

ISSUES AND CHALLENGES PERTAINING TO THE FEDERAL STRUCTURE [GS-II]**Issue With Fiscal Transfers In India**

The article discusses how some wealthier southern Indian states feel unfairly treated because their taxes are redistributed to poorer northern states. However, wealthier states still gain economic benefits through the union, despite growing disparities between richer and poorer regions.

issues with fiscal transfers in India

- **Southern States' Perspective:** The "South Tax Movement" asserts that southern states are penalized for better economic management. Karnataka receives 15 paise per rupee of tax paid, and Tamil Nadu gets 29 paise.
- **Northern States' Benefits:** Meanwhile, Uttar Pradesh receives Rs.2.73 per rupee, and Bihar receives Rs.7.06, reflecting a higher fiscal benefit than southern states.
- **Not Just North-South:** Other wealthy states like Maharashtra, Gujarat, Haryana, and Delhi also contribute more than they receive back. Eastern states like Assam, Odisha, and West Bengal are among those benefiting more.

What can we learn from the European Union?

- **Richer Nations Contribute More:** In the European Union (EU), richer northern nations like Germany, the Netherlands, and Denmark believe they over-contribute compared to less developed countries in Southern and Eastern Europe.
- **Benefits of a Captive Market:** Despite these contributions, richer EU nations gain access to a captive market to sell their products, boosting their economic opportunities.
- **Currency Advantage:** The Bertelsmann Stiftung Foundation found that Germany experienced 0.5% annual growth due to the euro. If Germany still used the stronger D-Mark, its exports would be less competitive globally.
- **Migration Benefits:** Free migration within the EU increased overall income by €100-230 billion over a decade. Migrants from poorer countries find higher-paying jobs, while richer nations fill labor shortages.

Future Challenges Lie Ahead

- **Parliamentary Seat Allocation:** India's parliamentary seats have not been adjusted since 1991. With northern states growing faster, Bihar and Uttar Pradesh could gain over 30 seats after 2026, leading to potential North-South conflicts.
- **Representation Imbalance:** The southern states, along with Odisha and West Bengal, stand to lose seats, risking further North-South divides.
- **Fiscal Allocation:** The 16th Finance Commission will decide on fiscal distribution. Addressing health, education, and infrastructure gaps in poorer states is vital for balanced growth across India by 2047.

INDIAN CONSTITUTION- HISTORICAL UNDERPINNINGS, EVOLUTION, FEATURES, AMENDMENTS, SIGNIFICANT PROVISIONS [GS-II]**Affirmative Action In India- Constitutional Provisions, Implementation Challenges, And Political Debates**

This article discusses the political conflict around reservations in India, where parties debate caste census and religious reservations. It explains constitutional affirmative action, reviews its implementation, and considers potential changes like removing the 50% cap and sub-categorizing benefits.

How does the Constitution ensure affirmative action?

- **Fundamental Rights:** The Constitution ensures social justice by guaranteeing equality in Articles 15 and 16, allowing affirmative action in educational admissions and public employment.
- **Provisions for Backward Classes:** It enables special provisions for the advancement of OBCs, SCs, and STs. The 1992 Indra Sawhney case upheld a 27% reservation for OBCs while capping total reservations at 50%.
- **Creamy Layer Exclusion:** The court mandates excluding wealthy OBC individuals, currently defined as those with incomes above Rs.8 lakh.
- **EWS Reservation:** The Janhit Abhiyan case in 2022 validated the 10% Economic Weaker Section (EWS) quota.
- **Muslim Reservation:** Karnataka has a 4% sub-categorization for Muslims under the OBC quota, though it was briefly redistributed among Hindu OBCs. Courts later upheld this categorization.

How does affirmative action work in other countries?

- **United States:** The U.S. uses affirmative action programs that give special consideration to racial minorities like African-Americans and Latin-Americans. However, the U.S. Supreme Court ruled in Fair Admissions vs. Harvard (2023) that race-based admissions violate the Constitution.
- **United Kingdom:** The U.K. permits voluntary "positive action" programs allowing employers to support underrepresented groups.

- France: There is no race-based affirmative action in France. Instead, educational measures promote opportunities for low-income students.

current controversy about religious reservations

- BJP-Congress Conflict: The BJP and Congress conflict centers on the caste census and reservations. The BJP criticizes Congress’s push for a caste census and linking reservations to religion. Meanwhile, Congress questions the BJP’s policies on reservation, despite the BJP denying any changes to its stance.
- Muslim and Christian Quotas: The government is exploring extending SC benefits to Dalit Muslims and Christians, given that their backwardness aligns with the constitutional definition of “socially and educationally backward classes.”

Challenges In Implementing Affirmative Action Effectively

- Concentration of Benefits: The Rohini Commission found that 97% of reserved jobs and educational seats are taken by only 25% of OBC castes, leaving about 1,000 OBC communities unrepresented.
- Lack of Sub-Categorization: Although 11 states implemented sub-categorization, it hasn’t been applied at the central level.
- No Creamy Layer Exclusion: SCs and STs lack a mechanism like the OBC creamy layer to ensure equitable distribution.
- Religious Discrimination: The Constitution includes all religions under “socially and educationally backward classes,” but the 1950 Scheduled Castes Order limits SC membership to Hinduism, Sikhism, or Buddhism. There’s no such limitation for STs.

SECURITY- CYBER SECURITY [GS-III]

Generative AI Impacting Cybersecurity

The article discusses the rise in cyber threats linked to generative AI misuse. It highlights how hackers use AI to impersonate voices, phishing attacks are growing, and cybersecurity needs tighter global cooperation.

How is generative AI impacting cybersecurity ?

- Increased Phishing Attacks: Phishing emails surged by 1,265% and credential theft rose by 967% since late 2022 due to AI.
- Voice Cloning for Fraud: Hackers imitated a mother’s daughter’s voice to extort money, highlighting the risks of AI-based scams.
- Enhanced Hacking Sophistication: AI helps hackers translate code, identify vulnerabilities, and amplify attacks.
- Rising Attacks on Organizations: 75% of professionals reported more cyberattacks last year, while 85% linked the trend to AI.
- Privacy Erosion: Voice-activated toys and biometric systems threaten individual privacy.

Government’s action about it

- Global Cooperation: Countries like the U.S., U.K., China, and India signed the Bletchley Declaration at the AI Safety Summit to strengthen collaboration.
- Legislation Development: Governments are working on tighter ethical and legal frameworks to combat AI misuse despite facing challenges in fully understanding the technology.

wayforward

- Content Watermarking: Implement watermarking for AI-generated content to help identify and limit malicious use.
- Digital Literacy Training: Companies should offer training to help employees identify phishing and other scams, with 75% reporting increased cyberattacks.
- Public Feedback: Engage the public to improve regulation and ensure protection for privacy and security.

AGRICULTURE – MARKETING OF AGRICULTURAL PRODUCE [GS-III]

How India’s agricultural exports fell

This article discusses how India’s agricultural exports fell by 8.2% in the fiscal year ending March 31, 2024, mainly due to government restrictions on exporting key items like sugar, non-basmati rice, wheat, and onions to protect domestic supply and control inflation.

Reasons for the Decline in Agricultural Exports:

Bans on Key Commodities:

Government bans on sugar exports starting October 2023 reduced their value from \$5.77 billion to \$2.82 billion. Non-basmati rice exports dropped from \$6.36 billion to \$4.57 billion due to restrictions imposed in July 2023. Wheat exports were banned in May 2022, causing a sharp drop from \$2.12 billion to \$56.74 million. Onion exports fell to 17.08 lakh tonnes worth \$467.83 million following export restrictions.

Global Price Shifts:

A global crash in agri-commodity prices between 2013-14 and 2019-20 made India's exports less competitive. The FAO food price index dropped from 119.1 to 96.5 points, impacting export revenues.

Why did imports change?

- Imports changed in 2023-24 primarily due to shifts in edible oil prices and pulses demand.
- Global edible oil prices dropped after the Russia-Ukraine war, leading to a fall in India's vegetable oil import bill to below \$15 billion from over \$20 billion the previous year.
- Conversely, pulses imports nearly doubled to \$3.75 billion, driven by high domestic demand.
- The change in import trends was thus shaped by declining international oil prices and rising domestic demand for essential agricultural products like pulses.

Way forward

- **Policy Stability:** Farmers and traders require predictable policies. Sudden bans on key exports like wheat hurt market development and need careful consideration.
- **Temporary Tariffs:** Introducing temporary tariffs instead of outright bans would better balance consumer and producer interests.
- **Support Crop Diversification:** Encourage farmers to grow less water-intensive crops like pulses and oilseeds by maintaining reasonable tariffs. Current zero/low tariffs on imports of these crops counter efforts to diversify away from rice, wheat, and sugarcane.
- **Balanced Approach:** Develop a policy that prioritizes both short- and long-term goals, supporting the farm sector's growth while safeguarding consumer interests.

PRELIM FACT

1. Cook Islands

1. The Cook Islands is leading efforts to explore deep-sea mining for minerals essential in electric car batteries.
2. Cook Islands is a self-governing island state in free association with New Zealand.
3. It is located in the South Pacific Ocean. Its capital is Avarua on Rarotonga Island.
4. The Cook Islands comprise 15 islands divided into the Northern and Southern island groups.
 - a. The northern islands are mostly low-lying and sparsely populated coral atolls; and include the islands of Manihiki, Nassau, Penrhyn, Pukapuka, Rakahanga, and Suvarrow. These islands are covered in light vegetation and equipped with white sand beaches.
 - b. The southern islands generally consist of much larger higher islands that are volcanic in origin and more densely populated.
5. Highest and lowest point: The highest point is Te Manga on the Rarotonga island and the lowest point is the Pacific Ocean (0m).
6. Flora and fauna: The Cook Islands has a unique tropical ecosystem. This includes approximately 100 native ferns, 200 flowering plants, 500 fish species, a dozen lizards, landbirds, shellfish, migrant birds, resident seabirds, as well as marine turtles and humpback whales

2. FLiRT variant

- The COVID-19 cycle has regained momentum with the emergence of new 'FLiRT' variants. KP.2 and KP1.1 are descendants of the Omicron JN.1 variant, which proliferated worldwide.
- About FLiRT Variants: The FLiRT variants are new strains of the SARS-CoV-2 virus that have emerged in the United States. They are distant relatives of the Omicron variant.
- Variants: Two main strains have been identified within the FLiRT group: KP.2 and KP.1.1.
- Caused by: These variants were first detected in wastewater samples across the country and are descendants of the JN.1 lineage.

Reasons for Concern:

- Scientists are concerned that KP.2 and KP.1.1 may be more adept at evading the immune system due to mutations in their spike proteins.
- Factors such as waning immunity and suboptimal uptake of the latest COVID-19 vaccines raise concerns about a potential surge in infections during the summer.

Symptoms and Vaccination:

- Symptoms: Symptoms associated with FLiRT variants largely mirror those of other COVID-19 strains, including fever, cough, fatigue, and respiratory difficulties.
- While vaccines remain effective against FLiRT variants, maintaining up-to-date booster shots is crucial to bolster protection against them.
- Situation in India: India's SARS-CoV-2 Genomics Consortium (INSACOG) has identified 238 cases of KP.2 and 30 cases of KP1.1 as of May 6. India has witnessed a resurgence in cases since early April, with a significant rise in positivity rates.

3.NIN's Dietary Guidelines

With noncommunicable diseases (NCDs) such as cardiovascular diseases, cancers, and diabetes on the rise, India's National Institute of Nutrition (NIN) has released comprehensive dietary guidelines targeting vulnerable groups, including pregnant and lactating women, children, and the elderly.

1. Addressing Disease Burden: Unhealthy diets contribute to approximately 4% of India's disease burden. These guidelines stress the importance of dietary improvements to prevent NCDs such as Type 2 diabetes and heart disease.
2. Focus on Vulnerable Groups: Optimal nutrition during critical periods like pregnancy, lactation, and early childhood is crucial for proper growth and development. Alarming rates of lifestyle-related conditions among children and adolescents underscore the need for targeted interventions.
3. Dual Nutrition Challenge: Micronutrient deficiencies are prevalent among children aged 1 to 19, alongside persistent concerns such as anaemia. Additionally, obesity rates have surged, highlighting the dual challenge of undernutrition and overnutrition.
4. Importance of Dietary Guidelines: The guidelines advocate for healthy dietary practices, including reducing salt intake and limiting consumption of highly processed foods. Tailored recommendations are provided for pregnant and lactating women, infants, children, and the elderly, emphasizing the consumption of nutrient-dense foods from diverse food groups.

4.Neural Processing Unit

Recently, Apple launched the M4 chip with the iPad Pro. Its key feature includes a 16-core Neural Engine which is equivalent to an NPU.

About NPU: A Neural Processing Unit is a specialized processor designed to accelerate neural network processes. These neural networks are fundamental to machine learning algorithms for data processing. They are part of the semiconductors specifically designed for machine learning operations, which enables AI features such as generating text or images.

Applications:

- i) NPUs excel in AI-related tasks like speech recognition, natural language processing, and image or video editing processes such as object detection.
- ii) They enable efficient handling of complex AI operations, enhancing performance in consumer gadgets like smartphones, laptops, and tablets.
- iii) NPUs play a crucial role in efficiently deploying AI-powered applications directly on hardware.

Differences Between NPU, CPU, and GPU

CPU (Central Processing Unit): It processes instructions one at a time and ideal for tasks requiring sequential data processing. It is best for general computing, applications, and systems operations.

GPU (Graphics Processing Unit): It is capable of multiple calculations simultaneously, optimized for graphics and complex computations. It focuses on graphic rendering and resolution upscaling and are also used in AI development stages.

NPU (Neural Processing Unit): It is similar to GPUs but exclusively optimized for neural network and AI computations. It is more efficient and is less power-consuming for AI tasks, and running refined AI models on devices.

5.Constructed Wetlands

- Constructed wetlands are engineered ecosystems designed to replicate the functions of natural wetlands for the purpose of treating wastewater. These systems utilize vegetation, soil, and microbial processes to remove contaminants and pollutants from water before it is discharged back into the environment.
- Constructed wetlands are effective in treating various types of wastewater, including domestic sewage, industrial effluents, and storm water runoff. They are often used as an alternative to traditional wastewater treatment methods, offering advantages such as lower operational costs, environmental benefits, and versatility in design and application. Additionally, constructed wetlands can provide habitat for wildlife, improve water quality, and contribute to flood control and carbon sequestration.

6.Batagay crater (Permafrost)

Siberia's "gateway to the underworld," the Batagay crater, is expanding at an alarming rate of 35 million cubic feet (1 million cubic meters) annually due to permafrost thaw.

Batagaika Crater

- Located in Russia's Far East is the world's largest permafrost crater, formed by melting permafrost dating back to the Quaternary Ice Age. It began to form in the 1960s when surrounding forest clearance triggered permafrost thaw, causing the land to sink. However, thawing permafrost poses environmental risks, as the release of organic carbon into the atmosphere could exacerbate global warming.
- Permafrost is permanently frozen ground that remains below the freezing point of water for two or more consecutive years. It is typically found in polar regions, such as the Arctic and Antarctic, as well as in high-altitude mountainous areas.

ANSWER WRITING

Q. How does Mission Karmayogi aim to prepare the civil service to be future-ready, equipped with the necessary mindset, skills, and knowledge in alignment with the vision of New India, and what key reforms and initiatives are being pursued in this regard by the government?

Mission Karmayogi, launched by the Union Government in 2020 as the National Programme for Civil Services Capacity Building (NPCSCB). Aiming to cultivate a future-ready civil service, it seeks to equip civil servants with the vital mindset, skills, and knowledge aligned with the vision of New India, revolutionizing capacity-building infrastructure.

Key Features of the Mission Karmayogi that aim to prepare Civil Service to be Future-ready

- **Unified Learning Platform:** It introduces an Integrated Government Online Training Platform (iGOT), offering a plethora of training modules tailored to the diverse learning needs of civil servants. This approach ensures standardisation of learning content across all cadres and departments.
- **Continuous Capacity Building:** The mission transcends intermittent training, emphasising continuous capacity building. This ensures that civil servants remain updated, relevant, and are encouraged to pursue continuous professional development throughout their careers.
- **Competency-driven Approach:** It adopts a competency-based framework, identifying specific roles, activities, and competencies needed for each rank and position. Tailoring training to individual job requirements ensures that officers are best equipped for their specific roles.
- **Role-based approach:** The shift from rule-based to role-based management, which will align work allocation, performance evaluation, promotion, and postings with the competencies of each civil servant. It ensures that civil servants are assigned roles that suit their potential and aspirations.
- **Behavioural Change:** While technical skills are imperative, the mission accentuates behavioural competencies. It aims at instilling a service-oriented ethos, ensuring civil servants serve with empathy and efficiency.
- **70:20:10 Learning Model:** The promotion of a culture of continuous learning among civil servants through the 70:20:10 model, which stipulates that 70% of capacity building happens through on-the-job learning, 20% through peer-to-peer learning, and 10% through formal training.
- **Digital Learning:** Leveraging the latest technology, e-learning avenues are promoted, enabling officials to access resources irrespective of location or time, making learning more adaptable and convenient.
- **Collaborative Learning:** It promotes collaboration and knowledge sharing among civil servants across ministries, departments, states, and regions through a common learning ecosystem. It fosters a spirit of teamwork, innovation, and problem-solving among civil servants.
- **Global Best Practices:** Exposure to international standards and best practices ensures that India's civil service is in tandem with global benchmarks, preparing them for challenges in a globalised world.
- **Feedback-driven Approach:** The initiative actively seeks real-time feedback from bureaucrats, directly shaping and refining course content to remain current and effective.
- **Flexibility and Personalization:** Officers are endowed with the autonomy to choose courses, assuring learning trajectories are individualised and resonate with personal interests and professional needs.

Key Reforms and Initiatives by the Government

- **Prime Minister's HR Council (PMHRC):** It provides strategic direction to civil service reforms, it acts as a guiding force ensuring that reforms align with the nation's broader developmental goals. It also offers a high-level interface between governance and policy-making.
- **Capacity Building COMMISSION (CBC):** Its role involves overseeing training institutions, ensuring uniformity in content delivery, and leveraging shared faculty and resources. It essentially anchors the qualitative aspect of the capacity-building process.
- **Cabinet Secretariat Coordination Unity (CSCU) :** Mission Karmayogi is coordinated by the CSCU, which is a division of the Cabinet Secretariat that facilitates the coordination and communication between the Cabinet Secretary and the Secretaries of various Ministries and Departments.
- **Special Purpose Vehicle (SPV):** It is a non-profit entity designed to operate the iGOT Karmayogi platform. By offering online courses to civil servants across all ranks, it democratizes learning, making high-quality content accessible irrespective of geography or service seniority.
- **SRG and ARCs:** The Specialized Regional Groups (SRGs) and Agency-specific Residential Courses (ARCs) are mechanisms tailored to address specialised and niche training needs. They cater to unique departmental requirements, ensuring officers are well-equipped for specific roles.
- **Karmayogi Bharat Dashboard:** With digital monitoring becoming essential, this real-time dashboard provides a holistic view of capacity-building efforts, helping policymakers understand areas of progress and points of intervention.
- **Mission Karmayogi Portal:** This digital portal is a treasure trove of resources. From courses curated by global experts to in-depth training modules, it's the one-stop solution for a civil servant's learning needs.

Mission Karmayogi represents a monumental stride towards sculpting a civil service that is adept, responsive, and aligned with the aspirations of New India. By focusing on continuous learning, global best practices, and personalised development, the initiative lays the foundation for a bureaucracy that's not just efficient but also empathetic.

MCQs

- Which of the following methods, through the use of Directive principles, does the Constitution guarantee worker welfare and protect labor rights?
 - It makes provision for just and humane conditions for work and maternity relief.
 - It exhorts the government to take steps to secure the participation of workers in the management of industries.

Which of the above statements is/are correct?

a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2
- What is the Batagay crater?
 - A volcanic crater located in Russia's Kamchatka Peninsula.
 - A meteorite impact crater found in northern Canada.
 - A thermokarst depression in the Siberian tundra.**
 - An artificial excavation site in South America.
- Consider the following statements:
 - Permafrost is only found in polar regions.
 - Permafrost is a type of rock formation.
 - Permafrost is not affected by climate change

How many of the above statements are correct?

a) Only one b) Only two
c) All three d) **None**
- Which of the following statements about the United Nations Office of Counter-Terrorism (UNOCT) is correct?
 - It was established in 2001 after the 9/11 attacks.
 - It primarily focuses on military interventions to combat terrorism.
 - It is responsible for coordinating global efforts to counter terrorism.**
 - It operates independently from other UN agencies.
- Consider the following statements:
 - Sperm whales are the smallest species of whales.
 - Sperm whales primarily feed on plankton and small fish.
 - Sperm whales are known for their exceptionally long tusks.

How many of the above statements are correct?

a) Only one b) Only two
c) All three d) **None**
- Consider the following statements about Shinku La tunnel:
 - It is the longest tunnel in Asia, stretching over 10 kilometers.
 - The tunnel serves as a vital link between Manali and Leh.

Which of the statements given above is/are correct?

a) 1 only **b) 2 only**
c) Both 1 and 2 d) Neither 1 nor 2
- Consider the following statements:
 - The number of phishing attacks has increased significantly due to advances in artificial intelligence (AI).
 - Prioritizing the use of AI in military and defense applications is the main objective of the 'Bletchley Declaration' in terms of AI development and implementation.

Which of the statement(s) given above is/are correct?

a) 1 only b) 2 only
c) Both 1 and 2 d) Neither 1 nor 2
- Consider the following statements:
 - The Indian government does not permit vaccination against avian influenza.
 - Avian influenza can affect mammals like cows and goats.
 - Some strains of avian influenza have a high mortality rate among humans.

Which of the statements given above are correct?

a) 1 and 2 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3
- Consider the following statements:
 - Titanium is the biggest industrial contributor to global carbon emissions.
 - Titanium is not found in its pure metallic form naturally.
 - China is the largest producer of titanium.

Which of the statement(s) given above is/are correct?

a) 1 and 2 only
b) 2 and 3 only
c) 3 only
d) 1 and 3 only
- With reference to the Glyptothorax punyabratai, consider the following statements:
 - It is a new catfish species.
 - It is mainly found in the Indian Ocean.
 - Its presence contributes to the regulation of prey populations and nutrient cycling.

Which of the statements given above are correct?

a) 1 and 2 only
b) 2 and 3 only
c) 1 and 3 only
d) 1, 2 and 3