

DAILY CURRENT AFFAIRS (DCA)

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NATURAL FARMING: ANCHORING A SUSTAINABLE WAY OF FARMING

Context

- The rise of natural farming among Shimla's apple growers marks a transformative shift toward sustainable agriculture.

Do you know?

Cash Crop: Apple is the dominant fruit crop in Himachal Pradesh and has become the leading cash crop among fruits.

- It contributes **76%** to the region's total fruit production.
- Decrease in Productivity:** Poor management practices, over-reliance on chemical fertilisers and pesticides as well as adverse effects of climate change pose serious challenges for Himachal Pradesh's once-thriving apple industry.
- Solution:** A promising solution to these challenges lies in natural farming, which focuses on utilising local resources, enhancing soil health and promoting sustainable production practices.

Natural Farming

- Natural farming is an approach to agriculture that emphasizes working with **nature's processes to grow crops** in a sustainable and holistic way.
- It follows **local agro-ecological principles** rooted in indigenous knowledge, location-specific technologies, and adaptations to local agro-ecology.
- One of the central ideas of natural farming is to **minimize reliance on external inputs** and create a system that can sustain itself over the long term.



Beejamrit

The process includes treatment of seed using cow dung, urine and lime based formulations.

Whapasa

The process involves activating earthworms in the soil in order to create water vapor condensation.

COMPONENTS OF NATURAL FARMING



Jivamrit

The process enhances the fertility of soil using cow urine, dung, flour of pulses and jaggery concoction.

Mulching

The process involves creating micro climate using different mulches with trees, crop biomass to conserve soil moisture.

Plant Protection

The process involves spraying of biological concoctions which prevents pest, disease and weed problems and protects the plant and improves their soil fertility.

Key practices of natural farming include:

- Minimal Soil Disturbance;
- Use of Organic Inputs;
- Biodiversity and Polyculture;
- Water Conservation;
- Natural methods to manage pests;
- Synthetic fertilizers, herbicides, and pesticides are avoided.

Natural Vs. Organic Farming

- Natural farming** emphasizes minimal intervention with nature, avoiding tilling, fertilizers, and even weeding.
 - It focuses on creating self-sustaining ecosystems with little to no external inputs, trusting nature to maintain soil health and manage pests.
- Organic farming** follows specific certification standards that prohibit synthetic chemicals and genetically modified organisms (GMOs).
 - It allows the use of organic fertilizers, pesticides, and tilling.
 - It tends to be more structured and regulated than natural farming.

Natural Farming in Practice

There are several states practicing Natural Farming. Prominent among them are Andhra Pradesh, Chhattisgarh, Kerala, Gujarat, Himachal Pradesh, Jharkhand, Odisha, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu.



Benefits of Natural Farming

- **Environmental Sustainability:** It helps protect soil health, reduces pollution, and supports biodiversity.
- **Resilience to Climate Change:** Natural farming promotes agricultural practices that can adapt to changing climates, such as drought-tolerant crops and sustainable water use.
- **Healthier Food:** Food produced without chemical fertilizers and pesticides is considered safer and more nutritious.
- **Economic Benefits:** Over time, natural farming can reduce costs related to chemical inputs and increase the resilience of farms, potentially leading to higher yields.

Challenges

- **Learning Local Ecosystem:** It requires a deep understanding of local ecosystems, which can take time to learn and apply effectively.
- **Labor-Intensive:** In the transition period, natural farming is more labor-intensive and initially produces lower yields compared to conventional farming.
- **Market Demand:** Although organic products are gaining popularity, natural farming does not always meet mainstream market expectations or certification standards.

Government Initiatives

- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** The promotion of drip and sprinkler irrigation systems under this program can be adapted to natural farming practices.
- **National Mission on Natural Farming (NMNF):** The Union Cabinet announced the NMNF as a standalone Centre-sponsored scheme under the Ministry of Agriculture & Farmers' Welfare.
 - ♦ It aims to promote natural farming among one-crore farmers across the country.
 - ♦ It will be implemented in **15,000 clusters in Gram Panchayats**, covering approximately 1 crore willing farmers.
- **Soil Health Card Scheme:** Launched in 2015, this initiative provides farmers with soil health cards that offer detailed information about the nutrient content and pH levels of their soil.
- **National Mission on Sustainable Agriculture (NMSA):** Launched in 2014, encourages the adoption of sustainable farming techniques, including natural farming, to improve soil health, conserve water, and enhance productivity.

- **National Organic Farming Research Institute (NOFRI):** It focuses on improving soil health, developing organic farming technologies, and promoting sustainable agricultural practices.
- **States Practicing:** There are several states practicing Natural Farming.
 - ♦ Prominent among them are Andhra Pradesh, Himachal Pradesh, Gujarat, Kerala, Jharkhand, Odisha, Madhya Pradesh, Rajasthan, Uttar Pradesh and Tamil Nadu.

Way Ahead

- The Government is increasingly recognizing the importance of natural farming in addressing environmental challenges, improving farmer incomes, and ensuring food security.
- These efforts, when combined with local farmer participation and state-level innovation, hold great promise for the future of sustainable agriculture in India.

Source: DTE

INDIA'S DIPLOMATIC ENGAGEMENTS

In News

2024 was marked by a series of incoming and outgoing visits, with significant emphasis on global insecurity and neighborhood shocks, especially in Bangladesh.

High Points in External Relations:

- **China:** Disengagement negotiations at the Line of Actual Control were the most difficult.
 - ♦ The first formal Modi-Xi meeting in five years marked a turning point.
- **France:** French President Emmanuel Macron attended Republic Day, reaffirming strong bilateral ties.
- **European Free Trade:** The India-European Free Trade Association agreement was concluded, India's first with Europe.
- **Neighborhood Diplomacy:** Visits by leaders of neighboring countries, including Bhutan, Sri Lanka, and the Maldives, strengthened ties.
 - ♦ External Affairs Minister S. Jaishankar's visit to Pakistan for the SCO summit was significant.

Challenges for India in 2024:

- **Bangladesh:** The estrangement of Bangladesh after Prime Minister Sheikh Hasina's political upheaval was a significant shock.

- **Canada:** Diplomatic ties soured due to allegations of Indian involvement in the Nijjar killing, leading to tensions with PM Justin Trudeau's government.
- **U.S. Relations:** The U.S. The Department of Justice filed indictments against the Adani group and an Indian official, complicating ties with the U.S. despite its pro-India government.
- **Causes :** Rising sea levels are caused by ocean warming and the melting of glaciers and ice sheets, both driven by climate change.
 - ◆ Even with global warming limited to 1.5°C above pre-industrial levels (as per the Paris Agreement), sea levels will still rise significantly.
 - ◆ Ocean circulation patterns, like the Gulf Stream, can cause regional variations in sea level rise

Navigating Global Conflicts:

- **Russia-Ukraine Conflict:** Prime Minister Narendra Modi's visits to both Russia and Ukraine fueled speculation about India's potential mediation role.
- **Israel-Palestine:** India maintained a balanced stance, calling for an end to civilian casualties while hedging on UN resolutions regarding Israel's actions in Gaza.
- **Middle East Relations:** Multilateral initiatives like IMEC and I2U2 faced challenges, and India sought to engage West Asian countries bilaterally.

Future Outlook

- **U.S. Relations:** S. Jaishankar's visit to Washington and meetings with the Trump team signal a focus on U.S.-India ties.
 - ◆ President Trump is expected to visit India for the Quad Summit.
- **Iran:** A ministerial visit from Iran is expected to kick off 2025.
- **Russia:** Russian President Vladimir Putin's visit to Delhi is expected in early 2025, marking his first since the war began.
- **Republic Day:** Indonesian President Prabowo Subianto will be the guest at India's Republic Day celebrations.
 - ◆ The main challenge for India's foreign policy in 2025 will be navigating global uncertainty while adapting to change.
- **Global Rise:**
 - ◆ **Since 1880**, global sea levels have risen by approximately **20 centimetres**.
 - ◆ If greenhouse gas emissions continue unabated, projections indicate this figure could soar by up to **1.2 metres by the end of the century**.
 - ◆ Sea levels were increasing by around **2 mm/year in 1993**.
 - This rate has since **doubled** and climate researchers expect floods in coastal areas will increase **threefold by 2050**.
- **Scenario in India:** India's coastline, **stretching over 7,500 kilometres**, is a hub of cultural vibrancy, economic activity and biodiversity.
 - ◆ SLR has **catastrophic consequences**, particularly for major urban centres like Mumbai, Chennai and Kolkata.
 - ◆ The Sundarbans, the world's largest contiguous mangrove forest, could lose up to 80% of its area by 2100, endangering biodiversity.
 - ◆ Similarly, the nesting grounds of Olive Ridley turtles on Odisha's coast are at risk due to rising flooding and erosion, disrupting their breeding cycles and food sources.

Source :TH

SEA LEVEL RISE

Context

- The phenomenon of sea level rise (SLR) is a global challenge, India's vast and densely populated coastal regions are particularly vulnerable.

Sea level rise

- Sea level rise is an increase in the level of the world's oceans due to the effects of global warming.

Climate Change

- Climate change refers to **long-term shifts in global or regional climate patterns**.
- It's primarily **driven by human activities**, such as burning fossil fuels, deforestation, and industrial processes, **which release greenhouse gases like carbon dioxide (CO2) and methane into the atmosphere**.
- These gases trap heat, causing the Earth's temperature to rise—a **phenomenon known as global warming**.

- **Impact:** It threatens the essential ingredients of good health – clean air, safe drinking water, nutritious food supply and safe shelter – and has the potential to undermine decades of progress in global health.

Concerns with Increase in Sea Level

- **Flooding:** It leads to more frequent and severe flooding in coastal areas, threatening infrastructure, homes, and livelihoods.
- **Displacement:** Rising seas force communities to relocate, leading to displacement and potential conflicts over resources.
- **Saltwater Intrusion:** Salinity contaminates freshwater sources, affecting drinking water supplies and agriculture.
- **Economic Impact:** Coastal industries, such as fishing and tourism are severely impacted, leading to job losses and economic instability in affected regions.
- **Biodiversity Loss:** Ecosystems like mangroves and coral reefs are threatened, impacting biodiversity and the services these ecosystems provide.
- **Health Risks:** Flooding leads to the spread of waterborne diseases.

India's Efforts to Combat Climate Change

- **Renewable Energy Expansion:** India has announced its aim to meet **50% of its electricity demands from renewable energy sources by 2030**.
 - ♦ It has invested heavily in solar and wind energy projects, with the goal of reducing reliance on fossil fuels and lowering greenhouse gas emissions.
- **International Commitments:** India is a signatory to the Paris Agreement, committing to reduce its carbon intensity and increase the share of non-fossil fuel energy sources in its total energy mix.
- **Afforestation and Forest Conservation:** Recognizing the role of forests in carbon sequestration and climate regulation, India has initiated programs to increase forest cover, restore degraded lands, and promote sustainable forest management practices.

- **Clean Transportation:** India is promoting the **adoption of electric vehicles (EVs) and has set a target of 30% EV market share by 2030**.
 - ♦ The government has introduced incentives and subsidies to support the production and adoption of EVs.
- **Climate Resilience:** India is investing in measures to enhance climate resilience and adaptation, particularly in vulnerable sectors such as agriculture, water resources, and coastal areas.
- **International Cooperation:** India actively participates in international forums and collaborations on climate change, engaging in initiatives such as the **International Solar Alliance and the Coalition for Disaster Resilient Infrastructure**.

What More Needs to be done ?

- India has implemented the Coastal Regulation Zone (CRZ) Notification (1991) to protect coastal areas but its enforcement is inconsistent.
 - ♦ There is a need for adaptation of laws to address climate change impacts, including rising sea levels and stronger storms.
- **Adaptation and Mitigation Strategies** include sea walls, early warning systems, and restoration of natural barriers like mangroves and wetlands.
 - ♦ Mangrove afforestation can reduce wave energy and prevent soil erosion.
 - ♦ Floating agriculture and salt-resistant crops can help farmers in vulnerable coastal areas.
- India can seek technical and financial assistance from wealthier nations to address SLR impacts, as part of its commitments to the UNFCCC.
 - ♦ **Global collaboration** is needed to fund infrastructure, technology, and migration programs for affected populations

Concluding Remarks

- Rising sea levels represent a socio-economic and humanitarian crisis for India's coastal regions.
- Immediate and coordinated action is necessary to safeguard coastal populations, ecosystems, and cultural heritage.
- Sustainable development and adaptation measures will ensure a resilient future for India's coastline.

Source: DTE

CHALLENGES OF HOLDING JUDGES ACCOUNTABLE

Context

- Holding judges accountable in India presents a unique set of challenges, rooted in the constitutional framework and the mechanisms in place for judicial oversight.
 - ♦ The recent controversy surrounding Justice Shekhar Kumar Yadav of the Allahabad High Court has once again highlighted these difficulties.

Current Mechanism for Judicial Accountability

- The existing mechanism for judicial accountability in India is governed by **the Judges (Inquiry)**

Act, 1968. It stipulates that a judge can only be removed for 'proved misbehaviour or incapacity' which must be determined by a **three-member committee.**

- ♦ The inquiry committee comprises a **Supreme Court judge, a Chief Justice of a High Court, and an eminent jurist.**
- This committee **functions like a trial court** but is only convened after a successful **impeachment motion** is initiated in **either the Lok Sabha or the Rajya Sabha.**
- The **motion must be** approved by the **presiding officer of the House**— the Speaker in the case of the Lok Sabha, or the Vice-President/Chairman in the case of the Rajya Sabha.

Mechanism for Removal of Judges

- The Constitution of India provides for the **removal of judges of the Supreme Court and High Courts** under Article 124(4) and Article 217 respectively on grounds of '*proved misbehavior or incapacity*'.

Process:

- **Initiation of Impeachment:** A motion for removal must be introduced in either House of Parliament, supported by a **special majority** ($\frac{2}{3}$ rd of the total membership and $\frac{2}{3}$ rd of members present and voting).
- **Presidential Approval:** After the motion is passed, the President of India issues an order for the removal of the judge.
- Parliament may regulate by law the procedure for the presentation of an address and for the investigation and proof of the misbehaviour or incapacity of a judge.

Do You Know?

- **Only two judges** have been found guilty of 'misbehaviour' by a committee set-up under the **Judges (Inquiry) Act, 1968** so far.
- The **first** was retired **Supreme Court** Justice V. Ramaswami (in the late 1980s and early 1990s) who was found guilty of extravagant spending on his official residence.
 - ♦ Despite being found guilty of extravagant spending and misuse of office, the impeachment motion against him failed in Parliament.
- The **second** was **Justice Soumitra Sen**, who was found guilty of misappropriating 33.23 lakh while serving as a court-appointed receiver.
- It underscored the **limitations of the existing system** and led to the adoption of the '**Restatement of Values of Judicial Life**' by the Supreme Court in 1997, which serves as a **Code of Conduct for Judges.**

Challenges in the Current System

- **Complex Impeachment Process:** A two-thirds majority in the Lok Sabha or an absolute majority in the Rajya Sabha is required for removal from office.
 - ♦ This makes it difficult to achieve consensus, especially in a politically charged environment.
- **Immunity:** Judges in India enjoy significant **immunity** and can escape accountability by resigning before formal proceedings.
 - ♦ This immunity is greater than that afforded to elected officials, highlighting a gap in the system's ability to hold judges to account for misconduct.
- **Lack of Transparency:** The judiciary operates with a high degree of opacity, particularly in the appointment and transfer of judges through the collegium system. It undermines public trust.
- **Political Interference:** There are instances where political pressures influence judicial decisions,

compromising the independence and impartiality of the judiciary.

Proposed Reforms

- **Judicial Standards and Accountability Bill:** The reintroduction and modification of the **Judicial Standards and Accountability Bill**, which **lapsed in 2014**, could provide a comprehensive framework for addressing judicial misconduct.
 - ♦ It proposes mechanisms for the declaration of assets by judges and the **establishment of a National Judicial Oversight Committee**.
- **Strengthening the Collegium System:** Reforming the collegium system to include greater transparency and accountability in the appointment and transfer of judges is crucial.
 - ♦ It could involve publicizing the criteria and reasons for judicial appointments and transfers.
- **Independent Oversight Bodies:** Establishing independent bodies to oversee judicial conduct and investigate complaints against judges can help mitigate biases and ensure impartiality.
- **Enhanced Transparency:** Implementing measures to increase transparency in judicial proceedings and decisions can restore public confidence.
 - ♦ It includes making court proceedings and judgments more accessible to the public.

Way Forward

- **Strengthening Internal Mechanisms:** Establishing a more effective internal oversight body within the judiciary that can investigate and act on complaints against judges.
- **Transparency in Appointments:** Ensuring greater transparency in the appointment and transfer of judges through a more open and participatory process.
 - ♦ Judicial accountability campaigns, such as the **Forum for Judicial Accountability (FJA)**, advocate for continued investigations into judicial misconduct, even after a judge's resignation. These campaigns emphasize that impeachment is not just about removal but restoring the integrity of the judicial system.
- **Public Disclosure:** Mandating the disclosure of judges' assets and liabilities to enhance transparency and public trust.

- **Judicial Reforms:** Implementing comprehensive judicial reforms that address delays in the justice delivery system and improve the overall efficiency of the judiciary.

Conclusion

- Fixing accountability in the Indian judiciary is essential for maintaining the integrity and trust of this vital institution. While existing mechanisms provide a foundation, significant reforms are necessary to address the challenges of transparency, political interference, and the cumbersome impeachment process.
- By adopting comprehensive reforms, India can ensure that its judiciary remains independent, impartial, and accountable to the people it serves.

Source: TH

TWO YEARS OF INDIA-AUSTRALIA ECONOMIC COOPERATION AND TRADE AGREEMENT

Context

- The India-Australia Economic Cooperation and Trade Agreement (**Ind-Aus ECTA**) completed two years creating new opportunities for MSMEs, businesses and employment in both nations.

India-Australia Economic Co-operation and Trade Agreement (Ind-Aus ECTA)

- The Ind-Aus ECTA provides an institutional mechanism to encourage and improve trade between the two countries.
 - ♦ It entered into force on **29 December 2022**.
- **Core Features: Australia provides** preferential market access on **100% tariff lines**, benefiting India's labor-intensive export sectors such as textiles, leather, and jewelry.
 - ♦ **India offers preferential access** on over **70% tariff lines**, mainly on raw materials and intermediaries of Australian export interest, including coal, mineral ores, and wine.

Progress under Ind-Aus ECTA

- **The bilateral merchandise trade** has surged from USD 12.2 billion in 2020-21 to USD 24 billion in 2023-24, with India's exports to Australia growing by 14%.
- **The export utilisation** under the Ind-Aus ECTA has reached **79 per cent** after two years of implementation, while import utilisation stood at **84 per cent**.

- ◆ **Trade Utilisation** rates measure how effectively businesses leverage trade benefits, offering insights into procedural efficiencies.
- **Key sectors showing growth:** Textiles, chemicals, agriculture, and new exports like gold-studded diamonds and turbojets have seen notable growth. Imports of raw materials such as metalliferous ores, cotton, and wood have supported Indian industries.
 - ◆ Sectors like electronics and engineering still hold potential for further expansion.

India-Australia Economic Cooperation

- Australia is an important trade and strategic partner of India.
- Both the countries are part of the **14 country Indo Pacific Economic Forum for Prosperity (IPEF)** and Trilateral Supply Chain Resilience Initiative (SCRI) which is expected to strengthen the supply chain resilience in the region.
- FDI from Australia during January-September 2023 was **\$307.2 million**, seven times the \$42.43 million received in the whole of 2022.
 - ◆ FDI in consultancy services was **\$248 million** from **\$0.15 million** in 2022.
- In FY23, India was Australia's 9th largest trading partner, and Australia was India's 13th largest trading partner.
- Trade between India and Australia is expected to cross **\$45-50 billion by 2035**.

Future Plans

- **Strengthening the Indo-Pacific Vision:** India and Australia share a commitment to a resilient, inclusive, and open Indo-Pacific region.
 - ◆ Both nations are active members of the **QUAD, Indo-Pacific Economic Framework for Prosperity (IPEF),** and the **Supply Chain Resilience Initiative (SCRI)** with Japan.
- **Comprehensive Economic Cooperation Agreement (CECA):** Negotiations are underway for a CECA to build upon ECTA outcomes, targeting greater economic integration and collaboration in strategic sectors.
- Both countries are aiming for bilateral trade to reach AUD 100 billion by 2030.

Concluding remarks

- India and Australia are steadily advancing their economic partnership, leveraging the Ind-Aus ECTA to unlock new opportunities.

- In recent times, **investor-friendly policies** and game-changing reforms has made India an even more attractive destination for Australian businesses.
- Together, India and Australia are poised to take their economic partnership to new heights, fostering mutual prosperity and contributing to a more resilient and dynamic global economy.

Source: PIB

LEAD POLLUTION IN INDIA NEEDS TO BE STRENGTHENED

Context

- The UNICEF report projected that nearly **275 million** children out of the **800 million** affected by lead pollution reside in India, i.e. **50 percent** of India's child population.

What is Lead?

- Lead (Pb) is in a **bluish-white color** and is **soft and ductile metal**.
- It is a naturally occurring **toxic metal** found in the Earth's crust.
 - ◆ It is produced through decay of radioactive members of the natural decay series of the radioisotopes of uranium, namely **U-235 and U-238, and Th-232**.

What is Lead Poisoning?

- Lead poisoning is a serious health issue caused by the accumulation of lead in the body.
- **Normal range of lead in blood for adults:** less than 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$).
 - ◆ **For children:** less than 5 $\mu\text{g}/\text{dL}$.
- Countries with the highest burden are Iran, Afghanistan, Yemen, Peru, Vietnam, the Philippines and parts of Central Africa.

Lead Poisoning in India

- **The affected states are** Bihar, Uttar Pradesh, Madhya Pradesh, Jharkhand, Chhattisgarh, and Andhra Pradesh accounting for **40%** of the population with high blood lead levels.
- **Lead toxicity in India** contributes to **4.6 million** Disability-Adjusted Life Years (DALYs) and **165,000 deaths** annually.

Sources of Lead Poisoning

- **Manufacturing and disposal of lead-based products** like paints, batteries, and toys contribute significantly to environmental contamination.

- **Leaded Gasoline:** Once a widespread source, leaded petrol was phased out globally (United States in 1975, India in 2000, and Algeria as the last in 2021).
- **Geological Processes:** Volcanic eruptions release lead into the atmosphere.
 - ◆ Weathering of lead-rich rocks contributes to soil and water contamination.

Impact of Lead Poisoning

- Lead directly **affects the nervous system**, particularly in children, leading to developmental delays and cognitive impairments.
- It inhibits the absorption of essential nutrients like **iron, zinc, and calcium**, which are vital for brain and body growth.
- Lead acts as a **xenobiotic toxicant**, promoting reactive oxygen species production, which damages **DNA, RNA, and proteins**.

Government steps to control lead poisoning

- **National Programme for Prevention and Control of Fluorosis, Endemic Skeletal Fluorosis and Arsenicosis:** It was launched in 2010 to take measures to prevent lead poisoning.
- **National Health Mission (NHM):** It was initiated to provide comprehensive healthcare services, including screening for lead poisoning and treatment for affected individuals.
- **Lead Battery Waste Management Rules, 2016:** It was formulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) to regulate the disposal of lead-acid batteries and promote their recycling in an environmentally safe manner.
- **National Programme for the Health Care of the Elderly (NPHCE):** It was launched to provide healthcare services to the elderly population, who are particularly vulnerable to lead poisoning.
- **Center for Advanced Research on Environmental Health (CAREH):** It was established by the Indian Council of Medical Research (ICMR) to conduct research on environmental health issues, including lead poisoning.

Way Ahead

- **Awareness campaigns:** The government can launch awareness campaigns to educate people about the dangers of lead poisoning and the sources of lead exposure.

- **Occupational health and safety regulations:** The government should implement and enforce occupational health and safety regulations to protect workers in industries that involve lead exposure.
- **Periodic soil testing** in areas with high lead exposure is required to identify and mitigate contaminated areas.

Sources: DTE

NEWS IN SHORT

18TH EDITION OF EXERCISE SURYA KIRAN

In News

The 18th edition of Exercise SURYA KIRAN will take place in Saljhandi, Nepal from 31st December 2024 to 13th January 2025.

About SURYA KIRAN

- It is an annual joint military exercise conducted alternately between India and Nepal.
- It aims to enhance interoperability in jungle warfare, counter-terrorism operations, and Humanitarian Assistance and Disaster Relief (HADR) under the United Nations Charter.
- It focuses on operational preparedness, aviation aspects, medical training, and environment conservation.
- It aims to improve combat skills, coordination, and operational capabilities of troops to function effectively in challenging situations.

Source: PIB

SPADEX

In News

ISRO will launch the Space Docking Experiment (SpaDEX).

About SpaDeX

- SpaDeX is a new mission by the Indian Space Research Organisation (ISRO) aimed at demonstrating in-space docking and undocking technologies.
- **It aims** to develop and demonstrate the technology needed for rendezvous, docking, and undocking of two small spacecraft (SDX01, which is the Chaser, and SDX02, the Target, nominally) in a low-Earth circular orbit.

- ◆ Each satellite weighing 220 kg, will be launched together on the PSLV C60 rocket into a **470-km orbit with a 55° inclination**.
- If successful, SpaDeX will make India the fourth country to achieve in-space docking.
 - ◆ Only the US, Russia, and China have mastered such advancements so far.
- **The primary goal** is to complete the docking manoeuvre, followed by secondary objectives like power transfer between the spacecraft, composite spacecraft control, and payload operations post-undocking.
- **Importance:** The mission is vital for India's space goals like Chandrayaan-4, Moon sample return, and the Bharatiya Antariksh Station (BAS).

Source: TH

PARKER SOLAR PROBE

In News

NASA scientists announced that the Parker Solar Probe survived the closest-ever approach to the Sun.

About Parker Solar Probe

- **Parker Solar Probe** was developed as part of **NASA's Living With a Star program**, which aims to explore the Sun-Earth system and its impact on life and society.
 - ◆ The program is managed by NASA's Goddard Space Flight Center in Maryland.
- The mission is named in honor of **Dr. Eugene N. Parker**, who **first proposed the theory of the solar wind in the 1950s** and revolutionized solar science.
- **Parker has four instrument** suites to study magnetic fields, plasma, energetic particles, and image the solar wind.
- The spacecraft is flying closer to the Sun than any previous probe, coming within about 4 million miles (6.5 million kilometers) of its surface, inside the orbit of Mercury.
- **Corona Exploration:** On Dec. 14, 2021, Parker became the first spacecraft to fly through the Sun's corona, sampling particles and magnetic fields.
- **Objectives** : Parker Solar Probe aims to revolutionize our understanding of the Sun by studying its atmosphere, the solar wind, and the heating of the corona.
- **Impact on Earth:** Data from the probe will help better understand the Sun's impact on Earth,

including space weather, which can affect satellites, electronics, and technology on Earth.

Source: IE

EXTENSION OF SUEZ CANAL

Context

- Egypt has tested a new **10-kilometre extension** to the Suez Canal as it tries to minimise the impact of currents on shipping and increase the key waterway's capacity.

About

- The Suez Canal is a **193-km artificial waterway** that connects the **Mediterranean Sea to the Red Sea**, making it the shortest maritime route between Europe and Asia.
 - ◆ It was officially opened to ships in **1869**.
- The Canal **does not have locks** and it is essentially a sea-level waterway.
 - ◆ This characteristic allows for a **smoother, more efficient passage of vessels**, thus supporting a high volume of maritime traffic.
- It is one of the busiest waterways in the world through which **12%** of global commerce passes.
 - ◆ The new extension is set to boost the canal's capacity by six to eight vessels a day.



Importance of Suez Canal

- **Reduced Transit Time:** The Suez Canal reduces the maritime distance between Europe and Asia by approximately **7,000 kilometers**.
- **World trade:** It's a major factor in the world's economy, with roughly 12% of global trade, 7% of the world's oil, and 30% of daily container traffic passing through it.
- **Revenue Generation:** The Suez Canal is one of **Egypt's** primary sources of revenue.
- **Global Supply Chain Impacts:** The canal's uninterrupted functioning is crucial for the global supply chain.

- ♦ **The blockage** of the Suez Canal in **2021** caused a major loss to international trade. The blockage cost an estimated **US\$90 million** in the first week.

Source: TH

H-1B VISAS

Context

- Amid an online spat between Elon Musk and other right wing supporters in the US over H-1B visas, Donald Trump has said he has always liked the visas.

About

- It allows **American employers to hire non-immigrant workers** in specialty occupations that require a high level of skills and at least a bachelor's degree.
 - ♦ Under it **temporary employment of qualified individuals is facilitated**, who are not otherwise authorised to work in the United States.
- **Visas Issued:** The US government has capped the total number of new H-1B visas at 65,000 each financial year.
 - ♦ Another 20,000 visas can be given to those who have obtained a Master's degree or higher from a US institution.
- **Majority Holders:** Indians have been the majority of H-1B visa-holders in the past few years.
 - ♦ In the fiscal year 2023, Indians accounted for 72.3% (2.79 lakh) of the total (3.86 lakh) H-1B approvals.

Source: IE

NATIONAL MARITIME HERITAGE COMPLEX

Context

- A review meeting on the upcoming National Maritime Heritage Complex was held recently.

About Complex

- **Developed by:** Ministry of Ports, Shipping & Waterways, launched in 2019.
- **Nodal Agency:** Indian Ports Association as the nodal agency, while Indian Port Rail Corporation Ltd (IPRCL) as executing agency of the project.
- **Location:** It is being developed in Lothal, Gujarat - home to the world's first manmade dock, and a major site of Indus Valley Civilization.

- **Completion:** The first phase will be completed by August 2025, and the entire project will be completed by 2028.
- **Components of NMHC:** NMHC museum, Lothal Town and Open Aquatic Gallery, Lighthouse Museum, Bagicha Complex, Coastal State Pavilions and Recreation of Lothal city, Maritime research institute, etc.
- **Significance:** It will not only boost tourism but will also generate employment in large numbers and will also help in reviving the local businesses of the region.

Do you know ?

- Lothal, an important city of the Indus Valley Civilisation (2400 BCE), is historically significant for its advanced dockyard, thriving trade, and bead-making industry. Archaeological findings, including seals, tools, and pottery, highlight its rich cultural and economic history, making it a key site of the Harappan civilisation.

Source: IE

CAMEROON ISLANDS

Context

- In Cameroon, the NGO Papaye International runs a sanctuary for the Orphaned Chimpanzees on three islands in the **Douala-Edea national park**.

Cameroon Islands

- The Cameroon Islands refer to the chain of volcanic islands associated with the Cameroon Volcanic Line, a unique geological formation stretching from the **Gulf of Guinea** into the **mainland of Africa**.
- **The key islands associated** with it are Annobón (Pagalu), São Tomé, Príncipe etc.

Douala-Edea National Park

- **Location:** It is situated along the **Sanaga River** and adjacent to the **Atlantic Ocean**.
 - ♦ Initially established as a wildlife reserve in **1932**, it was upgraded to a national park in **2018** to bolster conservation efforts and promote sustainable tourism.
- **Flora:** The mangrove forests include species like **Rhizophora and Avicennia**.
- **Fauna:** African forest elephants, Chimpanzees and Monkeys, including the endangered drills and red colobus monkeys.

Source: TH

