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

1. The long and winding road of India-China relations

Context: The visit of India's Foreign Secretary Vikram Misri to China in January 2025 marked a significant diplomatic engagement, signifying a possible thaw in tensions. However, while both nations have announced the restoration of key exchanges, several underlying issues, such as border stability, economic concerns, and geopolitical influences, continue to shape the evolving relationship. Amid these developments, it is important to examine the factors behind the renewed engagement, the complexities at the Line of Actual Control (LAC), and the need for greater transparency in India's diplomatic approach.

Key points

• <u>Overview:</u> During his visit to China, Foreign Secretary Misri met with high-ranking Chinese officials, including Foreign Minister Wang Yi and Liu Jianchao, Minister of the International Department of the Communist Party of China. The Indian government later announced the revival of various

- bilateral exchanges, such as media and think-tank interactions, the Kailash Mansarovar Yatra, and increased connectivity through flights.
- <u>Geopolitical and Economic Factors:</u> The Trump Factor and Its Impact on India-China Relations The return of Donald Trump to the U.S. presidency has injected a new element of unpredictability into global geopolitics. Given his track record, China anticipates a renewed period of U.S.-China tensions, potentially leading to stricter trade barriers, sanctions, and geopolitical confrontations. China's Economic Slowdown and the Need for Stability China's economy has been facing mounting challenges in recent years. Sluggish growth, a real estate crisis, and declining foreign investments have forced Beijing to rethink its economic priorities.
 - India's Economic Growth and Strategic Calculations While China grapples with economic difficulties, India has emerged as one of the fastest-growing major economies. With its expanding manufacturing sector, growing middle class, and increasing foreign direct investment (FDI), India is positioning itself as an alternative to China in global supply chains.
- Challenges: Despite these diplomatic strides, ambiguity remains regarding the situation at the LAC. India has not provided a clear statement on whether de-escalation and demobilisation of troops have occurred. Since the Galwan clashes in June 2020, both nations have maintained significant military presence along various flashpoints, including Galwan, Depsang Bulge, Charding Nala, Gogra Post, Hot Springs, and the Pangong Lake region. Furthermore, India has consistently argued that border stability is a prerequisite for broader engagement, while China has taken the opposite stance, insisting that other aspects of the relationship should progress irrespective of border disputes.
- <u>Way forward:</u> The Indian government's guarded approach to communicating progress at the LAC raises concerns. A clearer articulation of India's position is necessary to reassure domestic and international audiences that its core interests are being upheld. While diplomatic prudence is understandable, a lack of transparency could weaken India's negotiating position and allow China's perspective to dominate international discourse. India-China relations have historically been cyclical, fluctuating between periods of cooperation and tension.
- <u>Conclusion</u>: India's recent engagement with China represents a step toward diplomatic normalization, but critical uncertainties remain. While economic and geopolitical considerations may have driven this shift, the lack of clarity on the border situation raises valid concerns. As India moves forward, it must balance diplomacy with firm strategic positioning to ensure that any restoration of relations does not come at the expense of its security interests. Greater transparency and a principled approach will be essential in maintaining an equitable and stable relationship with China.

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

2. The transformation of Koraput's tribal food basket

Context: Koraput, a district in Odisha, is a region of breathtaking landscapes and rich biodiversity, it also suffers from persistent poverty and high levels of undernutrition. Despite the presence of various government schemes aimed at improving food security and livelihoods, malnutrition remains widespread. According to the National Family Health Survey-5 (2019-21), a staggering 43% of children under five in the district are stunted, and 33% are underweight. Moreover, only 17% of children receive an adequate diet, and over 50% of women are anaemic; given these alarming statistics, it is crucial to examine how the local community can take ownership of its nutrition security.

- <u>Community-Based Nutrition Literacy Model:</u> The Community-Based Nutrition Literacy Model implemented in Koraput by the M.S. Swaminathan Research Foundation (MSSRF). It was designed to empower tribal communities by enhancing their understanding of nutrition and equipping them with the skills to make informed dietary choices.
- Approach Taken by MSSRF: Awareness and Self-Assessment The first step in implementing the model was to sensitise the community to its own nutritional challenges. To achieve this, health and nutrition data of women, children, and adolescents were collected through height and weight measurements and consolidated with secondary data sources.
 - Selection of Community Representatives for Training Once the community acknowledged the issue, villagers selected representatives, both men and women, from different villages and caste groups to undergo residential training programs. This ensured inclusivity and representation of diverse social groups.
 - Mobilising Collective Action While social structures in rural communities are often hierarchical, the residential training created a neutral space where villagers from different backgrounds could engage in open discussions. This bridged social divides and fostered collective action. Participants collaborated to introduce more nutritious crops, share farming techniques, and advocate for government entitlements.
- Other initiatives: Tangible Changes in Nutrition and Agriculture The impact of these efforts was visible in the community's dietary habits and farming practices. Home gardens, which initially contained only four types of crops, grew to include nine varieties. Similarly, crop diversity in larger farms expanded from two or three varieties to as many as five.
 - Strengthening Community Institutions Villagers took an active role in monitoring direct feeding programs under the Integrated Child Development Services (ICDS). Additionally, the community revived traditional institutions such as grain banks and engaged in village council meetings (Gram Sabhas) to discuss long-term strategies for achieving hunger-free villages.
- <u>Conclusion</u>: The transformation witnessed in Koraput highlights the power of community-driven initiatives in addressing undernutrition. By combining nutrition literacy with sustainable agricultural practices, the MSSRF program enabled villagers to take control of their own food security. The success of this approach underscores the importance of integrating local knowledge with scientific principles while fostering collective action. As the community continues its journey toward better nutrition and food security, its experiences serve as an inspiring model for other regions facing similar challenges.

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

3. India can ensure Ukraine at the table

Context: The ongoing negotiations between the United States and Russia regarding Ukraine's future, without Ukraine's participation, echo painful historical experiences for India. The scenario starkly reminds India of the colonial arrogance exhibited during its own Partition in 1947. Britain, in its hasty withdrawal, arbitrarily drew borders without considering the human and geopolitical implications, leading to long-term strife and suffering. For India, Ukraine's exclusion represents not just a diplomatic oversight but a deep historical injustice.

- <u>Overview:</u> The United States and Russia are holding high-level negotiations over Ukraine's future without Ukraine's participation, raising concerns about historical injustices and great power dominance.
- <u>Historical perspective</u>: India's historical perspective underscores that peace agreements lacking
 justice only serve as temporary solutions. This led to the collapse of Afghan democracy and the
 erasure of two decades of progress, especially affecting women, minorities, and dissidents. Such an
 approach rewards aggression and violates international law, potentially destabilizing Europe and
 undermining the very concept of positive peace.
- <u>Struggle for sovereignty:</u> India's history of fighting for sovereignty and dignity resonates with Ukraine's current struggle. Today, Ukraine finds itself in a similar position fighting for its existence as a sovereign state and for its people's right to live without fear.
- <u>India's Strategic Role:</u> Exerc<mark>ising Econom</mark>ic and Defence Leverage India's significant arms purchase from Russia and robust trade relations with Western nations provide substantial leverage. India can condition its cooperation on a fair resolution that respects Ukraine's territorial integrity and independence.
- <u>Challenges:</u> The analysis warns that any peace deal lacking justice, accountability, and strategic security is inherently flawed. Conceding Ukrainian territory to Russia would merely pause hostilities, setting the stage for future conflicts. With India's post-Partition struggles, suggesting that just as arbitrary borders in 1947 sowed the seeds for Indo-Pakistani tensions, an unfair Ukraine settlement could lead to prolonged European instability.
- <u>Conclusion</u>: In conclusion, the exclusion of Ukraine from critical negotiations is more than a diplomatic misjudgement it is a dangerous return to imperialist practices. For India, still grappling with the wounds of its own Partition, supporting Ukraine's right to self-determination is not only a strategic choice but also a moral responsibility. Failure to include Ukraine could trap Europe in another prolonged period of conflict and instability, a fate that India, given its historical context, understands all too well.

GS 3: ECONOMY, ECOLOGY, SCIENCE & TECHNOLOGY, DEFENCE, SECURITY AND DISASTER MANAGEMENT

4. Rupee depreciation and policy responses

Context: State governments are crucial stakeholders in the Union Budget, as their fiscal health is significantly influenced by tax devolution, grants from the Centre, and interest-free loans for capital spending. These components form a substantial part of state revenues and shape their expenditure and deficit levels.

- <u>Tax Devolution Trends:</u> Over 40% of several states' revenues come from tax devolution and grants. The actual tax devolution has fluctuated over the past five years, varying from initial budget estimates.
 - ➤ 2024-25 Tax devolution was revised upwards to Rs 12.9 trillion from Rs 12.5 trillion, reflecting adjustments for previous payments and an increase in states' share of income tax revenues.
 - ➤ 2025-26 Tax devolution is projected at Rs 14.2 trillion, an 11% increase over the previous year.
 - Future projections The impact of personal income tax modifications may lead to an optimistic revenue growth forecast, potentially affecting tax devolution.
- <u>Declining and Volatile Trends:</u> Grants from the Centre have shown an uneven trajectory, influenced by factors such as end of GST compensation grants (2022-23). Decline in Finance Commission-recommended grants, leading to a 13% drop in total grants (Rs 7.8 trillion in 2023-24).
 - > 2024-25 Further reduction of Rs 1 trillion in 2024-25 revised estimates due to lower allocations for centrally sponsored schemes and GST compensation.
 - ➤ 2025-26 projections Total grants set at Rs 8.9 trillion, marking a 14% growth, surpassing the increase in tax devolution.
- <u>Capital Expenditure Loans to States:</u> Interest-free loans for capital expenditure have emerged as a
 critical funding source since 2020-21. To boost the resources of state governments, the Centre has
 been stepping up allocation under the special assistance scheme as loans to states for capital
 expenditure.
 - > 2024-25 revised estimates Allocation for the capex loan scheme was reduced to Rs 1.25 trillion from Rs 1.5 trillion. By January-end 2025, actual disbursements reached Rs 1.1 trillion, indicating robust utilization.
 - ➤ 2025-26 allocation Rs 1.5 trillion, with disbursement influenced by the mix of tied and untied loans.
- <u>16th Finance Commission Recommendations:</u> State governments will closely monitor the recommendations of the 16th Finance Commission (FY 2027-31). Key expectations include-
 - Deficit and debt targets for states.
 - Continuation of the capex loan scheme beyond the 16th FC award period.
 - > Potential exclusion of capex loans from the net borrowing limit.
- <u>Conclusion:</u> The Union Budget significantly influences state finances through tax devolution, grants, and loans. While tax devolution has seen an upward revision, the volatility in grants remains a concern. The capex loan scheme and conditional borrowing linked to power sector reforms play a crucial role in shaping state fiscal health. The upcoming 16th Finance Commission recommendations will be critical in determining future fiscal frameworks for states.

GS 3: ECONOMY, ECOLOGY, SCIENCE & TECHNOLOGY, DEFENCE, SECURITY AND DISASTER MANAGEMENT

5. Al-powered tools generate real time insights into antibiotic resistance

Context: Antimicrobial resistant infections are a significant global health threat, responsible for millions of deaths each year. This pressing issue has the potential to revert humanity to a time when common infections such as urinary tract infections (UTIs) or pneumonia were frequently lethal and untreatable. Antimicrobial resistance (AMR) occurs when pathogens, including bacteria, viruses, and fungi, develop mechanisms to evade the drugs designed to eliminate them. The overuse of antibiotics, particularly in settings such as poultry farms and healthcare facilities, has been identified as a primary driver of AMR.

- <u>Understanding AMR and Its Causes:</u> AMR arises when microorganisms evolve to survive exposure to antimicrobial drugs, rendering standard treatments ineffective and leading to persistent infections. This phenomenon is exacerbated by the excessive and often inappropriate use of antibiotics in both agricultural and medical contexts. In farms, antibiotics are frequently administered to livestock to promote growth and prevent disease, creating an environment where resistant strains can thrive and spread. Similarly, in healthcare settings, the over-prescription and misuse of antibiotics contribute significantly to the development of resistant pathogens.
- <u>Scientific Advances in AMR Research:</u> Luis Pedro Coelho, a computational biologist at the Queensland University of Technology in Australia, leads a notable study that underscores these advancements. Coelho's research, published in the journal Cell, introduces a comprehensive database of nearly one million potential antibiotic compounds, offering a promising avenue for overcoming AMR.
- <u>Utilizing AI for Antibiotic Discovery:</u> The use of artificial intelligence (AI) in antibiotic discovery represents a groundbreaking development in the fight against AMR. The study led by Coelho employs machine learning algorithms to explore potential antibiotic peptides produced by bacteria in competitive environments. The AI algorithm sifted through billions of protein sequences, narrowing down the list to the most promising candidates with predicted antimicrobial properties. Ultimately, the researchers identified 863,498 new antimicrobial peptides, with more than 90% being previously undescribed. These peptides share a common mechanism of action: disrupting bacterial cell membranes, which are crucial for bacterial survival.
- **Broader Impact and Commercialization Challenges:** While the study's findings are promising, significant challenges remain in the commercial viability of new antibiotics. Sebastian Hiller notes that new antibiotics are typically reserved for use only when existing treatments fail, to prevent the development of resistance. This practice, while beneficial in preserving the efficacy of antibiotics, makes it challenging for new antibiotics to be financially viable.
- <u>Conclusion</u>: The fight against antimicrobial resistance is far from over, but recent scientific advancements provide a reason for optimism. The innovative use of machine learning to discover new antibiotic peptides represents a significant leap forward in the battle against AMR. By publishing their extensive dataset with open access, researchers like Luis Pedro Coelho are fostering a collaborative approach to antibiotic development, paving the way for targeted and effective treatments.