

DAILY CURRENT AFFAIRS (DCA)

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THE IMPLICATIONS OF INDIA'S 1.9 FERTILITY RATE

Context

- According to the recently released Sample Registration System (SRS) Statistical Report 2024, **India's total fertility rate (TFR) has dropped to 1.9.**

Major Highlights

- **India's Total Fertility Rate (TFR)**, the average number of children a woman would have in her lifetime assuming she lives through her reproductive years (15-49 years), has **fallen below the replacement level of 2.1.**
- **Replacement rate** is the number of child births a woman must go through to keep the population constant from one generation to the next without migration.
- **The only states in India with a TFR higher than 2.1 in 2024** were Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan, and Chhattisgarh.
- **Delhi records the lowest TFR at 1.2**, followed by Tamil Nadu, Kerala and West Bengal at 1.3 each.
- **In 1985, India's TFR was 4.3** and has fallen at a rate of about 0.06 per year and there is no sign that this decline will reverse.
 - ♦ At the current pace, India's TFR is projected to drop below 1.6 by 2031.

Reasons for Declining Fertility Rate in India

- **Delayed Marriage and Childbearing:** The average age at marriage has increased, especially in urban areas, couples are postponing childbirth due to career considerations.
- **Urbanisation:** Urban living is associated with higher costs of housing, education, healthcare, and childcare. Limited living space and changing lifestyles encourage smaller family sizes.
- **Improved Access to Contraception and Family Planning:** Expansion of reproductive health services and contraceptive availability has enabled couples to plan the number and spacing of children.
- **Declining Infant and Child Mortality:** Improvements in healthcare, immunisation, nutrition, and sanitation have reduced child mortality which makes parents no longer feel the need to have additional children.
- **Economic Factors:** The cost of raising and educating children has increased substantially. Families increasingly prefer investing more

resources in fewer children to improve their quality of life and educational outcomes.

- **Demographic Transition:** India is moving through the later stages of the Demographic Transition Model, characterised by low birth rates, low death rates, slower population growth.

Implications

- **Slower Population Growth and Eventual Stabilisation:** A fertility rate below replacement level means that, over time, each generation will be smaller than the previous one. Eventually, the population is expected to stabilize and later decline.
- **Rising Ageing Population:** A sustained low fertility rate will increase the proportion of elderly citizens.
 - ♦ India may face challenges similar to those experienced by countries such as Japan and South Korea i.e. higher pension liabilities, greater healthcare expenditure and increased demand for geriatric care and social security.
- **Future Labour Force Challenges:** A declining birth rate eventually leads to fewer entrants into the labour market. Economic growth could slow if productivity improvements do not compensate for a smaller workforce.
- **Regional Demographic Imbalances:** Fertility rates vary significantly across states, most southern and western states have well below replacement fertility, while states such as Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan continue to record relatively higher fertility levels.
 - ♦ This may alter the internal migration patterns, political representation, resource allocation and labour market dynamics.

Way Ahead

- **Need for New Population Policies:** India's policy focus may gradually shift from controlling population growth to managing ageing population.
- **Opportunity to Strengthen the Demographic Dividend:** India still has a large working-age population, lower fertility can reduce the dependency burden on families and the state.
 - ♦ Greater investments can be directed towards education, health, skills, and productivity of the workforce.

Conclusion

- India's fertility rate of 1.9 represents a major demographic transition, while it reflects

progress in education, healthcare, and women's empowerment.

- It also signals future challenges related to aging, workforce sustainability, and social security.
- The key policy task is to convert the current demographic advantage into long-term economic and social gains before the ageing burden becomes significant.

Source: DTE

NATIONAL FAMILY HEALTH SURVEY (NFHS)-6

Context

- The Ministry of Health and Family Welfare has released the National Family Health Survey (NFHS)-6.

About

- The NFHS-6 was conducted during **2023-24 by MoHFW** with the **International Institute for Population Sciences (IIPS)**, Mumbai as the nodal agency.
- Covering nearly 6.79 lakh households across 715 districts, the survey provides evidence on **population, health, nutrition and family welfare indicators**.
- It supports **evidence-based planning and programme implementation** up to the district level.

Major Findings

- **Improvements in Maternal and Child Healthcare:** 95.9% of pregnant women received antenatal care (ANC), while mothers receiving ANC in the first trimester increased from 70.0% to 76.2%.
- **Institutional Deliveries:** Institutional deliveries increased from **88.6% to 90.6%**, moving India closer towards universal coverage. Births attended by skilled health personnel improved from 89.4% to 91.3%.
 - ♦ **Caesarean section deliveries** have also increased sharply from 21.5% to 27.2% in India, the C-section rate in urban areas stood at 40%. This rate far **exceeds the World Health Organisation's (WHO) optimal threshold of 10-15%**.
- **Maternal Nutrition:** Mothers consuming iron folic acid supplements for 100 days or more during pregnancy increased from 44.1% to 54.9%, while those consuming supplements for 180 days or more rose from 26.0% to 37.8%.

- **Family Planning:** India's Total Fertility Rate (TFR) remains at 2.0. The Contraceptive Prevalence Rate (CPR) increased from 66.7% to 69.1%, with focus on well-being of mother and child.
- **Child Immunization Success:** Full vaccination coverage among children aged 12-23 months based on vaccination cards, increased from **83.8% to 87.1%**.
 - ♦ 95.6% of children received most vaccinations through public health facilities.
 - ♦ Any vaccine received by children aged 12-23 months remains consistently high above 96%.
- **Child Nutrition:** 95.6% of children under six months of age were found to be breastfed during the survey period.
 - ♦ **Stunting (low height for age)** among children under five years declined substantially from 35.5% to 29.3%.
 - ♦ **Severe wasting (too thin for one's height)** declined sharply from 7.7% to 5.2%, while underweight prevalence in under five children also registered a marginal decline from 32.1% to 31.8%.
- **Health Protection Expansion:** Health insurance/financing scheme coverage has expanded significantly from 41.0% to 60.2% at the household level.
- **Women's Empowerment and Financial Inclusion:** Women who had ever used the internet nearly doubled from **33.3% to 64.3%**.
 - ♦ Women having a bank or savings account that they themselves use increased from 78.6% to 89.0%, and women having a mobile phone that they themselves use rose from 53.9% to 63.6%.
 - ♦ The use of **hygienic methods of menstrual protection** among women aged 15-24 years has increased from **77.6% to 79.2%**.

Conclusion

- The findings reflect **steady gains in maternal and child health, nutrition, women's empowerment and access to essential services**.
- At the same time, emerging challenges such as rising non-communicable diseases and the dual burden of undernutrition and rising overweight/obesity among adults highlight the need for **continued focus on preventive healthcare**.
- Overall, the **findings reaffirm India's steady progress** towards achieving the Sustainable Development Goals (SDGs).

- With continued emphasis on convergence, last-mile delivery and inclusive growth, India is well-positioned to sustain these gains and further improve the health and well-being of its population.

Source: PIB

NFHS-6: OBESITY & DIABETES RISING IN INDIA

Context

- The recently released National Family Health Survey-6 (NFHS-6) highlights a sharp rise in obesity and diabetes across India, signalling a growing burden of non-communicable diseases (NCDs).

About NFHS-6

- The NFHS-6, conducted in **2023-24** by the Union Health Ministry with the International Institute for Population Sciences (IIPS), Mumbai as the nodal agency, covered around 6.79 lakh households across 715 districts in all States and UTs, except Manipur.
- It provides “vital evidence” on population, health, nutrition and family welfare indicators.

Key Findings

- **Rising Obesity:**
 - ♦ **Obesity among women** increased from 24% (2019-21) to 30.7% (2023-24). Urban women recorded a higher prevalence (42.8%) than rural women (25.5%).
 - ♦ **Obesity among men** rose from 22.9% to 27.3% during the same period. Urban men (36.3%) were more affected than rural men (23%).
- **Rising Diabetes**
 - ♦ **High blood sugar prevalence among men (15+ years)** increased from 15.6% to 20.9%. The urban-rural figures stood at 23.9% and 19.7%, respectively.
 - ♦ **High blood sugar prevalence among women (15+ years)** increased from 13.5% to 17.8%. Urban women (21.9%) reported higher prevalence than rural women (16.2%).

What is Obesity?

- According to the World Health Organization, obesity is the abnormal or excessive accumulation of body fat that presents a risk to health.
- Traditionally measured using Body Mass Index (BMI).

What is Diabetes?

- Diabetes is a chronic metabolic disorder in which the body either does not produce enough insulin or cannot effectively use the insulin it produces.
- It results in elevated blood glucose levels.
- Major types:
 - ♦ Type 1 Diabetes
 - ♦ Type 2 Diabetes
 - ♦ Gestational Diabetes

Why is the Rise in Obesity and Diabetes a Concern?

- India already has over **10 crore people** living with diabetes, according to the ICMR-INDIAB study.
- Obesity is a major risk factor for **diabetes, cardiovascular diseases, hypertension, stroke, and certain cancers**.
- Rising **Non-Communicable Diseases (NCDs)** increase healthcare expenditure and reduce workforce productivity.
- Childhood and adolescent obesity can lead to lifelong health complications and a higher risk of adult NCDs.
- The growing burden of obesity and diabetes threatens India's demographic dividend by affecting the health and productivity of the working-age population.

Government Initiatives

- **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD):** Promote health through behavior change via community, civil society, media, and partner engagement.
 - ♦ **Focus Areas:** Screening, early diagnosis, management, referral, and follow-up at all healthcare levels for continuous care.
- **Specialized Ayurvedic Care:** The All India Institute of Ayurveda (AIIA) offers specialized treatments for obesity and related lifestyle disorders.
- **Ayurwasthya Yojana:** The Central Sector Scheme is aimed at promoting AYUSH interventions in community healthcare.
 - ♦ It supports projects focused on managing lifestyle disorders and non-communicable diseases (NCDs).
- **POSHAN Abhiyaan : Preventing Childhood Obesity:** Launched in **2018**, aiming to improve nutritional outcomes for children, adolescent girls, pregnant women, and lactating mothers by fostering a convergent ecosystem that enhances

nutrition content, delivery, and awareness to combat malnutrition and promote overall wellness.

- **Fit India Movement: A Mass Fitness Revolution:** Launched in **2019**, it promotes active lifestyles and encourages individuals to incorporate fitness into daily routines.
 - ♦ **Fit India School Certification for schools** incorporating physical activity in their curriculum.
 - ♦ **Fit India Sundays on Cycle initiative** promoting cycling and walking in urban spaces.
- **Eat Right India Movement (FSSAI):** It encompasses several key initiatives aimed at ensuring safe, healthy, and sustainable food for all.
- **Regulating High Fat, Salt, and Sugar (HFSS) Foods:** FSSAI, in collaboration with the ICMR-National Institute of Nutrition (NIN), has recommended mandatory labeling of High Fat, Salt, and Sugar (HFSS) foods.

Challenges

- **Sedentary lifestyles:** Increasing screen time, desk jobs, and reduced physical activity contribute to obesity.
- **Unhealthy dietary habits:** Rising consumption of ultra-processed foods high in sugar, salt, and fat.
- **Late diagnosis:** A large number of diabetes cases remain undiagnosed until complications emerge.
- **Urban-rural health gap:** Urban areas show higher prevalence, but rural healthcare systems are often less equipped to manage NCDs.
- **Economic burden:** Long-term treatment of obesity-related diseases increases healthcare costs for families and the government.

Way forward

- **Promote preventive healthcare** through awareness campaigns on healthy diets, exercise, and regular health check-ups.
- **Strengthen screening and early diagnosis** under primary healthcare and Ayushman Bharat initiatives.
- **Encourage healthier food choices** through better food labelling and regulation of High Fat, Salt and Sugar (HFSS) foods.
- **Develop active urban infrastructure** such as walking tracks, cycling lanes, and public recreational spaces.

- **Adopt a whole-of-government approach** integrating health, education, urban planning, food regulation, and nutrition policies to tackle NCDs.

Source: IE

INDIA'S GDP BASE YEAR REVISION

Context

- India has revised its GDP base year from 2011–12 to **2022–23**, resulting in changes to GDP estimates and growth rates to better reflect the current structure of the economy.

Why was the GDP series revised?

- India periodically revises its GDP base year to reflect changes in the **economy's structure, production patterns, consumption behavior, and data availability**.
- Such revisions are usually undertaken **every five years**, but this exercise was delayed due to the **implementation of GST and the COVID-19 pandemic**.

- The objective is to improve the **accuracy and reliability** of national income estimates.

Major Changes in the New GDP Series

- **Use of Better and More Recent Data Sources:** The revised series incorporates:
 - ♦ **Annual Survey of Unincorporated Sector Enterprises (ASUSE).**
 - ♦ **Periodic Labour Force Survey (PLFS).**
 - ♦ Updated administrative databases and sector-specific information.
- **More Disaggregated Sectoral Estimation:** Earlier estimates relied on broad sector-level indicators.
 - ♦ The new methodology uses detailed sub-sector and activity-level data for agriculture, industry, and services.
- **Improvement in Price Measurement:** The new series employs commodity-specific and activity-specific price indices to estimate real GDP. These detailed price indices capture variations in inflation across different sectors more accurately.
- **Introduction of Double Deflation:** The revised series applies the double deflation method in agriculture and manufacturing, which separately accounts for changes in **input prices and output prices**.
 - ♦ As a result, the estimation of real gross value added becomes more accurate.

Significance of GDP Revision

- **Better Policy Formulation:** More accurate GDP estimates enable policymakers to design **better fiscal and monetary policies**.
- **Better Understanding of Trends:** The revised estimates provide a clearer understanding of trends in consumption, investment, and production.
- **International Credibility:** Improved statistical methodologies increase confidence among investors and international institutions.
 - ♦ More reliable economic data strengthens India's credibility in global economic assessments.
- **Improved Assessment of Welfare:** Accurate GDP estimates help policymakers assess changes in income generation and employment opportunities.

Key Revisions in Estimates

- **The GDP estimate** for 2022–23 has been revised downward by **2.9 percent**.
 - ♦ The GDP estimates for 2023–24 and 2024–25 have each been revised downward by **3.8 percent**.
 - ♦ These revisions indicate that the size of the economy was previously overestimated.
- **Revision in Growth Rates:** The GDP growth rate for 2023–24 has been revised downward from **9.2 percent to 7.2 percent**.
 - ♦ The GDP growth rate for 2024–25 has been revised upward from 6.5 percent to **7.1 percent**.

About Gross Domestic Product (GDP)

- GDP is the **total monetary value of all final goods and services** produced within a **country's domestic territory** during a specific period (usually a quarter or a year).
- **Released By:** National Statistical Office (NSO), Ministry of Statistics and Programme Implementation (MoSPI).
- **Calculation of GDP:** GDP is calculated using three main methods;
 - ♦ **The Expenditure Approach:** This method sums up all spending on final goods and services in the economy.
 - ♦ **The Income Approach:** This method sums all incomes earned by factors of production (labor, capital).

- ♦ **The Production/Value-Added Approach:** This method adds up the value added by each industry at every stage of production.

Nominal Vs Real GDP

- **Nominal GDP** measures a country's economic output at current market prices, thereby **incorporating the effects of inflation** and making it useful for assessing the economy's size in present-value terms.
- **Real GDP** adjusts for inflation by **valuing output at constant base-year prices**, providing a more accurate measure of actual growth in production over time.

What is Base Year?

- A base year is a **benchmark year** used for comparison in **economic and statistical calculations**.
- It provides a **reference point** against which current values of indicators like GDP, CPI, and IIP are measured to track real changes over time.
- **Significance:**
 - ♦ It allows us to **remove the effect of inflation** and see real growth.
 - ♦ Ensures that the data reflects the **current structure of the economy**, consumption patterns, and prices.

Challenges Ahead

- GDP estimation remains **methodologically complex**, even with improved tools.
- Integrating multiple administrative datasets poses **data quality and consistency challenges**.
- Ensuring timely availability of **reliable survey data is critical**.
- Transition to a new series may initially create **comparability issues** for long-term analysis.

Concluding remarks

- The revision of India's GDP series marks a step towards improving the accuracy, transparency, and credibility of national income statistics.
- By updating the base year, and eliminating discrepancies the new framework is better aligned with the realities of a rapidly formalising and digitising economy.

Source: The Diplomat

DEEP-TECH INNOVATION AS A DRIVER OF INDIA'S GROWTH

Context

- The Union Education Minister said that Bharat Innovates reflects India's emergence as a global innovation hub, while addressing the concluding session of the Bharat Innovates Deep-Tech Pre-Summit at IIT Bombay.

Bharat Innovates 2026

- Bharat Innovates is a national programme of the **Ministry of Education, Government of India**.
- It is designed as a global accelerator and collaboration framework for **deep-tech ventures** emerging from **India's higher education and research ecosystem**.
- Core Purpose:** It acts as a long-term collaboration bridge connecting India's top deep-tech startups and research parks with global stakeholders, including investors, corporations, and international governments.
- Technology Focus:** The program spotlights innovations across **13 frontier sectors**. These include semiconductors, biotechnology, space and defence, AI and cloud computing, green energy, and smart mobility.

What is deep technology?

- Deep tech refers to **advanced and disruptive technologies** that have the potential to trigger transformative change, and provide solutions for the future.
- The term is used to describe **cutting-edge research** in nanotechnology, biotechnology, material sciences, quantum technologies, semiconductors, artificial intelligence, data sciences, robotics, 3D printing, etc.

Significance of India's Deep-Tech Ambitions

- Global Leadership:** It positions India as a trusted R&D hub in the "**China+1**" global landscape, leveraging its massive STEM talent pool to lead in frontier technologies like **Quantum Computing and 6G**.
- Technological Sovereignty:** Reduces critical reliance on foreign imports for national security, defense, and space, ensuring India isn't vulnerable to global supply chain disruptions.
- Solving Local Challenges:** Enables **India-first** solutions for massive social hurdles, such as AI for rural healthcare, precision agriculture for food security, and green hydrogen for energy independence.

- Economic Value:** A robust deep-tech ecosystem enables India to move up the global value chain, shifting from **low-cost services and assembly-based manufacturing to high-value research, design and intellectual property creation**.

Challenges Facing India's Deep-Tech Ecosystem

- Low R&D Expenditure:** India's Gross Expenditure on Research and Development (GERD) remains around **0.64% of GDP**, significantly lower than major innovation economies such as the **US, China, South Korea, and Israel**.
- Limited Private Sector Participation:** Public institutions account for a major share of R&D spending, while private-sector contribution remains around **36%**, far below countries where industry drives over **70%** of R&D investment.
- Funding Constraints:** Venture capital in India largely **favours quick-return sectors** such as **fintech and e-commerce**, whereas deep-tech ventures require high-risk investments, patient capital, and long gestation periods.
- Semiconductor Dependence:** India continues to rely heavily on imports of semiconductors, advanced electronics, and fabrication equipment, creating technological and **supply-chain vulnerabilities**.
- Brain Drain:** A large number of highly skilled researchers and engineers migrate abroad due to better research infrastructure, funding opportunities, and higher remuneration.
- Weak Industry–Academia Linkages:** Limited collaboration between universities, research institutions, and industry restricts technology transfer, patent commercialization, and the scaling of research-driven innovations.
- Global Competition in Frontier Technologies:** Rapid advancements in Artificial Intelligence, quantum technologies, biotechnology, and advanced manufacturing by major powers pose significant competitive challenges for India.

Government Initiatives for India's Deep-Tech Ecosystem

- Research Development and Innovation (RDI) Scheme Fund:** The scheme has an outlay of **Rs 1 lakh crore over 6 years**, with Rs 20,000 crore allocated for FY 2025–26, funded from the Consolidated Fund of India. **Key objectives** of the Scheme are as follows;
 - ◆ **Encourage the private** sector to scale up research, development, and innovation (RDI)

in sunrise domains and in other sectors relevant for economic security, strategic purpose, and self-reliance,

- ♦ Finance transformative projects at higher levels of **Technology Readiness Levels (TRL)**,
- ♦ **Support acquisition of technologies** which are critical or of high strategic importance,
- ♦ Facilitate setting up of a **Deep-Tech Fund of Funds**.
- **National Deep Tech Startup Policy (NDTSP):** It seeks to strengthen India's deep-tech ecosystem through **enhanced funding, research commercialization, intellectual property support, talent development, and enabling regulations** for frontier technologies such as AI, semiconductors, quantum computing, biotechnology, and space technology.
- **India Semiconductor Mission (ISM):** Launched with a financial outlay of ₹76,000 crore to develop semiconductor and display manufacturing in India.
 - ♦ Provides up to **50% fiscal support** for semiconductor fabs, ATMP facilities, chip design, and related infrastructure.
- **National Quantum Mission (NQM):** Approved in **2023** for the period **2023–2031**, NQM seeks to build capabilities in **quantum computing, quantum communication, quantum sensing, and quantum materials**.
- **Atal Innovation Mission (AIM):** It promotes innovation and entrepreneurship through **Atal Incubation Centres (AICs)** and **Atal Tinkering Labs (ATLs)**.

Way Ahead

- **Increase R&D Investment:** Raise India's Gross Expenditure on Research and Development

(GERD) to at least **2% of GDP** through greater public funding and stronger private-sector participation.

- **Industry–Academia Collaboration:** Establish innovation clusters around leading universities and research institutions to accelerate technology transfer and commercialization.
- **Attract Talent:** Improve research funding, academic autonomy, and career opportunities to curb brain drain and attract global scientific talent.
- **Promote Global Partnerships:** Expand international collaborations in critical technologies while safeguarding intellectual property and national interests.

Source: DD News

WATER BUDGETING AND INDIA'S RURAL WATER SECURITY

Context

- Water budgeting has emerged as an important tool for improving rural water governance amid rising water stress, groundwater depletion, and increasing agricultural demand in India.

What is Water Budgeting?

- Water budgeting involves a systematic assessment of water availability and demand within a defined geographical unit such as a village, watershed, block, or district, with the objective of balancing water use with renewable availability.
- It estimates all sources of water availability such as rainfall, surface water, and groundwater recharge against total demand from agriculture, households, livestock, and industry.



Why India Needs Water Budgeting?

- From a governance perspective, water budgeting supports informed and evidence-based decision-making. It helps identify surplus and deficit areas while ensuring efficient water allocation across sectors.
- India has 17.5 percent of the global population and 11.6 percent of the world's livestock. This creates significant demand on water resources. Agriculture accounts for 80 to 90 percent of water use in rural areas.

Government Initiatives

- **Jal Jeevan Mission (JJM):** It was launched in 2019 to provide Functional Household Tap Connections (FHTCs) to rural households, and has brought tap water to nearly eight out of every 10 rural households.
 - ♦ The mission improves health and sanitation, reduces the burden on women, strengthens decentralised water management, and has now been extended till 2028.
- **Atal Bhujal Yojana (ATAL JAL):** It focuses on sustainable groundwater management in water-stressed regions. Its key **features** include community participation, water budgeting, aquifer mapping, and behavioural change.
 - ♦ It marks a shift from supply-side to demand-side management.
- **National Water Mission (NWM):** It recognises water budgeting as a foundational element of Integrated Water Resources Management (IWRM).
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** Its objective is 'Per Drop More Crop'. Its **components** are micro-irrigation, drip and sprinkler systems, and water-efficient agriculture.
- **Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Mission:** It aims to improve urban water supply, develop sewage treatment systems, and promote wastewater reuse.
 - ♦ Urban India faces increasing pressure from rapid population growth and pollution.
- **Namami Gange Programme:** Integrated river rejuvenation programme focusing on pollution control, sewage treatment, biodiversity conservation, and riverfront development.
 - ♦ It reflects a basin-based approach to river governance.

- **Varuni Web Application:** A digital platform that supports block-level water budgeting using data-driven assessments.
 - ♦ Helps local authorities identify water surplus and deficit areas.
- **Jalyukt Shivar Abhiyan (JSA):** Launched in **2014**, it aims to drought-proof villages through groundwater recharge and water conservation. It has helped make over 11,000 villages drought-free, increased groundwater levels by 1.5–2 metres, and improved agricultural productivity by 30–50%.

Challenges

- **Institutional Fragmentation:** Multiple agencies handle irrigation, drinking water, groundwater, sanitation, and urban water supply.
 - ♦ It creates policy overlaps, coordination failures, and weak accountability.
- **Interstate Water Disputes:** Conflicts such as Cauvery dispute, Krishna water dispute, and Ravi-Beas conflict show the limitations of cooperative federalism in water sharing.
- **Predominance of Engineering-Centric Approach:** Water management policies in India have historically focused on large-scale infrastructure such as dams, canals, and irrigation systems.
 - ♦ This approach prioritises supply augmentation while neglecting ecological sustainability and demand management.
- **Weak Data Systems:** There is a lack of reliable, comprehensive, and accessible water data across the country.
 - ♦ This leads to poor planning, inefficient allocation, and unregulated extraction of water resources.
- **Agricultural Policies:** Agricultural policies promoting water-intensive crops such as rice and wheat have led to excessive groundwater extraction.
- **Climate Change:** Changing rainfall patterns are increasing floods, droughts, and extreme weather events. It necessitates climate-resilient water governance.
- **Pollution and Water Quality:** According to CPCB reports, rivers are heavily polluted due to untreated sewage and industrial discharge; and groundwater contamination by arsenic and fluoride affects several States.

Way Forward

- **States should institutionalise water budgeting** at Gram Panchayat and watershed levels, as water is a **State subject** under Schedule VII, to strengthen participatory and evidence-based water governance.
- Encourage crop diversification and reduce the cultivation of water-intensive crops in water-stressed regions.
- Strengthen groundwater regulation through aquifer mapping, recharge measures, and community participation.
- Improve real-time water data collection, digital monitoring, and GIS-based planning tools.
- Build climate-resilient water infrastructure to address floods, droughts, and rainfall variability.

Source: **PIB**

NEWS IN SHORT

INS SUDARSHINI AND LOKAYAN 26 EXPEDITION

Context

- INS Sudarshini arrived in Antigua and Barbuda after successfully completing a historic trans-Atlantic passage as part of the Lokayan 26 Expedition.

About INS Sudarshini

- INS Sudarshini is a **sail training ship of the Indian Navy** designed to train naval personnel in **traditional sailing and seamanship skills**.
- The vessel was built by **Goa Shipyard Limited** and was commissioned into the **Indian Navy in 2012**.

Lokayan 26 Expedition

- The Lokayan 26 Expedition is a landmark **10-month, 22,000-nautical-mile** transoceanic voyage by the Indian Navy's sail training ship, INS Sudarshini.
- The expedition aims to promote **maritime diplomacy, strengthen relations with friendly nations, and enhance professional sailing skills** among naval personnel.
- The voyage marks the first Atlantic crossing by INS Sudarshini, while the last such crossing was undertaken by **INS Tarangini in 2007**.

About Antigua and Barbuda

- It is a **twin-island country** in the **Caribbean Sea**, made up of **two main inhabited islands**, Antigua and Barbuda, along with a few smaller, neighboring islands.
- The islands gained independence from the **United Kingdom in 1981**.
- **Antigua:** The larger island is the economic hub, home to the capital city of **St. John's**.
- **Barbuda:** Located about 25 miles north of Antigua, this island is much flatter, less developed, and known for its pristine natural beauty and bird sanctuaries.

Source: **AIR**

WHITE-BELLIED HERON CONCERNS OVER KALAI-II HYDEL PROJECT

Context

- The Union Environment Ministry's Forest Advisory Committee (FAC) has granted in-principle forest clearance to the Kalai-II Hydroelectric Project, raising concerns due to its potential impact on the White-Bellied Heron.

Kalai-II Hydroelectric Project

- The project is a **1,200 MW** run-of-the-river hydropower project proposed by THDC (Tehri Hydro Development Corporation Limited) India Limited.
- It is located in **Anjaw district of Arunachal Pradesh**, near the India–China border.
- The project involves the construction of a **128.5-metre concrete gravity dam** and an **underground powerhouse**.
- **Concerns:** Around 869 hectares of forest land will be diverted, including the submergence of 638 hectares of forest area.
 - ◆ Since Arunachal Pradesh has more than two-thirds of its geographical area under forests, compensatory afforestation will be undertaken in **Madhya Pradesh**.

White-Bellied Heron

- **Scientific Name:** Ardea insignis.
- **Significance:** The species serves as an indicator of **healthy riverine ecosystems**.
- **IUCN Status:** Critically Endangered.
- Its global distribution is restricted mainly to **Bhutan, India, and Myanmar**.

- ♦ In India, it is primarily found in **Arunachal Pradesh and parts of Assam.**
- **Concerns:** The Lohit River constitutes one of the species' most important riverine habitats.
 - ♦ The species has been recorded in **Walong, Chengung, and the downstream Kamlang Tiger Reserve landscape.**
 - ♦ The submergence of forest and riverine areas may destroy the bird's **nesting, feeding, and breeding habitats.**

Source: **IE**

ALBINO HOG DEER

Context

- A **rare albino hog deer** was recently spotted roaming inside **Assam's Kaziranga National Park.**

About

- The albino hog deer is a **small cervid** native to the region of the Indian subcontinent and Indo-Gangetic Plain. It is characterised by **white fur, pink eyes and pale hooves.**
- Due to a rare genetic mutation known as **albinism**, the animal entirely lacks **melanin pigment.**



- **Albinism can make survival difficult in nature** as these animals often struggle with camouflage, visibility to predators, and sensitivity to sunlight.
- Beyond hog deers, India is also home to a **variety of albino species**, such as the Gaur, Indian cobra and primates like rhesus macaque.
- **Odisha's Bhitarkanika National Park** is famously home to **rare albino saltwater crocodiles.**

About Kaziranga National Park

- It is located in the northeastern state of Assam.
- It was established in **1908** as a reserve forest and became a **national park in 1974.**
- It was declared a UNESCO world **heritage site in 1985.**
- It is the largest habitat of the **Indian rhinoceros (Rhinoceros unicornis).**

Source: **IE**

BABESIA INFECTION

Context

- Eight lion cubs have died in Gujarat due to a suspected Babesia infection, raising concerns about the health of the Asiatic lion population.

About

- Babesia is a **parasitic disease** transmitted through **ticks** and can cause weakness, fever, coughing and nasal discharge in infected animals.
- It is a **zoonotic disease**, meaning it can transmit from animals to humans.
- Atovaquone plus azithromycin is used to treat most mild to moderate cases and is usually taken for 7 to 10 days.

Asiatic Lion (*Panthera leo persica*)

- It is one of the **five big cat species** found in India.
- **Physical Characteristics:** Asiatic lions are slightly **smaller than African lions.**
 - ♦ Males have **less developed manes**, leaving their ears visible.
 - ♦ Prominent **longitudinal fold of skin** along the belly (a distinguishing feature from African lions).
- **Distribution:** In India, concentrated in the state of Gujarat in and around the Gir Forest mainly in;
 - ♦ Gir National Park and Wildlife Sanctuary
 - ♦ Paniya Wildlife Sanctuary
 - ♦ Mityala Wildlife Sanctuary
 - ♦ Barda Wildlife Sanctuary
- **Conservation Status:**
 - ♦ **IUCN Red List status:** Endangered
 - ♦ **CITES:** Appendix I
 - ♦ **Wildlife Protection Act, 1972:** Schedule I



Source: **TH**