TATHASTU
Institute of Civil Services

DAILY CURRENT AFFAIRS

25th & 26th December, 2023

53/1, Upper Ground Floor, Bada Bazar Road, Old Rajinder Nagar, New Delhi -110060
www.tathastuics.com 9560300770, 9560300554 enquiry@tathastuics.com

SANITATION IN INDIA

SOURCE: THE HINDU

WHY IN NEWS?

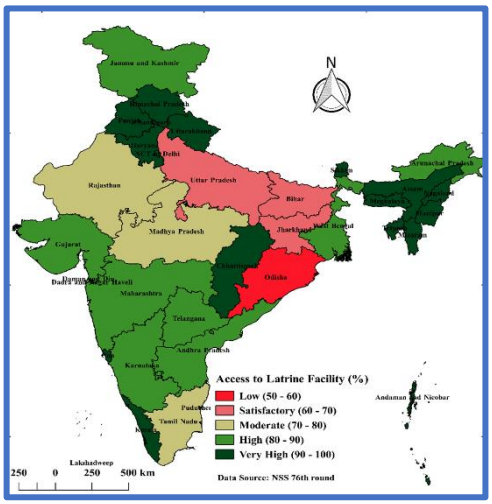
- *India, grappling with **sanitation challenges,** underscores the **critical importance of effective sanitation systems**. The discussion **delves into the intricacies of rural and urban sanitation**, highlighting various systems **like twin pits, septic tanks, and sewer networks**.*
- *The emphasis on **faecal sludge management (FSM)** through **Faecal Sludge Treatment Plants (FSTPs)** and **Sewage Treatment Plants (STPs)** becomes pertinent.*
- *As sanitation remains a crucial aspect of **public health and environmental conservation**, the need for well-designed, universally accessible sanitation services is underscored.*
- *The ongoing efforts to address challenges and **enhance sanitation practices** contribute to the **broader conversation on sustainable water management** and health in India.*

SANITATION IN INDIA:

- **Introduction:**
  - ✓ Sanitation, encompassing **the safe disposal of human waste** and the **maintenance of hygienic conditions,** is a critical aspect of **public health and environmental well-being.**
  - ✓ **At the recent G20 summit**, global leaders reaffirmed their **commitment to addressing climate change,** recognizing its **impact on vulnerable nations like India**.
  - ✓ India's extensive coastline makes it **highly susceptible to rising sea levels, floods, and droughts, affecting marginalized communities in coastal areas.**
  - ✓ Extreme climate events **damage toilets, water supplies, and sewage infrastructure**, affecting water quality and **causing sewage spillage**.
  - ✓ Adverse health effects, especially in **slum settlements, are a consequence**.

Background of Sanitation in India:

- **Rural Sanitation Programs:**
  - ✓ **Initiated in 1954**, with a focus on **improving rural life and providing dignity to women**.
  - ✓ The 1981 Census **revealed only 1% rural sanitation coverage**.
  - ✓ The **Total Sanitation Campaign (TSC)** from 1999 emphasized a demand-driven approach.
- **Nirmal Gram Puraskars and NBA:**
  - ✓ Nirmal Gram Puraskars recognized **achievements in rural sanitation**.
  - ✓ The **Nirmal Bharat Abhiyan (NBA) succeeded TSC in 2012**, aiming for comprehensive rural sanitation.



- **Swachh Bharat Mission:**
  - ✓ **Launched in 2014** to achieve **universal sanitation coverage by 2019.**
  - ✓ ***Two sub-missions:*** Swachh Bharat Mission (Gramin) and Swachh Bharat Mission (Urban).
  - ✓ Focus on **Solid and Liquid Waste Management** and **making Gram Panchayats Open Defecation Free.**

OBJECTIVES & IMPORTANCE OF SANITATION:

- **Sanitation Coverage Acceleration:**
  - ✓ Accelerate sanitation coverage to achieve **Swachh Bharat by October 2, 2019**.
- **Community Motivation:**
  - ✓ **Motivate communities and Panchayati Raj Institutions** for sustainable sanitation practices through awareness and education.
- **Technology Adoption:**
  - ✓ **Encourage cost-effective** and **eco-friendly sanitation** technologies.
- **Community-Managed Systems:**
  - ✓ Develop community-managed sanitation systems, **focusing on scientific Solid & Liquid Waste Management.**

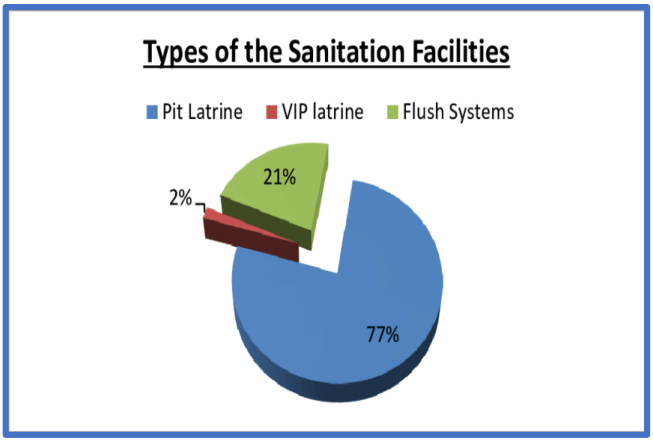
- **Gender and Social Inclusion:**
  - ✓ **Create a positive impact on gender and promote social inclusion** through improved sanitation, especially in marginalized communities.
- **Health Impact:**
  - ✓ Poor sanitation is a **primary cause of deadly diseases**, especially **among children under five**.
  - ✓ Contamination of water sources **leads to various diseases like diarrhea, cholera, trachoma, and malaria.**
  - ✓ **Exposure to human waste** can contain millions of **viruses, bacteria, and parasites**.
- **Environmental Impact:**
  - ✓ **Inadequate sanitation and waste management** directly impact the environment.
  - ✓ Untreated sewage affects **coastal and marine ecosystems**, contaminates soil and air, posing health risks.
- **Economic Impact:**
  - ✓ Absence of toilets and poor sanitation costs **India 6.4% of its GDP (2006).**
  - ✓ Economic impact includes health, education, access time, and tourism**, estimated at USD 38.5 billion annually.**

TYPES OF SANITATION SYSTEMS:

On-site Sanitation Systems (OSS):

- **Rural and Spacious Urban Areas:**
  - ✓ ***Twin Pits or Septic Tanks:***
    - **Collection and storage** structures connected **below ground to toilets.**
    - Other OSS types **include bio-digester toilets**, **bio-tanks, and urine diversion dry toilets**.
    - Passive treatment of used **water with disposal into the surrounding soil.**
- **Twin Pits:**
  - ✓ Two pits separated by **at least one meter.**

- ✓ Porous walls facilitate liquid percolation into **the ground while solids degrade** at the pit bottom.
- ✓ **Operational cycle** involves alternating pit use.
- ✓ After one pit reaches capacity, it remains unused for two years until contents are dry, pathogen-free, and safe for reuse.



➢ **Septic Tanks:**
- ✓ Watertight tanks where **solids settle at the bottom**, and **scum (oil and grease) floats to the top**.
- ✓ Clear liquid disposal into the surrounding soil through pits or longer, shallower trenches.
- ✓ Periodic removal of **accumulated faecal sludge and scum using trucks with vacuum pumps**.

➢ **Sewer Systems:**
- ✓ **Densely Populated Urban Areas:**
- ✓ **Underground network of pipes (sewers) collect** and convey used **water to treatment facilities**.
- ✓ Pipes transport water from toilets, bathrooms, and kitchens to treatment facilities through gravity or pumps.
- ✓ Sewers equipped with **machine-holes for maintenance and blockage removal**.

➢ **Sewage Treatment Plants (STPs):**
- ✓ Treatment of sewage from sewers.
- ✓ Various processes involve **physical, biological, and chemical methods** to remove pollutants.
- ✓ Effluent treatment facilitates **safe disposal or reuse of treated water**.

CHALLENGES OF SANITATION IN INDIA: [*Source:* DTE]

➢ **Claimed Success vs. Hard Data:**
- ✓ Despite the government's **claim of Open Defecation Free (ODF) status**, hard data from **NFHS-5 suggests ongoing challenges.**
- ✓ One in five households still practices **open defecation, and 19.4% of the population lacks toilet access.**

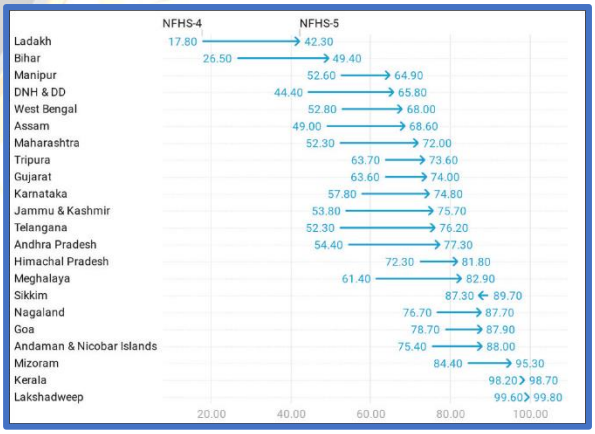


Figure 1: Percentage of Population Living in Households that Use Improved Sanitation

➢ **Caste and Socio-economic Exclusion:**
- ✓ Exclusion of **caste and socio-economic factors in policy design** contributes to the gap between government claims and ground reality.
- ✓ Caste-based discrimination, especially against **Dalits, results in 28.8% of rural Dalits lacking toilet access.**

➢ **Resource Diversion and Impact on Marginalized Communities:**
- ✓ Haste in achieving ODF status diverts resources**, impacting marginalized communities disproportionately.**
- ✓ Coercive tactics, including **withholding benefits, fines, and threats**, are used on lower castes to attain ODF status.

➢ **Villager's Role and Financial Burden:**

- ✓ **Villagers bear a financial burden**, constructing **toilets with their savings**, awaiting government subsidies.
- ✓ **Failure to build latrines results in berating, linking** the development narrative to individual contributions.

➢ **Access to Waste Treatment Facilities:**
- ✓ **Limited access to waste treatment** facilities poses a significant challenge.
- ✓ **Manual scavenging is required for pit latrines and septic tanks** due to the **absence of water and centralized sewage.**

➢ **Inadequate Waste Treatment Infrastructure:**
- ✓ **Lower castes, coerced into latrine construction, face challenges** without proper waste treatment infrastructure.
- ✓ **Lack of sewer connections leads to manual scavenging**, risking dignity and health, especially for Dalits.

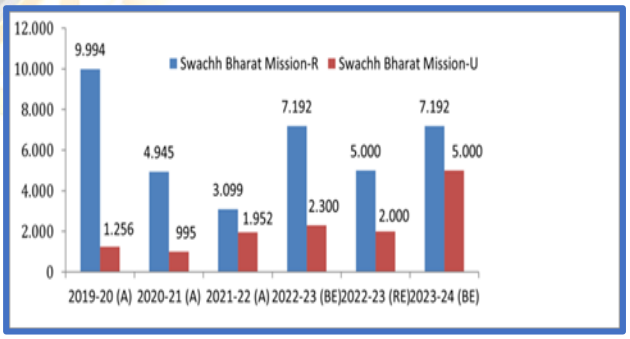
➢ **Need for Inclusive Policy Design:**
- ✓ The **singular focus on toilet construction neglects caste and socio-economic determinants**.
- ✓ Inclusion of these factors in policy design and implementation is crucial to address the root causes of open defecation.

➢ **Continued Manual Scavenging Risk:**
- ✓ In the **absence of proper waste treatment,** manual scavenging persists, **posing health risks** and perpetuating social inequalities.
- ✓ **Proper waste treatment infrastructure** is essential to eliminate manual scavenging practices.

➢ **Divergence from Sustainable Development Goals:**
- ✓ The challenges **highlight a gap in meeting Sustainable Development Goal 6.2**, emphasizing equitable access to sanitation.
- ✓ Addressing these challenges is essential for **achieving holistic and sustainable sanitation outcomes.**

GOVERNMENT INITIATIVES: KEY ACHIEVEMENTS [*Source:* PIB]

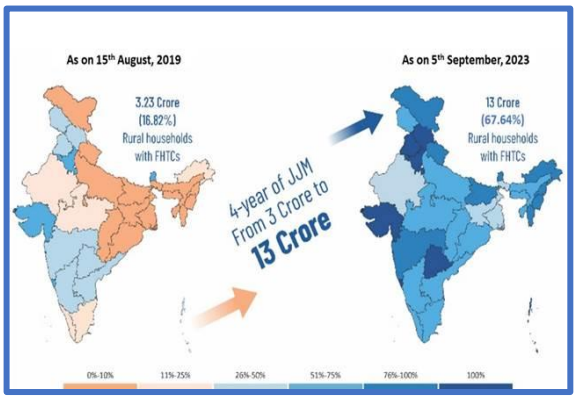
➢ **Swachh Bharat Mission Gramin (SBM-G):**
- ✓ **Achieved a major milestone** with **50% of villages declaring ODF Plus status**.
- ✓ **ODF Plus includes sustained ODF status** along with **solid or liquid waste management systems**.
- ✓ **Over 2.96 lakh villages declared ODF Plus**, contributing to **SBM-G Phase II goals by 2024-25.**



- ✓ Top-performing states include ***Telangana, Karnataka, Tamil Nadu, Uttar Pradesh, Goa, Andaman & Nicobar Islands, Dadra Nagar Havelli & Daman Diu, and Lakshadweep***.

➢ **Components of SBM-G Phase II:**
- ✓ Focus on sustaining ODF status, solid and liquid waste management, **plastic waste management, faecal sludge management, GOBARdhan,** and information education and communication /behavior change.
- ✓ SBM-G instrumental in **improving health, well-being**, and cleanliness across the country.
- ✓ SBM-G serves as a **shining example of successful sanitation and hygiene improvement** when there is concerted effort at various levels.
- ✓ Acknowledges and applauds the **contribution of villages, Gram Panchayats, Districts, and States/UTs** in achieving this significant milestone.

- **Financial Allocations:**
  - ✓ **Between 2014-15 and 2021-22**, the Central Government **allocated INR 83,938 crore to SBM-G**.
  - ✓ **Allocation for 2023-24 is Rs. 52,137 Crore**.
  - ✓ **Additional funds from the 15th Finance Commission** are also allocated for sanitation.



- **SBM-G Impact Areas:**
  - ✓ ***Plastic Waste Management:*** **831 units and 1,19,449 waste collection** & segregation sheds set up.
  - ✓ ***Bio-Gas/CBG Plants:*** 683 functional plants **established across 206 districts**.
  - ✓ ***Community Compost Pits:*** 3,47,094 constructed for **bio-degradable waste management.**
  - ✓ ***Soak Pits for Grey Water:*** Approximately **22 lakh soak pits constructed** to manage **grey water.**
  - ✓ ***Faecal Sludge Management:*** 591 functional **Faecal Sludge Treatment Plants (FSTPs)** are in operation.
- **GOBARdhan Scheme:**
  - ✓ A **'waste to wealth' initiative** focusing on biodegradable waste recovery and **creating clean & green villages.**
  - ✓ **683 Functional Bio-Gas/CBG Plants set up**, converting waste into bio-gas and bio-slurry.
  - ✓ GOBARdhan aligns with the **circular economy and Mission LiFE initiatives** of the Government of India.

- **Sujalam Campaign:**
  - ✓ Undertaken for **Grey Water Management**, addressing **wastewater from household chores**.
  - ✓ **Approximately 2.2 million soak pits (community & household pits)** constructed for effective grey water treatment.
  - ✓ **Sujalam 3.0 launched** for holistic and convergent Greywater Management.
- **Sanitation Impact on Economy and Environment:**
  - ✓ Reduction in GHG emissions, **forex savings from crude oil reduction**, employment opportunities, and economic savings from improved sanitation and health conditions.
- **Other Government Initiatives**:
  - ✓ **Swachhata Pakhwada, Namami Gange**, and the **GOBARdhan scheme contribute to broader cleanliness and waste management** goals in India.

WAY FORWARD:

*In 2019, India celebrated **the achievement of Open Defecation Free (ODF) status**, but recent data from the **National Family and Health Survey (NFHS-5) challenges these claims**. Open defecation persists in **one in five households, revealing a gap between official narratives and ground realities**. To move forward and truly improve sanitation outcomes, a comprehensive and inclusive approach is essential:*

- **Inclusive Sanitation Coverage:**
  - ✓ Recognize and prioritize marginalized populations, **including female-headed households**, landless people, **migrant laborers, and disabled individuals**, who still lack access to toilets.
  - ✓ Ensure that existing toilets are accessible and meet the specific needs of diverse communities.
- **Data Disaggregation and Innovation:**

- ✓ **Collect disaggregated sanitation coverage data**, especially in **public facilities**, to identify and **address gaps among disadvantaged sections**.
- ✓ Innovate data collection methods to cover missed populations and **accurately assess progress.**

- **Beyond Toilet Construction:**
  - ✓ Learn from past sanitation programs like the Central Rural Sanitation Programme and Total Sanitation Campaign, emphasizing that toilet construction alone does not guarantee usage.
  - ✓ **Focus on holistic behaviour change toward toilet use** through effective communication campaigns.
- **Political Leadership and Monitoring:**
  - ✓ Capitalize on **political support to drive sanitation initiatives**.
  - ✓ Strengthen monitoring mechanisms, **learn from past failures, and ensure effective measurement of success.**
- **Behavioral Change through Education:**
  - ✓ Emphasize the adverse health outcomes **resulting from unsafe sanitation practices.**
  - ✓ **Utilize educational institutions, child-care centers**, and hospitals to promote behavioral changes in sanitation practices.
- **Cultural Sensitivity and Awareness:**
  - ✓ **Screen and promote culturally relevant media**, such as movies like **"Toilet: Ek Prem Katha," to raise awareness about the necessity of toilets.**
  - ✓ **Engage school teachers and local leaders** as catalysts in spreading awareness and encouraging behavioral changes.
- **Continued Government Focus:**
  - ✓ Sustain the momentum of the **Swachh Bharat Mission (G) Phase II (2020-2025)** by transforming **villages from ODF to ODF Plus.**
  - ✓ Ensure **effective management of liquid and solid waste** to improve overall cleanliness in rural areas.
- **Independent Monitoring and Evaluation:**
  - ✓ Implement an independent, credible, and **robust monitoring tool to accurately measure sanitation progress.**
  - ✓ Address reasons for **non-usage of toilets and continually refine strategies** to meet sanitation goals and ensure well-being.

RANSOMWARE ATTACKS ON INDIAN IT FIRMS

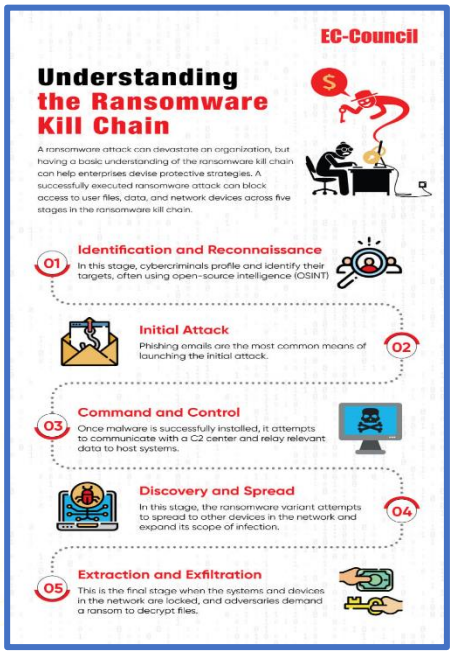
SOURCE: THE HINDU

WHY IN NEWS?

- *On December 20, **HCL Technologies** reported a **ransomware incident within a confined cloud environment**.*
- *The attack had **no observable impact on the broader HCL Tech network**, but it **influenced stock market** perceptions, leading to a **decline in share prices**.*

UNDERSTANDING RANSOMWARE:

- **About Ransomware:**
  - ✓ Ransomware is **a malware designed to deny a user or organization access to files** on their computer.
  - ✓ By encrypting these files and **demanding a ransom payment for the decryption key, cyberattackers place organizations** in a position where **paying the ransom is the easiest** and **cheapest way to regain access** to their files.
  - ✓ Some variants have added additional functionality – **such as data theft** – to provide further incentive for ransomware victims to pay the ransom.



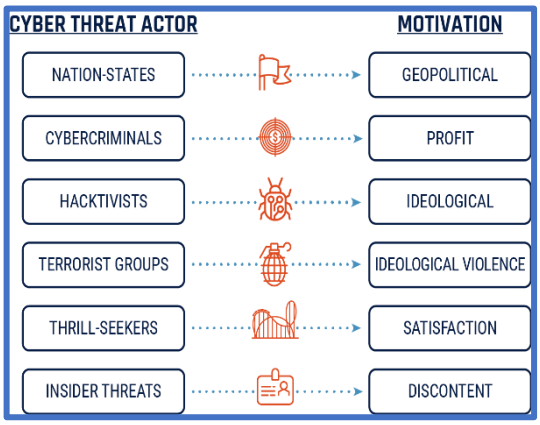
- **Ransomware Attack Explained:**
  - ✓ A ransomware attack involves **locking and encrypting crucial data**, compelling victims to make a payment to regain access.
  - ✓ Exploiting vulnerabilities in **human, system, network, and software aspects**, these attacks target various devices.
- **Examples of Ransomware Attacks:**
  - ✓ ***WannaCry:*** Exploited Windows **SMB protocol vulnerability**, affecting 230,000 computers in 150 **countries in 2017.**
  - ✓ ***Cerber:*** Operates as **ransomware-as-a-service (RaaS),** encrypting files and **displaying ransom notes on desktops.**
  - ✓ ***Locky:*** **Encrypts 160 file types**, primarily **impacting files used by designers, engineers, and testers**.
  - ✓ ***Cryptolocker:*** **Emerged in 2017**, infecting over 500,000 computers, **encrypting local and network drive files.**
  - ✓ ***NotPetya and Petya:*** **Target Windows machines**, encrypt an entire hard drive, and spread using various mechanisms.
  - ✓ ***Ryuk:*** **Spreads through phishing or drive-by downloads**, serves as a basis for an **Advanced Persistent Threat (APT).**
  - ✓ ***GrandCrab:*** **Released in 2018**, encrypts files and **demands ransom**, used in extortion attacks.
  - ✓ ***LockBit*:** It have **executed over 1,400 attacks against victims** in the United States in June 2023 and around the world, **issuing over $100 million** in ransom demands.

WHY IT ORGANIZATIONS ARE TARGETED BY THREAT ACTORS:

- **Value of Data:**

  Threat actors target organizations with valuable data.
  Higher data value increases the **likelihood of ransom payment**.

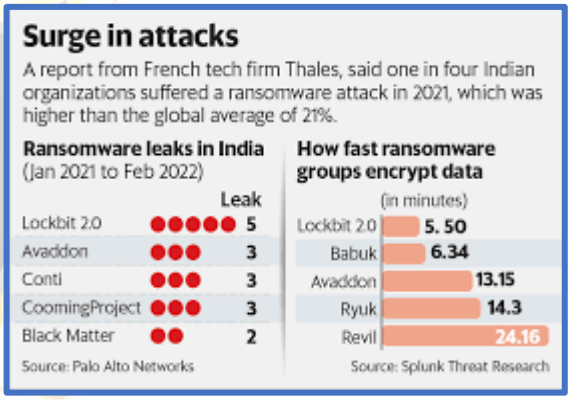
- **Intellectual Property at Risk:**
  - ✓ IT organizations and software vendors **possess sensitive intellectual property**.
  - ✓ Leaked IP can devalue the company, **replicate software, and threaten revenue**.
- **Cloud Security and Data Solutions:**
  - ✓ **IT firms offering cloud security and data solutions** manage large data repositories.
  - ✓ Successful attacks can **open channels to target supply chains**, pressuring ransom payment.



- **Diverse Data Holdings:**
  - ✓ Data held includes **personally identifiable client information**, IP, access credentials, and financial data.
  - ✓ Such data is leveraged for **launching additional attacks**.
- **Early Adopters of Technology:**
  - ✓ IT organizations **pioneer new technologies and advocate open architecture**.
  - ✓ Early adoption may lack the **highest levels of protection, making them attractive targets.**

SIGNIFICANCE OF RANSOMWARE THREATS IN INDIA:

- **Escalating Threat Landscape:**
  - ✓ Ransomware attacks pose a **growing concern for Indian organizations**, with an increasing frequency of incidents.
  - ✓ A study by **Sophos in 2023 revealed a significant rise**, indicating that **73% of organizations reported falling victim to ransomware attacks, compared to 57% in the previous year.**

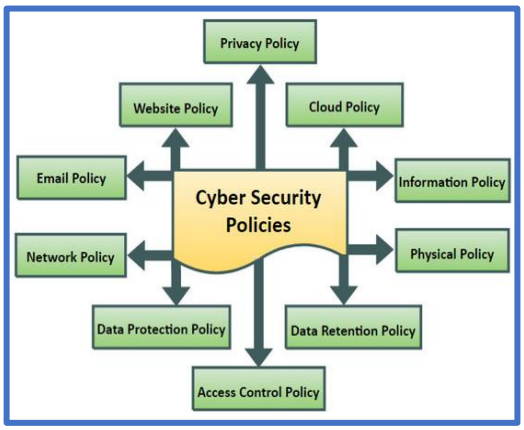


- **Alarming Success Rates**:
  - ✓ Among the affected organizations, **77% reported that attackers successfully encrypted their data**.
  - ✓ This high success rate indicates the efficacy of ransomware tactics in **infiltrating and compromising critical data systems.**
- **Shifting Payment Dynamics:**
  - ✓ The study noted a noteworthy **shift in the payment dynamics, with 44% of organizations** opting to pay the ransom for data retrieval—a **decrease from the previous year's 78%.**
  - ✓ Despite this decline, **companies that paid the ransom experienced a doubled cost** of recovery for their data compared to those relying on backups.
- **CERT-In's Ransomware Report:**
  - ✓ **India's Computer Emergency Response Team (CERT-In)** reported a **substantial 51% increase in ransomware incidents** during the **first half of 2022**.
  - ✓ The majority of these attacks **targeted crucial sectors such as data centers**, Information Technology (IT), and **Technology-enabled Services (TeS),** posing a significant **threat to critical infrastructure.**

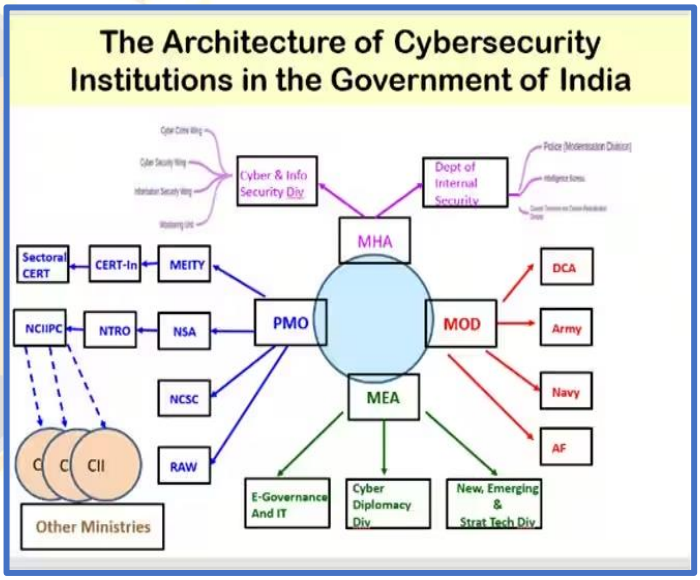
KEY CYBERSECURITY LAWS IN INDIA:

- **Information Technology Act, 2000:**
  - ✓ Enacted to **regulate electronic transactions** and define **cybercrimes and penalties**.

- ✓ **Establishes an adjudicating mechanism** for resolving **disputes related to cybercrimes**.



- ➢ **Payment and Settlement Systems Act, 2007:**
  - ✓ Governs **electronic payments and mandates security** requirements for payment systems.
  - ✓ **Requires payment system operators** to maintain robust security systems to prevent unauthorized access to customer information.
- ➢ **Reserve Bank of India Guidelines:**
  - ✓ **Issued by RBI to banks and financial institutions** to ensure secure online transactions.
  - ✓ Mandates security measures like **two-factor authentication**, encryption, and firewalls.
- ➢ **Information Technology Rules, 2011:**
  - ✓ Requires companies to **implement reasonable security practices** for protecting sensitive personal information.
  - ✓ **Applies to entities handling financial information, health records, and biometric data.**
- ➢ **National Cyber Security Policy, 2013:**
  - ✓ Outlines the **government's approach to securing cyberspace**.
  - ✓ Establishes the **National Critical Information Infrastructure Protection Centre** and promotes cybersecurity awareness and education.
- ➢ **Cyber Appellate Tribunal:**
  - ✓ Hears appeals against decisions under the **Information Technology Act of 2000**.
  - ✓ Empowered to hear **appeals related to cybercrimes**, including orders on compensation and damages.



Additional Cybersecurity Laws in India:

- ➢ **Companies Act (2013):**
  - ✓ Addresses **regulatory compliance**, **e-discovery, cyber forensics**, and **cybersecurity diligence**.
  - ✓ Defines responsibilities of company directors concerning cybersecurity obligations.
- ➢ **NIST Compliance - Cybersecurity Framework (NCFS):**
  - ✓ Authorized by the **National Institute of Standards and Technology (NIST).**
  - ✓ Contains guidelines, standards, and best practices for **addressing cybersecurity risks responsibly**.

STEPS TAKEN TO DEAL WITH CYBER CRIME AND CYBER SECURITY:

- ➢ **Online Reporting Portal:**
  - ✓ **Launch of www.cybercrime.gov.in for reporting cybercrimes**, with a focus on offenses like child pornography and explicit content.
- ➢ **Indian Cyber Crime Coordination Centre (I4C):**
  - ✓ Implementation of the **I4C scheme to comprehensively address national-level cybercrime** issues.
- ➢ **Incident Reporting Mandate:**

- ✓ Mandatory reporting of cybersecurity incidents by organizations providing **digital services to CERT-In.**

- **Cyber Swachhta Kendra:**
  - ✓ Establishment of a **centre for botnet cleaning and malware analysis**, providing detection tools and free programs for malware removal.
- **Audit of Government Websites:**
  - ✓ Provision for **pre-hosting and periodic audits** of government websites and applications.
- **Training Programs:**
  - ✓ Conducting training programs for administrators and **Chief Information Security Officers (CISOs)** to enhance IT infrastructure security and mitigate cyber-attacks.

PRELIMS POINTERS:

TOPIC	DISCRIPTION
DISINVESTMENT IN INDIA	**WHY IN NEWS?** ❖ *The **disinvestment target** for the current fiscal year is **expected to be missed**.* ❖ ***Key privatization plans for entities like BPCL, SCI, and CONCOR** are on hold, and analysts **predict meaningful privatization post** the upcoming general elections in April/May.* **DISINVESTMENT OVERVIEW** ❖ **Definition:** ☛ Disinvestment involves **the government selling its stake in public sector enterprises**, either through **stock exchanges or direct sales**, to strategic or financial buyers. ❖ **Utilization:** ☛ Proceeds from **disinvestment fund social projects**, **infrastructure,** and reduce the **government's fiscal deficit**. **DISINVESTMENT APPROACHES** ❖ **Minority Disinvestment:** ☛ Government retains over 51%, ensuring management control. ❖ **Majority Divestment:** ☛ Government surrenders control but retains some stake. ❖ **Complete Privatisation:** ☛ 100% control transferred to the buyer.  **DISINVESTMENT PROCESS IN INDIA:** ❖ **Conducted by DIPAM:** ☛ Department of Investment and Public Asset Management manages the government's investments and oversees disinvestment. ❖ **National Investment Fund (NIF):** ☛ Constituted in 2005 to channelize disinvestment proceeds. **RECENT DISINVESTMENT PERFORMANCE:** ❖ **Successes:** ☛ **Met or exceeded targets in 2017-18 and 2018-19**, earning **over ₹1 lakh crore in those years.** ❖ **Challenges in 2022-23:** ☛ Falling short of target, **realizing ₹31,106 crore to date**, with a significant portion **from LIC's IPO.** ❖ **Disinvestment Plan in 2023-24:** ☛ ***Limited Additions***: **No new companies added**; focus on already-announced privatizations, ***including IDBI Bank, SCI, Concor, NMDC Steel Ltd, BEML, HLL Lifecare.***

Cheetah's Return to Kuno National Park

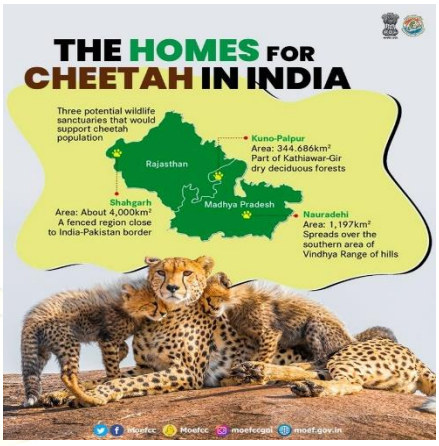
WHY IN NEWS?

- ***Cheetah named Agni**, released into the **wild with another named Vayu** in **Kuno National Park**, strayed into Baran district, Rajasthan.*
- *Tranquilization and Return: **Agni was tranquilized and safely brought back** to Kuno National Park from Baran district.*

CHEETAH RELEASE BACKGROUND:

- **Release Location:**
  - **Agni and Vayu** released in **Parond forest range**, part of Ahera tourism zone in Kuno National Park.
- **Origin of Cheetahs:**
  - **Eight cheetahs from Namibia arrived in September 2022,** followed by **12 from South Africa in February**. **Four cubs born in March**.
  - Since March, nine cheetahs, **including three cubs, have died;** 15 remained in special enclosures (bomas) since August.

ABOUT KUNO PALPUR NATIONAL PARK



- **Location:**
  - Situated in **Sheopur district**, **Madhya Pradesh,** Central India.
  - Proximity to the **Vindhyan Hills.**
- **Geographical Details:**
  - Spans an **area of 748 sq. km**.
  - Part of the **larger Kuno Wildlife Division.**
  - Originally designated as a **wildlife sanctuary, upgraded to a national park in 2018.**
  - **Named after the Kuno River**, a significant tributary of **the Chambal River.**
  - Predominantly characterized **by grasslands.**
- **Flora and Fauna:**
  - Rich biodiversity includes jungle **cat, Indian leopard, sloth bear, Indian wolf, striped hyena, golden jackal, Bengal fox, dhole.**
  - Habitat for over 120 bird species.

PROJECT CHEETAH

- **Initiative:**
  - Chosen for the **'Action Plan for Introduction of Cheetah in India.'**
- **Significance:**
  - Part of the **world's first intercontinental large wild carnivore** translocation project.

- **Approval:**
  - A**pproved** by the Supreme Court of India in **January 2020.**
- **Objective:**

- Pilot program aiming **to reintroduce cheetahs to India**.

❖ **Timeline:**

- **Around 50 cheetahs expected to be introduced** into the wild over the next five years.

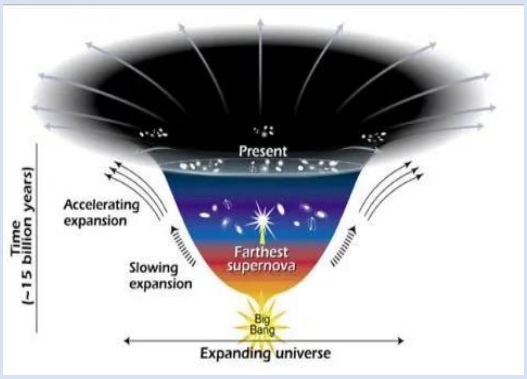
Dark Energy

WHY IN NEWS?

❖ *The recent attempt **to eliminate all energy in a room** involves moving it away **from Earth's gravity**, removing **matter, air, cosmic rays, neutrinos, and darkening it.***

❖ *Even in this emptiness, **"dark energy" persists, constituting 70% of the universe's total energy.***

DECODING DARK ENERGY



❖ **Mysterious Dominance:**

- **Dark energy makes up 68% of the universe**, driving its expansion**. (NASA)**
- Observable matter, **including dark matter, is less than 5%.**

❖ **Dark Matter Comparison:**

- **Dark matter (27%) has gravitational effects** but is **unseen**.
- Universe's composition challenges conventional understanding.

❖ **Quantum Theory Insights:**

- **Quantum theory** suggests space has **temporary virtual particles**.
- Calculations yield vastly **incorrect results, perplexing physicists**.

❖ **Quintessence Hypothesis:**

- Dark energy as **"quintessence**" remains mysterious.
- Nature, interactions, and existence are unknown.

❖ **Potential Gravitational Variations:**

- Dark energy challenges **Einstein's gravity theory**.
- Resolving possibilities requires more data.

RECENT FINDINGS

❖ **Predicted Dark Energy Sources:**

- Particle physicists **identify three sources of dark energy**:
- **Weight of the vacuum** (cosmological constant).
- **Zero-point energy** due to **Heisenberg's uncertainty principle**.
- **Field potentials** from fields like the **Higgs field.**

❖ **Fine-Tuning Challenge:**

- Dark energy contributions from **sources 2 and 3** can be calculated theoretically.
- **Contribution 1 (cosmological constant) is unknown**, leading to fine-tuning challenges.
- The cosmological constant appears finely tuned over an **astounding 122 decimal places**, raising questions about the underlying mathematical principles.

❖ **Unresolved Questions:**
- Physicists, including S**tephen Hawking and Steven Weinberg, propose various explanations** for the fine-tuning mystery, but the fundamental question remains unresolved.

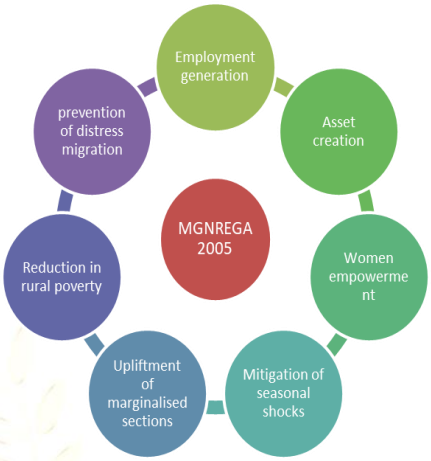
Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)

WHY IN NEWS?

❖ *Women participation in the **Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)** was the **highest in 10 financial years**, with the proportion of women person-days in the total t**ouching 59.25% till December 24 during the current financial year 2023-24**, shows official data.*

ABOUT MGNREGS

❖ **Legislative Foundation:**
- ***Act Enacted:*** **Mahatma Gandhi National Rural Employment Guarantee Act, 2005.**
- ***Main Provision:*** **Guarantees 100 days of wage employment** annually to **rural adults**.



❖ **Scheme Details:**
- ***Objective:*** Enhance **livelihood security** and promote **infrastructure development.**
- ***Initiation:*** Launched **nationally on February 2, 2006**, progressively expanding to cover Haryana.

❖ **Implementation Strategy:**
- ***Cost Sharing:*** Central and State Governments contribute in a **90:10 ratio.**
- ***Programme Execution:*** Implemented through **Panchayati Raj Institutions**; involves Gram Panchayats, **Block Programme Officers**, and **District Programme Coordinators (CEO)**.

RECORD WOMEN PARTICIPATION IN MGNREGS

❖ **Historic High Participation:**
- Women's engagement in **MGNREGS reaches a 10-year peak**.
- Women person-days in **MGNREGS constitute 59.25% in 2023-24.**

❖ **Progressive Trends:**
- **Positive trajectory** from **54.78% in 2019-20** to **59.25% in 2023-24.**
- Consistent rise despite challenges like the Covid-19 outbreak.

PARTICIPATION IN PAST 10 YEARS

Financial year	Days out of total (%)
2014-15	54.88
2015-16	55.26
2016-17	56.16
2017-18	53.53
2018-19	54.59
2019-20	54.78
2020-21	53.19
2021-22	54.82
2022-23	57.47
2023-24	59.25

Source: https://nrega.nic.in/

❖ **Quantitative Data Overview:**
- **Out of 238.62 crore person-days**, women **contributed 141.37 crore**.
- Highest percentage recorded among all financial years.

- **Regional Disparities:**
  - **Southern states lead with Kerala (89%),** Tamil Nadu (86%), Puducherry (87.16%), and Goa (72%) having **over 70% women participation**.
  - Northern states like **Uttar Pradesh and Madhya Pradesh lag** with around **40% or less.**
- **Improvements in Low-Participation States:**
  - Uttar Pradesh, Madhya Pradesh, and Lakshadweep witness an upswing.
  - Women participation rate in **Uttar Pradesh increases from 37.87% (2022-23) to 42.39% (2023-24)**.

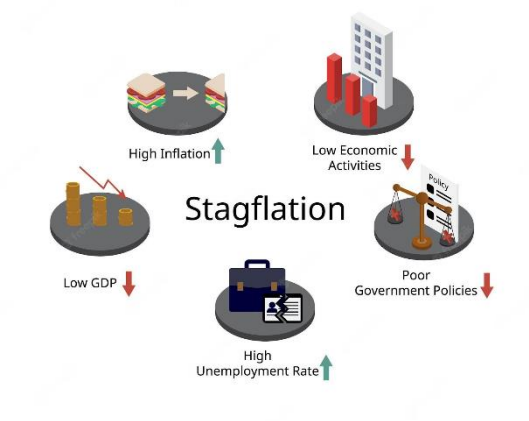
STAGFLATION

WHY IN NEWS?

- ***According to the RBI**, The **probability of stagflation** has been **revised from 3% (as stated in August**) to a **significantly lower 1%,** indicating a perceived reduction in the risk based on the latest data.*

STAGFLATION OVERVIEW

- **Definition:**
  - Stagflation is a **unique economic condition** marked by **slow economic growth, high unemployment**, and rising prices simultaneously.
- **Characteristics:**
  - Combines slow economic growth with inflation.
  - Reflects an e**conomy facing both increased inflation and reduced economic** output.
- **Causes:**
  - ***Oil Price Rise:*** Often triggered by **supply-side shocks**, like a **surge in oil prices, leading to increased business costs** and a leftward shift in aggregate supply.



  - ***Powerful Trade Unions:*** Strong union bargaining for **higher wages can cause inflation** without corresponding economic growth.
  - ***Falling Productivity:*** Declining productivity **results in higher costs** and lower output, **contributing to stagflation**.
  - ***Rise in Structural Unemployment:*** Shifts in **traditional industries** can lead to **structural unemployment** and lower output.
- **Phillips Curve and Stagflation:**
  - Traditional Phillips curve trade-off between inflation and unemployment is disrupted during stagflation.
  - **Stagflation shifts the Phillips curve to the right**, indicating both **higher inflation and unemployment.**
- **Consequences:**
  - Contradiction as slow growth typically **reduces inflation** but stagflation combines both.

- Increase in unemployment reduces consumer spending power.

❖ **Stagflation vs. Inflation:**

- ***Inflation:*** Typically linked with **economic growth;** stagflation is a **stagnant economy** facing both slow growth and high inflation.
- ***Recessions:*** Stagflation differs from **typical inflation patterns observed during economic downturns.**