

DAILY CURRENT AFFAIRS (DCA)

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PROPOSED AMENDMENTS TO NFSA

Context

- The **Union Food and Public Distribution Department** published a draft of the proposed amendments to the **National Food Security Act (NFSA), 2013**.

National Food Security Act (NFSA), 2013

- NFSA aims to supplement the food requirements of up to **75% of the rural** and up to **50% of the urban population** at Census 2011 comes to 81.35 crore persons.
- It aims to ensure food and nutritional security by providing affordable foodgrains through the **Targeted Public Distribution System (TPDS)**.
- Eligible households receive subsidized foodgrains based on:
 - ♦ **Antyodaya Anna Yojana (AAY) households:** These households constitute the poorest of the poor. AAY households are entitled to **35kg** of food grains **per household per month**.
 - ♦ **Priority Households (PHH):** These households are entitled to **5kg** of food grains **per person per month**.
- Under this, Central issue prices are highly subsidized (Rs 3/kg for rice, Rs 2/kg for wheat, and Rs 1/kg for coarse grains).
- Also, pregnant and lactating women are entitled to a **cash maternity benefit of not less than Rs. 6,000**.

Who are the Beneficiaries?

- Antyodaya Anna Yojana (AAY) Households:** Chosen by States/UTs based on Central Government criteria, covering the poorest of the poor. **The Eligible Categories are:**
- Households headed by widows, terminally ill persons, disabled persons, or elderly persons (60+) with no assured means of subsistence or societal support.
- Widows or terminally ill persons or disabled persons or persons aged 60 years or more or single women or single men with no family or societal support or assured means of subsistence.
- All primitive tribal households.
- Landless agricultural labourers, marginal farmers, rural artisans/craftsmen, slum dwellers, and people earning a daily livelihood in the informal sector and other similar categories in both rural and urban areas.

- ♦ All eligible Below Poverty Line (BPL) families of HIV-positive persons.

- ♦ **Priority Households:** Selected by State Governments/Union Territory Administrations as per their own criteria.

Merger With PMGKAY

- During the COVID-19 pandemic in **2020**, the government launched the **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**, under which additional foodgrains were provided free of cost.
- From January 2023, the government **merged PMGKAY with NFSA** and made the **regular NFSA entitlement itself free of cost**.
- In 2023, this free foodgrain scheme was **extended for five years** (January 2024 to December 2028).

Proposed Amendments to NFSA

- A new provision In **Section 3** of the **National Food Security Act, 2013**, proposes that **every person** belonging to households covered under the **Antyodaya Anna Yojana (AAY)** shall be entitled to **7 kg of foodgrains** every month to a **maximum of 35 kg per household**.
 - ♦ Earlier, it was 35 kg per AAY household, irrespective of the number of members in the household.
 - ♦ For AAY cardholders, this allocation will be **free of any charges**.
- Rational behind the proposal:** Rationalise foodgrain allocation by addressing the imbalance whereby smaller households receive disproportionately higher per-capita entitlements than larger households.

Concerns

- ♦ **Inadequate Nutritional Security:** The amendment focuses exclusively on cereals and does not include pulses, edible oils, or other nutrient-rich foods.
- ♦ **Demand for Higher Entitlement:** Right to Food activists have demanded **14 kg** of foodgrains per person instead of 7 kg, particularly for the poorest households.
- ♦ **Disadvantage to Large Families:** The amendment retains the ceiling of 35 kg per household. As a result, larger households would continue to receive lower per-capita allocations than intended.
- ♦ **Regional Disparities:** Smaller households (nuclear families), which are more common in southern States, may receive lower foodgrain allocations than under the existing system.

- **Outdated Coverage:** The coverage of the National Food Security Act continues to be based on the 2011 Census despite significant population growth. Millions of eligible households are estimated to remain outside the ambit of the Public Distribution System.
- **Implementation Challenges:** The amendment does not address operational issues affecting the Public Distribution System.
 - ♦ **Biometric authentication failures, e-KYC-related exclusions, connectivity issues,** and difficulties faced by migrant workers, elderly persons, and persons with disabilities continue to prevent eligible beneficiaries from accessing their foodgrain entitlements.

Way Ahead

- **Update NFSA beneficiary coverage** using the latest Census data to reflect current demographic realities.
- There is a need to ensure that **no existing beneficiary experiences food insecurity due to the transition.**
- Consider supplementing cereals with **pulses, edible oil, and fortified foods** to improve nutritional security.
- There is a need for consultations with States to build consensus and strengthen **cooperative federalism** before finalising the amendment.

Source: TH

STUDY TO CONTAIN AMR NEONATAL SEPSIS BEGINS IN INDIA

In News

- The landmark **NeoSep1 clinical trial**, funded by the GARDP Foundation has expanded to India to address escalating rates of **drug-resistant neonatal sepsis.**

More About the News

- The trial is especially important for India as the bacteria that cause newborn sepsis are not the same as in high-income countries.
- While **Group B Streptococcus** is a major cause worldwide, in India, cases are primarily driven by **drug resistant Gram-negative bacteria** such as *Klebsiella pneumoniae*, *Escherichia coli*, *Acinetobacter* and *Pseudomonas aeruginosa*.
- In India, it accounts for 30-40% of neonatal deaths in India with an estimated 2-2.5 lakh preventable deaths occurring annually.

About Sepsis

- Neonatal sepsis is a **life-threatening bloodstream infection** that occurs in babies under 90 days old, often affecting premature or low-birth-weight infants.
- It is categorised into **early-onset (occurring within the first 72 hours of life)** and **late-onset (occurring up to 28–90 days).**
- Common signs of sepsis include fever, fast heart rate, rapid breathing, confusion and body pain. It can lead to septic shock, multiple organ failure and death.
- Good hygiene, safe food practices, clean water and sanitation, vaccination, a healthy diet and breastfeeding for newborns can reduce the risk of infection and prevent sepsis.

Antimicrobial Resistance (AMR)

- It is a condition in which bacteria, viruses, fungi and parasites **no longer respond to antimicrobial medicines**, which include antibiotics, antivirals, antifungals and antiparasitics.
- As a result, infections become difficult or impossible to treat, increasing the risk of disease spread, severe illness, disability and death.
- It is the result of evolution of microbes in a situation where there is a misuse or overuse of antibiotics.

Factors contributing to the rise of AMR in India

- **Excessive use of Antimicrobial Drugs:** The irrational excessive use of antimicrobial drugs leads to the creation of resistant or extremely resistant superbugs.
- **Lack of Hygiene Practices:** Inadequate hygiene practices and the lack of proper infection control in hospitals and clinics, facilitate the spread of resistant bacteria.
- **Lack of Proper Diagnostics:** The prescription of antibiotics by doctors without proper diagnostics of the patient, relying solely on symptoms to determine the likely cause of the infection.
- **Pharmaceutical waste:** Pharmaceutical waste from antibiotic manufacturing can facilitate the emergence of new drug-resistant bacteria, which can spread globally and threaten our health.
- **Unregulated Access to Antibiotics:** An area of great concern is the unregulated access to antibiotics in the animal husbandry, dairy, and poultry sectors.
- **Social & Cultural Practices of India:** India's vibrant culture of massive religious festivals (e.g., Kumbh Mela), political rallies, and large

family weddings creates ultra-high-transmission environments.

Initiatives undertaken to combat AMR

- **National Programme on AMR Containment:** It was launched during the 12th Five Year Plan (2012-17). The main objectives of this program are:
 - ♦ Establish a laboratory-based antimicrobial resistance (AMR) surveillance system in the country to generate high-quality data on antimicrobial resistance.
 - ♦ Conduct surveillance of antimicrobial usage in different healthcare settings.
 - ♦ Strengthen infection control practices and promote the rational use of antimicrobials through antimicrobial stewardship activities.
 - ♦ Awareness through the Red **Line Campaign**.
- **National Action Plan (NAP) on AMR:** India was among the first countries to develop a comprehensive NAP on Antimicrobial Resistance in 2017.
 - ♦ The plan focuses on a One Health approach, involving various stakeholder ministries and departments.
- **AMR Surveillance Network:** ICMR established the Antimicrobial Resistance Surveillance and Research Network (AMRSN) in 2013 to collect evidence, track trends, and identify patterns of drug-resistant infections in the country.
- **Research & International Collaboration on AMR:** ICMR has also initiated international collaborations to develop new drugs and strengthen medical research in AMR.

What more needs to be done?

- **Regulating use of antibiotics in various sectors:** Usage of antibiotics in various sectors must be regulated to address the challenge of rising antimicrobial resistance (AMR) in India.
 - ♦ Governments should strictly control the use of antibiotics in poultry farms.
 - ♦ India ranks top in antibiotic use across the world. Every year, we see a rise in antibiotic use, 7–8% in outpatients and 11 % in indoor patients
- **Effective Sanitation & Hygiene:** Awareness should be increased among the people about the importance of hygiene, as various types of infections can be prevented by improving sanitation, implementing hygienic practices, and promoting vaccination.

- **Prioritise implementation of NAP on AMR:** Efficient implementation of NAP-AMR should be prioritised. The suboptimal implementation of it in the absence of resources should be addressed.
- **Promotion of Responsible Behaviour among Citizens and Doctors:** People should be educated on the dangers of overusing antibiotics.
 - ♦ Doctors must be educated to ensure appropriate use of antibiotics, saving the stronger ones for hospital based patients, and getting the patients tested to see which infection they have.
- **One Health Approach:** The environment plays a crucial role in the development, transmission, and spread of AMR. Therefore, the response must be based on a One Health approach, recognizing that humans, animals, plants, and the environment are interconnected and indivisible at the global, regional, and local levels.

Source :TH

WOMEN-LED PANCHAYATI RAJ AS A GLOBAL MODEL FOR INCLUSIVE GRASSROOTS GOVERNANCE

Context

- **Under India's BRICS Chairship 2026**, the Ministry of Panchayati Raj showcased the country's transformative initiatives in empowering women through **democratic decentralisation and strengthening grassroots governance**.

About

- Across the country, there are more than 2.5 lakh Panchayats, comprising about 24.04 lakh elected representatives.
- Notably, **women constitute approximately 49.75%** of these representatives, reflecting a significant shift towards inclusive local governance.

Panchayati Raj Institutions

- **Balwant Rai Mehta Committee (1957)** proposed a **three-tier Panchayati Raj structure**.
- **Rajasthan** became the **first state to implement it in 1959**.
- **73rd Constitutional Amendment Act, 1992** granted **constitutional status to Panchayati Raj Institutions**.
 - ♦ The provisions related to Panchayats are laid down in **Part IX of the Constitution of India**.

- The system operates through a three-tier structure:
 - ♦ **Gram Panchayat (GP):** It functions at the village level and is responsible for basic civic administration and local development activities.
 - ♦ **Block Panchayat (BP):** It coordinates development plans across multiple villages and ensures better implementation of government schemes.
 - ♦ **District Panchayat (DP):** It supervises and integrates development activities across blocks and ensures effective planning and resource allocation.
- **The Gram Sabha** is the **general body of all registered voters in a village** and represents the **most direct form of democracy**.
 - ♦ It is the **only permanent unit in the Panchayati Raj system** and is not constituted for a particular period.
 - ♦ The powers and functions of **Gram Sabha are fixed by the state legislature by law**.

Significance of Women Participation in PRIs

- **Diverse Perspectives:** Women bring unique experiences and viewpoints that contribute to more comprehensive decision-making, leading to better solutions and innovation.
- **Role Models:** Increased visibility of women in leadership roles inspires younger generations and helps challenge stereotypes about gender roles.
- **Equity and Justice:** Fair representation promotes gender equality, ensuring that women's voices and needs are considered in policymaking and organizational decisions.
- **Balanced Policies:** Women's involvement in governance can lead to policies that address issues specifically affecting women and families.
- **Economic Growth:** Empowering women and ensuring their representation can significantly contribute to economic development, as it expands the talent pool and encourages inclusive growth.
- **Cultural Change:** Increasing women's representation can challenge societal norms and promote a culture of equality, benefiting society as a whole.

Challenges Faced by Women while working in Powerful Positions

- **Gender Bias:** Despite progress, many women encounter stereotypes that question their competence and leadership abilities.
- **Work-Life Balance:** Balancing professional responsibilities with traditional family roles can be particularly demanding, often leading to burnout.
- **Harassment and Discrimination:** Workplace harassment remains a significant issue, creating hostile environments that discourage women from asserting themselves.
- **Cultural Expectations:** Societal norms impose additional pressures on women, such as expectations to conform to traditional roles, which conflict with career ambitions.

Initiatives for Women Empowerment in PRIs

- The Constitution 73rd and 74th Amendment Acts, mandated the reservation of **one-third of seats for women** in Panchayati Raj institutions and offices of the chairperson at all levels of Panchayati Raj institutions, and in urban local bodies respectively.
 - ♦ Out of the total 1/3rd seats reserved for women, **33% had to be reserved for the Scheduled Castes and Scheduled Tribes**.
 - ♦ One-third of the seats of office-bearers and chairpersons at all levels had to be reserved for women as well.
- **106th Constitutional Amendment:** It reserves one-third of all seats for women in Lok Sabha, State Legislative Assemblies, and the Legislative Assembly of the National Capital Territory of Delhi, including those reserved for SCs and STs.
- **Model Women-Friendly Gram Panchayat (MWFGP):** It is an institutional initiative aimed at strengthening women's leadership in local governance.
 - ♦ It focuses on building inclusive and gender-sensitive Panchayats that ensure women's participation along with safety, rights, and empowerment at the grassroots level.
- **Strengthening the Capacity of Elected Women Representatives (EWRs):** It is launched to enhance leadership, communication, and decision-making skills of Elected Women Representatives (EWRs). The focus is on practical and interactive learning for real governance situations.

- ♦ As part of this effort, the Ministry has launched a Special Training Module aimed at strengthening the leadership, communication, and negotiation skills of Women Elected Representatives (WERs).

Way Ahead

- It is a perennial issue to promote higher representation for women who constitute half the population in all countries.
- Women's representation is essential for creating equitable, just, and progressive societies.

Source: PIB

WORLD BANK APPROVES \$890 MILLION FOR INDIA'S ROOFTOP SOLAR PROGRAMME

Context

- Recently, the World Bank has approved a financing package of USD 890 million to support India's national rooftop solar programme under the **PM Surya Ghar: Muft Bijli Yojana**.

Rooftop Solar Programme in India

- **PM Surya Ghar: Muft Bijli Yojana (2024):** It aims at making rooftop solar accessible to households while promoting clean energy and energy security.
- **Key Features** are Central Financial Assistance (CFA) for residential consumers; collateral-free financing through banks; national online portal for registration and subsidy; vendor empanelment and quality assurance; net metering support; and capacity building for DISCOMs and financial institutions.
- It aims to:
 - ♦ Install rooftop solar in **1 crore (10 million) households**.
 - ♦ Reduce household electricity bills.
 - ♦ Boost domestic manufacturing – Make in India
 - ♦ Promote decentralised renewable energy generation.

Why is World Bank Support Important?

- **Support & Accelerate India's Clean Energy Transition:** The financing supports India's transition to decentralised renewable energy by scaling residential rooftop solar.
- **Supports Climate Commitments:** It aids India's goals of **Net Zero emissions by 2070**; and **60% non-fossil electricity generation by 2035**.

- **Unlocks Private Investment:** It reduces reliance on public funds and expands access to affordable credit **by leveraging \$4.2 billion in private financing**.
- **Reduces Financial Barriers:** Collateral-free loans and improved financing mechanisms make rooftop solar accessible to middle and lower-income households.
- **Strengthens Institutions:** The programme builds capacity DISCOMs, banks, vendors and installation agencies.
 - ♦ This improves service delivery and consumer confidence.
- **Job Creation:** The initiative is projected to generate 1.7 million jobs, especially in the manufacturing, installation, maintenance and allied services sectors.
- **Builds upon Long-Term Partnership:** The World Bank has been supporting India's rooftop solar sector for over a decade:
 - ♦ **2016:** \$648 million for the Grid-Connected Rooftop Solar Programme (main consumers are commercial and industrial)
 - ♦ **2022:** \$165 million more to enter the residential market.
- With the help of the cumulative support, the installed rooftop solar capacity has increased from about 500 MW to over 27 GW.

Challenges of Rooftop Solar Sector in India

- **High upfront installation costs** (even with subsidies)
- State-to-state net **metering policies are inconsistent**.
- Financial stress and capacity constraints of DISCOMs.
- **Grid integration and distribution infrastructure issues** as rooftop capacity increases.
- Low awareness among consumers in many markets.
- **Shortage of skilled technicians** in some areas
- Quality control issues for equipment and installation.
- Lack of affordable credit for low-income households.

Way Forward: Fully Exploiting PM Surya Ghar

- Release of subsidy through digital platform in time.
- Provide cheap and collateral-free credit.

- Standardise net metering regulations across states.
- Strengthen DISCOM financial and technical capacity.
- Promote local manufacturing of solar modules, inverters and storage systems under Production Linked Incentive (PLI) scheme.
- Invest in skill development of installation and maintenance personnel.
- Increase awareness campaigns to improve participation from households.
- Combine rooftop solar with battery storage and smart grids for greater reliability.
- Promote increased private sector participation through innovative financing and risk-sharing mechanisms.

Source: ANI News

AI POSES A RELATIVELY LOWER RISK TO INDIA'S GCC JOBS

Context

- **India's Chief Economic Adviser (CEA) V. Anantha Nageswaran** highlighted low impact of AI on India's Global Capability Centres (GCCs) due to their shift from low-cost service centres to innovation-driven hubs.

What Are Global Capability Centres (GCCs)?

- Global Capability Centres are **offshore subsidiaries of multinational corporations** that **perform critical business and technology functions** for their parent organisations.
- Over time, GCCs in India have evolved from **cost-arbitrage units into strategic hubs focused on research and development**, enterprise AI, data platforms, digital product engineering, and innovation management.
 - ♦ **Examples:** Goldman Sachs' Bengaluru center for tech & risk, HSBC's Pune hub for AI banking etc.

Key Trends Highlighting GCC Dominance

- **Hiring Momentum Despite IT Slowdown:** Leadership hiring growth in 2025 in **IT services firms is 2.4%**, whereas it is around 7.7% in case of GCCs.
- **Expansion Beyond Metros:** GCC growth is no longer confined to Tier I cities, as **Tier II and Tier III cities** such as Nagpur, Indore, Coimbatore, and Kochi are witnessing **8–9%** quarterly growth. This trend supports;

- ♦ Decentralisation of skilled employment
- ♦ Reduced pressure on metro infrastructure
- ♦ Balanced regional development
- **Strategic, Long-Horizon Talent Planning:** GCCs typically operate with 3–5 year rollout and ramp-up plans, unlike IT services firms that rely on quarterly demand-based hiring calibrations.
- **Premium and Diverse Employment:** GCCs offer **12–20% higher salaries** than traditional IT services firms. Expansion also includes the blue-collar and infrastructure roles with estimated **2.8–4 million additional jobs** by FY30.

Why GCC Jobs Face Relatively Lower AI Risk?

- IT services firms **depend heavily on short-term client demand** and discretionary tech spending.
 - ♦ When global enterprises cut IT budgets, IT services firms quickly slow or freeze hiring, making them more cyclical and vulnerable.
- GCCs are **embedded within parent enterprises** and are not dependent on external client deal cycles, unlike traditional IT services firms.
- Their focus is on **long-term capability creation in areas such as AI, digital platforms, and product engineering** rather than short-term revenue generation.
- Strategic mandates provide GCCs greater insulation from market volatility and global demand fluctuations.

Impact of the GCC-Led Shift on India

- **Economic Impact:** The expansion of Global Capability Centres is moving India up the global value chain from cost-based outsourcing to high-value, innovation-driven services.
- **Employment opportunities:** GCCs are generating more **stable, long-term technology jobs** compared to the cyclical hiring patterns of IT services firms.
- **Regional Development:** The expansion of GCCs into Tier II and Tier III cities is enabling India to pursue more balanced regional development by **distributing high-quality jobs beyond metropolitan centres**.
- **Skill and Innovation Impact:** GCCs are no longer just execution centres but are becoming hubs for global R&D, enterprise AI, and digital platform ownership.
 - ♦ This strengthens India's innovation capacity and integrates the country more deeply into global technology creation processes.

- **Strategic Impact:** Hosting critical global enterprise capabilities is enhancing India's strategic relevance in digital value chains.

What are the concerns?

- **Rising Global Competition:** Other countries are replicating India's GCC model, while rising costs and talent shortages reduce India's traditional cost advantage.
- **Skill Gap:** A mismatch between graduate skills and industry requirements, especially in AI, Machine Learning, semiconductor technology, and advanced engineering, constrain GCC growth.
- **Risk of Low-Value Operations:** GCCs focused only on routine, low-cost tasks face higher AI disruption risks.

Way Ahead

- India's GCC ecosystem has evolved from a low-cost outsourcing model into a hub of innovation and advanced technology.
- While AI may disrupt routine jobs, India's growing role in designing, deploying, and governing emerging technologies provides resilience.
- However, maintaining global leadership will require continuous investment in skills, innovation, and adaptability.

Source: TH

- **An agonist** is a substance (like a drug or hormone) that binds to a cell receptor and triggers a physiological response.

- The treatment is combined with **counselling, psychosocial support and regular medical follow-up** to help patients recover and reduce the risk of overdose, relapse and the spread of infectious diseases.
- It is recommended by the **World Health Organisation (WHO)** and implemented under the **guidelines of the National AIDS Control Organisation (NACO)** under **strict medical supervision**.
- **Methadone Maintenance Therapy** was first introduced in India in 2012 through pilot projects supported by the **Ministry of Health and Family Welfare, NACO and the United Nations Office on Drugs and Crime (UNODC)**.
- **Punjab** became the first state in the country to introduce MMT in 2012.

Source: IE

SABANG PORT

Context

- During PM Modi's recent visit, **India and Indonesia** agreed to **jointly develop Sabang Port** near the **Strait of Malacca**.

About

- Sabang Port is located on **Weh Island** in **Indonesia's Aceh province**, at the **northern tip of Sumatra**.
- Its biggest advantage is its proximity to the **Strait of Malacca**, one of the world's most critical maritime chokepoints.
- Around **80% of China's oil imports** and a **significant share of its trade** flow through these waters.



NEWS IN SHORT

METHADONE MAINTENANCE THERAPY

Context

- On June 26, the International Day Against Drug Abuse and Illicit Trafficking, Punjab inaugurated **six Methadone Maintenance Therapy clinics** in government hospitals.

About

- **Methadone Maintenance Therapy (MMT)** also known as **Methadone Treatment Therapy (MTT)**, is a medically supervised treatment **for people addicted to opioids** such as heroin, opium and prescription opioid painkillers.
- It uses **methadone, a long-acting opioid agonist**, under medical supervision to **reduce cravings and prevent withdrawal symptoms** without producing the intense high associated with illicit opioid use.

- The port is also only around **160 kilometres** from India's upcoming **international transshipment terminal at Great Nicobar Island**.
 - ♦ Together, the two locations could create a **strategic maritime corridor connecting the eastern Indian Ocean with Southeast Asia**.
- **Significance:** Together, these facilities will allow India to keep an eye on one of the world's busiest maritime chokepoints, enhance its surveillance capabilities, and reinforce its strategic position in the Indo-Pacific.
 - ♦ Sabang is expected to strengthen India's Act East Policy by improving maritime connectivity between the Andaman and Nicobar Islands and Indonesia's Aceh province.

Source: BS

NAVI MUMBAI AIRPORT AS PORT FOR IMPORT OF DRUGS

Context

- The Ministry of Health and Family Welfare has notified **Navi Mumbai Airport** as a **Port for Import of Drugs** under the **Drugs Rules, 1945**.
 - ♦ The total number of notified ports of entry for drug imports, including road, rail, sea and air routes, has increased to 42.

About

- Under the **Drugs and Cosmetics Act, 1940**, drugs can be imported into India only through **notified ports of entry**.
- The move is expected to facilitate smoother movement of pharmaceutical consignments, strengthen logistics infrastructure, and provide greater flexibility to importers by adding another entry point for drug imports.

Regulation of Drugs in India

- The Central Drugs Standard Control Organization (CDSCO) headed by the Drugs Controller General (India) is the Central Authority for regulating the quality of drugs in India under the Drugs and Cosmetics Act, 1940.
- National Pharmaceutical Pricing Authority (NPPA) is mandated to fix and revise drug prices under the provisions of the Drugs (Prices Control) Order (DPCO), 2013.
- **Indian Pharmacopoeia Commission (IPC):** It oversees the periodic publication of the Indian Pharmacopoeia, the official compendium of drug standards under the Drugs and Cosmetics Act, 1940.

- **State Health Regulatory Excellence Index (SHRESTH):** A first-of-its-kind national initiative to benchmark and strengthen state drug regulatory systems through a transparent, data-driven framework.

Source: PIB

RISING ENERGY STORAGE DEMAND IN INDIA

Context

- India's energy storage requirement is projected to rise to **888 GWh by 2035-36** as the country prepares for rapidly increasing electricity demand and higher renewable energy integration.

Energy Storage Demand in India

- According to the **India Energy Storage Alliance (IESA) and Customised Energy Solutions (CES) report**, India will require:
 - ♦ 321 GWh from Battery Energy Storage Systems (BESS).
 - ♦ 567 GWh from Pumped Storage Projects (PSP).
- India's current installed storage capacity is only around **1 GWh**, highlighting the massive scale-up required.

Battery Energy Storage Systems (BESS)

- BESS are systems in which batteries, either **individually or more often in groups**, are used in order to store electricity produced by generation plants, and make it available when needed.
- In a battery energy storage system, the fundamental components are the battery blocks, along with other elements:
 - ♦ **An inverter**, which converts the direct current from the batteries into the alternating current of the electricity grid (and vice versa);
 - ♦ **A transformer**, which adapts the system's voltage to that of the grid;
 - ♦ Auxiliary systems.
- BESS technology is based on the use of **electrochemical batteries**, which can store the energy produced by renewable energy plants.

Types of batteries

- **Lithium-ion batteries:** These batteries typically use lithium in combination with other materials, such as iron and phosphate used in LFP (lithium ferrophosphate) batteries.

- **Solid-state batteries:** While conventional and flow batteries normally use liquid electrolytes, in this case they are in a solid state (e.g., ceramic or synthetic materials).

Source: DTE

EGYPTIAN VULTURE

In News

- The Egyptian Vulture has suffered a steep decline in population in India

Egyptian Vulture

- **Scientific Name:** Neophron percnopterus.
 - ♦ It is one of the world's smallest vultures.
- **Habitat and Distribution:** It lives in open lowland and mountain areas and eats a wide variety of food including carrion, insects, organic waste, small animals, eggs and faeces.
 - ♦ It is distributed across southern Europe, northern and central Africa, the Middle East, Central Asia and the Indian subcontinent.

Current situation in South India

- India is home to the resident subspecies Neophron percnopterus ginginianus, while migrant birds from Africa and the Middle East also visit the country during winter.
- There are fewer than 150 resident Egyptian vultures left in all of Karnataka and Tamil Nadu.

Threats

- Use of veterinary non-steroidal anti-inflammatory drugs (NSAIDs) harmful to vultures such as diclofenac.
- Electrocuting from the growth of the power grid.
- Accidental poisonings and use of toxins.
- Destruction and disruption of nesting cliffs.
- Reduction in traditional livestock practices, resulting in less natural foods available.

Protection status

- It is globally listed as Endangered by the International Union for Conservation of Nature (IUCN).

Declining population India has nine species of vultures, six of which are found in Assam



Vultures of the genus 'Gyps'

- Oriental white-backed (Assam, critically endangered)
- Long-billed (critically endangered)
- Slender-billed (Assam, critically endangered)
- Himalayan griffon (Assam, winter visitor from Himalayas)

- Eurasian griffon (Assam, winter visitor from Himalayas)

Single representative species

- Egyptian
- Bearded
- Cinereous (Assam)
- King (Assam, critically endangered)

Source :TH

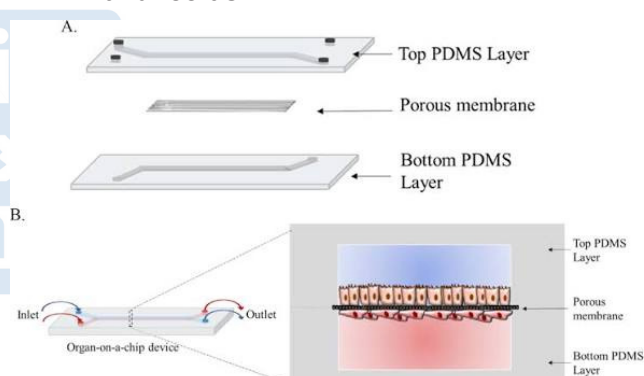
RESEARCHERS RECREATE KEY FUNCTIONS OF HUMAN PLACENTA ON CHIP

Context

- Researchers from the **ICMR-National Institute for Research on Women's Health (formerly ICMR-NIRRH)**, Mumbai, in collaboration with IIT Bombay, have developed an **indigenous lab-grown 'placenta-on-chip' platform**.

About

- Despite its name, it is **not an electronic computer chip**. It is a **transparent plastic device** containing a **porous membrane** on which **researchers grow human placental cells alongside human endothelial cells**.
 - ♦ Together, these recreate the interface through which **nutrients, hormones and other molecules** are exchanged between **mother and foetus**.



- Unlike many existing placenta-on-chip systems that require sophisticated microfluidic equipment, **this model is a static two-chamber platform that can be used in a standard laboratory**.
- The device reproduces **several essential functions of the human placenta**, including **hormone production, nutrient transfer, waste exchange and selective barrier function**.
 - ♦ These capabilities make it a **promising platform for studying placental biology**, understanding pregnancy complications, and evaluating how medicines cross the placental barrier.

Placenta

- The placenta is one of the **most critical organs in pregnancy**.
 - ♦ It supplies oxygen and nutrients to the fetus, removes waste products, produces

hormones essential for sustaining pregnancy and acts as a selective barrier, determining what passes from the mother's bloodstream to the developing baby.

- How well the placenta functions influences fetal growth, pregnancy outcomes and the safety of medicines prescribed during pregnancy.

Source: TH

GALAXEYE LAUNCHES MISSION DRISHTI

Context

- Mission Drishti, the world's first OptoSAR satellite developed by space start-up GalaxEye, encountered an anomaly following a geomagnetic solar storm during the final stage of the Launch and Early Orbit Phase (LEOP).

About

- Mission Drishti is an Earth observation satellite Weighing 190 kilograms.
- It is the first satellite globally to integrate Electro-Optical (EO) and Synthetic Aperture Radar (SAR) sensors into a single operational platform, enabling all-weather, day-and-night imaging capabilities.
 - ♦ The satellite carries both a **multispectral camera and a SAR imager** for enhanced data analysis.
- Mission Drishti provides **high-resolution imaging, with future satellites** aiming for **sub-metre resolution**.
- **Significance:** It is a dual-use satellite, supporting both civilian and defence applications.
 - ♦ **Key applications include** agriculture monitoring, disaster management, maritime surveillance, and infrastructure mapping.

Source: TH

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