DAILY CURRENT AFFAIRS 03-06-2024

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Shyok river

Syllabus: GS-1; Geography- Rivers of India

Context

- *Five Army personnel lost their lives when they were swept away while trying to get a tank across the Shyok river in eastern Ladakh.*

About

- *The Shyok River is a tributary of the Indus River that flows through northern Ladakh and enters* **Gilgit–Baltistan**, *in Pakistan, spanning some 550 km (340 mi).*
- *The Shyok River originates at the* **Rimo Glacier**.
- *Its alignment is very unusual, originating from the Rimo glacier, it flows in a southeasterly direction and, joining the* **Pangong range**, *it takes a northwestern turn, flowing parallel to its previous path.*
- *Shyok Valley widens at the confluence with the* **Nubra River** *but suddenly turns into a narrow gorge near* **Yagulung,** *continuing through Bogdang, Turtukand Tyakshi before crossing into Baltistan.*
- *The valley again widens near its* **Saltoro River** *junction at Ghursay.*
- *The river joins the Indus at Keris, east of the town of Skardu.*
- *The Nubra River, originating from the* **Siachen glacier**, *also behaves like the Shyok.*

- *Before Diskit, the southeasterly flowing river Nubra takes a northwest turn on meeting the river Shyok.*
- *The similarity in the courses of these two important rivers probably indicates a series of paleolithic fault lines trending northwest-southeast in delimiting the upper courses of the rivers.*
- *The name Shyok (or Shayog) is derived from Tibetan (shag) 'gravel' + (gyog) 'to spread' and therefore means* **'gravel spreader'***, referring to the large quantities of gravel that the river deposits when it floods.*
- *The name is sometimes incorrectly glossed as* **'river of death'***.*

Iran's Presidential election

Syllabus: GS-2: International Relations.

Context:

- *On June 28, Iran held the first round of voting to elect a new President, necessitated by the death of Ebrahim Raisi in a helicopter crash in May.*

Background:

Reformist*:*

- *Advocates for* **modernization and liberalization** *within the framework of the Islamic Republic.*
- *Supports* **social freedoms, women's rights***, and academic independence.*
- *Example: Mohammad Khatami (President from 1997-2005), Hassan Rouhani (President from 2013-2021).*

Hardliner (Conservative)*:*

- *Staunchly* **upholds traditional Islamic values** *and the authority of the Supreme Leader.*
- *Emphasizes* **strict adherence to religious laws** *and resists Western influences.*
- *Example: Mahmoud Ahmadinejad (President from 2005-2013), Ebrahim Raisi (President from 2021-2024).*

Historical Context:

Post-1979 Revolution*:*

- *The divide began after the* **Iranian Revolution** *and the formation of the Islamic Republic.*
- *Internal conflicts existed even during* **Ayatollah Khomeini's rule***, with moderate clerics opposing some of his policies.*
- *Example: Ayatollah Shariatmadari challenged Khomeini's concept of Wilayat al-Faqih (rule of the jurist).*

Post-Khomeini Era*:*

- *After* **Khomeini's death in 1989***, there were power struggles between conservatives and reformists.*
- *These struggles were reflected in presidential elections.*

Key Points:

- *The reformist-hardliner divide is a longstanding feature of Iranian politics.*
- *Reformists push for more progressive changes while conservatives emphasize maintaining traditional Islamic values and strict governance.*
- *The presidency has alternated between reformist and hardliner leaders over the past few decades.*

Views of the Two Candidates on Major Issues:

Masoud Pezeshkian (Reformist):

- **Women's Rights***: Opposes oppressive restrictions on women.*
- **Relations with the West***: Advocates for better relations with Western countries.*
- **Economic Sanctions***: Wants to end Iran's isolation due to Western economic sanctions.*
- **Nuclear Deal (JCPoA)***: Supports re-engaging with the West to revive the Iran nuclear deal.*
- **General Policy Stance***: Promotes liberal policies and reforms, though recognizing the difficulty of achieving these in the current political climate.*

Saeed Jalili (Hardliner):

- **Nuclear Deal (JCPoA)***: Opposes re-entering the nuclear deal, viewing it as an unacceptable concession.*
- **Economic Policy***: Supports the* **"resistance economy,"** *focusing on economic independence and self-sufficiency as a response to sanctions.*

- **Foreign Relations***: Advocates for closer ties with China and Russia.*
- **Political Alignment***: Member of the Expediency Council, closely aligned with Supreme Leader Ayatollah Ali Khamenei, indicating significant influence and conservative backing.*

What is the real extent of the President's power in Iran?

Supreme Leader's Authority:

- *The Supreme Leader is the* **final arbiter in the Iranian system***.*
- *The* **President must negotiate** *and align all major policy decisions with the Supreme Leader.*

Executive Power:

- *The President has a certain* **degree of executive power***.*
- *Manages the* **day-to-day running** *of the government and administration.*
- **Broader policy decisions** *must conform to the ideology of the Islamic Republic.*

Negotiation with the Supreme Leader:

- *The President's effectiveness in broader policymaking is contingent upon his* **ability to negotiate with the Supreme Leader***.*
- *The President's policy proposals and actions need the* **Supreme Leader's approval.**

Examples of Presidential Influence:

Mahmoud Ahmadinejad (Hardliner):

- *Asserted Iran's position in regional politics.*
- *Extended support to Hezbollah, a Lebanese Shiite militant group.*

Mohammad Khatami (Reformist):

- *Proposed "dialogue among civilisations" to foster better relations with the West, contrasting with the idea of fundamental incompatibility.*

Influence of Election Outcome on Iran's Immediate Foreign Policy and Relationship with India:

Immediate Foreign Policy:

Hardline President:

- *Continuation of policies similar to President Raisi.*
- *Strong support for groups like Hamas and Hezbollah in the Israel-Hamas conflict.*
- *Limited negotiation flexibility, especially during crises.*

Reformist President:

- *Potential for attempts to negotiate and de-escalate tensions.*
- *Efforts may face significant limitations due to the Supreme Leader's control over foreign policy.*
- *Short-term foreign policy likely remains unchanged even with a reformist President.*

Relationship with India:

Historical Ties:

- *Iran and India have a long-standing relationship rooted in history.*
- *The Iranian revolution did not negatively impact this relationship.*

Economic Projects:

- *Key* **projects like the Chabahar port** *have seen continuity despite ideological shifts in Iran's leadership.*
- **US sanctions have affected economic collaborations**, *but both nations have sought ways to maintain and develop their ties.*

Political Struggles:

- **Iran's domestic ideological** *and political struggles have minimal impact on its relationship with India.*
- *Both countries* **focus on mutual interests** *and historical ties over internal political dynamics.*

What does the low voter turnout — around 40%, the lowest since the revolution — suggest?

Implications of Low Voter Turnout in Iran:

Key Points:*Voter turnout was around 40%, the lowest since the revolution.*

Citizen Sentiment:

- *Does not indicate total apathy towards politics.*
- *Suggests a belief that electing a liberal President will not lead to significant policy changes.*

Socioeconomic and Ideological Divide:

Class Aspect:

- *Poorer Iranians often benefit from conservative regimes.*
- *Middle class, liberals, and city-dwellers are more likely to support reformists.*

Political Efficacy:

- *Low turnout reflects a sense of despondency among Iranians.*
- *Indicates a belief that their political voice does not lead to desired transformations.*

Economic Sanctions and Freedoms:

- *Desire for relief from economic sanctions and greater citizen freedoms remains unmet.*

Future Turnout Potential:

- **Run-off Vote:***Potential for higher voter turnout in the run-off election.*

Fiscal deficit

Syllabus: GS-3; Economy

Context

- *Fiscal deficit drops to under 5% from 9% levels in the past four years*

What is 'Fiscal Deficit'

- **Definition:** *The difference between total revenue and total expenditure of the government is termed as fiscal deficit. It is an indication of the total borrowings needed by the government. While calculating the total revenue, borrowings are not included.*
- **Description:** *The gross fiscal deficit (GFD) is the excess of total expenditure including loans net of recovery over revenue receipts (including external grants) and non-debt capital receipts. The net fiscal deficit is the gross fiscal deficit less net lending of the Central government.*
- *Generally fiscal deficit takes place either due to* **revenue deficit** *or a major hike in capital expenditure.*
- *Capital expenditure is incurred to create long-term assets such as factories, buildings and other development.*
- *A deficit is usually financed through borrowing from either the central bank of the country or raising money from capital markets by issuing different instruments like treasury bills and bonds.*
- **Fiscal Deficit = Total expenditure (Revenue expenditure + Capital expenditure) - Total receipts other than borrowings (Revenue receipts + Capital receipts except for borrowings)**

Polio vaccines

Syllabus: GS-3: Science and Technology – Vaccine.

Context:

- *The wild poliovirus is restricted to* **pockets of Afghanistan and Pakistan**, *and is beginning to reappear from here in big cities in these two countries.*

Background:

- *In 1948,* **microbiologists John F. Enders, Thomas Weller, and Frederick Robbins** *sought ways to grow various viruses in cell cultures.*
- *During an experiment* **using human muscle and skin cells**, *they decided to include an additional virus from their freezer.*
- *To their surprise, this virus, the poliovirus, thrived and grew successfully using their method.*
- *This breakthrough allowed them to* **grow the poliovirus in non-nerve cells**, *solving a significant scientific challenge of the time.*
- **Researchers in the mid-20th century** *believed the poliovirus could only grow in nerve cell cultures, based on their experiments with rhesus macaques.*
- *They mistakenly thought the* **virus could only infect these animals** *via direct injection into the nervous system.*
- *Early poliovirus strains, isolated from humans,* **couldn't infect non-human primates** *like macaques, contributing to the misconception.*
- *By continually passing the virus through macaque brain tissues, it adapted to this method of infection.*
- *This* **inability to culture poliovirus in non-nerve cells** *hindered polio vaccine development.*
- *Enders and his team's breakthrough allowed* **mass production of the poliovirus for vaccine research**, *overcoming this hurdle.*

Polio eradication target missed:

- *Polio eradication is a* **top priority for the WHO.**
- *Africa was* **declared polio-free in August 2020**, *confining the wild poliovirus to rural areas in Afghanistan and Pakistan.*
- *Recent reports indicate the* **virus is reappearing in major cities** *in these countries.*

- *Factors contributing to this resurgence include* **vaccine hesitancy** *fueled by misinformation, conflict, poverty, and limited healthcare access in isolated regions.*
- *The* **WHO's Global Polio Eradication Initiative** *is expected to miss its 2024 deadline due to these challenges.*
- *Despite setbacks,* **polio has been eradicated worldwide** *except in these isolated areas, thanks to two vaccines developed around the same time.*
- *These vaccines differ in administration, protection levels, components, and immune system targets, but both have been crucial in the global fight against polio.*

The systemic and the mucosal

- *In late 1949,* **Jonas Salk** *obtained the procedure from Enders and his team to grow the poliovirus in culture.*
- *Salk used this method* **to create the first successful polio vaccine**, *inactivating the virus with formaldehyde and injecting it into test subjects.*
- *The vaccine, administered into the muscle,* **stimulated systemic immunity** *in recipients.*
- *The immune system comprises two main components:* **systemic and mucosal.**
- *The* **systemic component** *involves the blood, brain, and all organ systems.*
- *The* **mucosal component includes** *linings of the digestive and respiratory systems, urogenital tract, and eyes, protected by mucous membranes that interact frequently with the external environment.*

Striking at ground zero:

- *Albert Sabin developed the* **oral polio vaccine (OPV)** *after Jonas Salk created the* **inactivated polio vaccine** *(IPV).*
- **OPV contains live polio strains weakened** *through serial growth in macaque cells, rendering them unable to cause disease in humans.*
- *Unlike IPV, which is injected,* **OPV is administered orally**, *leveraging the virus's natural mode of infection.*
- *OPV stimulates a* **robust mucosal immune response** *in the gut, where the virus typically enters the body.*
- *Advantages of OPV over IPV include* **enhanced protection at the site of viral entry** *and ease of administration without the need for syringes or trained personnel.*

A one-two punch:

- *The* **oral polio vaccine (OPV)** *occasionally allowed weakened viruses to revert and cause polio, despite its effectiveness in preventing the disease.*
- *In contrast, the* **inactivated polio vaccine** *(IPV) contains killed virus particles and poses no risk of vaccine-induced polio, though it provides less robust protection.*

- *Different countries used either IPV exclusively (e.g., Norway, Sweden, Finland, Iceland) or a combination of both vaccines.*
- **OPV is favored for its strong protection** *and ease of administration, while IPV is used when natural polio cases approach zero due to its safety.*
- **Both Jonas Salk and Albert Sabin chose not to patent their vaccines**, *believing they belonged to humanity. Salk famously compared patenting his vaccine to patenting the sun, emphasizing their availability for public good.*

Digital jurisprudence in India, in an AI era

Syllabus: GS-3: Science and Technology – Artificial Intelligence – IPR.

Context:

- *Even though* **Generative AI (GAI) stands as a transformative force**, *wielding power to revolutionise society in ground-breaking ways, existing legal frameworks and judicial precedents that have been designed for a pre-AI world may struggle to effectively govern this rapidly-evolving technology.*

Artificial Intelligence (AI):

- *Branch of computer science simulating intelligent behavior in computers.*
- *Machines accomplish tasks requiring human intelligence historically.*
- *Includes technologies: machine learning, pattern recognition, big data, neural networks, self-algorithms.*
- *Examples:*
    - *Facebook's facial recognition software identifies faces in photos.*
    - *Voice recognition software translates commands for Alexa.*

Generative AI:

- *Projected to increase global* **GDP by $7 to $10 trillion.**
- *Uses machine learning and AI to create new media forms: text, audio, video, animation.*
- *Generates creative content, synthetic media, and deep fakes from text prompts.*

AI Innovations:

- **GANs (Generative Adversarial Networks)**
- **LLMs (Large Language Models)**
- **GPT (Generative Pre-trained Transformers)**
- **Image Generation:**
  - *Experiment and commercial offerings like DALL-E.*
- **Text Generation:**
  - *ChatGPT writes blogs, code, marketing copy, and search query results.*

Previous Judgments and AI:

- **Christian Louboutin Sas vs Nakul Bajaj and Ors (2018):**
  - **Delhi High Court***: Safe harbor protection applies to "passive" intermediaries.*
- **S. Puttaswamy Judgment (2017):**
  - **Foundation for privacy** *jurisprudence in India.*
  - *Led to Digital Personal Data Protection Act, 2023 (DPDP).*
  - *Introduces "***right to erasure"** *and* **"right to be forgotten***."*
  - *GAI models cannot unlearn absorbed information.*

Challenges for Judiciary:

- *Difficult to distinguish between* **user-generated and platform-generated content** *in LLMs.*
- **AI chatbot liability** *arises when information is reposted by users.*
- *Response to user prompts not considered dissemination.*
- *Classifying GAI tools* **complicates court's ability** *to assign liability.*
- *ChatGPT's 'Terms of Use'* **shift liability to users for illegal output***, but enforceability in India is uncertain.*

AI and Copyright in India:

- **Section 16 of Indian Copyright Act 1957***: Only provisions of the Act grant copyright protection.*

- **Reluctance globally and in India** *to grant copyright protection to AI-generated works.*
- **161st Parliamentary Standing Committee Report***: Copyright Act of 1957 not equipped for AI authorship and ownership.*
- *Current Indian law* **allows copyright owners** *to take action against infringement with remedies like injunctions and damages.*
- *Copyright infringement* **by AI tools is unclear.**

Way Forward:

- *Consider* **temporary immunity for GAI platforms** *(sandbox approach) to allow responsible development and identify legal issues.*
- *Overhaul data acquisition for GAI training:*
    - **Ensure legal compliance***, proper licensing, and compensation for intellectual property.*
    - **Include revenue-sharing** *or licensing agreements with data owners.*
- *Simplify licensing:*
    - *Centralized platforms akin to stock photo websites like Getty Images.*
    - *Streamline data access for developers, ensuring data integrity.*
- *Holistic government-wide approach and* **judicious court interpretations** *are essential to:*
    - *Maximize benefits of powerful technology.*
    - *Safeguard individual rights and protect against unwelcome harm.*
- **Develop collaborative solutions** *to protect confidential information, identities, and human rights.*