2024

DAILY CURRENT AFFAIRS

GS 2: POLITY, GOVERNANCE, SOCIAL JUSTICE, INTERNATIONAL RELATIONS/INSTITUTIONS

1. An opportunity to settle Sri Lanka's ethnic problem

Context: India's move to name the Jaffna Cultural Centre after the Tamil poet-philosopher, Thiruvalluvar, is a symbolic gesture by New Delhi to reinforce the unbreakable bond with Sri Lanka. It is now called the "Jaffna Thiruvalluvar Cultural Centre", a recent landmark, built by the Indian government. In the last 40-odd years, the nature of political relations has undergone significant changes ever since the 1983 anti-Tamil pogrom in Sri Lanka drew India in to play the role of a mediator, initially, and that of an active player, later, in the attempt to resolve the vexatious ethnic problem.

Significance of India-Sri Lanka bilateral Relations

- **For both Nations:** *Mutual Support at international forums* - India's support for Sri Lanka's application to become a member of BRICS. Sri Lanka has extended its support to India's candidature for a non-permanent seat on the UN Security Council for 2028-29.

Energy cooperation - Several projects are at different stages of discussions, for instance, plans for inter-grid connectivity, a multi-product petroleum pipeline between the two countries, supply of LNG, and the under-preparation Sampur Power Project.

Regional and multilateral cooperation - Both are part of Indian Ocean Rim Association (IORA), and BIMSTEC.

- **For Sri Lanka:** *Economic importance* - India has been Sri Lanka's largest trade partner, top FDI contributor, and largest source of tourists.

  Other key areas of support from India - India acts as a 'first responder' for Sri Lanka in the field of Humanitarian Assistance and Disaster Relief. India acts as a 'first responder' for Sri Lanka in the field of Humanitarian Assistance and Disaster Relief.

- **Role of India in Debt Restructuring:** *Financial aid* - Nearly USD 4 billion was provided by India in various kinds of aid in 2022 and 2023 to help the country navigate its economic crisis. (see infographic).

  Co-chair of Official Creditors' Committee (OCC) - OCC was formed in 2023 by 17 countries, co-chaired by India, Japan, France, to discuss Sri Lankan debt treatment.

  International Monetary Fund (IMF) bailout - India was among the first countries to provide financing assurances to IMF, a prerequisite for the IMF's $2.9 billion bailout package approved in 2023.

  Conversion of line-of-credit to grant assistance - India extended USD 20.66 million as grant assistance to settle the payments related to seven completed line-of-credit projects in Sri Lanka.

- **Challenges:** *Chinese Strategic Presence in Sri Lanka* - Several developments may have security implications for India. China's growing influence through financial aid and projects like Hambantota Port increases its leverage over Sri Lanka, impacting India's interests. Chinese vessels (Shi Yan-6, Yuan Wang-5) conduct data collection activities may potentially aid future military operations against India.

  Delayed Implementation of the 13th Amendment - The amendment was a result of Indo-Lanka Accord (1987), aimed at resolving ethnic conflict through devolution of power. Sinhala nationalists oppose it as an imposition; Tamil groups seek broader powers. India pushed for devolution, but Sri Lanka's reluctance, especially on land and police powers, remains.

- **Proposed solution towards resolving Fishing Issue:** *Shared Fishing Zones* - Allow Indian fishermen to fish within 5 nautical miles of the International Maritime Boundary Line in exchange for Sri Lankan access to India's Exclusive Economic Zone.

  Regulated Trawling - Limit trawling to twice a week, reduce fishing hours, and enforce a 3-nautical-mile distance from the Sri Lankan coast & ultimately enforce a strict ban on bottom trawling.

- **Way Forward:** *India's Five "S" approach to the world* - Samman (Respect), Samvad (Dialogue), Sahyog (Cooperation), and Shanti (Peace); to create conditions for universal Samriddhi (Prosperity). India's 'Neighbourhood First Policy' and SAGAR policy should be the guiding force in tackling inimical Chinese attitude in and around the Indian Ocean.

  13th Amendment - Present Sri Lankan government could use this opportunity to devolve powers to the provinces.

2. EU tracks bird flu virus variants over rising threat to humans

Context: Two European regulators said they were tracking variants of the bird flu virus due to the threat of the pathogen adapting to spread between humans and triggering future pandemics. The European Centre for Disease Prevention and Control (ECDC) and the European Food Safety Authority also issued recommendations drawing on genetic analyses and human case studies to outline current risks from the virus. ECDC said its experts identified 34 genetic mutations that might increase the potential of avian influenza viruses spreading to humans.

Key points

- **Tracking Bird Flu Variants:** European health agencies are monitoring bird flu virus mutations that may increase the risk of spreading among humans. Experts have identified 34 genetic mutations that could raise the possibility of human infections. Authorities are using genetic analysis and case studies to assess current risks and provide recommendations.
- **Bird Flu:** H5N1 is a type of influenza virus that causes a highly infectious, severe respiratory disease in birds called avian influenza (or "bird flu").
- **Evolution and Global Spread of H5N1:** A new version of the virus emerged in Europe in 2020 and rapidly spread to Africa, Asia, North America (2021), South America (2022), and mainland Antarctica (2024), causing widespread illness and death among birds.
- **Impact on Farm and Wild Birds:** *Farm Birds* - H5N1 spreads quickly in overcrowded poultry farms, leading to significant outbreaks and fatalities.
  Wild Birds - The virus has caused severe mortality among wild bird populations.
- **Human Risk:** Although humans rarely contract bird flu, infections typically occur through contact with sick birds at poultry farms, where viral loads are high.
- **Government Response and Guidelines:** The Union Animal Husbandry Ministry issued a circular urging all States to quarantine infected or symptomatic tigers and other feline species to prevent transmission to humans and other animals. The ministry plans to release detailed guidelines within a week.
- **Investigation and Containment Efforts:** Post-mortem samples from the affected animals tested positive for avian influenza at the National Institute of High Security Animal Diseases (NIHSAD), Bhopal. A National Joint Outbreak Response Team has been deployed to implement containment measures, while human contacts are being screened as a precaution.
- **Enhanced Biosecurity Protocols:** The Ministry directed-
  - ➢ Temporary closure of affected establishments to the public.
  - ➢ Strengthening biosecurity measures and restricting personnel movement between infected and healthy areas.
  - ➢ Thorough disinfection of affected areas and collection of samples for strain identification.
- **Way forward:** The Ministry emphasized a "One-Health" approach, integrating efforts across human health, animal health, and wildlife sectors to comprehensively address the issue. Immediate attention is needed to mitigate risks to both animal and human health.

3. For the Yamuna to flow

Context: There are three separate issues concerning the Yamuna and Delhi – drinking water, pollution and environmental flow. The river Yamuna and Arvind Kejriwal's claim that Haryana was mixing poison in its water discharge in the river has become a major issue. Legal wrangling on the matter has started, and the election commission has questioned the statement. Each of these aspects plays a crucial role in the city's sustainability and directly impacts millions of residents.

Key points

- **Drinking Water Crisis and Dependency on Haryana:** Delhi's drinking water supply is heavily dependent on Haryana, which regulates the flow of the Yamuna through the Hathni Kund Barrage. The raw water reaching Delhi is primarily received at the Wazirabad Barrage, which, along with other treatment plants, processes it for public consumption. However, during lean seasons, water levels drop, leading to increased ammonia contamination.

- **Industrial Waste, Sewage, and Regulatory Failures:** Beyond drinking water concerns, the Yamuna's pollution is a pressing issue. Contamination arises from multiple sources—untreated sewage, industrial effluents from unauthorized factories, and solid waste dumping. Between 2018 and 2021, the National Green Tribunal (NGT) established the Yamuna Monitoring Committee (YMC) to oversee pollution control. The committee identified 16 major stakeholders, including the Delhi Jal Board, Delhi Development Authority, and governments of Haryana and Uttar Pradesh, all of whom had pledged to implement cleanup measures. However, many commitments remain unfulfilled. Major drains such as the Najafgarh, Supplementary, and Shahdara drains continue to discharge untreated sewage and industrial waste into the river. Haryana, too, has fallen short of its promises, with reports showing that approximately 80 million litters of untreated sewage from Gurugram enter the Yamuna daily. Delhi had initiated an "interceptor project" to capture and treat sewage before it reached the river, but incomplete sewer connections, inefficient treatment plants, and ongoing industrial discharge have hindered its success.

- **Environmental Flow and the Need for Policy Reform:** Another critical concern is the Yamuna's environmental flow—the volume of water necessary to maintain its ecological balance. The National Mission for Clean Ganga (NMCG) had tasked the National Institute of Hydrology (NIH) with assessing this issue. The NIH found that excessive upstream water withdrawals drastically reduce the Yamuna's flow through Delhi, exacerbating pollution and harming aquatic life. The YMC had similarly observed that during non-monsoon months, the Yamuna's flow is alarmingly low, leading to concentrated pollution and ecological degradation. The committee recommended revisiting the 1994 water-sharing agreement among Delhi, Haryana, Himachal Pradesh, Rajasthan, and Uttar Pradesh to ensure a fairer water distribution system. However, political inertia and competing interests among the states make it unlikely that these recommendations will be implemented without intervention from the central government or the judiciary.

- **Conclusion:** Despite clear solutions being proposed, political conflicts and bureaucratic inefficiencies have prevented meaningful progress in addressing the Yamuna's crises. The river's deteriorating state is not just an environmental concern but a matter of public health and governance. Citizens, too, must recognize the urgency of the situation and demand accountability from those in power. Until a consensus is reached and tangible actions are taken, neither political promises nor manifestos will bring any real change.

4. It's time for the AI leap

Context: Some have hailed DeepSeek's emergence as "AI's Sputnik moment", while others have expressed scepticism about the origins and actual costs of its rapid advancement. Startups/Researchers worldwide have begun testing, even locally installing, and trying to replicate the results of DeepSeeek's models. Chinese engineers are looking to develop foundation models/LLMs faced significant challenges in acquiring large quantities and the latest versions of Nvidia's GPUs.

Key points

- **The Emergence of DeepSeek and Its Disruptive Potential:** The development remarkable is the efficiency with which DeepSeek has achieved performance on par with OpenAI's ChatGPT-4, but at a fraction of the cost—just $6 million for training using 2,000 Nvidia H800 GPUs. These cost and efficiency metrics are significantly better than most frontier AI models.

- **Engineering Innovations Behind DeepSeek:** DeepSeek's achievement stems from its ability to overcome hardware constraints faced by Chinese developers due to restrictions on acquiring advanced Nvidia GPUs. Instead of relying on brute-force computation, DeepSeek optimised its training process using several AI techniques-

  - *Reinforcement Learning (RL)* – Used to develop self-verification and complex reasoning capabilities.
  - *Mixture of Experts (MoE)* – A system that activates only relevant model sections for specific tasks, improving efficiency.
  - *Memory and Compute Optimisation* – Techniques that reduce memory usage and speed up processing.
  - *Dual-token Prediction* – Predicting two words at a time instead of one, enhancing inference speed.

- **Impact on AI Application Development:** DeepSeek's low-cost and open-source nature presents a game-changing opportunity for Indian developers. Unlike proprietary models, DeepSeek allows businesses to run AI locally without dependence on foreign cloud servers.

- **The Need for Fundamental AI Research in India:** While India has a strong AI talent pool, most efforts have been focused on building applications rather than developing foundation models. If India aims to lead in AI innovation, it must invest in fundamental AI research rather than simply fine-tuning existing foreign models like Meta's LLaMA or DeepSeek.

- **AI Research Funding and Infrastructure Needs:** The IndiaAI Mission's GPU cluster will be crucial in this endeavor, providing computational infrastructure for Indian researchers to train large-scale AI models efficiently. However, merely having GPUs is not enough—multi-disciplinary teams with expertise in: **AI frameworks (e.g., PyTorch, TensorFlow), Reinforcement learning and attention mechanisms, Hardware acceleration and distributed computing.**

- **Way ahead:** Currently, India has few large-scale AI model development efforts. The DeepSeek moment should serve as a wake-up call for the country to launch competing AI initiatives to build its own foundation models. Government-backed initiatives, corporate R&D investments, and philanthropic funding can help drive such efforts.

- **Conclusion:** India possesses the necessary talent and determination to make significant AI advancements. However, a collective push—involving government, academia, and industry—is required to build indigenous AI models that cater to India's unique needs.