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Current Affairs - 04 April 2025

EXERCISE INDRA



India and Russia have commenced a six-day naval exercise, 'Indra', off the coast of Chennai, involving sophisticated maritime drills and live weapon firings.

- It is an **India - Russia bilateral naval exercise**.
- Since its **inception in 2003**, Exercise Indra has epitomised the long-term strategic relationship between the Indian and Russian navies.
- The exercise has evolved into a symbol of maritime cooperation, showcasing the two nations' commitment to enhancing naval interoperability and operational synergy.

INDRA 2025:

- It is the **14th edition** of the exercise.
- The exercise is being conducted in two phases: **Harbour phase at Chennai** and **Sea phase in the Bay of Bengal**.
- The Harbour Phase included an opening ceremony, Subject Matter Expert Exchanges (SMEEs), reciprocal visits, sports fixtures, and pre-sail briefings between personnel from both navies.
- The sea phase of the exercise will witness advanced naval drills, including tactical manoeuvres, live weapon firings, anti-air operations, underway replenishment, helicopter cross-deck landings, and exchange of sea riders.
- It is witnessing participation of Russian naval ships -- Pechanga, Rezkiy, and Aldar Tsydenzhapov.
- The Indian Navy has deployed its warships **Rana, Kuthar, and maritime patrol aircraft P8I**.

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TRUMP'S RECIPROCAL TARIFFS — IMPACT ON INDIA

India and the US Tariffs

- India has been smacked with a tariff rate of 26%.
- **Key Concerns Raised by the US**
 - **High and Unpredictable Tariffs**
 - India's WTO-bound agricultural tariff rates average 113.1%, going up to 300%.
 - Frequent tariff hikes without prior notice create uncertainty for US exporters.
 - **Regulatory and Policy Barriers**
 - **Lack of transparency** in tariff announcements and trade regulations.
 - **No uniform government procurement policy**, leading to inconsistent practices. Inadequate intellectual property (IP) enforcement.
 - **Foreign Investment and Market Access Restrictions**
 - **FDI restrictions in retail and dominance of state-owned banks** (holding 60% market share).
 - **Unequal competition** in the insurance sector, with state-owned firms enjoying government support.
 - **Agriculture and Subsidies**
 - **Extensive subsidies** (credit waivers, crop insurance, and input subsidies) distort market competition.

Silver Linings for India Amidst Trump's Tariff Storm

- **Comparative Advantage Over Key Export Rivals**
 - Initially, President Trump announced a **26% reciprocal tariff** on India. This is significantly lower than tariffs imposed on China (34%), Vietnam (46%), Bangladesh (37%), Thailand (36%), and Indonesia (32%).

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- India's key export sectors like textiles and garments may gain a competitive edge over these nations in the US market.
- Moreover, pharmaceuticals — India's biggest export to the US — are exempted under the executive order.
- **Scope for Bilateral Negotiation**
 - The Trump administration has left room for revision of tariffs if trade concerns are addressed.
 - India is already in talks with the US for a bilateral trade deal, aiming to finalize the first phase by October.
- **India's Pragmatic Non-Retaliatory Approach**
 - While countries like EU, Japan, Australia, and China may retaliate, India is unlikely to do so given its relatively lower tariff burden and ongoing trade talks.
 - Retaliation could trigger a damaging tariff war, which India appears keen to avoid.
 - Instead, India could use this opportunity to:
 - Reduce its own high tariffs
 - Negotiate trade concessions with both the US and other partners
 - Dismantle arbitrary non-tariff barriers recently imposed

Conclusion

- The tariffs may act as a wake-up call to make domestic policy more transparent and predictable, especially in areas like tariffs, FDI, IP enforcement, and digital regulation.

TRANSITING EXOPLANET SURVEY SATELLITE (TESS)



- TESS is a **NASA mission** that was launched in March 2018.
- It is a small space telescope designed to **discover** thousands of **exoplanets** in orbit around the **brightest dwarf stars** in the sky.

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- It is a **follow-up** to NASA's highly successful **Kepler** space telescope, which found thousands of exoplanets during a decade of work after its launch in 2009.
- In its **prime mission**, a two-year survey of the solar neighborhood, **TESS** monitored the **brightness of stars for periodic drops caused by planet transits**.
 - This method **reveals the diameter of the planet and the size of its orbit**.
 - **Orbits within a certain range lie in the “habitable zone”**, where liquid water can exist on the surface of an Earth-like world.
- The **prime mission ended on July 4, 2020**, and TESS is **now in an extended mission**.
- TESS is finding planets ranging from small, rocky worlds to giant planets, showcasing the diversity of planets in the galaxy.
- TESS **finished its primary mission by imaging about 75% of the starry sky** as part of a two-year-long survey. In capturing this giant mosaic, TESS found 66 new exoplanets.

ASOLA BHATTI WILDLIFE SANCTUARY



- It is located in the **South Delhi Ridge** of the **Aravalli hill range** on the **Delhi-Haryana border**, located in **southern Delhi**.
- The sanctuary is part of the Southern Ridge and has biodiversity significance as it **merges with the Indo-Gangetic Plain**.
- It is an important **part of the North Aravalli Leopard Wildlife Corridor**, which starts from **Sariska National Park in Rajasthan**, passes through various districts of Haryana, and finally **meets the Delhi Ridge**.

Vegetation:

- As per Champion & Seth (1968), the vegetation falls under the **Northern Tropical Thorn Forests**
- The native plants exhibit **xerophytic adaptations** such as thorny appendages, wax-coated, succulent, and tomentose leaves.

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Flora: The sanctuary's flora includes trees like the **Neem, Peepal, and Jamun.**

Fauna:

- The sanctuary is also home to mammals like the **Nilgai, Indian Porcupine, Indian Hare,** and Indian Grey Mongoose.
- The sanctuary has over 200 species of birds, including the **Indian Peafowl, Red Junglefowl,** and the Indian Grey Hornbill.

SEAWEED



- The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** aims to boost **India's seaweed production to 1.12 million tonnes** over five years.
- The **\$5.6 billion global seaweed industry** is expanding rapidly, with India's contribution increasing steadily.

What is Seaweed?

- **Seaweed is a marine plant** that grows in **oceans and seas.**
- It is **nutrient-dense**, containing **54 trace elements, vitamins, minerals, and amino acids.**
- It helps combat **cancer, diabetes, arthritis, heart disease, and high blood pressure** while also **boosting immunity.**
- **Unlike traditional crops**, seaweed **does not require land, freshwater, fertilizers, or pesticides**, making it an **eco-friendly and sustainable** agricultural resource.
- **Microscopic seaweeds**, such as **phytoplankton**, form the **foundation of marine food chains** and play a key role in **oceanic primary productivity.**
- **Large seaweeds**, like **giant kelp**, create **dense underwater forests** that serve as biodiversity hotspots, offering shelter and food to a variety of species.
- Seaweeds contribute to **oxygen generation** and **carbon sequestration**, playing a significant role in **climate regulation.**

KANNADIPPAYA



Kannadippaya, a traditional tribal handicraft from Kerala, has been awarded the Geographical Indication (GI) tag.

- "Kannadippaya" (meaning 'mirror mat') originates from its **distinct reflective design**.
- It is woven using **reed bamboo's soft inner layers**, which give it remarkable **thermal properties**—it provides warmth in winter and a cooling effect in summer.
- It is primarily crafted by **tribal communities** such as the **Oorali, Mannan, Muthuva, Malayan, and Kadar** tribes, along with **Ulladan, Malayarayan, and Hill Pulaya** artisans in the **Idukki, Thrissur, Ernakulam, and Palakkad**.
- The finest Kannadippaya is made from **Teinostachyum wightii**, locally known by various names such as **Njoonjileetta, Njoojoora, Ponneetta, Meieeta, and Neytheetta**.
- Other bamboo species, like **Ochlandra sp.** (locally called **Kareetta, Pereetta, Velleeta, Chitoora, and Kanjoora**), are also used.
- **Kannadippaya is the first tribal handicraft from Kerala to receive a GI tag.**

ARTIFICIAL RAINS



Delhi's Environment Minister recently chaired a meeting with key government agencies to explore the feasibility of artificial rain through cloud seeding.

- **Artificial rain** refers to the process of **inducing precipitation through cloud seeding**, a weather modification technique.
- It is primarily used to **enhance rainfall**, combat **drought conditions**, and **reduce air pollution**.

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How does it work?

- The method involves **dispersing chemicals** like **silver iodide**, **potassium iodide**, and **dry ice** into clouds to encourage the formation of raindrops using aircraft or helicopters.
- These chemicals **act as nuclei** around which **water vapour condenses to form larger droplets**, eventually leading to rainfall.
- The success of cloud seeding **depends on the presence of sufficient moisture and appropriate atmospheric conditions**.

Types of Cloud Seeding

- **Hygroscopic Cloud Seeding:** Accelerates the merging of droplets in liquid clouds, making them large enough to fall as rain.
- **Glaciogenic Cloud Seeding:** Introduces ice-forming agents into supercooled clouds, converting water vapour into ice crystals, which then melt into rain.

Alternative Technologies

- **Static artificial rain-inducing system:** Uses **natural ionisation technology** to stimulate precipitation.
- **Stratospheric Aerosol Injection (SAI):** A form of **solar geoengineering**, inspired by volcanic eruptions, where **aerosols like sulphur dioxide or other reflective particles** are injected into the atmosphere to **cool the planet and reduce smog**.
- **Diamond dust experiment:** Scientists have explored using **diamond dust** as a non-toxic, long-lasting alternative to **sulphur-based aerosols** for climate cooling. However, the **high cost** makes it unfeasible.

IMPORTANCE OF UNDERSEA CABLES

- Undersea cables are the backbone of global internet connectivity. They link internet service providers and telecom operators across countries, enabling fast and reliable data transmission worldwide.
- **Structure and Functionality**

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- These cables are just a few inches thick but heavily protected to survive harsh sea environments. Inside, they contain fiber optic strands that carry vast amounts of data at high speeds.
- **Landing Points and Stations**
 - Undersea cables come ashore at designated “landing points” — typically manholes buried under sand.
 - From there, they connect to “landing stations” inland, where they integrate with major networks.
- **Critical Role in the Modern World**
 - According to experts, undersea cables handle: 90% of global data; 80% of world trade; \$10 trillion in financial transactions, and secure government communications.

India's Undersea Cable Hubs

- India has two major undersea cable landing hubs — Mumbai and Chennai.
- Mumbai handles 95% of subsea cable traffic, mostly through a six-kilometre stretch in Versova. Many cables that land in Chennai also connect to Mumbai.
- **Current Cable Infrastructure**
 - 17 international cable systems currently land in India.
 - India also has two domestic cable projects:
 - CANI (Chennai–Andaman and Nicobar Islands)
 - Kochi–Lakshadweep Islands project

Risks Surrounding Undersea Cable Deployment in India

- **Vulnerability to Cable Cuts at Sea**
 - India's internet infrastructure is highly dependent on undersea cables, with more cables landing in Singapore than in India, making the country vulnerable to disruptions at sea.

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- **Impact of Cable Cuts in the Red Sea**
 - Large-scale damage to multiple cables in the region could cause significant internet outages, with limited ability to reroute data.
- **Historical Dependence on Shipping Routes**
 - Subsea cables have traditionally followed shipping trade routes, as these routes made it easier to lay down cables.

Measures to Strengthen India's Subsea Cable Infrastructure

- **Streamlining Regulatory Processes**
 - Currently, around 51 different approvals are needed, spanning various departments like the Department of Telecom, Home Ministry, Environment Ministry, and local municipalities.
 - Simplifying and streamlining these regulatory procedures would reduce delays and improve the ease of laying subsea cables.
- **Enhancing Cable Security**
 - Securing subsea cables is a significant concern, as fishing trawlers frequently damage cables, disrupting services.
 - Better security measures and monitoring systems need to be implemented to protect these critical infrastructures from physical damage.
- **Building Domestic Repair Capabilities**
 - There is a need for increased domestic investment in subsea cable repair vessels and cable storage depots to expedite repair work and reduce dependency on foreign resources.