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DIGITAL INDIA PROGRAMME COMPLETED 11 YEARS

The **Digital India Programme** completed **11 years on 1 July 2026**. During this period, India has built one of the world's most extensive **Digital Public Infrastructure (DPI)** ecosystems, fundamentally changing how citizens access government services, make payments, receive welfare benefits, study, obtain healthcare, and conduct business. The programme has become a key pillar of India's digital transformation and has gained international recognition as a model for digital governance.

What is the Digital India Programme?

Digital India is the Government of India's flagship initiative launched on **1 July 2015** under the **Ministry of Electronics and Information Technology (MeitY)**.

Before 2015, government services were largely paper-based, fragmented, and time-consuming. Citizens often had to visit multiple government offices, submit physical documents repeatedly, and wait weeks or months for approvals. Digital India was introduced to replace this system with one where government services are delivered electronically, making them more accessible, transparent, and efficient.

The programme seeks to transform India into a **digitally empowered society and knowledge economy**, where technology becomes an integral part of governance, public service delivery, economic growth, and citizen empowerment.

Its vision rests on three pillars:

- **Digital infrastructure as a core utility to every citizen**, ensuring that every individual has access to digital identity, internet connectivity, and digital storage.
- **Governance and services on demand**, where government services are available online anytime and anywhere without unnecessary paperwork or delays.
- **Digital empowerment of citizens**, enabling people to use digital technologies confidently through digital literacy and access to information in multiple languages.

Thus, Digital India is not merely about using computers or smartphones; it is about redesigning governance itself through technology.

The Nine Pillars of Digital India

To achieve its objectives, the programme is built around nine major pillars, each addressing a different aspect of digital development.

1. Broadband Highways
Reliable internet connectivity is the foundation of any digital economy. Broadband Highways aim to provide high-speed internet across the country, particularly in rural India through projects such as BharatNet. Without internet connectivity, citizens cannot access online education, telemedicine, digital banking, or e-governance services.

2. Universal Access to Mobile Connectivity
Many remote and border regions previously lacked mobile network coverage. This pillar seeks to ensure that every village has access to mobile connectivity, enabling communication, banking, education, and emergency services even in geographically difficult areas.

3. Public Internet Access Programme
Not everyone owns a smartphone or computer. Therefore, Common Service Centres (CSCs) and digitally enabled post offices act as public access points where citizens can obtain government certificates, apply for schemes, pay bills, and access various digital services with assistance.

4. e-Governance: Reforming Government through Technology
Traditionally, government departments functioned independently, requiring citizens to submit the same documents repeatedly. This pillar simplifies administrative processes by digitising records, integrating databases, reducing paperwork, and enabling online applications, approvals, and grievance redressal.
The emphasis is not merely on computerising existing procedures but on redesigning them to become faster, simpler, and citizen-friendly.

5. e-Kranti: Electronic Delivery of Services
While e-Governance focuses on administrative reforms, e-Kranti ensures that the actual services reach citizens digitally.
Services such as birth certificates, land records, pensions, scholarships, passports, healthcare, and educational services are increasingly delivered through online platforms, reducing delays and improving accessibility.

6. Information for All
A democratic government must keep citizens informed. This pillar promotes transparency by making government information, policies, reports, and public services available online. Citizens can also interact directly with government agencies through websites, mobile applications, and social media platforms.

7. Electronics Manufacturing
India imports a significant proportion of electronic goods. This pillar encourages domestic manufacturing of mobile phones, semiconductors, and electronic equipment under initiatives like "Make in India." Strengthening domestic manufacturing reduces imports, creates employment, and improves technological self-reliance.

8. IT for Jobs
Digital transformation requires a digitally skilled workforce. This pillar focuses on training youth in information technology, software development, cybersecurity, and other digital skills, thereby improving employability and supporting India's growing digital economy.

9. Early Harvest Programmes
These are projects that deliver visible benefits within a short period, such as biometric attendance systems in government offices, Wi-Fi in educational institutions, secure government email services, and digital classrooms. Such initiatives help demonstrate the immediate benefits of digital governance.

Digital Public Infrastructure (DPI): The Backbone of Digital India
One of the greatest achievements of Digital India has been the creation of **Digital Public Infrastructure (DPI)**.

DPI refers to digital platforms built by the government that provide common digital infrastructure upon which citizens, businesses, and governments can build and access services.
Unlike private digital platforms that operate for profit, DPI is designed as a public good. It provides secure, interoperable, and scalable systems that reduce transaction costs and increase access to services.
India's DPI is often described as consisting of three fundamental layers:

Digital Identity
The **Aadhaar** provides every resident with a unique digital identity. This enables secure authentication and eliminates duplicate beneficiaries in welfare schemes. Aadhaar-based e-KYC has simplified processes such as opening bank accounts, obtaining SIM cards, and accessing government services.

Digital Payments
The **Unified Payments Interface**, developed by the **National Payments Corporation of India**, has revolutionised digital payments by enabling instant bank-to-bank transfers through mobile phones. It has significantly reduced dependence on cash and has become one of the world's largest real-time payment systems.

Digital Governance
Platforms such as **DigiLocker**, **UMANG**, **Government e-Marketplace**, **Goods and Services Tax Network**, and **Open Network for Digital Commerce** enable citizens and businesses to access government services, official documents, taxation systems, procurement platforms, and digital commerce through integrated online platforms.

Health
Digital platforms such as **CoWIN**, **eSanjeevani**, eHospital, and **Tele MANAS** have expanded access to healthcare, especially in remote regions where specialist medical services are limited.

Education
Digital platforms including **DIKSHA**, **SWAYAM**, SWAYAM Prabha, PM e-Vidya, and APAAR ID support online education, teacher training, and lifelong learning across the country.

Agriculture
Digital initiatives such as **AgriStack**, **e-NAM**, Kisan e-Mitra, and Kisan Sarathi provide farmers with digital identities, market access, advisory services, and information on weather, prices, and government schemes.

Major Achievements
The impact of Digital India has been significant.

India today accounts for **nearly half of all global real-time digital payment transactions**, demonstrating the rapid adoption of UPI. The digital economy contributes approximately **12–14% of India's GDP**, reflecting the growing role of technology in economic growth.

Rural connectivity has expanded substantially through BharatNet, which has connected nearly **97% of Gram Panchayats**, enabling digital inclusion in villages. DigiLocker now serves over **70 crore users**, reducing dependence on physical documents, while ONDC has expanded digital commerce to around **1,000 cities**. AgriStack has generated more than **9 crore Farmer IDs**, improving targeted delivery of agricultural services.

These achievements indicate that Digital India has moved beyond digitisation to become a comprehensive governance and development strategy.

Significance of Digital India

The programme has transformed governance by making government services more transparent, accountable, and efficient. Direct Benefit Transfers linked to Aadhaar have reduced leakages and corruption by transferring subsidies directly into beneficiaries' bank accounts.

Financial inclusion has improved dramatically as millions of citizens now possess bank accounts linked with Aadhaar and mobile numbers, allowing them to receive government benefits securely and participate in the digital economy.

The programme has enhanced the ease of living by allowing citizens to access certificates, pay taxes, consult doctors, attend online classes, and store official documents digitally. Businesses also benefit from simplified compliance systems, digital taxation, online procurement, and seamless digital payments, thereby improving the ease of doing business.

Furthermore, India's Digital Public Infrastructure has become a platform for innovation. Numerous startups in fintech, health-tech, ed-tech, agritech, and artificial intelligence build their services on these public digital platforms, fostering economic growth and employment.

Challenges

Despite impressive progress, several challenges remain. The digital divide continues to exclude many rural, tribal, elderly, and economically weaker populations. Internet connectivity remains uneven in remote areas, and digital literacy is still limited among certain sections of society.

The rapid expansion of digital services has also increased concerns regarding cybersecurity, cybercrime, data privacy, and misuse of personal information. Strengthening legal safeguards and improving cyber resilience remain essential.

Way Forward

The next phase of Digital India should focus on universal digital inclusion by ensuring affordable internet access, expanding broadband infrastructure, and improving digital literacy. Stronger cybersecurity mechanisms, effective data protection, responsible use of artificial intelligence, and continued investment in indigenous electronics and semiconductor manufacturing will be critical.

At the same time, digital services must become more inclusive by supporting regional languages and ensuring accessibility for persons with disabilities.

The Digital India Programme has fundamentally transformed the relationship between citizens and the government by making governance faster, more transparent, and more accessible. Its success demonstrates how Digital Public Infrastructure can be leveraged to promote inclusive development, financial inclusion, and economic growth. Going forward, addressing challenges such as digital inequality, cybersecurity, and privacy while continuing to innovate will determine whether Digital India can fully realise its vision of a digitally empowered and inclusive society.

SARAS SHAKTI

The Ministry of Rural Development launched the SARAS Shakti Collection and the SARAS Shakti Coffee Table Book during the Rashtriya Gramin Vikas Sammelan (RGVS) 2026.

SARAS Shakti

About SARAS Shakti:

What It Is?

- **SARAS Shakti** is a flagship branding and marketing initiative under the **Deendayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM)**. It showcases premium products made by women Self-Help Groups (SHGs) to promote rural entrepreneurship and expand market access.

Aim:

- To strengthen women-led rural enterprises through branding, product promotion, and wider market linkages.
- To position SHG products in premium institutional and consumer markets while supporting the vision of **Lakhpati Didis** and **Viksit Bharat**.

Key Features:

- **Curated Product Collection:** Showcases premium handlooms, handicrafts, textiles, wellness products, home décor, and traditional foods made by women SHGs.
- **SARAS Shakti Coffee Table Book:** Documents the diversity, quality, success stories, and market potential of SHG enterprises across India.
- **Market Access Platform:** Enhances branding, packaging, digital marketing, and institutional market linkages for rural products.
- **Women Enterprise Promotion:** Supports over **10 crore women** associated with SHGs under **DAY-NRLM**, encouraging sustainable livelihoods and entrepreneurship.

Significance:

- Strengthens women's entrepreneurship, improves rural incomes, and supports the goal of creating **6 crore Lakhpati Didis by 2029**.
- Enhances the visibility of indigenous products, preserving traditional crafts while expanding domestic and institutional markets.

What is Deendayal Antyodaya Yojana-National Rural Livelihood Mission?

About:

- It is a **Centrally Sponsored Programme,** launched by the Ministry of Rural Development in 2011.
- It aims to **eliminate rural poverty through the promotion of multiple livelihoods** and improved access to financial services for the rural poor households across the country.

Functioning:

- It involves working with community institutions through community professionals in the spirit of **self-help which is a unique proposition of DAY-NRLM.**
- It impacts livelihoods by
  - Mobilizing rural households into SHGs.
  - Organizing one-woman member from **each rural poor household**into SHGs
  - Providing training and **capacity building to SHG members**
  - Providing access to financial resources from their own institutions and banks.

Sub Programs:

Mahila Kisan Shashaktikaran Pariyojana (MKSP): It aims to promote agro-ecological practices that increase women farmers' income and reduce their input costs and risks.

Start-Up Village Entrepreneurship Programme (SVEP): It aims to support entrepreneurs in rural areas to set up local enterprises.

Aajeevika Grameen Express Yojana (AGEY): It was launched in August 2017, to provide safe, affordable and community monitored rural transport services to connect remote rural villages.

Deendayal Upadhyaya Grameen Kaushalya Yojana (DDUGKY): It aims at building placement-linked skills of the rural youth and placing them in relatively higher wage employment sectors of the economy.

Rural Self Employment Institutes (RSETIs): DAY-NRLM, in partnership with 31 Banks and State Governments, is supporting Rural Self Employment Institutes (RSETIs) for skilling rural youth to take up gainful self-employment.

Outcome:

By July 2022, 8.35 crore women were connected to NRLM and there were 5.9 lakh crore bank linkages, while the NPAs have reduced to 2.5 %.

Till 2014, It involved 2.35 lakh houses, had 80,000 crore bank linkages with **Non-Performing Assets (NPAs)** at 9.58 %.

As of May 2021, there are 6.9 million SHGs in India with 75 million members across 7,83,389 villages.

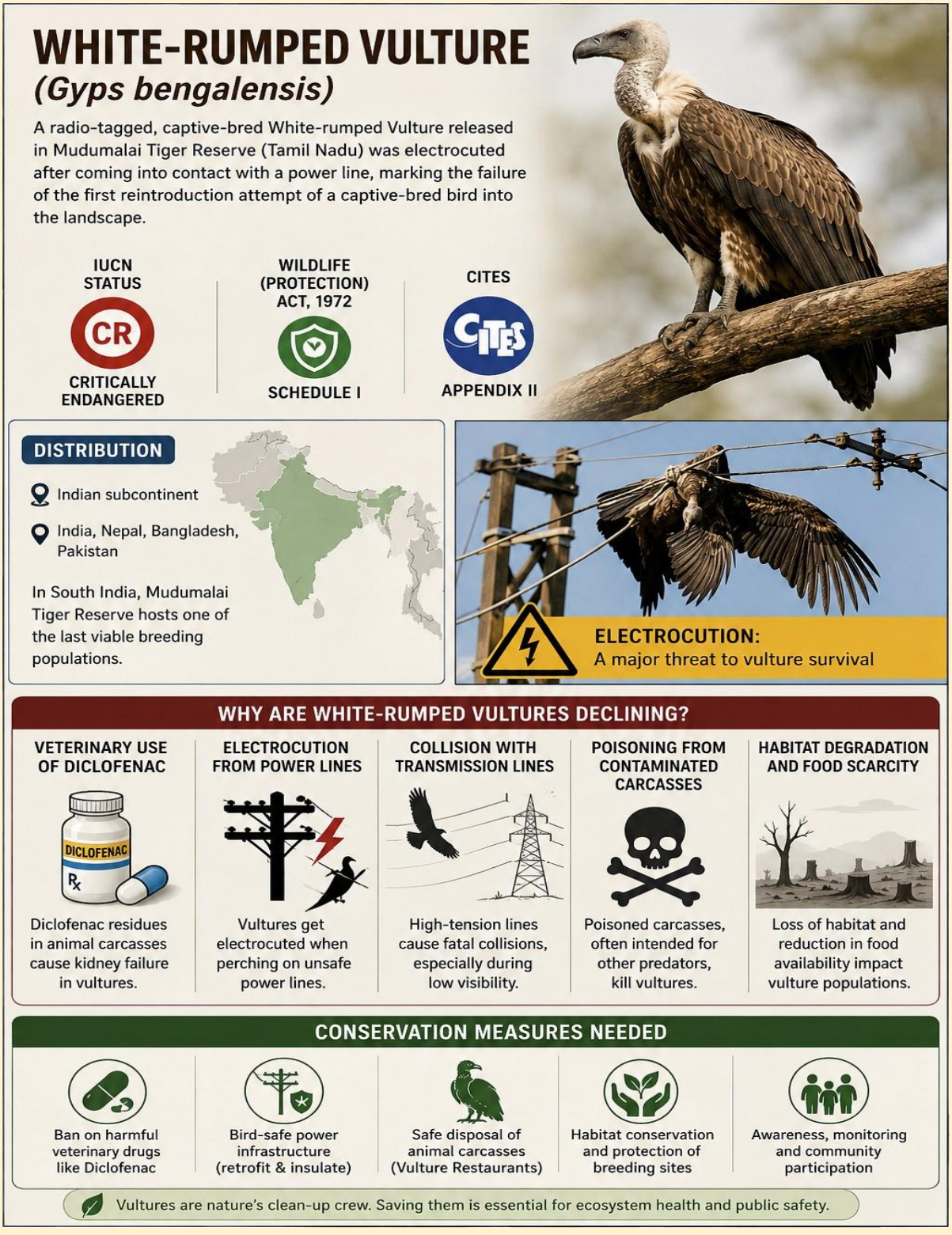
The NRLM has enabled rural families to negotiate for greater access to essential services such as education and healthcare.

It has improved **food security, improved school enrolment, access to land for women to grow food**, and created an impact on gender issues with women's groups taking on issues like dowry, child marriage, and discrimination against girls.

WHITE-RUMPED VULTURE

Why is it in the news?

Recently, a **radio-tagged, captive-bred White-rumped Vulture** released into the wild in the **Mudumalai Tiger Reserve** was **electrocuted after coming into contact with a power line**. This was significant because it was the **first attempt to reintroduce a captive-bred White-rumped Vulture into its natural habitat** in South India. The incident highlights the challenges involved in species recovery programmes. While breeding endangered species in captivity is an important conservation strategy, ensuring their survival in the wild requires eliminating threats such as unsafe power infrastructure.



What is the White-rumped Vulture?

The **White-rumped Vulture** is one of India's native vultures belonging to the genus *Gyps*. It is a medium-sized scavenging bird recognised by the distinctive white patch on its lower back or rump, from which it derives its name.

Unlike birds of prey that actively hunt, vultures are **obligate scavengers**, meaning they feed almost exclusively on the carcasses of dead animals. By rapidly consuming carcasses before they decompose, vultures perform an essential ecological service by preventing the spread of diseases.

Once among the most abundant birds in the Indian subcontinent, their population declined by more than **99% within a few decades**, making them one of the fastest-declining bird species in recorded history.

Distribution

The White-rumped Vulture is found across **India, Nepal, Bangladesh, and Pakistan**.

In southern India, the **Mudumalai Tiger Reserve** forms part of the **Nilgiri Biosphere landscape** and supports one of the country's last viable breeding populations. The availability of forests, grasslands, and large wild herbivores provides suitable nesting and feeding conditions.

Conservation Status

The species receives the highest level of legal protection because of its extremely low population.

- **Scientific Name:** *Gyps bengalensis*
- **IUCN Red List:** Critically Endangered
- **Wildlife (Protection) Act, 1972:** Schedule I (highest legal protection in India)
- **CITES:** CITES Appendix II

Being classified as **Critically Endangered** means the species faces an **extremely high risk of extinction in the wild** unless urgent conservation measures are implemented.

Ecological Importance of Vultures

Vultures are often referred to as **"nature's sanitation workers"** because they play a crucial role in maintaining ecosystem health.

When an animal dies, its carcass becomes a breeding ground for harmful bacteria and pathogens. Vultures can locate and consume carcasses within hours. Their highly acidic digestive system destroys dangerous microorganisms such as those responsible for anthrax and botulism, thereby preventing disease transmission.

By removing dead animals quickly, vultures also reduce food availability for feral dogs and rats, which are carriers of diseases such as rabies. Thus, healthy vulture populations contribute directly to public health as well as environmental cleanliness.

Why are White-rumped Vultures Declining?

1. Veterinary Use of Diclofenac – The Primary Cause

The single biggest reason for the collapse of vulture populations in South Asia has been the veterinary use of **Diclofenac**.

Diclofenac is a painkiller administered to cattle. When treated animals die, traces of the drug remain in their tissues. Vultures feeding on these carcasses ingest the drug, which causes **acute kidney failure** and the accumulation of uric acid crystals in their organs, a condition known as **visceral gout**. Even very small quantities can be fatal. This discovery led India to ban the veterinary use of Diclofenac in 2006, although illegal use continues in some areas.

2. Electrocution from Power Lines

As demonstrated by the recent incident in Mudumalai, vultures often perch on electricity poles or fly close to power lines. Their large wingspan increases the likelihood of simultaneously touching live wires, leading to electrocution.

This threat is becoming increasingly important because expanding electricity infrastructure overlaps with vulture habitats.

3. Collision with Transmission Lines

Unlike electrocution, collisions occur when vultures fail to detect transmission wires while soaring over long distances. Such accidents often result in severe injuries or death and have become a major concern in landscapes with extensive power infrastructure.

4. Poisoning from Contaminated Carcasses

Sometimes carcasses contain toxic substances such as pesticides or poisons used intentionally to kill carnivores like leopards or jackals. Since vultures feed communally, a single poisoned carcass can kill dozens of birds at once.

5. Habitat Degradation and Food Scarcity

Urbanisation, deforestation, and changing livestock management practices have reduced nesting sites and the availability of safe carcasses. Improved carcass disposal methods and declining populations of free-ranging cattle have further reduced food resources for vultures.

Conservation Measures

Recognising the catastrophic decline, India has initiated several conservation programmes.

The **Vulture Conservation Breeding Programme** breeds endangered vultures in captivity with the aim of releasing healthy birds into the wild once conditions become safer.

The veterinary use of Diclofenac has been banned, and safer alternatives such as **Meloxicam** are promoted for livestock treatment. Conservation organisations and state governments have also established **Vulture Safe Zones**, where the use of harmful veterinary drugs is monitored and controlled. In addition, efforts are being made to insulate dangerous power lines, install bird diverters on transmission cables, and conserve nesting habitats.

Significance of the Recent Incident

The death of the released bird is important because it demonstrates that **species recovery depends not only on successful captive breeding but also on making natural habitats safe**.

The incident underscores the need for better coordination between wildlife authorities and power utilities. It also highlights the importance of identifying hazardous power lines, creating vulture-safe landscapes, and continuously monitoring released birds through radio telemetry.

The White-rumped Vulture is far more than an endangered bird—it is a keystone scavenger that protects ecosystems and public health by efficiently removing animal carcasses. Although captive breeding programmes have offered hope for its recovery, the recent electrocution in Mudumalai shows that conservation cannot succeed unless threats such as unsafe power infrastructure, toxic veterinary drugs, poisoning, and habitat degradation are comprehensively addressed. Ensuring safe habitats alongside effective breeding and monitoring programmes will be crucial for bringing this iconic scavenger back from the brink of extinction.

GREEN UREA MANUFACTURING ROADMAP

The Department of Fertilizers (DoF) conducted a high-level Pre-Expression of Interest (EOI) meeting at PDIL headquarters in Noida to establish India's first commercial Green Urea manufacturing roadmap.

The Roadmap to Make Green Urea Production a Reality

About The Roadmap to Make Green Urea Production a Reality:

What It Is?

- **Green Urea** is an eco-friendly fertilizer produced using **green hydrogen and green ammonia** instead of fossil fuels. It uses renewable energy to split water for hydrogen, combines it with atmospheric nitrogen, and utilizes captured **CO_2** from industries to manufacture sustainable urea.

Key Data and Statistics on India's Green Urea Programme:

- **National Green Hydrogen Mission:** The MNRE has allocated ₹19,744 crore under the National Green Hydrogen Mission (NGHM) to develop India's green hydrogen ecosystem.
- **Green Ammonia Procurement:** Under Mode 2A, SECI will procure 7.24 lakh metric tonnes (MT) of green ammonia annually through an e-reverse auction.
- **High Urea Imports:** India imports nearly 1 crore MT (10 million tonnes) of conventional urea every year, which the Green Urea programme seeks to reduce.
- **CO_2 Requirement:** A world-scale 12.7 lakh MT Green Urea plant requires about 10 lakh MT of captured CO_2 annually as feedstock.

The Imperative Need for a Green Urea Roadmap:

- **Meeting the 2070 Net Zero Mandate:** Traditional fertilizer operations are highly carbon-intensive; moving to green hydrogen processes is essential to meet India's climate pledge of achieving net-zero emissions by 2070.
- **Replacing an Aging, Inefficient Factory Fleet:** A significant portion of India's domestic chemical plants are **over 30 years old**, meaning they require extensive technology updates or total substitution with sustainable greenfield units.
- **Securing Reliable Markets for Carbon Capture (CCUS):** Developing integrated fertilizer hubs gives thermal power, steel, and cement factories an immediate, large-scale consumer for their captured carbon dioxide, commercializing carbon-reduction programs.
- **Insulating Agriculture from Volatile Import Shocks:** Substituting international supply chains with localized green operations shields Indian farmers from unpredictable foreign natural gas spikes and maritime transport disruptions.

Key Initiatives Taken So Far:

- **The Pudimadaka 150-TPD Pilot Plant:** Developed by NETRA (the R&D wing of NTPC) at the Pudimadaka Green Hydrogen Hub in Andhra Pradesh, this **150 tonnes-per-day facility** serves as the technology benchmark by combining water electrolysis with carbon utilization.
- **Enacting the Offtaker-Side Differential Subsidy:** To resolve cost gaps, the Solar Energy Corporation of India (SECI) will buy green ammonia from producers and supply it to factories at standard, market-linked Grey Ammonia prices, with the DoF covering the price difference.
- **Providing Long-Term 10-Year Contract Certainty:** To build developer confidence, the state guarantees cash incentives for a **10-year period from** the date of commercial supply via binding Green Ammonia Procurement Agreements (GAPA).
- **Launching the Srijan and Srijan DEEP Digital Registries:** The Ministry has rolled out centralized databases to smoothly map localized tech providers, electrolyzer manufacturers, and renewable energy vendors into a resilient ecosystem.

Key Challenges Associated with Green Urea Integration:

- **A High Early-Stage Price Premium:** Because renewable electricity and electrolyzers remain costly, Green Ammonia is currently significantly more expensive to manufacture than conventional natural gas-based Grey Ammonia.
- **Securing Continuous Logistics for Captured Carbon:** Collecting, purifying, and transporting 10 lakh MT of CO_2 from scattered power or cement plants to a single fertilizer hub requires a complex, highly specialized compression pipeline network.
- **An Intermittent Supply of Renewable Power:** Operating a continuous, 24/7 chemical synthesis plant using variable wind and solar energy requires massive, expensive grid-scale battery storage or green hydrogen reservoirs.
- **High Infrastructure Modification Costs:** Retrofitting existing three-decade-old fertilizer units to safely process pure green hydrogen inputs demands high capital spending and complex engineering changes.

Way Forward:

- **Expediting the SECI Reverse Auctions:** Swiftly execute the e-reverse auctions under NGHM Mode 2A to lock in the 7.24 lakh MT of green feedstock and give private investors clear market entry points.

- **Expanding Integrated Carbon Capture Hubs:** Coordinate with central ministries to set up dedicated industrial carbon capture systems near thermal power and steel clusters to ensure a steady supply of CO2.
- **Optimizing Green Credit and Sagarmala Funding:** Leverage specialized non-banking financial entities like the Sagarmala Finance Corporation Limited to extend low-cost, long-term credit to greenfield clean fertilizer projects.
- **Upgrading Regional Grids for Clean Power Purity:** Build specialized high-voltage green energy corridors to feed continuous renewable electricity directly into localized water electrolyzer hubs.

By matching ₹19,744 crore in clean energy funding with a practical differential subsidy mechanism, the state has successfully protected local factories from early-stage price shocks. Moving forward, scaling up advanced carbon capture networks and building high-capacity green hydrogen hubs will remain vital to replace foreign imports and secure India's agricultural future ahead of 2070.

TUNGABHADRA BASIN

Context: The Chief Ministers of Karnataka, Andhra Pradesh, and Telangana achieved an administrative consensus to protect farming interests and pursue desilting operations in the Tungabhadra basin.

The Tungabhadra River

About The Tungabhadra River:

What It Is?

- The Tungabhadra River is a major, perennial right-bank tributary of the Krishna River. It is a vital hydrological lifeline for the Deccan peninsula, supporting extensive agricultural networks, industrial clusters, and urban centers across southern India.

Location and Basin States:

- **Geographical Region:** Situated in the semi-arid, central-southern plateau of the Indian Deccan peninsula.
- **States Flown Through:** The river and its tributaries flow primarily through **Karnataka**, before tracing the border with **Telangana** and entering **Andhra Pradesh** to merge with the Krishna River.

Origin and Confluence:

- **The Source Streams:** The river originates as two separate rivers, the **Tunga** and the **Bhadra**, in the Western Ghats.
    - The Tunga originates near Varaha Parvatha at Kurasa, and the Bhadra originates at Gangamoola near Kudremukh in the Chikkamagaluru district of Karnataka.
- **The Sacred Confluence:** The two streams flow independently eastward before merging at **Kudli**, a village near Shivamogga city in Karnataka, officially creating the single Tungabhadra River.
- **Final Destination:** After flowing roughly northeast for about 531 km, the river joins the **Krishna River** at Sangamaleshwaram in the Kurnool district of Andhra Pradesh.

Key Features:

- **Tungabhadra Reservoir (Pampa Sagar):** A major inter-state dam near Hosapete, Karnataka, regulating water sharing. Heavy siltation (about 33 TMCFT) has reduced its storage capacity.
- **Distinct River Geomorphology:** The Tunga flows through steep, fast-moving channels, while the Bhadra has a wider, gentler valley. Both traverse ancient granitic and crystalline rocks.
- **Rich Ecological Corridor:** The basin stretches from the evergreen Western Ghats to the dry Deccan plains, supporting species such as the smooth-coated otter and Mugger crocodile.
- **Vijayanagara Irrigation Heritage:** The river hosts centuries-old stone anicuts and irrigation canals built by the Vijayanagara Empire, many of which remain functional.

Significance:

- Supplies irrigation to the dry regions of Karnataka and Andhra Pradesh, supporting major rice-growing districts through Left and Right Bank canals.
- Provides water for industries, power plants, mining, and drinking water needs across numerous towns and villages in the Deccan region.

16TH INDIA-JAPAN ANNUAL SUMMIT

The Japanese Prime Minister Sanae Takaichi paid her first official State Visit to New Delhi for the 16th India-Japan Annual Summit.

16th India-Japan Annual Summit:

About 16th India-Japan Annual Summit:

What it is?

- The 16th Annual Summit marks a critical point of bilateral alignment between two of Asia's largest democracies and economic engines. Faced with deep volatility in global energy markets and high maritime security tensions across the Indo-Pacific, the summit focused on building stable, mutually beneficial supply lines.
- The bilateral framework formally connects Japan's updated Free and Open Indo-Pacific (FOIP) strategy with India's Indo-Pacific Oceans' Initiative (IPOI) and MAHASAGAR doctrine to support a rules-based maritime order.

Key Outcomes of the Summit:

1. **Defence & Maritime Security:**
   - **UNICORN Antenna Agreement:** India and Japan agreed on the remaining technical aspects of the **UNICORN** project, marking their first defence technology co-development initiative.
   - **2+2 Ministerial Dialogue:** Both sides decided to hold the **4th India–Japan 2+2 Foreign and Defence Ministers' Meeting** in Tokyo before the end of 2026.
   - **Naval Cooperation:** The leaders expanded naval ties through **JAIMEX exercises** and agreed to cooperate in naval **maintenance, repair, and overhaul (MRO)** under Make in India.
2. **Economic Security & Supply Chains:**
   - **Joint Economic Security Framework:** Both countries agreed to strengthen cooperation in semiconductors, critical minerals, clean energy, ICT, and pharmaceuticals.
   - **High-Tech Trade Facilitation:** They agreed to ease export controls, promote secure technology trade, and encourage local currency transactions.

3. **Energy & Clean Transition:**
    - **CBG Initiative:** Launched the India–Japan Cooperative Biogas for Growth Initiative to support India's target of 1,000 biogas plants.
    - **Odisha Green Energy Project:** Reaffirmed cooperation for the Odisha green hydrogen and clean ammonia production project.
    - **Energy Security Cooperation:** Signed an Energy Resilience Statement on strategic petroleum reserves, while Japan supported India's IEA membership.
4. **Technology & Infrastructure:**
    - **AI Strategic Dialogue:** Established a new **AI Strategic Dialogue** to promote trusted and secure artificial intelligence cooperation.
    - **High-Speed Rail Partnership:** Japan reaffirmed support for the Mumbai–Ahmedabad Bullet Train and future high-speed rail projects.
    - **Regional Infrastructure Projects:** Advanced **JICA-supported** projects including Mumbai Metro, Bengaluru Metro, healthcare, education, and horticulture.

Strategic Opportunities:

- **Accelerating a $1 Trillion Investment Pipeline:** The summit positioned Japan to channel large-scale capital investments across Indian states, supporting the national goal of Viksit Bharat.
- **Modernizing the Indo-Japan CEPA:** Reviewing the 15-year-old Comprehensive Economic Partnership Agreement (CEPA) provides an opportunity to diversify trade and lower commercial tariffs.
- **Developing the North Eastern Region (NER):** Japan's support helps build industrial value chains connecting India's Northeast with the Bay of Bengal and BIMSTEC zones.
- **Democratizing the Alternative Hardware Ecosystem:** Collaborative R&D under the Sakura Science Exchange and joint space missions like **LUPEX(Lunar Polar Exploration)** help India reduce single-vendor technology monopolies.
- **Integrating Tier-II and Tier-III Small Businesses:** The newly inaugurated India-Japan SME Forum allows Indian micro, small, and medium enterprises (MSMEs) to integrate directly into advanced Japanese corporate supply chains.

Key Geopolitical Challenges:

- **Addressing Economic Coercion and Monopolies:** Both nations face high supply chain vulnerabilities due to non-market export restrictions on critical minerals controlled by dominant regional powers.
- **Managing Maritime Chokepoint Disruptions:** Ongoing regional conflicts in West Asia directly threaten trade stability; for instance, **31 Japanese commercial vessels remain stranded** near the critical Strait of Hormuz.
- **Countering Regional Militarization:** Growing military expenditure and the militarization of disputed features in the South China and East China seas create ongoing friction for Indo-Pacific shipping lines.
- **Navigating Cross-Border Cyber and Terror Threats:** The summit highlighted the collapse of legacy arms-control agreements alongside complex non-traditional security threats, including cross-border cyber infiltration and regional terrorism.
- **Reconciling Technical and Labor Differences:** Replicating advanced high-speed mobility systems requires bridging gaps between Japan's specialized engineering standards and India's local labor frameworks.

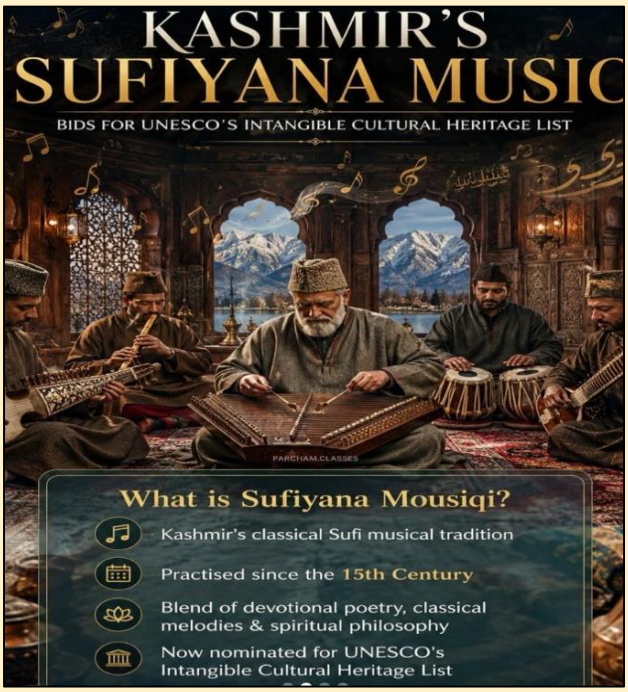
Way Forward:

- **Executing the UNICORN Defense Project Timeline:** Swiftly conclude the remaining technical clearances for the UNICORN naval antenna to demonstrate successful co-development before the upcoming 17th Annual Summit.
- **Expanding India's Strategic Petroleum Reserves:** Leverage Japan's technical expertise to build secure underground crude oil stockpiles, insulating both economies from supply shocks in the Persian Gulf.
- **Operationalizing the 2027 High-Speed Rail Deadline:** State and central authorities must work together to ensure the priority sections of the Mumbai-Ahmedabad High-Speed Rail meet the 2027 launch target.
- **Enforcing Domicile-Portable Digital Payment Links:** Integrate local currency transaction systems and NPCI payment structures to allow seamless retail transactions for businesses and tourists.
- **Launching the Trilateral Dialogue with the Philippines:** Advance preparations to execute the newly planned trilateral 1.5 track policy dialogue with the Philippines to improve maritime domain awareness in the South China Sea.

By matching a trillion-dollar investment pipeline with defense agreements like the UNICORN antenna project, the two nations have successfully moved past standard trade ties toward deep technological co-development. Moving forward, executing strategic petroleum stockpiles, stabilizing critical mineral supplies, and completing the 2027 high-speed rail link will remain vital to protect their economic security and ensure lasting regional peace.

KASHMIR'S SUFIYANA MUSIC

Kashmir's Sufiyana Music (also known as *Sufiyana Mausiki* or *Sufiyana Kalam*) is a distinctive form of classical choral ensemble music. It is a highly structured, mystical art form that blends devotional poetry, classical melody, and philosophy, serving as a unique bridge between Persian, Central Asian, and Indian classical musical systems.



Region Associated:

- The art form is entirely indigenous and exclusive to the **Kashmir Valley** in the Union Territory of Jammu and Kashmir.
- Historically, it is preserved and carried forward by a select few surviving *gharanas* (traditional musical lineages or schools) located across **Budgam, Srinagar, and Anantnag**.

History and Cultural Fusion:

- **Origins:** The art form emerged between the 14th and 15th centuries as a continuum of pre-Islamic musical practices in Kashmir.
- **Civilizational Synthesis:** Rather than replacing existing local systems, the incoming traditions merged with indigenous practices. It represents a rare cultural synthesis of Persian, Islamic, and Shaivite philosophical thought.
- **Central Asian Influx:** As Kashmir opened up to the wider Islamic world, Sufi saints, scholars, artisans, and musicians arriving from regions like Iran, Bukhara, and Samarkand introduced new structural ideas that shaped Kashmir's unique classical music.

Key Features of Sufiyana Music:

- **Choral and Multi-Instrumental Ensemble:** It is performed by a group of five to seven musicians who simultaneously act as both vocalists and instrumentalists.
- **The Structural Sequence:** Most compositions open with an instrumental prelude, followed by a short poem sung free-hand without rhythm. The main lyrics, known as ***Bathe***, are presented in the form of a couplet that adheres strictly to a designated *maqam*and *tala* (rhythmic cycle).
- **The Maqam System:** Similar to Indian *ragas*, the music is bound by ***maqams*** rooted in Persian classical traditions. While historically boasting around 50 distinct *maqams*, only 20 to 25 are actively practiced today.
- **Rhythmic Progression:** Performance arrangements follow a mathematical sequence where the longest *talas* (time cycles) are gradually followed by progressively shorter ones.
- **Specialized Acoustic Instruments:** The ensemble utilizes a highly specific array of traditional instruments, each possessing a distinct tonal quality determined by its unique dimensions and string counts. These include the *ney* (a type of flute), harmonium, *rabab*, tabla, and sitar.
- **The 100-String Santoor:** Central to the performance is the *Sufiana santoor*, a unique Kashmiri hammer-stringed instrument featuring **100 strings** spread over a triangular-shaped, three-legged stand.
- **Oral Transmission:** The complex system of *maqams*, *talas*, and accompanying poetry is not codified in text; instead, it is **passed down entirely orally** from one generation to the next within specialized families.

INDIA'S DOMESTIC SHIPBUILDING INDUSTRY

South Korean President Lee Jae Myung made a historic visit to India—the first by a South Korean leader in eight years—meeting with Prime Minister of India.

- This high-level interaction has injected positive momentum into bilateral strategic ties, paving the way for extensive collaboration to transform India's domestic shipbuilding industry.

The Shift in India's Shipbuilding Drive

About The Shift in India's Shipbuilding Drive:

What it is?

- The modern shift in India's shipbuilding drive marks a transition from fragmented, slow-moving maritime projects to a holistic, cluster-led developmental model inspired by successful international hubs like Ulsan in South Korea.
- Rather than simply buying vessels from abroad, India is positioning itself as a major manufacturing destination by establishing greenfield shipyards and localized supply chains.

Key Highlights of the India–South Korea Shipbuilding Deals:

- **The Mega Greenfield Investment:** A subsidiary of HD Korea Shipbuilding & Offshore Engineering (Hyundai) signed an agreement with Cochin Shipyard Limited to invest **$4 billion in Thoothukudi, Tamil Nadu**, to construct a state-of-the-art green shipyard.
- **Strategic Defense Partnerships:** Samsung Heavy Industries (SHI) finalized a manufacturing partnership with Swan Defence and Heavy Industries to build advanced ships directly in India.
- **Ancillary Supply Chain Mapping:** The Korea Marine Equipment Association (KOMEA), which represents **304 specialized enterprises across** ship design, repair, and marine hardware, has established a dedicated office in Mumbai to seed a localized component cluster.
- **Cluster-Led Success Blueprints:** Both governments signed multiple business-to-business (B2B) and government-to-government (G2G) agreements targeting workforce development, maritime education, and joint research to replicate the Ulsan industrial cluster model.
- **Massive Foreign Capital Commitments:** The sudden entry of South Korea's Big Three shipbuilders—Samsung, Hyundai, and Hanwha Ocean—reaffirms Seoul's deep-level strategic and financial commitment to anchoring India's maritime supply lines.

Current Indian Shipbuilding Status:

- **Clear Vision Targets:** India's development roadmaps—the Maritime Vision 2030 and Maritime Amrit Kaal Vision 2047—set clear targets to place the country among the **top 10 global shipbuilding nations by 2030 and the top 5 by 2047**.
- **Dedicated Financial Mechanisms:** The state has launched specialized fiscal engines, including the Maritime Development Fund, the Shipbuilding Development Scheme, and the Shipbuilding Financial Assistance Policy, to aggressively attract foreign direct investment.
- **The Launch of the Maritime NBFC:** To ease structural credit crunches, the state established the **Sagarmala Finance Corporation Limited (SFCL)**, functioning as India's first dedicated non-banking financial company for the maritime sector.
- **Expanding Strategic Project Approvals:** The country has demonstrated a shift in regulatory speed by granting swift, in-principle clearances for the multi-billion-dollar greenfield shipyard project in Tamil Nadu, showing that traditional approval bottlenecks can be overcome.

Key Challenges Associated with the Shipbuilding Sector:

- **A Heavily Fragmented Industrial Ecosystem:** India currently lacks a comprehensive, localized network of ancillary marine suppliers, forcing shipyards to rely on imported components that drive up manufacturing costs.
- **Persistent Regulatory and Legal Policy Gaps:** A lack of long-term consistency in maritime regulations and unpredictable legal timelines can dampen foreign investor confidence during multi-year projects.
- **A Shortage of Specialized Technical Human Capital:** The domestic workforce lacks sufficient exposure to cutting-edge automated ship design and advanced marine engineering know-how, creating a critical skills gap.
- **High Costs of Domestic Industrial Capital:** Indian shipbuilders have traditionally faced high borrowing costs and a shortage of long-term financing options compared to heavily state-subsidized foreign competitors.
- **Fierce Competition from Established Asian Giants:** Competing against dominant, deeply consolidated global shipbuilding empires—most notably China—presents a massive market challenge for India's emerging yards.

Way Forward:

- **Ensuring Strict Inter-Governmental Follow-Through:** State governments, alongside central ministries, must maintain strict timelines to avoid operational bottlenecks and facilitate smooth land and utility clearances for South Korean investors.
- **Accelerating Supplier Localization and Anchor Clusters:** Leverage the newly established KOMEA Mumbai office to rapidly build localized ancillary hubs, reducing import dependencies for steel fabrication and marine machinery.
- **Securing Low-Cost Capital via the Sagarmala Finance Corp:** Deploy the financial capacity of the SFCL to offer domestic shipbuilders long-term, low-interest capital loans to match international financing baselines.
- **Upgrading Academic and Technical Maritime Institutions:** Partner Indian universities and research labs directly with South Korean maritime academies to train a skilled workforce in automated manufacturing and green propulsion.
- **Formulating a Sectoral Strategy with Clear Interim Goals:** Establish a strict, step-by-step sectoral plan with clear annual production targets to systematically absorb transferred technologies and scale up industrial capacity.

The landmark agreements signed during President Lee's 2026 visit offer India a valuable opportunity to absorb cutting-edge technology, build robust manufacturing clusters, and secure long-term foreign capital. Ultimately, by combining these global corporate partnerships with consistent domestic policies and streamlined approvals, India can successfully transform its maritime landscape to become a self-sufficient global shipbuilding powerhouse.

CRÈCHE GUIDELINES IN INDIA: RULES, LABOUR LAWS, SAFETY NORMS & CHILDCARE STANDARDS

The severe abuse of toddlers by caregivers at the 'Little Buds Day Care' facility located on the Capgemini campus in Brookefield, Bengaluru, has sparked intense public outrage.

Crèche Guidelines in India

About Crèche Guidelines in India: Rules, Labour Laws, Safety Norms & Childcare Standards

What it is?

- A crèche is defined as a specialized care center that provides a safe, protective, and nurturing environment for children while their parents or primary guardians are away at work. The administrative framework aims to standardize early childhood care by providing supplementary nutritious meals, enforcing hygienic conditions, and offering age-appropriate early childhood education activities.

Key Facts:

- **Operational Age Limit:** Crèches are designed to provide childcare for **children aged 6 months and above**, supporting working parents during early childhood.
- **Expansion under Palna Scheme:** The government aims to establish **17,000 Anganwadi-cum-Crèches (AWCCs)** under **Mission Shakti** to expand quality childcare services.
- **Women Caregivers Only:** National guidelines require **only women** to be appointed as caregivers and helpers to ensure child safety and comfort.
- **Mandatory Crèche Provision:** Establishments employing **50 or more workers** must provide a crèche facility under labour laws.

Laws & Guidelines Governing Crèches:

- **National Minimum Standards & Protocol (2024):**
  - **National Standards:** Issued by the Ministry of Women & Child Development and Ministry of Labour, these standards prescribe minimum safety and childcare norms for all crèches.
  - **Location & Infrastructure:** Crèches should preferably be on the **ground floor**, with proper ventilation, secure windows, child-friendly toilets, and continuous water supply.
  - **Staff Eligibility:**Caregivers must have **police verification, character and medical fitness certificates**, with preference for trained childcare or nursing professionals.
  - **CCTV Monitoring:** All crèches must install **CCTV cameras** and provide parents with remote access for continuous monitoring of their children.
  - **Crèche Administrative Committee (CAC):** Every facility must form a committee comprising administrators and parent representatives to regularly monitor quality and address concerns.
- **Labour Law Provisions:**
  - **Code on Social Security & OSHWC Code:** Employers with **50 or more workers** must establish or arrange a crèche facility within the prescribed distance.
  - **Nursing Breaks:** Working mothers are entitled to **four visits per day** to the crèche for breastfeeding and childcare, with travel time counted as paid working time.

Key Challenges Associated with Childcare Centers:

- **A Critical Lack of Uniform State-Level Adoption:** Because the 2024 central protocol is "suggestive," only a small handful of states have turned these guidelines into strict municipal laws, leaving other regions with uneven legal oversight.
- **Widespread Corporate Non-Compliance:** Trade unions and labor organizations routinely report that thousands of commercial establishments deliberately fail to provide physical crèche assets, exploiting weak enforcement loops to avoid spending capital.
- **Weak Background Checks and Automated Sourcing:** Daycare agencies often outsource staffing to unverified private contractors who skip psychological screenings, leading to the recruitment of highly abusive or untrained individuals.
- **The Absence of Regular Unannounced Inspections:** State social welfare and labor departments rarely conduct independent, surprise physical audits of registered private daycare centers, depending instead on paper compliance.
- **A High Variance in Emergency Medical Ties:** Many neighborhood crèches and office daycare centers function as isolated setups, failing to maintain active, formal tie-ups with localized pediatric hospitals or first-aid trauma units.

Way Forward:

- **Mandating Immediate, State-Enforced CCTV Integration:** State labor departments must make it an immediate condition of a business license that all corporate daycares deploy functional CCTV grids, providing real-time, tamper-proof viewing links directly to parents' mobile phones.
- **Turning the Central 2024 Protocol into Binding State Law:** State assemblies should pass specific amendments to transition the suggestive 2024 central standards into strict, legally binding municipal regulations.
- **Conducting Bi-Annual Multi-Department Surprise Audits:** Launch joint inspection teams combining members of the local Police Station, the Child Protection Unit, and the Labour Department to perform unannounced checks on food safety, hygiene, and caregiver behavior.

- **Creating a Centralized Public Registry for Certified Caregivers:** Establish a digital database tracking certified childcare professionals, ensuring that any worker terminated for ethical violations or abuse is permanently blacklisted.
- **Financing Shared Common Crèche Hubs for Small Businesses:** Allow clusters of small and medium enterprises (MSMEs) or urban business parks to pool their capital to establish high-quality, shared common crèche systems, backed by partial municipal grants.

While the 2024 national protocol and modern labor codes provide an excellent structural plan for women-led development, the current ecosystem suffers from weak inspection tracking and widespread corporate avoidance. Ultimately, by turning background verification into a non-negotiable law and opening up real-time CCTV channels for parents, society can ensure that crèches remain safe spaces for children.

BUNDIBUGYO VIRUS (BDBV)

The World Health Organization (WHO) has added the first molecular diagnostic test for Bundibugyo virus (BDBV) to its Emergency Use Listing (EUL).

The Bundibugyo Virus Disease (BVD)

About The Bundibugyo Virus Disease (BVD):
What It Is?

- Bundibugyo virus disease (BVD) is a severe, highly infectious, and frequently fatal zoonotic disease in humans. It is caused by the **Bundibugyo virus**, which is one of the distinct viral species belonging to the *Orthoebolavirus* genus (commonly referred to as the Ebola virus group).

Origin and Transmission:

- **Natural Reservoir:** Fruit bats are the suspected natural reservoirs hosting the virus in wild ecosystems.
- **Spillover Event:** Human infection initially triggers through close handling or contact with the blood, raw meat, or bodily secretions of infected wildlife, such as bats or non-human primates (monkeys and apes).
- **Person-to-Person Spread:** Once inside human communities, the virus spreads rapidly through direct contact with broken skin or mucous membranes coming into contact with the blood, organs, saliva, vomit, or other bodily fluids of infected individuals. It also spreads via contaminated surfaces, unsterilized medical gear, and unsafe traditional burial practices.

Key Epidemiological Characteristics:

- **Incubation Period (2–21 Days):** After infection, symptoms usually appear within 2–21 days. Patients are not infectious before symptoms develop, reducing transmission during incubation.
- **High Case Fatality Ratio (CFR):** Bundibugyo virus disease has a **high mortality rate**, with previous outbreaks recording **30–50% fatality**, making early detection and treatment critical.
- **Diagnostic Challenges:** Early symptoms resemble malaria, typhoid, and other tropical fevers, making clinical diagnosis Confirmation requires PCR or antigen/antibody laboratory tests.
- **No Approved Vaccine or Treatment:** There is no licensed vaccine or specific antiviral drug for Bundibugyo virus disease. Control depends on early isolation, contact tracing, and supportive medical care.

Symptoms & Disease Progression:

- **Early Stage:** Patients develop high fever, severe fatigue, headache, muscle pain, joint pain, and sore throat, resembling many common viral infections.
- **Gastrointestinal Stage:** The disease progresses to vomiting, severe diarrhoea, and abdominal pain, causing dehydration and rapid physical weakness.
- **Advanced Stage:** Severe cases may develop liver and kidney failure, followed by internal and external bleeding (haemorrhage) due to widespread organ damage.

Implications:

- Because early symptoms resemble common fevers, infected patients may not be isolated immediately. Without proper PPE and infection-control measures, hospitals can become centres of transmission.
- Armed conflict, displacement camps, and weak healthcare systems in eastern DRC make surveillance, isolation, and contact tracing extremely difficult during outbreaks.
- Frequent movement across the **DRC–Uganda border** increases the risk of regional spread. Neighbouring countries must strengthen surveillance, laboratory testing, and border health preparedness.

VIKRAM-1

Hyderabad-based space-tech startup Skyroot Aerospace has announced that the launch window for its maiden test flight of **Vikram-1**, named **Mission Aagaman**.

About Vikram-1, India's First Private Orbital Rocket:

What It Is?

- Vikram-1 is a seven-storey-tall, multi-stage orbital launch vehicle designed to carry small satellites into Low Earth Orbit (LEO). Named after Dr. Vikram Sarabhai, the pioneer of the Indian space program, the rocket represents a major leap from suborbital test flights to full-scale, commercial orbital operations.

Developed By: The rocket has been completely designed, developed, and manufactured in-house by **Skyroot Aerospace**, a Hyderabad-based private space startup founded by former ISRO scientists. Skyroot recently achieved unicorn status with a valuation of over $1.1 billion.

Aim of Mission Aagaman:

- **The Mission:** Christened *Aagaman* (a Sanskrit word meaning "arrival"), the mission symbolizes the arrival of India's private sector on the global orbital launch stage.
- **Target Orbit:** The flight aims to place payloads weighing up to 350 kg into a 450 km Low Earth Orbit with a 60-degree inclination.

Key Features:

- **All-Carbon Composite Structure:** The entire rocket is built using advanced lightweight carbon composite materials. This ensures the vehicle maintains high structural strength to survive extreme launch forces while shedding critical weight to maximize payload capacity.
- **In-House Solid & Liquid Propulsion:** Vikram-1 uses a mix of solid and liquid propulsion systems developed entirely by Skyroot. The first three stages utilize powerful solid rocket motors named after Dr. A.P.J. Abdul Kalam.
- **3D-Printed Rocket Engines:** The vehicle integrates cutting-edge 3D-printed engine components, which allow for rapid manufacturing, lower production costs, and greater design flexibility compared to traditional machining.
- **High Launch Cadence Design:** The rocket is explicitly engineered for rapid assembly and high-frequency launches, catering to the fast-paced demands of global small satellite operators.
- **Evolution from Vikram-S:** Vikram-1 builds directly upon the foundational technology validated by the successful suborbital launch of the smaller *Vikram-S* rocket (Mission Prarambh) in November 2022.

Significance:

- A successful Vikram-1 launch will demonstrate that private Indian companies can independently build and launch orbital rockets, advancing India's space sector reforms.
- Vikram-1 strengthens India's position in the global small satellite launch market by offering reliable, cost-effective launch services for commercial satellite constellations.

BORJULI WETLAND

The Borjuli wetland in Assam has been officially notified as a **Biodiversity Heritage Site (BHS)** to protect its unique population of *Oryza rufipogon*, a disease- and pest-resistant wild rice variety.

The Borjuli Wetland

About The Borjuli Wetland:

What It Is?

The Borjuli wetland is a biologically unique freshwater swamp and marshy ecosystem that acts as a natural gene sanctuary. It is celebrated as one of India's most critical habitats for preserving crop wild relatives(CWR), particularly primitive varieties of wild rice.

Location:

- **Geographic Position:** Located in the **Sonitpur district of Assam**, India, nestled within the fertile, flood-prone plains of the Brahmaputra River valley.
- **Ecological Matrix:** Fed by seasonal monsoonal runoff and local alluvial water channels, creating a dynamic wetland environment that naturally cycles between intense flooding and waterlogged conditions.

Key Biological Characteristics:

- **Home of the Rice Ancestor:** The wetland serves as a natural refuge for ***Oryza rufipogon***, the direct evolutionary ancestor (progenitor) of *Oryza sativa*, the domestic rice cultivated globally today.
- **Natural Disease and Pest Resistance:** The wild rice plants inside this ecosystem have spent centuries adapting to local conditions, developing a strong genetic resistance against destructive agricultural pests and fungal or bacterial diseases.
- **High Environmental Tolerance:** These plants are uniquely adapted to survive extreme weather. They can endure long periods of complete flooding and handle saline water conditions without dying.
- **In-situ Conservation Model:** Backed by the ICAR-National Bureau of Plant Genetic Resources (ICAR-NBPGR) and the Assam State Biodiversity Board, the wetland serves as a live, evolving field laboratory where wild strains are preserved directly in their native environment.

About Biodiversity Heritage Sites (BHS):

What It Is?

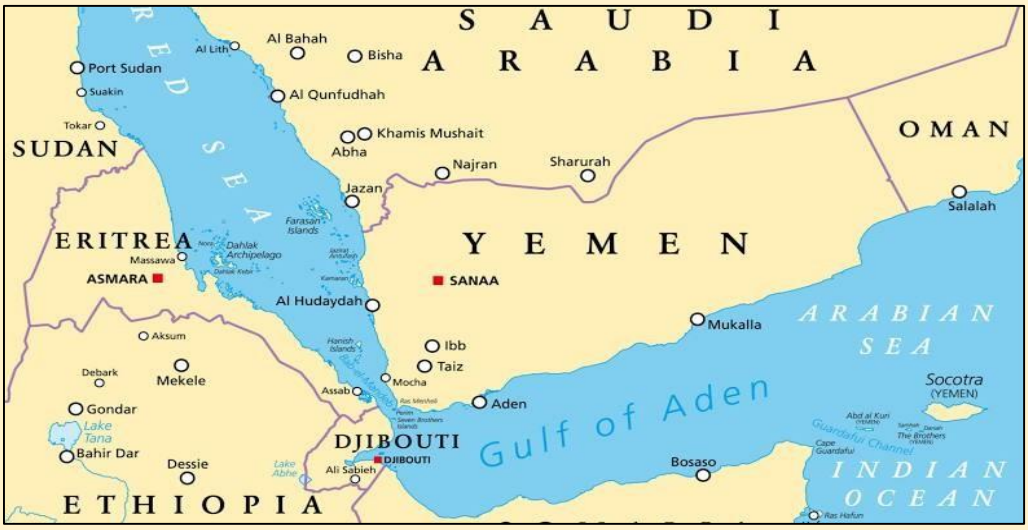
- A Biodiversity Heritage Site (BHS) is a legally protected geographic area defined by unique, ecologically fragile ecosystems. These sites feature a rich diversity of wild or domesticated species, unique crop varieties, rare or threatened wildlife, or valuable fossil beds.

Key Statutory Features:

- **Statutory Foundation:** Notified under **Section 37 of the Biological Diversity Act, 2002**, by State Governments in close consultation with local administrative bodies and village committees.
- **The Conservation Purpose:** Designed to protect fragile ecosystems, including wild crop relatives, sacred groves, high-density wildlife corridors, and wetlands that fall outside the traditional National Park or Wildlife Sanctuary network.
- **Community-Led Governance:** Managed by local **Biodiversity Management Committees (BMCs)**, ensuring that conservation efforts support rather than replace traditional community access and sustainable farming methods.
- **Financing and Technical Oversight:** Regulated under the guidance of the **National Biodiversity Authority (NBA)**, with funding from central agencies like the National Rainfed Area Authority (NRAA) to improve long-term food security and climate-resilient agriculture.

GULF OF ADEN

The Indian Navy's mission-deployed stealth frigate, **INS Trikand**, successfully foiled a piracy attempt on the merchant vessel *MV Golden Arsenal*in the Gulf of Aden.



About The Gulf of Aden:

What It Is?

- The Gulf of Aden is a highly strategic, deepwater marine basin that forms an essential choke-point link within the global maritime trade highway. It covers an area of roughly 205,000 square miles (530,000 square km) and acts as the vital hydrographic gateway connecting the Red Sea to the open waters of the Arabian Sea and the Indian Ocean.

Location: Bordered by **Yemen** to the north, **Somalia and Somaliland** to the south, and connected to the **Bab el-Mandeb Strait** via the Gulf of Tadjoura in the west.

Eastern Boundary: Opens into the Indian Ocean, geographically framed by the meridian of Cape Guardafui to the south, extending past the Socotra archipelago and the Khuriyyā Muriyyā Islands to the north.

Dimensions: Measures approximately 920 miles (1,480 km) in length and maintains an average width of 300 miles (480 km).

Key Geological Features:

- **The Sheba Ridge:** An active **mid-ocean ridge** where seafloor spreading creates new oceanic crust through continuous tectonic activity.
- **The Alula-Fartak Trench:**A deep trench reaching **5,360 m**, formed by faulting along the Sheba Ridge and marking the gulf's deepest point.
- **Continental Drift:** The Gulf of Aden formed about **35 million years ago** as the Arabian Plate separated from the African Plate.
- **Complex Hydrographic Flows:**Indian Ocean water enters through the **Bab el-Mandeb Strait** to compensate for heavy Red Sea evaporation, with currents shaped by monsoon winds.
- **Highly Productive Marine Ecosystem:** Seasonal upwelling brings nutrient-rich waters to the surface, supporting plankton, fisheries, sea turtles, whales, dolphins, and tuna.

Significance:

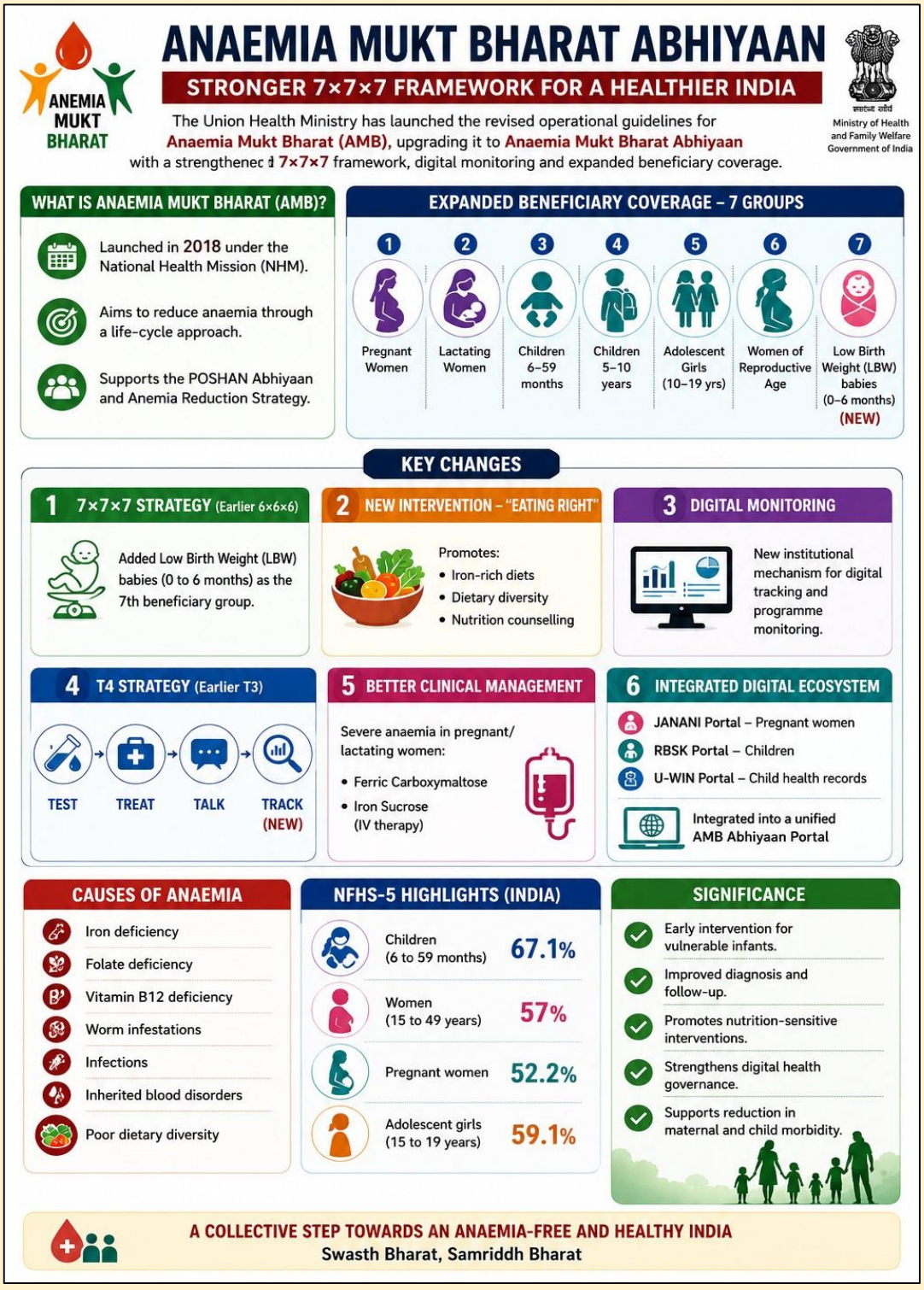
- The Gulf of Aden carries nearly 12% of global trade, linking the Suez Canal with the Indian Ocean for oil and cargo transport.
- Due to piracy threats near Somalia and Yemen, international navies, including the Indian Navy, regularly patrol to secure merchant shipping.

ANAEMIA MUKT BHARAT ABHIYAAN (AMB)

Why is it in the news?

The **Ministry of Health and Family Welfare** has released **revised operational guidelines** for the **Anaemia Mukt Bharat Abhiyaan**, upgrading the earlier **Anaemia Mukt Bharat (AMB)** programme. The revised framework introduces a strengthened **7×7×7 strategy**, expands beneficiary coverage, adopts digital monitoring, and improves the clinical management of anaemia, particularly among pregnant women and children.

The revision reflects India's renewed commitment to reducing the high burden of anaemia, which continues to affect millions of women, children, and adolescents despite years of intervention.



What is Anaemia?

Anaemia is a medical condition in which the **number of red blood cells or the amount of haemoglobin in the blood is lower than normal**.

Haemoglobin is an iron-containing protein present in red blood cells that transports oxygen from the lungs to various tissues of the body. When haemoglobin levels fall, the body's organs receive less oxygen, leading to fatigue, weakness, poor physical growth, reduced learning ability, decreased immunity, and pregnancy-related complications.

Anaemia is not a disease by itself but a manifestation of underlying nutritional deficiencies, infections, or genetic disorders.

What is Anaemia Mukt Bharat?

Anaemia Mukt Bharat (AMB) was launched in **2018** under the **National Health Mission**.

It was designed as a **life-cycle approach** to reduce anaemia by providing preventive, promotive, and curative services to vulnerable groups from infancy to adulthood.

The programme also complements the **POSHAN Abhiyaan**, recognising that anaemia cannot be eliminated merely through iron tablets but requires improvements in nutrition, sanitation, healthcare, and behavioural practices.

The revised programme is now known as **Anaemia Mukt Bharat Abhiyaan**, reflecting a more comprehensive and technology-driven strategy.

Why is Anaemia a Major Public Health Problem?

Anaemia affects physical, mental, and economic development.

In children, it impairs brain development, learning ability, and immunity, making them more susceptible to infections.

Among adolescents, especially girls, anaemia reduces physical capacity and educational performance.

In pregnant women, anaemia increases the risk of maternal mortality, premature delivery, low birth weight, and complications during childbirth.

At the national level, widespread anaemia reduces workforce productivity and imposes a significant economic burden due to poor health and reduced human capital.

The Earlier 6×6×6 Strategy

The original AMB programme followed a **6×6×6 strategy**, which consisted of:

- **Six beneficiary groups**
- **Six evidence-based interventions**
- **Six institutional mechanisms**

This framework focused on providing iron supplementation, deworming, testing, behaviour change, and monitoring for high-risk populations.

The New 7×7×7 Strategy

The revised programme strengthens the earlier framework into a **7×7×7 strategy**, making it broader and more comprehensive.

1. Seven Beneficiary Groups

A major change is the inclusion of **Low Birth Weight (LBW) babies aged 0–6 months** as the **seventh beneficiary group**.

Low birth weight infants are highly vulnerable because they are born with limited iron stores. Without early intervention, they face a higher risk of developmental delays, infections, and severe anaemia.

By including this category, the programme ensures that preventive care begins immediately after birth rather than later in infancy.

2. Seven Interventions

The programme now includes an additional intervention called **"Eating Right."**

Earlier interventions primarily focused on iron supplementation and medical treatment. The revised strategy recognises that sustainable anaemia control requires improving dietary habits.

The "Eating Right" initiative promotes:

- Consumption of iron-rich foods such as green leafy vegetables, pulses, millets, meat, fish, and jaggery.
- Dietary diversity to ensure adequate intake of multiple micronutrients.
- Nutrition counselling for families, particularly pregnant women and mothers of young children.

This represents a shift from a medicine-based approach towards a nutrition-sensitive approach.

3. Seven Institutional Mechanisms

Institutional mechanisms have also been strengthened to improve planning, implementation, supervision, and accountability.

The programme now emphasises digital monitoring, better coordination among departments, and continuous evaluation to ensure that interventions actually reach intended beneficiaries.

Digital Monitoring: A Major Reform

One of the most significant additions is the introduction of a **digital monitoring system**.

Instead of relying solely on manual reporting, beneficiary information and programme performance will now be tracked electronically.

A unified **AMB Abhiyaan Portal** integrates data from several existing health platforms:

- **JANANI Portal** for tracking pregnant women.
- **RBSK Portal** for monitoring child health.
- **U-WIN Portal** for maintaining child immunisation and health records.

This integration reduces duplication of records, improves follow-up, enables real-time monitoring, and supports evidence-based policy decisions.

The New T4 Strategy

Earlier, the programme followed a **T3 strategy**:

- Test
- Treat
- Talk

The revised guidelines introduce **Track** as the fourth component, creating a **T4 strategy**.

Test

Individuals are screened for anaemia using haemoglobin estimation.

Treat

Appropriate treatment is provided depending on severity, including iron supplementation, deworming, dietary advice, or referral for specialised care.

Talk

Healthcare workers counsel beneficiaries regarding nutrition, hygiene, medication adherence, and healthy lifestyle practices.

Track

The new "Track" component ensures that patients are regularly followed up using digital systems to assess treatment response and prevent dropouts.

This improves continuity of care and programme effectiveness.

Improved Clinical Management

The revised guidelines recommend better treatment options for severe anaemia among pregnant and lactating women.

Instead of relying only on oral iron tablets, severe cases can now receive **intravenous iron therapy**, including:

- Ferric Carboxymaltose
- Iron Sucrose

These treatments rapidly replenish iron stores, improve haemoglobin levels, and reduce pregnancy-related complications.

Causes of Anaemia

Although iron deficiency is the most common cause, anaemia has multiple causes.

The major causes include:

Iron Deficiency

Poor intake of iron-rich foods or increased iron requirements during pregnancy and adolescence.

Folate Deficiency

Lack of folic acid affects the production of healthy red blood cells.

Vitamin B12 Deficiency

Common among individuals consuming inadequate animal-source foods or those with absorption disorders.

Worm Infestations

Intestinal parasites such as hookworms cause chronic blood loss, leading to anaemia.

Infections

Diseases such as malaria and chronic infections destroy red blood cells or interfere with their production.

Inherited Blood Disorders

Conditions like **Thalassemia** and **Sickle Cell Disease** can also cause anaemia.

Poor Dietary Diversity

Diets lacking fruits, vegetables, pulses, and protein often fail to provide sufficient micronutrients required for healthy blood formation.

Significance of the Revised Programme

The revised Anaemia Mukt Bharat Abhiyaan is significant because it adopts a more comprehensive, preventive, and technology-driven approach.

Including low birth weight infants enables intervention at the earliest stage of life. Digital monitoring improves accountability, reduces missed follow-ups, and allows real-time tracking of beneficiaries. The addition of nutrition counselling recognises that medicines alone cannot eliminate anaemia. Improved clinical management through intravenous iron therapy can significantly reduce maternal morbidity and mortality.

Overall, the programme strengthens India's efforts to improve maternal and child health, enhance nutrition, reduce preventable deaths, and contribute to achieving the Sustainable Development Goals related to health and nutrition.

Challenges

Despite these reforms, several challenges remain:

- Poor compliance with iron-folic acid supplementation due to side effects.
- Inadequate dietary diversity, especially among economically weaker households.
- Limited awareness regarding nutrition and anaemia.
- Weak healthcare infrastructure in remote and tribal areas.
- Persistence of infections, poor sanitation, and worm infestations.
- Difficulties in ensuring regular follow-up and adherence to treatment.

Anaemia is both a medical condition and a developmental challenge because it affects cognitive development, educational attainment, maternal health, workforce productivity, and national economic growth. The revised **Anaemia Mukt Bharat Abhiyaan** represents a significant step forward by combining **early-life interventions, improved nutrition, digital health governance, and better clinical care**. If effectively implemented, it has the potential to substantially reduce India's burden of anaemia and improve the health and productivity of future generations.

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Course Fee: : ₹ 49,200 (₹ 40,000 + 18% GST ₹ 7,200 + Caution Deposit ₹ 2,000)

Prelims Cum Mains Weekend Batch

For the Working Professionals & students who are doing their UG/PG

- Course Fee: Ongoing Degree/PG students: ₹ 41,300 (₹ 35,000 + 18% GST ₹ 6,300)
- Course Fee: Working Professionals : ₹ 49,200 (₹ 40,000 + 18% GST ₹ 7,200 + Caution Deposit ₹ 2,000)

Civil Service Foundation Course

For Higher Secondary School Students

Course Fee: ₹ 5,900 (₹ 5,000 + GST ₹ 900)

Talent Development Course

For Middle School & High School Students

Course Fee: ₹ 4720 (₹ 4,000 + 18% GST ₹ 720)

REHEARSE- Prelims Test Series

38 Test papers including 3 exclusive current affairs tests and 5 CSAT papers

RESILIENCE- Mains Test Series

17 Tests including compulsory papers

REKINDLE- PCM REPEATERS BATCH

Mentorship, Weekly Current Affairs classes, Bi Weekly CSAT classes, Prelims Test Series, Revision classes, Extensive Answer Writing class / Practices

REPHRASE- Mains Answer Writing Programme

This answer writing exercise will cover Essay, General Studies - I, General Studies - II, General Studies -III & General Studies -IV papers

KEY HIGHLIGHTS

- Prelims & Mains test series with All Kerala rank list.
- Expert faculties.
- Library facility across the centres.
- Instalment facility for fee payment available to BPL category students.

OPTIONAL SUBJECTS

Geography, History, Malayalam, Political Science & International Relations, Public Administration and Sociology

Course Fees : Rs. 11,800/– (Fees Rs 10,000/- + GST Rs.1,800/-).

KERALA STATE CIVIL SERVICE ACADEMY

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