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Daily News Analysis

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1. Uranium Contamination of Groundwater

- **Prelims** -Uranium Contamination of Groundwater
- **Mains** - GS 3 - Environment

Why in the news?

- The Parliamentary Standing Committee on Water Resources called for urgent actions to safeguard public health over concerns of continued presence of uranium contamination in drinking water sources in Punjab.

Uranium Contamination of Groundwater

- **What is it?:**
 - It refers to the presence of excessive levels of Uranium in groundwater beyond the safe levels for life.
 - Prescribed Safe limit: **0.03mg of Uranium per litre** of water is prescribed by WHO and Bureau of Indian Standards(BIS).
- **Health Impacts:**
 - Radioactivity as well as Chemical toxicity of Uranium poses risks to both human beings and animals.
 - Intake of contaminated water or food can lead to Cancers, Chronic Kidney Diseases (CKD), Skeletal damage, Reproductive health disorders etc.
- **Uranium Contamination in India:**
 - In India, the contamination is more prevalent in the alluvial aquifers of the northwestern region and hard-rock aquifers of southern India.
 - Punjab, Haryana, Rajasthan, Telangana, Andhra Pradesh, Madhya Pradesh, and Gujarat were the states found to be the most affected.
- **Sources of Groundwater Contamination:**
 - **Natural Sources:** Weathering of uranium-bearing rocks and the movement of groundwater, can release uranium into water sources.
 - **Anthropogenic Sources:**
 - ★ **Industrial Processes:** Industrial activities like those involving nuclear facilities and phosphate fertilizers can cause Uranium release.



★ **Mining and Milling:** Uranium mining and processing can cause release of uranium into the environment.

★ **Groundwater depletion:** Lowers the water table and alters aquifer chemistry, leading to uranium release.

- **Government Measures Taken:**

- **Hybrid membrane techniques and Reverse Osmosis (RO)** plants developed by the Department of Atomic Energy (DAE) and Bhabha Atomic Research Centre (BARC) are being installed in affected areas of Punjab and Haryana on a pilot basis.

- **Central Ground Water Board** is generating scientific data to understand aquifer behavior and provide site-specific solutions under **National Aquifer Mapping and Management Programme (NAQUIM)** to mitigate contamination risks.

- **Low cost adsorbents and nanomaterials** are being developed to filter uranium from groundwater under the ambit of the **Council of Scientific and Industrial Research (CSIR)**.

- **Way Forward:**

- The Government of India needs to **formally recognize uranium as a major groundwater contaminant** as they have done with Arsenic and Fluoride, in order to streamline interventions that can bring in a change.

- **Adoption of low-cost, decentralized treatment technologies** such as adsorption filters in severely affected villages.

- **Public awareness campaigns** must be conducted to educate people regarding the health risks of uranium contamination and how to use water safely.



2. Myanmar

- **Prelims** - Location of Myanmar
- **Mains** - GS 1 - Geography

Myanmar



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Why in the news?

- Myanmar and Thailand's busiest trade crossing was closed for a second day after the military junta pledged to throttle black markets funding armed opposition groups ahead of a disputed December election.

Myanmar

- **Capital:** Naypyidaw
- **Border Countries:** Bangladesh, India, China, Thailand, and Laos.
- **Bordering Waterbodies:** Bay of Bengal.
- **Indian States Bordering Myanmar :** Arunachal Pradesh, Nagaland, Manipur and Mizoram.
- **International Groupings:** Myanmar is a member of the East Asia Summit, Non-Aligned Movement, ASEAN, and BIMSTEC.
- **Major River:** Irrawaddy river flow from north to south known for **Irrawaddy dolphins**.



7994058393

www.enliteias.com enliteias@gmail.com



3. Venezuela

- Prelims - Location of Venezuela
- Mains - GS 1 - Geography

Venezuela



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Why in the news?

- Venezuela's president said he would deploy 4.5 million militia members in response to U.S. "threats", after Washington raised the bounty to \$50 million for his arrest and launched anti-drug operations in the Caribbean

Venezuela

- **Location:** It is a South American country.
- **Capital:** Caracas
- **Bordering Countries:** Guyana, Brazil, and Colombia.
- **Bordering Waterbodies:** Caribbean Sea and the Atlantic Ocean.
- **Rivers:** Orinoco River
- **Grasslands:** Llanos
- **Waterfall:** Angel Falls, the world's highest waterfall.





4. Creamy Layer Equivalence Principle

- Prelims - Creamy Layer Equivalence Principle
- Mains - GS 2 - Polity

Why in the news?

- The Union government is now **considering applying an "equivalence" principle** to the creamy-layer rule for OBC reservations. This would create uniformity across different sectors - central and state government bodies, PSUs, universities, and potentially others.

Creamy Layer Equivalence Principle

- **What is the Background?:**
 - Periodically, the income ceiling for creamy-layer eligibility has been updated, reaching 8 lakh limit in 2017.
 - The 2004 DoPT "clarifications" sought to fill loopholes for non-government jobs, but weren't uniformly enforced. From 2015 to 2023, over 100 Central Civil Services candidates were denied OBC status - despite qualifying under old rules - due to these clarifications.
 - These **inconsistencies** spurred the current push for equivalence, with multiple ministries and bodies involved in drafting the proposal - including Social Justice and Empowerment, Education, DoPT, Legal Affairs, Labour, NITI Aayog, and NCBC.
- **Need of Equivalence:**
 - Currently, inconsistencies persist in how "creamy layer" status is applied.
 - ★ e.g.: Children of government school teachers may get OBC quota benefits, but those of similarly ranked teachers in government-aided institutions (who follow similar pay structures) may be denied those benefits because equivalence hasn't been recognized.
 - Ensuring that reservation benefits reach those genuinely in need by treating equivalent positions the same, regardless of the institution.
- **Mode of Action:**
 - **Government-Aided Institutions & Universities**
 - ★ Posts in government-aided schools or universities with pay scales or roles comparable to Group A/Class I central government jobs (e.g., assistant professors starting at Level 10) would be classified as creamy-layer positions.



- ★ Their children would thus not be eligible for OBC reservation benefits

→ Statutory Bodies & Autonomous Bodies

- ★ These bodies typically follow central/state government pay scales.
- ★ Employees would be matched against government job categories (by level, group, pay), and treated accordingly.

→ Public Sector Undertakings

- ★ While central PSU equivalence was addressed in 2017, state PSUs and others are now included.
- ★ Executive-level roles would be put in the creamy layer—unless their incomes are at or below ₹8 lakh, aligning them with current private-sector income thresholds.

→ Private Sector

- ★ Given their vast diversity, private-sector roles present challenges for equivalence.
- ★ Here, the existing ₹8 lakh income/wealth ceiling would continue to determine creamy-layer status.

● Advantages of the Measure:

- **Legal Clarity:** Reduces ambiguities in issuing caste certificates and OBC quota implementation.
- **Consistency & Fairness:** Ensures similar roles are treated alike, regardless of employer.
- **Corrective Measure:** Aims to redress past exclusions of eligible candidates.
- **Social Justice:** Prevents economically advanced families within OBCs from unduly benefiting.

Creamy Layer

- What is it: The term "creamy layer" refers to the **relatively wealthier and better-educated members of India's Other Backward Classes (OBCs)** who are not eligible for reservations in government jobs and educational institutions.
- Origin:
 - The concept evolved from the **Indra Sawhney vs Union of India (1992)** case (Mandal Commission verdict).
 - The **Supreme Court upheld 27% OBC reservations** but ruled that the "creamy layer" (affluent members of OBCs) must be excluded from quota benefits.



- **Objective:** Ensure that reservation reaches the **truly disadvantaged**, not the socially advanced among OBCs.
- **Criteria for Creamy Layer:** Persons included in Creamy layer criteria are-
 - **Income/Status-based exclusion** (updated periodically by DoPT):
 - ★ Currently (as of 2024), families with **annual gross income above ₹8 lakh** are considered “creamy layer”.
 - ★ Children of:
 - Constitutional posts holders (President, Judges, MPs, Ministers).
 - Group A/Class I and Group B/Class II officers in government.
 - Professionals (doctors, engineers, lawyers, etc.) in high-income brackets.
- **Constitutional Basis:** **Not explicitly mentioned** in the Constitution, but derived from **judicial interpretation** of Articles **15(4)**, **16(4)** (reservation for socially & educationally backward classes).



5. LCA Tejas and LCA Tejas Mk-1A Fighter

- **Prelims** - LCA Tejas and LCA Tejas Mk-1A Fighter
- **Mains** - GS 1 - Science and Technology

Why in the news?

- The Cabinet Committee on Security (CCS) approved procurement of LCA Tejas Mk-1A fighter jets.

LCA Tejas Fighter

- **History:** The Light Combat Aircraft (LCA) programme was started by the Government of India in 1984.
- **Aim:** To replace the ageing Mig 21 fighter planes (known as flying coffins due to repeated crashes and death of pilots)
- **Designed by:** Aeronautical Development Agency under the Department of Defence Research and Development.
- **Manufactured by:** State-owned Hindustan Aeronautics Limited (HAL).
- **Features**
 - The lightest, smallest and tailless multi-role supersonic fighter aircraft.
 - Designed to carry a range of air-to-air, air-to-surface, precision-guided, weapons.
 - Air to air refueling capability.
 - Maximum payload capacity of 4000 kg.
 - It can attend the maximum speed of Mach 1.8.
 - The range of the aircraft is 3,000km

LCA Tejas Mk-1A Fighter

- **What is it?:** An upgraded variant of India's indigenously developed Light Combat Aircraft (LCA) Tejas.
- **Developed by:** Hindustan Aeronautics Limited (HAL) under the Make in India initiative.
- **Upgradation**
 - **Advanced Avionics**
 - ★ Equipped with AESA radars: Israeli EL/M-2052 and indigenous Uttam AESA radar.



→ Electronic Warfare (EW) Systems

- ★ Unified Electronic Warfare Suite (UEWS).
- ★ Advanced Self-Protection Jammer Pod.

→ Flight Control

- ★ Improved Digital Fly-by-Wire System with DFCC Mk1A for enhanced maneuverability.

→ Weapons Capability

- ★ Nine hardpoints for diverse payloads.
- ★ Supports BVR missiles, ASRAAM, precision-guided munitions, and air-to-air/air-to-ground missiles.

→ Operational Efficiency

- ★ Reduced weight, improved maintainability.
- ★ Faster turnaround during missions.