Objective of PLFS:**
 - To estimate the key employment and unemployment indicators (viz. [Worker Population Ratio](#), [Labour Force Participation Rate](#), **Unemployment Rate**) in the short time interval of three months for the urban areas only in the '**Current Weekly Status**' (**CWS**).
 - To estimate employment and unemployment indicators in both '**Usual Status**' and **CWS**

in both rural and urban areas annually.

What are the Related Key Terms?

- **Labour Force Participation Rate (LFPR):** It represents the **percentage of people aged 15 and above** who are either employed or unemployed but actively seeking work.
- **Worker Population Ratio (WPR):** This measures the percentage of employed individuals within the total population.
- **Unemployment Rate (UR):** It indicates the percentage of unemployed persons among those in the labour force.
- **Regarding Activity Status:**
 - **Principal Activity Status (PS):** The primary activity a person engaged in for a substantial period (during 365 days preceding the survey).
 - **Subsidiary Economic Activity Status (SS):** Additional economic activities performed, apart from the usual primary activity, for at least 30 days in the 365-day period before the survey.
 - **Current Weekly Status (CWS):** This status reflects a person's activities during the immediate past 7 days before the survey date.

What are the Major Issues Related to Unemployment in Urban Areas?

- **Structural Unemployment:** Urban areas often face a **disparity between the skills possessed by the workforce and the skills demanded by industries**.
 - The education system does not **align with the needs of the job market**, leading to a surplus of unskilled or under-skilled workers.
 - **Rapid technological advancements and changes in the economy** have led to the decline of traditional industries, resulting in job losses for many urban workers who lack the necessary skills for emerging sectors.
- **Informal Sector Dominance:** A significant portion of the **urban population is employed in the informal sector**, characterized by **low pay, job insecurity, and lack of social security benefits**.
 - This sector often experiences seasonal fluctuations, leading to inconsistent employment opportunities.
 - Many workers are **forced to accept jobs that are below their skill levels due to the scarcity of formal employment opportunities, leading to underutilization of human resources**.
 - According to IMF, In India in terms of employment share the unorganized sector employs 83% of the workforce.
 - Also, there are **92.4% informal workers (with no written contract, paid leave and other benefits)** in the economy.
- **Demographic Challenges:** Rapid urbanization and population influx into cities have **outpaced job creation**, causing a strain on the job market and resulting in higher unemployment rates.
 - **Rural-to-urban migration** often leads to an oversupply of labour in cities, contributing to higher unemployment rates among migrant populations, further exacerbating urban poverty.
- **Credential Inflation:** Overemphasis on educational qualifications can lead to **situations where individuals are overqualified for available jobs**, leading to underemployment or unemployment.

What are the Government's Initiatives Related to Employment?

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

- [Rozgar Mela](#)
- **Indira Gandhi Urban Employment Guarantee Scheme- Rajasthan.**

Way Forward

- **Reformative Education:** Aligning education with the **current market demands by updating curricula to impart relevant skills, emphasizing vocational training, and promoting lifelong learning** to enhance employability.
- **Startup Ecosystem Support:** Fostering a conducive environment for startups by **providing financial incentives, reducing bureaucratic hurdles, and offering mentorship programs** to encourage entrepreneurship.
- **Pro-Employment Policies:** Formulating and implementing policies that promote job creation, including investment in infrastructure, industry-friendly regulations, and fiscal incentives for businesses generating employment.
- **Promoting Creative Economy:** Investing in cultural industries, arts, and creative sectors, supporting artisans, performers, and craftsmen to generate employment through cultural entrepreneurship.
- **Green Spaces and Urban Agriculture:** Promoting **urban agriculture and green spaces within cities**, creating employment in farming, gardening, and related eco-friendly activities.
- Offering training in sustainable practices, landscaping, and urban forestry to create employment in the green sector.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Disguised unemployment generally means (2013)

- (a) large number of people remain unemployed
- (b) alternative employment is not available
- (c) marginal productivity of labour is zero
- (d) productivity of workers is low

Ans: (c)

Mains

Q. Most of the unemployment in India is structural in nature. Examine the methodology adopted to compute unemployment in the country and suggest improvements. (2023)

Fast Radio Bursts

For Prelims: Fast Radio Bursts (FRBs), Radio Frequency Emissions, Deep Space, Neutron stars, Laser Interferometer Gravitational-wave Observatory (LIGO), Laser Interferometer Space Antenna.

For Mains: Fusion of neutron stars and emission of Fast Radio Bursts (FRBs).

[Source: TH](#)

Why in the News?

Recently, scientists are trying to understand a new aspect of [Fast Radio Bursts \(FRBs\)](#), which are **mysterious radio signals** coming from [distant galaxies](#).

- **Laser Interferometer Space Antenna (LISA)**, which is scheduled to launch in the early 2030s, will aid in studying **FRBs and mysterious radio signals**.

What are Fast Radio Bursts (FRBs)?

- **Fast Radio Bursts (FRBs)** are **powerful and brief bursts** of [radio frequency emissions](#) originating from [deep space](#). These mysterious and intense signals last **only milliseconds** but release an amount of energy comparable to **hundreds of millions of suns**.
- [Astronomers](#) have proposed that [magnetars](#), a type of [neutron star](#) formed from the remnants of **exploding stars**, could be a probable origin for FRBs.
- The **rotation of magnetars is comparatively slower** than that of other neutron stars.
- **Neutron stars** are formed when a massive star collapses. The very central region of the **core collapses, crushing** together every **proton** and **electron** into a neutron. These newly-created neutrons can stop the collapse, leaving behind a neutron star.
- A magnetar possesses a [magnetic field](#) over a **thousand times stronger** than that of other **neutron stars**, and it is a **trillion times** more powerful than **Earth's magnetic field**.

How are Neutron Stars Involved in the Genesis of FRBs?

- The occurrence of **FRBs** might result from the **collision of two neutron stars**.
- The collision could generate two distinct signals: **gravitational waves**, which cause **ripples in space-time**, and **FRBs**.
 - **Neutron star mergers** have been known to be accompanied by **electromagnetic counterparts** in the past.
- The [Laser Interferometer Gravitational-wave Observatory \(LIGO\)](#) in the US and the [Virgo instrument](#) in Italy made a **groundbreaking observation** by **detecting gravitational waves** from the **collision of two neutron stars** for the first time in 2015.

What is Laser Interferometer Space Antenna (LISA)?

- LISA is a planned **space-based gravitational wave observatory** led by the [European Space Agency \(ESA\)](#) and [National Aeronautics and Space Administration \(NASA\)](#).
- **LISA** is designed to **detect and observe gravitational waves** by measuring the minute changes in the distance between **three spacecraft** in a triangular formation, caused by the **passage of gravitational waves** through space.
- This **space-based observatory** is anticipated to provide valuable insights into cosmic events, such as the **mergers of massive black holes** and other astrophysical phenomena, contributing to our understanding of the universe.

What is LIGO?

- **About:**
 - **LIGO** stands for **Laser Interferometer Gravitational-Wave Observatory**.
 - It is a groundbreaking observatory designed to detect and study **gravitational waves**.
 - It is providing a new way to explore the **universe** by observing the **ripples in space-time** caused by events such as the collision of black holes or neutron stars.
- **First Detection of Gravitational Waves:**
 - The **LIGO** in the **US first detected gravitational waves** in **2015**, which led to a **Nobel Prize in Physics in 2017**.
 - These gravitational waves were produced by the **merger of two black holes**, which were about 29 and 36 times the mass of the Sun, 1.3 billion years ago.

- **Black hole mergers** are the source of some of the strongest **gravitational waves**.

Conclusion

Scientists are investigating Fast Radio Bursts (FRBs), brief and powerful signals from distant galaxies. Magnetars, dense remnants of exploded stars, are proposed sources. Neutron star collisions may generate both FRBs and gravitational waves, as observed by LIGO and Virgo. The upcoming Laser Interferometer Space Antenna (LISA) aims to deepen our understanding of cosmic phenomena.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. Recently, scientists observed the merger of giant 'blackholes' billions of light-years away from the Earth. What is the significance of this observation? (2019)

- (a) 'Higgs boson particles' were detected.
- (b) 'Gravitational waves' were detected.
- (c) Possibility of intergalactic space travel through 'wormhole' was confirmed.
- (d) It enabled the scientists to understand 'singularity'

Ans: (b)

Exp:

- Every few minutes a pair of black holes smash into each other. These cataclysms release ripples in the fabric of space time known as gravitational waves.
- Gravitational waves are 'ripples' in space-time caused by some of the most violent and energetic processes in the Universe.
- Albert Einstein predicted the existence of gravitational waves in 1916 in his General Theory of Relativity.
- The strongest gravitational waves are produced by catastrophic events such as colliding black holes, the collapse of supernovae, coalescing neutron stars or white dwarf stars, etc.
- Scientists have yet again detected gravitational waves produced by the merger of two light black holes about a billion light-years away from the Earth.
- It was recorded by Laser Interferometer Gravitational-Wave Observatory (LIGO).
- Therefore, option (b) is the correct answer.

Mains

Q. How does the Juno Mission of NASA help to understand the origin and evolution of the Earth?

Terms of Reference for 16th Finance Commission

For Prelims: [Sixteenth Finance Commission](#), [Consolidated Fund of India](#), [Grants-in-aid](#), [Panchayats and Municipalities](#), [Gross State Domestic Product](#), [Centrally Sponsored Schemes](#), Criteria for Devolution of funds.

For Mains: Major Terms of Reference for 16th Finance Commission, Key Recommendations of 15th Finance Commission.

[Source: TH](#)

Why in News?

Recently, the **Union Cabinet** has given the green light to the **terms of reference (ToR) for the Sixteenth Finance Commission**.

- This commission holds the critical responsibility of recommending the **formula for revenue distribution between the Centre and the States** for the upcoming five-year period starting from **April 1, 2026**.

What are the Major Terms of Reference for 16th Finance Commission?

- **Division of Tax Proceeds:** Recommending the **distribution of taxes between the Union Government and the States** under **Chapter I, Part XII of the Constitution**.
 - This includes the **allocation of shares among the States** from these tax proceeds.
- **Principles for Grants-in-Aid:** Establishing the **principles governing grants-in-aid to the States from the Consolidated Fund of India**.
 - This encompasses determining the amounts to be provided to the States as grants-in-aid, specifically under **Article 275 of the Constitution**, for purposes beyond those outlined in the **provisos to clause (1) of that article**.
- **Enhancing State Funds for Local Bodies:** Identifying measures to enhance the **Consolidated Fund of a State**.
 - This is aimed at **supplementing the resources available to Panchayats and Municipalities within the State**, based on recommendations made by the State's own Finance Commission.
- **Evaluation of Disaster Management Financing:** The Commission **may review the current financing structures related to Disaster Management initiatives**.
 - This involves examining the funds created under the **Disaster Management Act, 2005**, and presenting suitable recommendations for improvements or alterations.

What is the Finance Commission?

- **About:**
 - The Finance Commission in India is a constitutional body established under **Article 280 of the Indian Constitution**.
 - Its primary function is to **recommend the distribution of financial resources** between the central government and the state governments.
 - The **Fifteenth Finance Commission** was constituted on **27th November, 2017**. It made recommendations covering the period of six years commencing on **1st April, 2020** through its Interim and Final Reports.
 - The recommendations of the Fifteenth Finance Commission are valid up to the financial year **2025-26**.
- **Criteria for Devolution:**

Criteria	14 th FC (2015-20)	15 th FC (2020-21)	15 th FC (2021-26)
Income Distance	50.0	45.0	45.0
Area	15.0	15.0	15.0
Population (1971)	17.5	-	-
Population (2011)#	10.0	15.0	15.0
Demographic Performance	-	12.5	12.5
Forest Cover	7.5	-	-
Forest and Ecology	-	10.0	10.0

Tax and fiscal efforts*	-	2.5	2.5
Total	100	100	100

Note

'Population (1971)' was considered only for the 14th Finance Commission, while 'Population (2011)' and 'Tax and fiscal efforts' were introduced by the 15th Finance Commission. The figures represent the weightage in percentage for each criterion during the specified periods.

▪ Key Recommendations of 15th Finance Commission:

- **Share of States in Central Taxes:** The Commission proposed maintaining the **states' share in central taxes at 41% for the 2021-26 period**, a slight reduction from the 42% allocated during 2015-20 by the 14th Finance Commission.
 - This **1% adjustment aims to accommodate the newly formed union territories of Jammu and Kashmir and Ladakh** from the central resources.
- **Fiscal Deficit and Debt Levels:** The Commission recommended that the Centre aims to limit its fiscal deficit to **4% of GDP by 2025-26**.
 - For states, it advised specific fiscal deficit limits as a percentage of **Gross State Domestic Product (GSDP)** for different years within the 2021-26 period.
 - States not fully utilizing the sanctioned borrowing limits in the initial four years (2021-25) can access the remaining amount in subsequent years.
- **Other Recommendations:**
 - **Defense and Internal Security Funding:** The report suggests establishing a **Modernisation Fund for Defence and Internal Security (MFDIS)**, non-lapsable and funded primarily through the Consolidated Fund of India and other sources.
 - **Centrally Sponsored Schemes (CSS):** Recommendations include setting a **threshold for annual CSS allocations, third-party evaluations, transparent funding patterns**, and stable financial allocations to phase out redundant schemes.

Conclusion

With the **ToRs now approved**, the stage is set for the commission to embark on its mandate, contributing decisively to the **financial architecture that underpins India's federal structure**.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. Consider the following: (2023)

1. Demographic performance
2. Forest and ecology
3. Governance reforms
4. Stable government
5. Tax and fiscal efforts

For the horizontal tax devolution, the Fifteenth Finance Commission used how many of the above as criteria other than population area and income distance?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) All five

Ans: (b)

Mains

Q. Discuss the recommendations of the 13th Finance Commission which have been a departure from the previous commissions for strengthening the local government finances. (2013)

Sri Lanka's Debt Crisis and Paris Club

For Prelims: Sri Lanka's Debt Crisis and [Paris Club](#), [IMF \(International Monetary Fund\)](#), Debt Management, [Asia-Pacific](#), Russia's invasion of Ukraine.

For Mains: Sri Lanka's Debt Crisis and Paris Club, Bilateral, regional and global groupings and agreements involving India and/or affecting India's interests.

[Source: TH](#)

Why in News?

Recently, Sri Lanka has reached a preliminary debt restructuring deal with India and the [Paris Club Group](#), paving the way for it to revive a stalled [IMF \(International Monetary Fund\)](#) loan programme.

- It will help Sri Lanka, which defaulted on its debts in 2022, to **secure the next tranche of a USD 3 billion IMF lending package** agreed in March 2023.
- When a country defaults on its debt, it means that the **government is unable to meet its financial obligations** to its creditors. This failure can manifest in various ways and has significant implications.

What is Sri Lanka's Debt Scenario?

- Sri Lanka has foreign debts of about USD 46 bn, the largest share of which is owed to Chinese lenders, with Japan, India and commercial bondholders also large creditors.
- Sri Lanka has yet to reach a deal with the commercial bondholders, which could yet slow down progress on the country's economic recovery.
- Sri Lanka in May 2022 became the first country in the [Asia-Pacific](#) to **default on its debts in two decades**, the result of domestic economic mismanagement and a surge in global inflation following the coronavirus pandemic and **Russia's invasion of Ukraine**.
- A sharp drop in foreign currency reserves led to **shortages of imported food, fuel and medicine**, devastating living standards on the island and triggering mass protests in 2022.

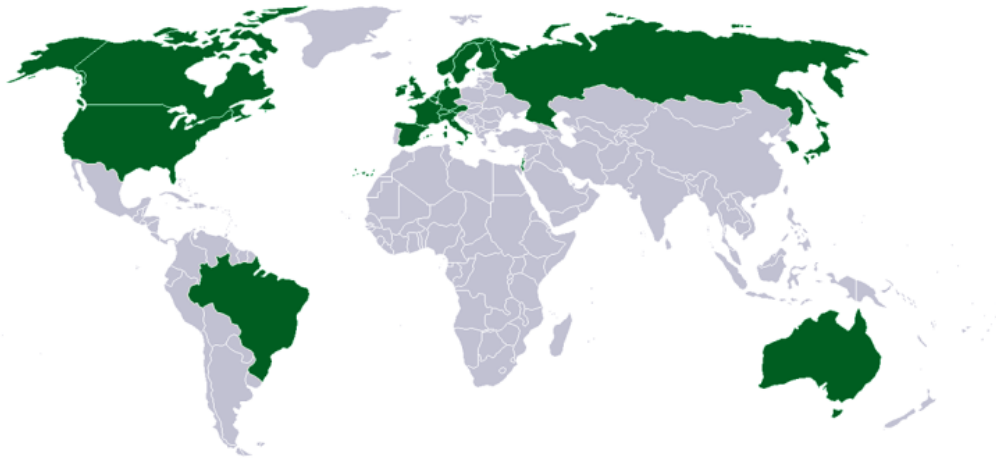
What is the Paris Club?

- **About:**
 - The Paris Club is a group of **mostly western creditor countries that grew from a 1956 meeting** in which Argentina agreed to meet its public creditors in Paris.
 - It describes itself as a forum where official creditors meet to solve payment difficulties faced by debtor countries.
 - Their objective is to find sustainable debt-relief solutions for countries that are unable to repay their bilateral loans.

▀ **Members:**

- The members are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Japan, Netherlands, Norway, Russia, South Korea, Spain, Sweden, Switzerland, the United Kingdom and the United States.
- All 22 are members of the group called [Organisation for Economic Co-operation and Development \(OECD\)](#).

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▀ **Involved in Debt Agreements:**

- According to its official website, Paris Club has reached **478 agreements with 102 different debtor countries**.
- Since 1956, the debt treated in the framework of Paris Club agreements amounts to USD 614 billion.

▀ **Recent Developments:**

- The Paris group countries dominated bilateral lending in the last century, but their **importance has receded over the last two decades** or so with the emergence of China as the world's biggest bilateral lender.
- In Sri Lanka's case, for instance, India, China, and Japan are the **largest bilateral creditors**.
 - **Sri Lanka's debt to China is 52% of its bilateral debt**, 19.5% to Japan, and 12% to India.

How is India Helping Sri Lanka with Debt Management and Economic Development?

▀ **Role in Debt Restructuring:**

- India has played a role in collaborating with the [International Monetary Fund \(IMF\)](#) and creditors to help Sri Lanka in restructuring its debt.
- India became the first country to hand over its letter of support for financing and debt restructuring of Sri Lanka.

▀ **Connectivity and Renewable Energy:**

- Both countries have agreed on a joint vision that emphasises comprehensive connectivity, including People to People connectivity, [renewable energy](#).
- Indian companies are developing renewable energy projects in the northeast of Sri Lanka, indicating growing collaboration in the [energy sector](#).

▀ **Economic and Technology Cooperation Agreement (ETCA):**

- Both countries are exploring the possibility of an [ETCA](#) to integrate their economies and foster development.

▀ **Agreement on a Multi-Project Petroleum Pipeline:**

- Both India and Sri Lanka have agreed to establish a multi-product petroleum pipeline from the southern part of India to Sri Lanka.
- This pipeline aims to ensure an affordable and reliable supply of energy resources to Sri Lanka. Recognition of energy's critical role in economic development and progress is

driving the focus on establishing the petroleum pipeline.

▪ **Adoption of India's UPI:**

- Sri Lanka has also adopted India's UPI service, which is a significant step towards enhancing fintech connectivity between the two countries.
- The [use of rupee for trade settlement](#) is further helping Sri Lanka's economy. These are concrete steps to help Sri Lanka's economic recovery and growth.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q1. "Rapid Financing Instrument" and "Rapid Credit Facility" are related to the provisions of lending by which one of the following? (2022)

- (a) Asian Development Bank
- (b) International Monetary Fund
- (c) United Nations Environment Programme Finance Initiative
- (d) World Bank

Ans: (b)

Exp:

- Rapid Financing Instrument (RFI) provides quick financial assistance, which is available to all member countries facing urgent balance of payments requirements. The RFI was created as part of a broader reform to make IMF financial support more flexible to meet the diverse needs of member states. The RFI replaces the IMF's previous emergency assistance policy and can be used in a wide variety of circumstances.
- The Rapid Credit Facility (RCF) provides immediate balance of payments (BoP) requirements to low-income countries (LICs) with no ex-post condition, where a full economic program is neither necessary nor feasible. RCF was set up as part of a comprehensive reform to make the fund's financial support more flexible and better suited to suit the diverse needs of LIC including times of crisis.
- There are three areas under the RCF: (i) a "regular window" for immediate BoP needs due to a wide range of sources such as household instability, emergencies and fragility (ii) for immediate BoP needs due to sudden, exogenous shocks. an "exogenous shock window" and (iii) a "large natural disaster window" for immediate BoP needs due to natural disasters where the damage is estimated to be equal to or greater than 20% of the member's GDP.

Q2. "Gold Tranche" (Reserve Tranche) refers to (2020)

- (a) a loan system of the World Bank
- (b) one of the operations of a Central Bank
- (c) a credit system granted by WTO to its members
- (d) a credit system granted by IMF to its members

Ans: (d)

Mains

Q1. In respect of India-Sri Lanka relations, discuss how domestic factors influence foreign policy. **(2013)**

Q2. 'India is an age-old friend of Sri Lanka.' Discuss India's role in the recent crisis in Sri Lanka in the light of the preceding statement. **(2022)**

Ethical, Social and Cultural Risks of Climate Engineering

For Prelims: [Climate Engineering](#), [Climate Change](#), [Reflecting Sunlight](#), [Greenhouse Gases](#), [Carbon Dioxide Removal \(CDR\)](#), [Solar Radiation Modification \(SRM\)](#).

For Mains: Fusion of neutron stars and emission of Fast Radio Bursts (FRBs).

Source: DTE

Why in the News?

The [United Nations Educational, Scientific and Cultural Organization \(UNESCO\)](#) in its report on the **Ethics of Climate Engineering** emphasized the importance of including vulnerable, neglected, and **marginalized individuals**, along with women, youth, and indigenous people, as crucial stakeholders in policy decisions regarding the contentious field of [climate engineering](#).

What is Climate Engineering?

- **Climate engineering** refers to the deliberate modification of Earth's climate to counteract or mitigate the effects of [climate change](#).
- This can involve various techniques aimed at either [reflecting sunlight](#) away from the Earth or removing [greenhouse gasses](#) from the atmosphere.
- **Climate engineering techniques** are gaining policy attention due to the current gap between **climate policy targets** and the necessary reductions in atmospheric greenhouse gas concentrations.
- **Climate engineering** is classified into two groups of techniques:
 - **Carbon Dioxide Removal (CDR):**
 - It removes and stores the emitted carbon dioxide from the atmosphere. [CDR](#) involves **five approaches**. This includes:
 - **Direct air capture**
 - **land-use management** through [afforestation / reforestation](#)
 - [Sequestering carbon dioxide \(CO₂\)](#) produced by biomass that may also be used as an energy source increases the uptake of CO₂ by the ocean and enhances natural weathering processes that remove CO₂ from the atmosphere.
 - New **CDR technologies** have performed only about 0.1% of carbon removal around 2.3 million tonnes per year according to a report in the journal Nature.
 - **Solar Radiation Modification (SRM):**
 - **SRM** approaches include increasing the surface reflectivity of the planet
 - Painting structures with reflective paints
 - **Planting crops with high reflectivity**
 - Enhancing the reflectivity of marine clouds
 - Removing **infrared-absorbing clouds**
 - **Injecting aerosols** into the lower stratosphere to mimic the cooling induced by volcanic eruptions and lowering the solar radiation reaching the earth by placing **reflectors** or **shields** in space are some more SRM techniques.

What are the Issues related to Climate Engineering Highlighted in the Report ?

- **Ethical Issues:**
 - **Climate engineering methods** may pose a "**moral hazard**" by giving stakeholders a reason to avoid reducing **fossil fuel** use. A comprehensive approach involves considering these techniques as part of a broader portfolio of climate policies, moving away from the

moral hazard framework.

- **Climate engineering** faces the issue of "**organized irresponsibility**," where uncertainties and combined environmental risks make it challenging to pinpoint specific institutions responsible for assigning blame. This is because all institutions are interconnected and lack clear individual accountability.

▪ **Economical Issues:**

- **Climate engineering** could be pushed by corporations as a favored response to tackling global warming while fostering **business investments** and **economic growth**.
- **Deployment of climate engineering technologies** requires international cooperation among countries with different economic interests. It will be a challenge to tailor these technologies to help vulnerable countries while not endangering others.

▪ **Governance and Regulation Issues:**

- At present, action on **climate change** suffers from a gap between the global approach that it requires and the current nation state-based legal order.
- Climate engineering governance requires a multi-level approach and coordinating with non-state actors. The involvement of such actors can be a source of risk, however, civil society can also play an important role in pressuring institutions to **meet their obligations**, such as through **litigation**.

What are the Recommendations of UNESCO's Report?

- **UNESCO** recommended its Member States to **introduce legislation** that regulates climate action while also considering the **transboundary impact of their decisions** on all human beings and ecosystems.
- Countries should make regional agreements to avoid risks of **unequal spatial distribution of effects**.
- It called for a ban on using **climate engineering techniques** as a weapon (weaponization).
- It added that **political** or **economic** interests should not interfere with **scientific research on climate engineering**.

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. In the context of which of the following do some scientists suggest the use of cirrus cloud thinning technique and the injection of sulphate aerosol into stratosphere? (2019)

- (a) Creating the artificial rains in some regions
- (b) Reducing the frequency and intensity of tropical cyclones
- (c) Reducing the adverse effects of solar wind on the Earth
- (d) Reducing the global warming

Ans: (d)

Peace Agreement Between Government of India and UNLF

For Prelims: United National Liberation Front (UNLF), [Unlawful Activities Prevention Act, 1967](#), [Suspension of Operations \(SoO\) agreement](#), Insurgent Groups, Kuki groups, Inner Line Permit (ILP), [Article 244 \(1\)](#), [Article 244 \(2\)](#).

For Mains: Analysis of Peace Agreement for tackling the [North East Insurgency](#).

[Source: PIB](#)

Why in the News?

Recently, The **Government of India** and **Government of Manipur** signed a **Peace Agreement with United National Liberation Front (UNLF)**, which is oldest valley-based insurgent group of Manipur.

What is the United National Liberation Front (UNLF)?

- The **UNLF** was formed in 1964, and is distinct from the insurgent groups active in the **state's Naga-dominated and Kuki-Zomi dominated hills**.
- The **UNLF** is one of the seven "**Meitei Extremist Organisations**" banned by the Union government under the [Unlawful Activities Prevention Act, 1967](#).
- The **UNLF** has been operating both **within** and outside Indian Territory.
- It is believed that the UNLF initially received training from the **NSCN (IM)**, the largest insurgent group among the Naga factions.
- It operates in all the **valley areas of Manipur** and some **villages** in the **Kuki-Zomi hill districts**.
- It is a banned group It mostly operates from **camps** and **training bases** in **Myanmar's Sagaing Region, Chin State**, and Rakhine State, with support from the **Myanmar military**.

What is the Purpose of the Peace Agreement?

- The **agreement** is anticipated to bring about a **significant boost** in ushering in a new era of peace, particularly in Manipur and the **North East region**.
- This marks the first instance where a **Manipuri armed group** from the valley has chosen to abandon violence, returning to mainstream society while committing to respect the [Constitution of India](#) and abide by the **country's laws**.
- The agreement will not only bring an end to hostilities between **UNLF** and **security forces** which have claimed precious lives on both sides over the last more than half a century but also provide an **opportunity to address** the longstanding concerns of the community.
- The return of the UNLF to the mainstream will also encourage other valley-based armed groups to participate in the peace process.
- A **Peace Monitoring Committee (PMC)** will be constituted to oversee enforcement of the agreed ground rules.

What are the Other Insurgent Groups of Manipur?

- Several other Insurgent groups of Manipur are **Kangleipak Communist Party (KCP)**, **People's Liberation Army (PLA)**, **Kanglei Yawol Kanna Lup (KYKL)**, **People's Revolutionary Party of Kangleipak (PREPAK)**, **National Socialist Council of Nagaland - Khaplang (NSCN-K)**.
- A **trilateral [Suspension of Operations \(SoO\)](#)** agreement was established in 2008 involving the **Central government, the state of Manipur, and insurgent groups** from the [Kuki-Zomi region](#).

What is the Suspension of Operations (SoO) Pact?

- The **SoO agreement** with Kuki was signed in 2008 as a ceasefire agreement between the Indian government and various **Kuki militant groups** operating in the northeastern states of Manipur and Nagaland.
- Under the agreement, the **Kuki militant groups** agreed to stop carrying out violent activities and come to designated camps to be monitored by security forces.
- In return, the Indian government agreed to **suspend its operations** against the Kuki groups.
- The **Joint Monitoring Group (JMG)** oversees the effective implementation of the pact.
- **Security forces**, including state and central forces, cannot launch operations, nor can the

underground groups.

What are the Administrative Arrangements to Tackle with Insurgent Groups?

- **Ministry of Development of North Eastern Region (DoNER):**
 - It is responsible for the matters relating to the **planning, execution and monitoring of development schemes** and projects in the North Eastern Region, to accelerate the **pace of socio-economic development** of the region.
- **Inner Line Permit (ILP):**
 - Restrictions are imposed on the **entry of outsiders** to maintain the original identity of indigenous people of **Mizoram, Nagaland** and Arunachal Pradesh entry of outsiders are not allowed without **Inner Line Permit (ILP)**.
- **Constitutional provision**
 - **Article 244 (1)** provides that provisions of the **5th schedule** shall apply to the **administration or control of scheduled areas and scheduled tribes**.
 - **Article 244 (2)** provides that provisions of the 6th schedule shall apply to the administration or control of schedule areas, in the states of **Assam, Meghalaya, Tripura and Mizoram** to create **Autonomous Districts Councils** in these states.
 - In pursuance of these provisions, the various autonomous districts have been created to contain the demands of various ethnic groups like **Karbi Anglong, Khasi hill district, Chakma district** etc.

Conclusion

The Peace Agreement involving the Central government, Manipur governments and the UNLF is a crucial step toward peace in Manipur and the wider North East region. The historic accord sees the UNLF returning to mainstream, fostering hope for long standing issue resolution. The Peace Monitoring Committee reinforces commitment to enforce ground rules, while similar arrangements with other insurgent groups signal ongoing efforts to address regional complexities and promote development.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Analyze the multidimensional challenges posed by external state and non-state actors, to the internal security of India. Also discuss measures required to be taken to combat these threats. **(2021)**

Delhi High Court Scrutinizes 'Walk with Wildlife' Event in Asola Sanctuary

The **Delhi High Court** has raised concerns regarding the proposed "**Walk with Wildlife**" event by the Delhi government's forest department **scheduled to take place in [Asola Bhatti Wildlife Sanctuary](#)**.

- The questions arose concerning the **lack of a precise count of sanctuary animals**, including **leopards**, prompting the court's skepticism about acquainting people with wildlife without knowing the wildlife numbers.
 - Also, there is a **requirement of demarcation of such places into core and buffer areas**. However, there is no such demarcation in the sanctuary.
- Asola-Bhatti Wildlife Sanctuary covering 32.71 sq km area on the Southern Delhi Ridge of Aravalli hill range on Delhi-Haryana border lies in Southern Delhi as well as northern parts of Faridabad and Gurugram districts of Haryana state.

Read more: [Asola Wildlife Sanctuary](#)

Three Anti-Submarine Warfare Ships for Indian Navy

The [Cochin Shipyard](#) unveiled the **first three of eight Anti-Submarine Warfare (ASW)** shallow water crafts commissioned for the [Indian Navy](#) - **INS Mahe, INS Malvan, and INS Mangrol.**

- These ships are poised to replace the [Abhay class ASW corvettes](#) and excel in anti-submarine operations, coastal defense, mine laying, and sub-surface surveillance.
- They demonstrate a **high-speed capability of 25 knots, an endurance of 1,800 nautical miles**, and are designed to undertake coordinated ASW operations with aircraft while being adept at search and rescue missions.

Read more: [Indian Navy](#)

Accelerated Growth of the Core Sector

- India's [core sectors](#) grew 12.1% in October from a revised uptick of 9.2% in September.
- All **eight sectors clocking positive growth** for only the **third time in 18 months**, and five of them recording a **double-digit surge**.
- The **core sectors** constitute little over 40% of the [Index of Industrial Production \(IIP\)](#).
 - The **Index of Industrial Production (IIP)** is an index that shows the growth rates in different industry groups of the economy in a fixed period of time.
- A rise in **power generation** signals strong economic activity supported by the coal sector. The **Industrial Production (IIP)** growth for October is anticipated to be between 6% and 8%, depending on **consumer goods performance**.
- [Fertilizer production](#) has risen in anticipation of [Rabi crop sowing](#) this month, while the cement industry has experienced growth due to both a **negative base effect** and an upturn in the housing sector.
 - **Base effect** is the effect that choosing a different reference point for a comparison between two data points can have on the result of the comparison.

Read More: [Index of Industrial Production \(IIP\)](#)

40th Coast Guard Commanders' Conference

- Recently, the **Union Defence Minister** inaugurated the **40th Coast Guard Commanders' Conference**.
 - The conference agenda covers vital topics such as **improving [maritime safety and security](#)**, including **search and rescue**, **[pollution response](#)**, **[combating contraband and drug trafficking](#)**, **[ensuring the safety of fishermen and seafarers at sea](#)**, **optimizing coastal security**, **promoting inter-agency coordination**, and **enhancing [Maritime Domain Awareness](#)**.
- **ICG** was established in **1978** by the [Coast Guard Act, 1978](#) as an independent Armed force of India.
 - As the **fourth largest Coast Guard** in the world, it has played a significant role in

securing the Indian coasts and enforcing regulations in the maritime zones of India.

Read more: [Indian Coast Guard](#)

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