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Daily Current Affairs

To The Point

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Table Of Content 29 Jan 2025

1. Is France's Influence in West Africa Coming to an End?
2. Unspent 70,744-Crore Fund for Workers' Welfare
3. Is Poverty in India Being Underestimated
4. India's Rice Exports
5. LID-568: A Black Hole That Defies Astrophysical Norms
6. Tamil Nadu: The Birthplace of the Iron Age

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GS Paper 2 – International Relation

1 Is France's Influence in West Africa Coming to an End?

Context: In recent developments, **Chad**, **Ivory Coast**, and **Senegal** have called for the **withdrawal of French troops** from their territories. This marks a potential turning point in **France's historical influence** over its former colonies in West Africa, raising questions about the future of the region's political landscape.

Why Are These Countries Requesting the Withdrawal?

1. **National Sovereignty: A Call for Autonomy:** Since gaining independence, many **West African countries** have grappled with the heavy presence of **French influence**, particularly through **colonial pacts** such as **'Francafrique'**. France's military footprint, including **Operation Barkhane**, has been prominent in **Senegal** and **Ivory Coast** since 2014, and **Chad's defense pact** has lasted for decades. However, many view this continued military presence as a challenge to their **national sovereignty**, calling for a reevaluation of these longstanding ties.
2. **Public Frustration with French Military Efforts:** Despite **French military involvement** aimed at curbing insurgent groups aligned with **Al-Qaeda** and the **Islamic State** (ISIS), instability in the region has persisted. **Public sentiment** has soured, with increasing frustration toward the **French forces** and their failure to stabilize the situation. This has led to growing **anti-French sentiments** among the local populations.
3. **Shifting Alliances and the Influence of Russia:** Countries in the region, including **Mali** and **Niger**, have begun to seek alternative forms of support, notably from **Russian mercenaries**. These new alliances, characterized by security assistance without the "**baggage**" of **democratic values** associated with Western powers, are seen as a possible shift away from traditional French influence.

Implications for West African Countries:

1. **The End of France's Longstanding Influence:** Should **French troops withdraw**, the resulting **political vacuum** could drastically shift the **power dynamics** in the region. Countries that have long relied on France for military and economic support may now look to forge new **regional or global alliances** to secure their futures.
2. **Continued Instability Despite New Alliances:** While countries like **Mali**, **Niger**, and **Burkina Faso** are turning to **Russian mercenaries**, their success in quelling insurgencies has been limited. **Military-led governments** in these nations, despite their alignment with Russia, have yet to effectively stabilize the region, showing that the solution may not lie in simply replacing one foreign influence with another.
3. **Formation of New Alliances in the Sahel:** With **French departure**, countries like **Chad**, **Senegal**, and **Ivory Coast** could find themselves aligning with the **Alliance of Sahel**—a coalition of **military-led governments** in the region. This could bring about a new **regional bloc** of nations focused on security, though their ability to maintain stability remains uncertain.

Geographic Overview of Key Countries Involved:

- **Chad**: A **landlocked** country bordered by **Libya**, **Sudan**, **Central African Republic**, **Cameroon**, **Nigeria**, and **Niger**. Its capital is **N'Djamena**.

- **Senegal**: Located on the **Atlantic Ocean**, it shares borders with **Mauritania**, **Mali**, **Guinea**, and **Guinea-Bissau**. Its capital is **Dakar**.
- **Ivory Coast (Côte d'Ivoire)**: Situated along the **Gulf of Guinea**, bordered by **Mali**, **Burkina Faso**, **Ghana**, **Liberia**, and **Guinea**.

Conclusion: A New Era for West Africa?

The **request for French troop withdrawals** signals a fundamental shift in **West Africa's geopolitics**. With countries seeking greater autonomy and forming new alliances, the future of **France's influence** in the region hangs in the balance. As local populations demand more control over their affairs, the next chapter in **West African politics** could be defined by shifting allegiances and the rise of new power centers.

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GS Paper 3 – Economy

2 Unspent 70,744-Crore Fund for Workers' Welfare: A Missed Opportunity

Context: In a recent **Right to Information (RTI)** response, the **Union Labour Ministry** revealed a concerning statistic: **State welfare boards** for **building and other construction workers** have not yet utilized a staggering **70,744.16 crore** of the cess collected from employers. These funds, meant for the welfare of construction workers, have remained largely **untapped**.

Understanding the Building and Other Construction Workers (BOCW) Act, 1996

Purpose of the Act:

The **BOCW Act** was designed to regulate the **employment**, **working conditions**, and overall **welfare** of **construction workers**. The law mandates the establishment of **Construction Workers' Welfare Boards** by **State governments**, which are tasked with implementing various welfare initiatives.

Cess Collection for Worker Welfare:

Under the **BOCW Act**, welfare boards are authorized to impose a **cess** ranging from **1% to 2%** of the construction costs incurred by employers. This cess is crucial for funding essential **welfare measures**, including:

- **Temporary accommodation**
- **Drinking water and sanitation**
- **Social security benefits** for workers

Who Can Benefit?

Workers aged between **18 and 60** years, engaged in construction activities for at least **90 days** in the last year, are eligible for registration with **State Welfare Boards** as beneficiaries.

Current State of Cess Collection and Usage

Funds Collected: A Staggering 1.17 Lakh Crore

Since 2005, a total of **1,17,507.22 crore** has been **collected** as cess from construction employers across India. However, a significant portion of these funds remains **unutilized**:

- **67,669.92 crore** has been allocated to workers, but a massive **70,744.16 crore** remains unused.

Key Issues in Implementation

Underutilization of Funds

Despite the vast amounts of cess collected, only a fraction has been put to use, leaving workers without the **statutory benefits** they are entitled to.

Cess Evasion:

There are growing concerns about **cess evasion**, with allegations suggesting that **builders and employers** are underreporting construction costs, resulting in a significant shortfall in collected cess.

- **Example**: In **Maharashtra**, estimates suggest **construction worth 1 lakh crore** annually, yet the reported cess collection is far lower, indicating possible evasion.

Failure to Support Workers During COVID-19

The **COVID-19 lockdowns** in 2020 exposed a glaring flaw in the welfare system, as millions of construction workers were left stranded. The **lack of adequate support** during this crisis highlighted the ineffectiveness of both **State and Central governments** in utilizing the collected funds for the workers' welfare.

Conclusion: Time for Action

With over **70,000 crore** lying unused, it's imperative for **State governments** to act swiftly in utilizing these funds for the benefit of **construction workers**. The funds are meant to provide essential support to workers who have long been neglected, and it's high time they received the welfare benefits they are rightfully owed.

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GS Paper 3 – Economic Growth and Development

3 Is Poverty in India Being Underestimated

Context: In recent months, the **Indian government** released the **2023-24 Household Consumption Expenditure Survey (HCES)**, which indicated a **decline in poverty** levels across both **urban and rural areas**. While the report paints a hopeful picture, **policymakers** and **academics** have raised concerns about **incomparable data**, **data unavailability**, and the very definition of an **adequate consumption basket** used to determine the **poverty line**.

Poverty Estimation in India: The Evolving Methodologies

India has undergone several revisions in how it measures poverty. Over the years, various **committees** have offered new approaches to ensure more accurate estimations:

Y.K. Alagh Committee (1979):

- **Methodology**: Defined the poverty line based on **minimum calorie intake** requirements for both **rural** and **urban areas**.

Lakdawala Committee (1993):

- **Methodology**: Introduced **state-specific poverty lines** and **price indices** to estimate poverty, considering regional disparities.

Tendulkar Committee (2009):

- **Shift in Focus**: Moved beyond **calorie consumption** and broadened its focus to **spending patterns**.
- **Methodology**: Introduced the **Mixed Reference Period (MRP)**, considering both **food** and **non-food** expenditures.

Rangarajan Committee (2014):

- **New Poverty Line**: Proposed higher thresholds for poverty estimation.
- **Methodology**: Modified consumption baskets to better reflect **rising living standards** and the realities of the Indian economy.

Multidimensional Poverty Index (2021):

- **Launched by NITI Aayog**: It moved beyond income-based poverty lines and included **12 indicators** like **access to bank accounts** and **maternal health**.
- **Improvement in Methodology**: The **URP** (Uniform Reference Period) evolved into **MRP** and eventually into **MMRP** to better capture expenditure habits.

Recent Developments: A Shift Towards More Accurate Data

To enhance the **accuracy** of poverty estimations, the **National Sample Survey Office (NSSO)** has started conducting **multiple household sittings**, which allows respondents to recall their expenditures more accurately. This improvement has led to better data **reliability** and has sparked optimism about more informed poverty policies in the future.

Decline in Poverty: A Glimpse into the Latest Statistics

The **2023-24 HCES factsheet** has reported a **sharp decline in poverty**, with estimates showing a reduction of **17-18%** in poverty levels since **2011-12**. Some estimates for **2022-23** put poverty levels at around **10%** using the **Rangarajan line**. This decline is attributed to several factors:

- High **GDP growth**
- Flagship **government programs**
- Improved **public delivery systems**

Key interventions like the **National Food Security Act** have played a pivotal role in ensuring **sustained low poverty levels**.

Urban vs. Rural Poverty: Shifting Dynamics

One of the key findings of the **HCES** is the **narrowing gap** between **rural** and **urban consumption patterns**. Rural areas are showing more **diversified consumption** trends, signaling progress in addressing rural poverty. However, the classification of rural areas is based on **2011 Census data**, which may not fully capture the **urbanization trends**, as many rural areas today are more **urban** or **peri-urban** in nature.

Conclusion: Are the Numbers Truly Reflective of Poverty in India?

While the decline in poverty levels reported by the **2023-24 HCES** is encouraging, there remain concerns about whether **poverty** is being **underestimated** in India. **Data gaps**, **methodology limitations**, and the evolving nature of **urbanization** suggest that a more nuanced approach is required to truly understand the complexities of poverty in India.

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GS Paper 3 – Agriculture and Food Security

4 India's Rice Exports: Resilience Amidst 2024 Export Restrictions

Context: In 2024, **India's rice exports** have shown remarkable resilience despite facing **temporary curbs** earlier in the year. The surge in **premium basmati rice** shipments effectively balanced the drop in **non-basmati rice exports**, allowing India to retain its status as the **world's largest rice exporter**.

India, which accounts for more than **40%** of global rice exports, had imposed **restrictions** on rice shipments in **2023** to address **domestic price rises** and ensure **food security**. After lifting the curbs in **September-October 2024**, exports rebounded, ending the year on a positive note.

Key Highlights of Rice Exports in 2024:

- **Total Exports**: India exported **17.8 million metric tonnes (MMT)** of rice in 2024, slightly lower than **2023's** 17.86 MMT, demonstrating strong but slightly reduced exports.
- **Basmati Rice Exports**: Basmati rice exports soared by **16.3%**, reaching a **record 5.7 MMT**. **Major Buyers**: **Saudi Arabia**, **Iraq**, and the **UAE** contributed significantly to this growth.
- **Non-Basmati Rice Exports**: Exports of **non-basmati rice** declined by **6.9%** to **12.1 MMT**. Countries like **Bangladesh**, **Cameroon**, **Djibouti**, and **Gambia** reduced their imports, primarily due to **high prices**.

Lifting of Export Restrictions: A Turning Point

India lifted most restrictions on both **non-basmati** and **premium basmati rice** in **September-October 2024**, allowing rice exports to recover strongly in the final quarter of the year.

Impact on Global Rice Markets:

- **Global Price Stabilization**: India's continued rice exports helped stabilize **global rice prices**, which had spiked during the restrictions.
- **Reduction of Domestic Surplus**: By exporting more, India was able to reduce its **record-high domestic rice stockpile** from an excellent harvest, helping prevent oversupply in the local market.

India's Strong Domestic Rice Production:

India's **bumper rice harvest** ensured sufficient rice availability for both **domestic needs** and **global markets**. Despite the **temporary curbs**, the government managed to balance **food security** concerns with **export demands**, showcasing its strategic handling of rice exports.

Why Were Export Restrictions Imposed in the First Place?

- **Domestic Food Security**: Restrictions were primarily imposed to ensure enough rice remained in the country for **food security**, especially amidst rising **domestic prices**.
- **Rising Domestic Prices**: The government had to control rising **rice prices** and ensure that domestic availability was prioritized.
- **Monsoon Uncertainty**: The uncertainty surrounding the **monsoon** season also prompted caution in rice exports to ensure adequate stock for the country's needs.

Global and Domestic Significance of India's Rice Export Performance:

- **Global Impact**: India's continued rice shipments helped stabilize **global rice markets**, providing much-needed relief to import-dependent countries, even as rice prices remained high.

- **India's Dominance**: India maintained its **dominance** in the global rice market, with record **basmati shipments** strengthening its ties with important trading partners in the **Middle East**.

Conclusion: India's Resilient Export Story

India's ability to weather export restrictions and maintain strong **rice export performance** in 2024 highlights its resilience in navigating complex global and domestic challenges. The country's proactive policies and its surplus rice production have ensured that it continues to be a key player in **global food security**.

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GS Paper 3 – Science and Technology

5 LID-568: A Black Hole That Defies Astrophysical Norms

Context: A team of international researchers using NASA's **James Webb Space Telescope (JWST)** and the **Chandra X-ray Observatory** has uncovered an extraordinary black hole known as **LID-568**. This discovery challenges established **astrophysical theories** and provides groundbreaking insights into the **formation** and **rapid growth** of **supermassive black holes**.

What is LID-568?

LID-568 is a **low-mass supermassive black hole** that existed just **5 billion years** after the **Big Bang**. Discovered through complementary observations from JWST and Chandra, this black hole is feeding on surrounding matter at a rate that far exceeds the established theoretical limit known as the **Eddington limit**—by nearly **40 times**.

This unusual behavior suggests a **faster growth mechanism** for black holes than previously thought possible, pushing LID-568 into the category of **super-Eddington accretion**.

What is the Eddington Limit?

The **Eddington limit**, named after **Sir Arthur Eddington**, represents the theoretical maximum luminosity a star or accretion disk can achieve. At this limit, the **outward radiation pressure** from the object balances the **inward gravitational force**, preventing the further accretion of matter.

If an object exceeds this limit, it generates excessive **radiation pressure**, which could potentially blow away the outer layers of the star or accretion disk, ensuring a self-regulating mechanism to maintain stability.

Super-Eddington Accretion: A New Frontier

When an object, such as a **black hole**, exceeds the **Eddington limit** and accretes matter at an **unprecedented rate**, it is said to be in a **super-Eddington accretion** phase. In this state, the object emits more **luminosity** than the theoretical Eddington limit, challenging the traditional models of **radiation pressure balance**.

The discovery of **LID-568** demonstrates **super-Eddington accretion** at a level previously thought impossible. At just **1.5 billion years** after the Big Bang, LID-568 was consuming material at over **40 times** the Eddington limit, offering a glimpse into how **supermassive black holes** grew rapidly in the early universe.

Key Concepts of Black Holes:

- **Black Holes**: A black hole is a region in space where gravity is so intense that even light cannot escape. They typically form when massive stars collapse under their own gravity after exhausting their nuclear fuel.
- **Event Horizon**: The **event horizon** marks the boundary of a black hole. Once matter or light crosses this threshold, it cannot escape and is inevitably pulled towards the singularity.
- **Singularity**: At the core of a black hole lies the **singularity**, a point where the gravitational force is infinite, and the laws of physics break down.
- **Accretion Disk**: An **accretion disk** is a disk-like structure formed by gas and dust spiraling into the black hole. The material heats up due to friction, emitting **radiation** that can be detected in **X-rays**.

- **Spaghettification**: As objects approach a black hole, they experience extreme tidal forces that stretch and elongate them, a phenomenon known as **spaghettification**.
- **Supermassive Black Holes**: These black holes, like **Sagittarius A*** at the center of the **Milky Way**, can grow to billions of times the mass of the Sun.

The Role of the Chandra X-ray Observatory:

The **Chandra X-ray Observatory** played a crucial role in identifying **LID-568**, detecting its exceptional brightness in **X-rays**, even though it was invisible in **optical** and **near-infrared wavelengths**. The black hole's remarkable X-ray emissions provided key insights into its behavior and growth patterns.

Why This Discovery Matters:

The discovery of **LID-568** opens up new possibilities in our understanding of black hole growth. It not only challenges the **Eddington limit** but also sheds light on how **supermassive black holes** can grow so rapidly in the early universe. As astrophysics continues to explore the mysteries of black holes, discoveries like LID-568 could revolutionize our understanding of the **cosmic evolution** and the **mechanisms driving black hole formation**.

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GS Paper 1 – Indian Heritage and Culture

6 Tamil Nadu: The Birthplace of the Iron Age – A Groundbreaking Discovery

Context: A **groundbreaking study** has uncovered that the **Iron Age in Tamil Nadu** began as early as **3,345 BCE**, drastically altering the previously understood timeline of iron usage in the region by over **1,000 years**. This new evidence challenges prior historical assumptions and underscores Tamil Nadu's pivotal role in early metallurgical advancements. The study was authored by **K Rajan** (Pondicherry University) and **R Sivanantham** (Tamil Nadu State Department of Archaeology).

Iron Age in India: A Transformative Era

The **Iron Age** in India marked a period of significant advancement, especially in the use of **iron tools and weapons**. These innovations played a vital role in the **growth of agriculture, warfare**, and **social structures**. Traditionally, the Iron Age was believed to have begun around **1500 to 2000 BCE**, but new evidence from **Tamil Nadu** has revealed iron usage as early as **3345 BCE**, pushing the timeline back by more than a millennium.

Technological Breakthroughs: Advancements in Metallurgy

The **Iron Age** was a leap forward in **metallurgy**, following the **Copper-Bronze Age**. Iron smelting required the use of **advanced furnaces** capable of reaching temperatures as high as **1534°C**, showcasing the remarkable technological prowess of the era.

Archaeological Evidence: Key Discoveries in Tamil Nadu

- **North India**: Iron usage in sites like **Hastinapur**, **Kausambi**, and **Ujjain** is linked to the **Painted Grey Ware (PGW)** culture.
- **Central India and Deccan**: Sites like **Nagda**, **Eran**, and **Prakash** reveal evidence of **iron-bearing Black and Red Ware (BRW)**.
- **South India**: Iron artifacts date back to the **Neolithic** and **Megalithic phases**, indicating early iron use in Tamil Nadu.

Iron Age's Role in Agriculture and Urbanization:

Iron tools, including **axes** and **ploughs**, were essential in clearing forests and expanding agricultural activities. This facilitated the **second urbanization** in the **Ganga valley (800-500 BCE)**, bringing about **increased agricultural productivity** and **urban growth**.

Social and Economic Impact of the Iron Age:

The spread of **iron technology** enabled **forest clearance**, enhanced **agriculture**, and led to urbanization, resulting in **socio-economic stratification**. This era also saw the rise of **chiefdoms**, **states**, and the formation of **trading networks**, laying the foundation for the formation of the **Mauryan Empire** and the integration of diverse regions.

Key Findings of the Study: Revising the Iron Age Timeline

The report, **'Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu'**, offers conclusive evidence that **iron technology** in Tamil Nadu dates back to as early as **3345 BCE**. Using **Accelerator Mass Spectrometry (AMS)** and **Optically Stimulated Luminescence (OSL)** methods, the study redefines the global history of **iron metallurgy**.

Archaeological Sites Studied: Confirming Early Metallurgical Practices

- **Sivagalai**: Charcoal and potsherd samples date iron technology to **2953–3345 BCE**, with a paddy sample from a burial urn dated to **1155 BCE**.
- **Mayiladumparai**: Samples from this site, dating to **2172 BCE**, surpass earlier benchmarks for the region.
- **Kilnamandi**: The discovery of a **sarcophagus burial** dating to **1692 BCE** is the earliest of its kind in Tamil Nadu.

Tamil Nadu: A Leader in Early Metallurgy

This study positions **Tamil Nadu** as a pioneer in **early metallurgy**, with evidence of **smelted iron** dating back to the **middle of the 3rd millennium BCE**. The research suggests that the **Copper Age** in **North India** and the **Iron Age** in **South India** occurred simultaneously, reflecting distinct but parallel cultural trajectories.

Advanced Iron-Smelling Techniques in Tamil Nadu:

Archaeologists identified three distinct iron-smelting furnaces at:

- **Kodumanal**: Circular furnaces that could reach **1300°C**, enough to produce **sponge iron**.
- **Chettipalayam** and **Perungalur**: These sites demonstrated further innovative **smelting techniques**, highlighting Tamil Nadu's sophisticated knowledge of **pyro-technology**.

Significance of the Study: A New Chapter in Indian Archaeology

- **Iron Age Timeline Revised**: The discovery of **radiometric data** from **Sivagalai** places the use of iron in Tamil Nadu as early as **3345 BCE**, making it the earliest evidence of iron technology globally.
- **Global Implications**: This finding challenges the widely accepted **Hittite Empire (1300 BCE)** as the birthplace of the Iron Age.
- **A Turning Point in Archaeology**: This discovery marks a monumental shift in the history of **Indian archaeology**, positioning Tamil Nadu at the forefront of **global metallurgical innovation**.

This **groundbreaking study** not only rewrites the history of the **Iron Age** in India but also elevates Tamil Nadu as a key player in the **evolution of metallurgy**, offering new insights into the technological advancements of ancient civilizations.