

Today's Prelims Topics

New Development Bank (NDB)

Context

Algeria becomes the 9th Member of New Development Bank (NDB).

About New Development Bank (NDB)

- **Establishment:** Founded in 2015 by the BRICS nations – Brazil, Russia, India, China, and South Africa.
 - Also known as the **BRICS Development Bank**.
- **Objective:** Functions as a multilateral development bank aimed at mobilizing resources for infrastructure and sustainable development projects in emerging markets and developing countries (EMDCs).
- **Membership:**
 - **Current Members:** Brazil, Russia, India, China, South Africa, Bangladesh, UAE, Egypt, and Algeria.
 - **Open Membership:** Available to all UN member states, including borrowing and non-borrowing countries (as per Article 2 of the NDB Agreement).
 - **Prospective Member:** Uruguay (approved by the Board of Governors; full membership pending upon deposit of accession instrument).
- **Headquarters:** Located in Shanghai, China.
- **Capital Structure:**
 - Authorized Capital: \$100 billion.
 - Initial Subscribed Capital: \$50 billion shared equally among the five founding BRICS nations.
- **Voting Rights:** Founding members must hold a minimum of 55% of the total voting power.

Contemporary Relevance of Regional Financial Institutions like NDB

- **Focus on Sustainable and Inclusive Development:** Supports projects aligned with environmental sustainability and social inclusion.
 - As of 2024, India has approximately 20 active projects worth \$4.87 billion, including sectors like transport and water conservation.
- **Addressing Infrastructure and Investment Gaps:** Aims to provide long-term financing for critical infrastructure.
 - Helps attract private capital and bridge funding shortages in developing regions.
- **Promoting Regional Integration and Stability:** Facilitates cross-border cooperation and development initiatives.
 - Strengthens South-South cooperation through India's active role in both NDB and the Asian Infrastructure Investment Bank (AIIB).

Source: [The Hindu: BRICS bank NDB admits Algeria as new member](#)

Globally Important Agricultural Heritage Systems (GIAHS)

Context

6 new sites join FAO's Globally Important Agricultural Heritage Systems (GIAHS).

Recent Additions to GIAHS Sites

- **Brazil: Traditional agroforestry system** used in cultivating the erva-mate plant.
- **China:** Added multiple **specialized farming systems**, including:
 - Cultivation of **pearl mussels** (a type of mollusc)
 - Farming of **white tea**
 - Production of **pears**
- **Mexico:** Honoured for an **ancestral agricultural system** that conserves vital **food crops and biodiversity**.
- **Spain (Lanzarote Island):** Acknowledged for a **unique farming system** adapted to the island's volcanic landscape.

About Globally Important Agricultural Heritage Systems (GIAHS)

- They are agroecosystems where communities maintain a deep and intricate relationship with their natural environment.
- These are dynamic and resilient agricultural systems that evolve over time.
- **Key Characteristics:**
 - **Remarkable Agrobiodiversity:** Includes a variety of crops, livestock, and ecosystems
 - All components function in ecological harmony.
 - **Traditional Knowledge:** Encompasses long-standing agricultural practices and wisdom.
 - Passed down through generations.
 - **Invaluable Cultures:** Reflects rich cultural heritage.
 - Traditions are intimately connected with the landscape and farming methods.
 - **Beautiful Landscapes:** Features visually striking and ecologically significant landscapes.
 - Shaped by sustained human-nature interaction.

GIAHS Programme

- **Origin:** Initiated in 2002 during the World Summit for Sustainable Development.
- **Rationale:** Developed as a response to rising global threats facing family farmers and traditional agricultural systems.
- **Objective:** To safeguard traditional farming practices and family-based agriculture from:
 - Climate change
 - Biodiversity degradation
 - Community displacement
- **Key Approach:**
 - **Multi-stakeholder Engagement:** Brings together various actors to support farming communities.
 - **Technical Assistance:** Provides direct support to enhance the resilience of local agricultural practices.
 - **Knowledge Promotion:** Encourages recognition and preservation of traditional agricultural knowledge and techniques.
 - **Market Development:** Facilitates new opportunities like:
 - Marketing of traditional farm products
 - Agro-tourism
 - Local economic development

Current Status (as of latest data)

- **Total Recognized Sites:** 95
- **Notable Indian GIAHS Sites:**
 - Saffron Heritage of Kashmir
 - Koraput Traditional Agriculture, Odisha
 - Kuttanad Below Sea Level Farming System, Kerala

Source: [FAO: Six new sites recognized as Globally Important Agricultural Heritage Systems](#)



PM Internship Scheme

Context

Following the review of two pilot phases of the **PM Internship Scheme (PMIS)**, the **Ministry of Corporate Affairs** is planning to introduce certain modifications to the scheme.

About PM Internship Scheme

- **Aim:** To provide internship opportunities to one crore youth in the top 500 companies.
- **Benefits:**
 - A monthly stipend of ₹4,500 will be provided to the interns from the central government via DBT (Direct Benefit transfer)
 - Additional ₹500 offset will be provided by the company's CSR fund.
- **Internship Period:** 1 Year
- **Eligibility:**
 - Candidates aged between 21 and 24 years who are not engaged in full-time employment are eligible for the one-year internship programme.
 - Internships are available to those who have passed class 10 or higher.
- **Exceptions:**
 - Individuals from families with government jobs are excluded
 - A candidate who graduated from premier institutes such as IIT, IIM or IISER, and those who have CA, or CMA qualification would not be eligible to apply for this internship.
 - Anyone from a household that includes a person who earned an income of ₹8 lakh or more in 2023-24, will not be eligible.

What is CSR (Corporate Social Responsibility) ?

- It is a concept whereby companies integrate social and environmental concerns in their business operations.
- In India, Companies Act, 2013 has made CSR contribution mandatory.

Source: [Indian Express: Govt to seek cabinet nod to tweak PM Internship Scheme](#)

Editorial Summary

How EVs contribute to pollution

Context

A new study by Indian researchers has found that EVs may be bad news for tackling air pollution.

How EVs Contribute to Pollution

- **Tyre Wear and Tear:** Due to their **greater weight**, EVs experience **more tyre degradation** than conventional vehicles.
 - This results in the release of **larger quantities of small rubber and plastic particles** into the air.
- **Microplastic and Nanoplastic Emissions:** The **small particles** (often <10 micrometres) stay suspended in the air, adding to **air pollution**.
 - These particles are difficult to settle and can **penetrate human lungs**, causing health issues.
- **Primary Fragmentation from Heavier Loads:** EVs undergo more "**primary fragmentation**" due to frequent **braking, sudden acceleration, and bad road encounters**.
 - This process generates **smaller, airborne particles**, which are more harmful than larger ones.
- **Speed and Acceleration Factor:** EVs **accelerate faster**, leading to **more friction and heat** on tyres.
 - This increases the rate of **particle generation** and air pollutant concentration.
- **Global Scale of Impact:** As **EV adoption rises globally**, these non-exhaust emissions will become a **significant source of pollution**.
 - In countries like **India and China**, rapid EV expansion could intensify this issue.
- **Regulatory Gaps and Challenges:** Current air quality norms often regulate only **PM2.5 and PM10**.
 - **Tyre micro-particles are smaller** and go **unregulated**, making it necessary to revise air quality standards.

Suggested Responses

- **Expand air quality regulations** to include tyre-related microplastic particles.
- **Encourage R&D** for **stronger, EV-compatible tyres**.
- **Consider tech solutions** to **capture tyre particles at the source**.
- **Update emission standards** to include **non-exhaust pollutants** like tyre and brake wear.

Source: [Indian Express: Tyre particles: How EVs are a climate solution with pollution problem](#)

A medical oxygen access gap SE Asia must bridge

Context

The Lancet Global Health Commission on medical oxygen security highlights a stark reality — that South Asia (78%) and East Asia (74%) and the Pacific have the highest unfulfilled demand for medical oxygen.

Challenges Associated with Oxygen Availability

- **Equipment Shortage:** Only 54% of hospitals in LMICs have pulse oximeters and 58% have access to oxygen.
- **High Costs:** An estimated \$6.8 billion is required globally to bridge the oxygen gap, with South Asia alone needing \$2.6 billion.
- **Human Resource Gaps:** Lack of trained biomedical personnel delays maintenance and leads to frequent equipment failure.
- **Weak Infrastructure:** Inadequate and outdated oxygen generation and supply infrastructure, especially in rural and underserved areas.
- **Power Supply Issues:** Frequent power outages hinder oxygen production; many facilities lack backup or renewable energy solutions.
- **Poor Integration:** Oxygen is often not integrated into routine healthcare and emergency preparedness plans.
- **Governance and Coordination Failures:** Absence of national policies, poor inter-agency coordination, and insufficient regulatory oversight.
- **Dependency on Imports:** Many LMICs rely on imported equipment and oxygen supplies, raising costs and delays.
- **Lack of Real-Time Data:** Absence of digital tools for monitoring oxygen levels, forecasting demand, or optimizing supply chains.
- **Underutilization of PSA Plants:** Many COVID-era PSA (Pressure Swing Adsorption) plants remain underutilized due to lack of technical readiness and maintenance.

Way Forward

- **Strengthening Infrastructure:** Establish decentralized oxygen production units like PSA plants.
 - Promote solar-powered oxygen systems for energy-resilient supply, especially in remote areas.
- **Enhancing Workforce Capacity:** Train biomedical engineers and technicians through regional and international cooperation (e.g., Bhutan-Nepal-WHO model).
 - Build capacity at the district and peripheral healthcare level.
- **Sustainable Financing:** Develop long-term financing models for oxygen infrastructure.
 - Encourage continued donor support and public-private partnerships.
- **Policy and Governance Reforms:** Integrate oxygen access into Universal Health Coverage and national emergency plans.
 - Develop national medical oxygen scale-up plans with WHO support.
 - Use WHO's Access to Medical Oxygen Scorecard to monitor and ensure accountability.
- **Local Manufacturing and Innovation:** Encourage local production of oxygen equipment to reduce import dependency.
 - Invest in cost-effective and innovative technologies (e.g., portable concentrators, booster pumps).
- **Global and Regional Cooperation:** Foster cross-border knowledge exchange, training, and joint initiatives.
 - Align efforts with WHO's Oxygen Resolution timelines (2026, 2028, 2030 reporting).
- **Leveraging Digital Technology:** Use digital tools for real-time monitoring, predictive analytics, and supply chain optimization.

Conclusion

The oxygen crisis, exposed starkly during the COVID-19 pandemic, is a solvable issue with the right investments, partnerships, and political will. Ensuring equitable access to medical oxygen is not just a public health necessity but a fundamental human right. Sustainable solutions—not crisis-driven responses—are the key to bridging the oxygen gap and saving lives.

Source: [The Hindu: A medical oxygen access gap SE Asia must bridge](#)



Detailed Coverage

Urban Flooding

Context

Bengaluru's recent heavy rains flooded the roads with water.

What Is Urban Flooding?

- Urban flooding is the **inundation of land or property in a built environment**, particularly in densely populated areas, **caused by rainfall** overwhelming the capacity of drainage systems.
- Unlike rural flooding, which is often caused by overflowing rivers, urban flooding is primarily **driven by the unique characteristics of cities**.

Causes Of Urban Floods

Natural Factors

- **Higher Rainfall:** Increased monsoon intensity and unpredictable rainfall patterns, as per the Indian Meteorological Department (IMD), contribute significantly to urban flooding. Heavy downpours overwhelm drainage systems and natural landscapes, leading to inundation.
- **Storm Surges:** Coastal cities face an additional threat in the form of storm surges, which can be devastating.
 - **E.g., Cyclone Amphan in 2020** serves as a stark reminder, with its devastating floods in Kolkata that claimed 98 lives and caused billions of dollars in damage.
- **Climate Change:** The changing climate exacerbates the risk of floods through extreme weather events.
 - Increased frequency of short-duration heavy rainfall leads to higher water runoff, further intensifying flooding potential.

Human-Made Factors

- **Encroachment on Drainage Channels:** Many cities have witnessed encroachment and illegal construction on water bodies like lakes, ponds, and rivers, and in urban green patches or mini forests, often referred to as '**blue infrastructure**'.
 - This results in reduced water storage capacity and disrupts the natural water flow, leading to increased flooding during heavy rains.
 - **E.g.,** In Hyderabad, from having 400 lakes and 48 flood-absorbing tanks in 1929, the city now has only 169 lakes.
- **Inadequate Drainage Systems:** Many Indian cities rely on centuries-old drainage infrastructure, originally designed for a much smaller population.
 - **E.g.,** The **Karnataka State Action Plan on Climate Change (2013)** had noted that drain infrastructure of Bengaluru is not enough to handle even moderate rainfall events. Yet, the infrastructure has not been upgraded.
- **Uncontrolled Water Release:** Sudden and unplanned release of water from dams and lakes can cause devastating floods in urban areas.
 - **E.g.,** The **Chennai floods of 2015**, triggered by the release of water from Chembarambakkam Lake.
 - **Uttarakhand Floods 2013** – The devastating flood event in Uttarakhand was exacerbated by the sudden release of water from dams located upstream.
- **Urban Heat Island Effect:** Cities experience higher temperatures due to the concentration of buildings and heat-generating activities. This "heat island effect" can lead to increased rainfall, further contributing to flooding risks.

- **E.g.,** Rapid urbanisation of Gurugram/Gurgaon, has led to the construction of numerous high-rise buildings and paved areas, contributing to the city's increasing vulnerability to floods.
- **Unsustainable Development:** Building structures in flood-prone areas or obstructing natural watercourses can disrupt the natural flow of water during heavy rainfall events. This can cause water to accumulate and lead to flooding.
 - **E.g., Delhi Flood 2023-** The Yamuna River reached a high level of 208.48 metres, causing flooding in Delhi's low-lying areas along the riverbanks and affecting streets, as well as public and private infrastructure.
- **Poor Governance:** Lack of proper planning, inadequate drainage infrastructure, and poor waste management practices all contribute to urban flooding.
 - **E.g., Patna (2019)** experienced severe urban flooding due to the challenge faced by the municipal authorities during this crisis was their inability to locate the city's drainage map.
- **Poor Waste Management:** Inefficient waste management practices lead to the accumulation of plastic and other debris in drainage channels, further obstructing water flow and increasing the risk of flooding.
 - **E.g., Mumbai Flood, 2005-** Experts said it is a result of clogged open surface drains with solid waste, including plastic, storm water drains and its channels.
- **Illegal Mining Activities:** Unsustainable practices like illegal mining of sand and quartzite for construction deplete riverbeds and lakes, reducing their water retention capacity and exacerbating flood risks.
 - **E.g.,** The Jaisamand Lake in udaipur and the Cauvery River in Tamil Nadu.

Impacts Of Urban Flooding

- **Loss of life and injuries:** Flooded streets and buildings can lead to drowning, electrocution, and other injuries.
 - **E.g., Chennai floods(2015)** claimed over 300 lives, highlighting the potential for human casualties during extreme flooding events.
- **Economic disruption:** Flooded streets, homes, and businesses can suffer structural damage and require costly repairs.
 - Businesses may be forced to close due to flooding, leading to lost revenue and unemployment.
 - Disruptions to transportation and communication networks can hinder economic activity and productivity.
 - **E.g., Mumbai floods (2005)** caused an estimated \$10 billion in economic losses, highlighting the significant financial impact of urban flooding.
- **Health risks:** Contaminated flood water can spread waterborne diseases like cholera, typhoid, and leptospirosis.
 - Standing water can create breeding grounds for mosquitoes, increasing the risk of malaria and dengue fever.
 - Psychological impacts like stress, anxiety, and depression can be experienced by individuals and communities affected by floods.
- **Environmental damage:** Floodwaters can carry pollutants and debris into rivers and waterways, harming aquatic life and ecosystems.
 - Erosion and sedimentation can damage soil quality and agricultural land.
 - Floods can also contribute to the spread of invasive species and disrupt natural habitats.
 - **E.g., Kerala floods (2018)** caused widespread damage to agricultural land and disrupted the local fishing industry, showcasing the environmental repercussions of urban flooding.

Way Forward

- **Nature-Based Solutions (NBS):** Cities are increasingly looking towards NBS, which involve utilising natural processes and ecosystems to mitigate flooding.
 - **E.g.,** In Mumbai, initiatives like The City Fix Lab and the Climate-Proof Cities movement are focusing on reviving lakes and enhancing urban greenery.
 - These efforts are cost-effective, environmentally friendly, and involve local communities, making them sustainable long-term solutions for urban flood mitigation.
- **Integrated Blue-Green-Grey Infrastructure:** This approach combines natural (blue-green) infrastructure with traditional (grey) water infrastructure.
 - This method uses natural systems, such as parks and wetlands, to absorb stormwater runoff, retain stormwater, and mitigate impacts of coastal erosion.
 - **E.g.,** Globally, cities like Portland, Seattle, and New York have implemented such integrated solutions at the street and neighbourhood scale, transforming hard streets into porous, green landscapes with permeable pavements and rain gardens.
- **Urban Green Spaces:** Transforming open spaces like city parks, playgrounds, and post-industrial zones into water-prudent landscapes has been effective in cities like Paris, Singapore, and Rotterdam.
 - These spaces not only manage floodwater but also enhance urban biodiversity and provide recreational areas for residents.
- **Sponge Cities Concept:** This concept focuses on making cities more absorbent to water, similar to a sponge.
 - **E.g., China's Sponge City Initiative** aims for cities to absorb and reuse a significant percentage of rainwater.
- **National Policies and Programs:** Support from national policies is crucial for widespread implementation of flood-proofing strategies.
 - **E.g.,** In Singapore and China, national green policies and programs have been instrumental in supporting the financing and implementation of innovative hybrid solutions for urban flood management.

Source: [Deccan Herald: Gaps in dealing with Bengaluru floods](#)