



1 September, 2023

TAMARA

Context: TDB-DST has provided funding support of ₹89.00 lakh for the innovative waterbody management project called "TAMARA".

- Addressing global water resource challenges is crucial, especially for India.
- AMRUT 2.0 mission focuses on preserving water bodies and promoting circular water economy.
- Mission aligns with Blue Economy principles, emphasizing sustainable ocean resource utilization.

TDB's Support for Responsible Waterbody Management

- TDB backs "Development and Commercialization of Intelligent Water Body Management System (IWMS)-TAMARA."
- M/s Bariflo Labs Private Limited, Odisha, receives ₹89.00 lakh funding from TDB.
- Project's total cost: ₹150.00 lakhs.

Innovative Elements of TAMARA Project

- **Smart Sediment Aeration System:**
 - Robotic system moves diffuser aerators in water, increasing oxygen at water bottom.
 - Tested successfully in various water types.
- **Smart Climate-Driven Water Quality Monitoring System**
 - Monitors water quality from bottom to surface, following computer simulations.
 - Controls water nutrient levels and oxygen content.
- **Smart Weed Harvester System (PLASHBOT)**
 - Removes unwanted water plants using robotic components.
 - Employs smart navigation for efficiency.
- **Communication System and Data Protection**
 - Utilizes secure technology for data exchange between devices.
 - Lab-tested for reliability.

AI-driven Approach for Effective Waterbody Management

- TAMARA project uses AI, IoT, and robots.
- System comprehends weather conditions and water quality.
- Monitors oxygen and nutrient levels for aquatic life support.

AMRUT 2.0 Mission

- Launched in October 2021 for a 5-year duration (FY 2021-22 to 2025-26).
- Extends the original AMRUT mission initiated in June 2015.
- Aims to provide all statutory towns with tap access to guaranteed water supply and sewer connections.
- Ministry of Housing and Urban Affairs (MoHUA) oversees the scheme.

Objectives:

- Expand universal water supply coverage from 500 AMRUT-covered cities to all statutory towns nationwide.
- Achieve comprehensive sewage and septage control in 500 AMRUT cities for city self-reliance and water security.
- Reforms focus on water sector improvements, citizen comfort, and financial sustainability.
- Build upon AMRUT's successes in water supply, waterbody revival, aquifer management, treated wastewater reuse, and water circular economy.
- Attain 100% sewage and septic system coverage in 500 AMRUT cities.
- Safeguard freshwater bodies against pollution to sustain natural resources.
- Projected 40% of industrial demand and 20% of urban water demand to be met by recycled treated wastewater.
- Implement fair water distribution, wastewater reuse, and water body mapping through Pey Jal Survekshan in cities.

Adopt a Heritage Programme

Context: On September 4, 2023, ASI will introduce the "Adopt a Heritage 2.0 program," along with the Indian Heritage app and an e-permission portal.

About the scheme

- "Adopt a Heritage: ApniDharohar, ApniPehchaan" is a partnership between the Ministry of Tourism, Ministry of Culture, and Archaeological Survey of India (ASI).
- Launched on September 27, 2017, to coincide with World Tourism Day.
- Aims to improve tourism by allowing public and private entities to manage heritage sites.
- Selection of sites is based on popularity and visibility.
- Individuals and organizations, known as "Monument Mitras," can adopt sites for five years.
- The scheme covers 106 tourist spots, with over 600 Monument Mitras registered and 27 MoUs signed.
- The Ministry of Tourism can terminate agreements with Monument Mitras for noncompliance or poor performance.

Objectives of the Scheme

- Improving fundamental tourism infrastructure at historical sites, monuments, natural locations, and tourist attractions.
- Elevating the tourism experience through the creation of amenities and services at historical sites, monuments, natural areas, and tourist attractions.
- Raising awareness and promoting the cultural and heritage importance of the nation's treasures.

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Monument Mitras

- "Monument Mitra" signifies partners in the 'Adopt A Heritage' program.
- It started under the Ministry of Tourism and shifted to the Ministry of Culture.
- The project's aim is to improve monuments and tourist sites.
- Corporations, public sector firms, and individuals are invited to "adopt" these sites.

Archaeological Survey of India

- ASI is linked with India's Ministry of Culture.
- Its work includes archaeological research, safeguarding ancient sites, and conserving monuments.
- ASI oversees all archaeological activities with the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- It also manages the Antiquities and Art Treasure Act, 1972.
- Founded in 1861 by James Cunningham, an enthusiastic British Army engineer.
- Archaeological efforts started earlier with the Asiatic Society formed by Sir William Jones in 1784.
- Often called the 'Father of Indian Archaeology,' Alexander Cunningham played a key role.
- It became a statutory body under the AMASR Act, 1958, after India's independence.
- Headed by a Director-General and headquartered in New Delhi.
- Over 3500 important monuments and sites are protected by ASI.
- Notable ASI publications are "Ancient India" and "Epigraphia Indica."

State of Food Security and Nutrition in the World Report-2023 (SOFI-2023)

Context: UN Agencies launched the 'SOFI 2023' report with the theme 'Urbanisation, agrifood systems transformation, and healthy diets across the rural-urban continuum'.

Key findings

- **Global Hunger:**
 - Over 122 million more people are facing hunger worldwide since 2019 due to pandemic, weather shocks, and conflicts.
 - Global hunger numbers stalled between 2021 and 2022 due to these challenges.
- **Nutritional Access:**
 - In 2022, approximately 2.4 billion individuals lacked consistent access to safe, nutritious, and sufficient food.
 - This issue disproportionately affected women and people living in rural areas.
- **Child Malnutrition:**
 - In 2021, 22.3% (148.1 million) of children were stunted.
 - 6.8% (45 million) of children were wasted.
 - 5.6% (37 million) of children were overweight.
- **Urbanization and Diets:**
 - Urbanization drives an increase in the consumption of processed and convenience foods.
 - This contributes to a rise in obesity rates in urban, peri-urban, and rural areas.
- **Rural Shift to Markets:**
 - Rural regions in Africa and Asia that were once self-sustaining are now relying more on national and global food markets.
- **Future Urban Population:**
 - It's projected that by 2050, 70% of the global population will live in cities.
 - This demographic shift highlights the need to reshape food systems to address hunger and malnutrition in urban areas.

India-specific Findings

- India's cost of a healthy diet is the lowest among BRICS nations and neighbors.
- About 74% of people in India can't afford a healthy diet.
- Meal costs in Mumbai rose by 65% in five years, while salaries increased by 28%-37%.
- If a diet costs more than 52% of a country's average income, it's considered too expensive.
- Between 2019 and 2021, the expense of a healthy diet increased by almost 9% in Asia, the highest among regions.
- In Asia, South Asia had the most people (1.4 billion) and the highest share (72%) unable to afford a healthy diet.
- In Africa, Eastern and Western Africa together had the most people (712 million) and the highest share (85%) unable to afford a healthy diet.

About the Report

- The report is an annual flagship publication created collaboratively by organizations like FAO, IFAD, UNICEF, WFP, and WHO.
- It offers a detailed view, monitoring, and analysis of global hunger, malnutrition, and evolving food security dynamics.
- The report also provides in-depth insights into the main challenges of achieving these objectives within the framework of the 2030 Agenda for Sustainable Development.

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NEWS IN BETWEEN THE LINES

Stem Cell Therapy



Stem Cells and Therapy:

- Stem cells are undifferentiated cells with potential to differentiate into specialized cells.
- Stem cell therapy uses stem cells to prevent/treat diseases, promoting tissue repair.

Working of Stem Cell Therapy:

- **Stem Cell Extraction:** Extract stem cells from bone marrow, process in lab.
- **Specialization:** Manipulate stem cells to specialize into needed adult cell types.
- **Implantation:** Replace damaged tissue with specialized mature cells.

Applications of Stem Cell Therapy:

- Treat neurological problems, diabetes, arthritis and injuries.
- Study diseases, identify new drugs, screen for side effects.

Advantages of Stem Cell Therapy:

- **Disease Reversal:** Renewable cell source for disease sufferers.
- **Minimal Invasiveness:** Non-surgical, no incisions or scars.
- **Fast Recovery:** Quick procedure, minimal downtime.
- **Natural Healing:** Stimulates growth of new cells for tissue repair.
- **Complication Prevention:** No side effects, reduces infection risk.

Van Raji Tribe



Origin and Region:

- The Van Raji tribe is one of India's primitive and vulnerable tribes.
- They primarily inhabit the villages of Kumaon Himalayas in Uttarakhand's Pithoragarh district.
- Many members of the tribe still practice cave dwelling, reflecting their ancient lifestyle.

Socio-Economic Status:

- The tribe faces socio-economic challenges due to their remote location and limited access to modern amenities.
- Economic activities often include subsistence farming, hunting and gathering.

Cultural Significance:

- Their cultural identity is closely linked to the natural environment of the Himalayan region.

Empowerment:

- Initiatives like Doon Sanskriti School in Dehradun provide education exclusively for tribal children, aiming to empower them through education.

Inclusivity and Recognition:

- Events like President Droupadi Murmu's Raksha Bandhan celebration underscore the importance of recognizing and including vulnerable tribes like Van Raji.
- Such occasions provide a platform to showcase tribal culture and foster a sense of belonging.

Kakrapar Atomic Power Project (KAPP3)



Location: Kakrapar Atomic Power Project (KAPP3) is located in Gujarat, India.

Significance: It is a nuclear power plant that contributes to India's energy generation.

Type of Reactor:

- KAPP3 features a 700-megawatt electric (MWe) nuclear power reactor.
- The reactor type is the Pressurised Heavy Water Reactor (PHWR).

Initiation of Operations: KAPP3 recently commenced operations at full capacity.

Safety Features:

- The PHWR technology used in KAPP3 emphasizes safety.
- Thin-walled pressure tubes and enhanced safety systems contribute to its safety profile.

Government Approval and Investment:

- The NDA government approved the construction of 12 reactors, including KAPP3, in 2017.
- The project's capital investment is funded through a debt-to-equity ratio.

Contributing to Energy Expansion: KAPP3 is part of India's efforts to increase nuclear power capacity from 7,480 MWe to 22,480 MWe by 2031.

Solar Ultraviolet Imaging Telescope (SUIT)



What is Solar Ultraviolet Imaging Telescope?

- Solar Ultraviolet Imaging Telescope (SUIT) is a key payload developed for India's Aditya-L1 mission, aimed at studying the Sun.
- SUIT is designed to image two outer layers of the Sun, namely the Photosphere and Chromosphere, in the ultraviolet (UV) range.

Developers: Created by IUCAA scientists Durgesh Tripathi and A. N Ramaprakash.

Imaging Solar Layers:

- SUIT's primary purpose is to capture images of the solar Photosphere and Chromosphere.
- Photosphere is the innermost outer layer of the Sun and is directly visible. Chromosphere lies just above the Photosphere.

Ultraviolet Range and Temperature Variation:

- SUIT operates in the ultraviolet range to capture specific wavelengths of solar radiation.
- Temperatures in the Photosphere range between 3,700 and 6,200 degrees Celsius.
- Chromosphere temperatures are between 3,700 and 7,700 degrees Celsius.

Contribution to Aditya-L1 Mission:

- SUIT is one of the main payloads on the Aditya-L1 spacecraft.
- It contributes crucial data to address scientific goals related to the Sun's behavior and phenomena.

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Kokborok



Lingua Franca of Tripura Tribes:

- Kokborok is the primary language spoken by the majority of Tripura's 19 tribal communities.
- It holds cultural and linguistic significance in the state.

Historical Recognition:

- Kokborok was recognized as an official state language of Tripura in 1979.
- It is taught in various educational institutions, including 22 degree colleges and Tripura Central University.

Script Debate:

- Kokborok lacks its own script, leading to debates on how it should be written.
- There has been a longstanding argument whether it should be written in the Bengali or Roman script.

Commissions and Recommendations:

- The erstwhile Left government established two commissions to address the script issue.
- Commissions led by Shyama Charan Tripura and linguist Pabitra Sarkar favored the Roman script based on tribal preferences.

TIPRA Motha's Stand:

- The regional party TIPRA Motha advocates for retaining both Bengali and Roman scripts for Kokborok.

In a tragic incident, a fire erupted in a building in Johannesburg, claiming the lives of at least 63 individuals.

Political boundaries: Johannesburg is located in Gauteng province, South Africa.

The city is bordered by Ekurhuleni to the east, Sedibeng to the south, West Rand to the west and Mogale City to the north.

Physical features:

- Johannesburg is located on the Highveld, a plateau in South Africa.
- The city is bisected by the Witwatersrand, a range of hills that are rich in gold.
- The city is home to a number of rivers, including the Jukskei River and the Crocodile River.

History:

- The area around Johannesburg was originally inhabited by San hunter-gatherers and Sotho-Tswana people.
- In 1886, gold was discovered on the Witwatersrand, which led to the rapid growth of Johannesburg.
- Johannesburg was also a major center of the anti-apartheid movement.
- In 1994, South Africa held its first democratic elections, and Johannesburg became the capital of Gauteng province.



Place in News

Johannesburg

POINTS TO PONDER

- ❖ Recently, Who is appointed as the first woman Chairperson of the Railway Board? -Jaya Verma Sinha
- ❖ Which Assam-based oncologist won the 2023 Ramon Magsaysay award for revolutionizing cancer treatment through people-centric healthcare? - Ravi Kannan
- ❖ After India, which other countries opposed China's new "standard map" for 2023? -Philippines, Malaysia and Indonesia
- ❖ Who has been appointed as the new Principal D-G of Press Information Bureau (PIB)? - MANISH V. Desai
- ❖ What payload has completed in situ measurements on Chandrayaan-3's lander? – RAMBHA - LP

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