UPSC Daily Current Affairs| One Liners 02-07-2025

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Geography

Kariyachalli Island Restoration Begins

The Tamil Nadu government has recently launched the restoration of Kariyachalli Island in the Gulf of Mannar Marine National Park, following the successful Vaan Island project.

• **TNSHORE Initiative -** Part of the Tamil Nadu Sustainably Harnessing Ocean Resource (TNSHORE) initiative, this ₹50 crore project is funded by the state government and the World Bank.

• **Island Shrinkage Concerns -** Kariyachalli Island has drastically shrunk from 20.85 hectares in 1969 to just 3.14 hectares (high tide) recently, primarily due to coastal erosion and climate change.

• **Vital Coral Reefs -** Coral reefs are crucial for coastal protection and marine biodiversity. The Gulf of Mannar, home to a major Indian reef system, has suffered from historical coral mining.

• **Restoration Techniques -** The project involves deploying 8,500 artificial reef modules to protect the island and restore marine life, along with rejuvenating degraded coral reefs and seagrass beds.

• **Community and Scientific Involvement -** Over 300 local community members will participate. Comprehensive environmental, social, and wave dynamics studies, led by IIT-Madras, informed the restoration strategy, aiming to enhance biodiversity and sustain livelihoods.

Polity & Governance

Revolutionizing Rail Reservations

Recently, Indian Railways has launched major reforms to modernize its reservation system, making it more passenger-friendly, transparent, and efficient, with a strong focus on technological transformation.

• **Earlier Waitlist Charting -** To reduce uncertainty for waitlisted passengers, the reservation chart will now be prepared 8 hours before departure for trains leaving after 2 PM, and at 9 PM the previous day for morning trains. This provides more time for alternate arrangements.

• **Modern PRS by December 2025 -** CRIS is developing a new Passenger Reservation System (PRS) to significantly boost booking capacity to over 1.5 lakh tickets per minute and enquiry capacity to over 40 lakh per minute.

• **Enhanced PRS Features -** The new PRS will offer a multilingual interface, seat selection, a fare calendar, and integrated services for special categories like Divyangjan, students, and patients.

• **Verified Tatkal Bookings -** Effective **July 1, 2025**, Tatkal bookings on IRCTC will require OTP-based identity verification using Aadhaar or DigiLocker. This aims to reduce fraud and ensure fair access for genuine users.

• **Multilingual Accessibility -** The new system will support multiple Indian languages, making it more inclusive and accessible for passengers from diverse linguistic backgrounds, especially in rural and semi-urban areas.

National Turmeric Board Inaugurated

The union Home minister recently inaugurated the National Turmeric Board headquarters in Nizamabad, Telangana, addressing a 40-year demand from farmers.

• **Specialized Statutory Body -** This new statutory body, under the Ministry of Commerce and Industry, will promote, regulate, and support India's turmeric sector from production to export. Nizamabad, the "Turmeric Capital," will serve as its base**.**

• **Board Composition -** Chaired by a Central Government appointee, the Board includes representatives from key ministries, top-producing states, farmers, exporters, and research institutions.

• **Objectives** - Include value addition, branding, eliminating middlemen, and boosting farmer income**.**

• **Key Functions -** The Board will develop export infrastructure, promote GI-tagged organic turmeric, ensure compliance with international standards, and coordinate exports with relevant bodies.

• **Turmeric in India -** Known as the "Golden Spice," turmeric is a crucial rhizomatous plant in India, cultivated across over 20 states. India produces over 75% of global turmeric, with major producers being Maharashtra, Telangana, and Karnataka**.**

• **Production and Export Targets -** In 2022-23, India produced 11.61 lakh tonnes of turmeric. The country aims to increase turmeric exports to USD 1 billion by 2030, building on current major destinations like Bangladesh and the UAE.

Economy

Indian GST Day

July 1st marks Indian Goods and Services Tax (GST) Day, commemorating its 2017 nationwide rollout.

• **Unifying Tax Reform -** GST replaced a complex indirect tax system, creating a "one nation, one tax" regime to simplify compliance.

• **Vision for Growth -** The aim was to foster a seamless national market, reduce tax evasion, and boost India's economic growth.

• **Overcoming Initial Hurdles -** Despite initial adaptation challenges, the digital GST system has matured, becoming more streamlined and efficient.

• **Celebrating Collaboration -** GST Day acknowledges the collaborative efforts of governments and businesses in this successful tax transition.

• **Transparent Economic Impact -** GST has brought greater **transparency**, expanded the tax base, improved logistics, and significantly aided India's digital economic integration.

Security

QUAD

The Coast Guards of India, Japan, the US, and Australia have recently launched the QUAD at Sea Ship Observer Mission to boost Indo-Pacific maritime cooperation.

• **Wilmington Declaration Roots -** This mission, fostering a rules-based maritime order, stems from the Wilmington Declaration adopted at the September 2024 QUAD Leaders' Summit.

• **First-of-its-Kind Initiative -** Two officers, including women, from each QUAD nation are aboard the US Coast Guard Cutter Stratton, marking a unique collaborative effort.

• **India's SAGAR Vision -** India's participation underscores its SAGAR (Security and Growth for All in the Region) maritime vision, aligning with wider Indo-Pacific Oceans Initiative (IPOI) efforts.

• **Enhancing Maritime Governance-** The mission aims to improve interoperability, domain awareness, and operational readiness, strengthening a free, open, and rules-based maritime order crucial for regional stability.

• **Paving the Way for Future Cooperation-** This initiative sets the stage for more joint operations, fostering trust and resilience against evolving maritime threats in the vital Indo-Pacific region.

Science

Altermagnets

Recent advancements highlight altermagnets, a novel class of magnetic materials, with potential to transform electronics, particularly in spintronics.

• **Hybrid Magnetic Nature -** Altermagnets uniquely combine **ferromagnetic** and **antiferromagnetic** properties, lacking external magnetism but possessing beneficial internal electron behavior.

• **CrSb's Remarkable Qualities -** Chromium antimonide (CrSb) is a metallic altermagnet, retaining magnetic properties significantly above room temperature and exhibiting the largest recorded altermagnetic spin-splitting.

• **Direction-Dependent Conduction -** CrSb displays Direction-Dependent Conduction Polarity (DDCP): n-type conduction parallel to crystal layers and p-type perpendicular, challenging conventional material classifications.

• **Device Design Implications -** This dual conduction simplifies device architecture, potentially eliminating the need for doping and leading to more compact, efficient electronic devices.

• **Sustainable Future -** Composed of earth-abundant, non-toxic elements, CrSb offers an environmentally friendly solution for next-generation electronics, aligning with sustainable technology demands.

Teak Leaf Extract for Optical Safety

Recently, Researchers at the Raman Research Institute (RRI) have found that teak leaf extract, usually discarded, shows promise for optical safety due to its nonlinear optical properties.

• **Harnessing Natural Pigments -** Teak leaves contain natural pigments with remarkable nonlinear optical (NLO) properties, making them a potential eco-friendly alternative to synthetic optical components**.**

• **Extracting the Dye -** The process involves drying and grinding leaves, then soaking the powder in solvents. Ultrasonication and centrifugation purify the extract into a vibrant dye for testing.

• **Reverse Saturable Absorption (RSA) -** RRI tests with green laser light revealed the dye's reverse saturable absorption (RSA), where it absorbs more light at higher intensities, crucial for laser safety equipment.

• **Environmental Advantages -** This teak leaf dye is inexpensive, biodegradable, and compostable, offering a sustainable and environmentally friendly alternative to traditional optical limiters**.**

• **Broad Future Applications -** This discovery could lead to laser safety goggles, protective shields for optical sensors, and laser-resistant coatings, reducing laser-induced injuries and promoting green practices in the optical industry**.**

Miscellaneous

India's First Wooden Gurdwara

Sri Nanak Niwas, India's first wooden Gurdwara, now stands in Fazilka, Punjab.

• **Visionary Creation -** SSP Bhupinder Singh Sidhu's devotion led to its 2023 creation within police lines.

• **Finnish Deodhar Marvel -** Constructed entirely from imported Finnish Deodhar wood, it's a unique, durable architectural and spiritual sanctuary.

• **Rapid Construction -** Measuring 40 ft x 40 ft with four inclusive entrances, it was built in just three months.

• **Community Hub -** The Gurdwara hosts daily prayers, ceremonies, and weekly congregations, attracting devotees nationwide and globally.

• **Symbol of Devotion -** It symbolizes how individual faith can shape inclusive public spaces, boosting religious tourism.

National Statistics Day 2025

Recently, India celebrated its 19th National Statistics Day on June 29, 2025, honoring Prof. P.C. Mahalanobis's 132nd birth anniversary.

• **75 Years of NSS' Theme -** The 2025 theme, "75 Years of National Sample Survey," celebrates the NSS's evolution and significant contributions since its 1950 inception**.**

• **Promoting Statistical Awareness -** The day aims to educate youth about statistics' importance in national planning and highlight innovations in data monitoring and dissemination**.**

• **P.C. Mahalanobis: Pioneer -** Prasanta Chandra Mahalanobis (1893–1972), known as the Father of Indian Statistics, was a visionary statistician and planner**.**

• **Key Contributions -** Mahalanobis founded the Indian Statistical Institute (ISI) in 1931 and developed the Mahalanobis Distance (1936), a crucial multivariate statistical measure**.**

• **Architect of Indian Planning -** He designed India’s first household sample survey system (NSS) in 1950, spearheaded the Mahalanobis model for the Second Five-Year Plan, and contributed to flood management, revolutionizing data-driven governance and shaping India's planned economy.

Patna to Get Water Metro

Patna is set to revolutionize its transport with a new water metro service, utilizing the Ganga River to combat severe traffic congestion. Union Minister Sarbananda Sonowal announced this initiative, mirroring Kochi's successful model.

• **Kochi's Blueprint -** Inspired by Kochi's electric/hybrid ferry system, which has served over 40 lakh passengers since 2023, Patna's water metro will initially focus on the Ganga's east-west axis.

• **Addressing Patna's Congestion -** With limited road expansion options and increasing vehicular traffic, Patna faces chronic gridlock. The water metro offers a sustainable solution by leveraging underutilized river resources**.**

• **Feasibility Study Underway -** The Inland Waterways Authority of India (IWAI) has commissioned Kochi Metro Rail Limited (KMRL) for a feasibility study, assessing river conditions and commuter demand for optimal route planning.

• **Challenges and Benefits -** Key challenges include seasonal sedimentation and informal existing ferry services. However, the water metro promises decongested roads, eco-friendly transport, improved air quality, and economic growth through enhanced connectivity and tourism**.**

• **Integrated Urban Mobility -** The water metro will seamlessly integrate with Patna's upcoming rail metro, strategically connecting terminals near major transport hubs to create a comprehensive, efficient urban mobility network, aligning with national water transport development**.**



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