

BROADER AND HIDDEN IMPLICATIONS OF WEST ASIA CONFLICT FOR INDIA

- The ongoing conflict in West Asia has disrupted **LPG** supply chains to India, triggering a domestic fuel crisis.
- This has led to rising LPG prices, panic buying, black-marketing, and economic distress in small industries.
- The situation has broader implications, extending beyond energy security to **food** security and **nutrition** outcome.

Immediate Impacts of LPG Supply Disruption:

- **Rising household expenditure:**
 - According to the Household Consumption Expenditure Survey (HCES) 2023-24, fuel and light account for 6.1% (rural) and 5.6% (urban) of monthly per capita expenditure.
 - Increase in LPG prices directly raises the cost of cooking meals, comparable to spending on health and education.
- **Economic ripple effects:**
 - Reduced LPG availability affects small-scale industries reliant on LPG, urban informal workforce, leading to **reverse migration** (similar to COVID-19 trends).
 - **Government response:** Prioritisation of domestic consumption over commercial use, and diversification of import sources.

Indirect Effects on Food Systems:

- **Rising cost of agricultural production:**
 - India's dependence on fertiliser imports makes it vulnerable to global disruptions.
 - Increased costs of fertilisers, mechanisation, and transportation - likely to trigger **food inflation**.
- **Supply chain disruptions:** Higher logistics costs impact availability and affordability of food items, especially perishables.

Impact on Nutritional Security:

- **Cost of a Healthy Diet (CoHD):**
 - Based on ICMR dietary guidelines, average CoHD (non-vegetarian diet) was ₹73.1/person/day (2023-24).
 - This indicates that 25–49% of the population are already unable to afford a healthy diet.
- **Role of cooking fuel costs:** Meal preparation adds ₹9.5 extra, including ₹6.5 from fuel costs alone. This raises unaffordability to 32–62% of the population.
- **Post-crisis scenario:** Rising LPG prices and food inflation may further result in declining dietary diversity and nutrition intake. This will create a disproportionate impact on poor and vulnerable households.

Way Forward:

- **Short-term measures:**
 - Expand social safety nets, for example, subsidise nutritious foods (pulses, vegetables, eggs, meat, nuts).
 - Strengthen schemes like **PMUY** (Pradhan Mantri Ujjwala Yojana) to ensure continued LPG affordability, and including migrant workers temporarily.
 - **Price stabilisation** through buffer stocks and market intervention.
- **Medium-term interventions:** Improve public distribution system (**PDS**) to include nutrient-rich foods, strengthen last-mile delivery mechanisms, and enhance urban food security frameworks.
- **Long-term structural reforms:**
 - Promote domestic fertiliser production and reduce import dependency, and encourage nutrition-sensitive agriculture.
 - Adopt a **food systems approach** integrating production, distribution, consumption, and energy access.

AN ALTERNATIVE PROPOSAL ON VIKSIT BHARAT SHIKSHA ADHISTHAN BILL

- The proposed Viksit Bharat Shiksha Adhistan (**VBSA**) **Bill** seeks to institutionalise the implementation of the National Education Policy (NEP) 2020.
- While it is presented as a reformative framework for higher education, the Bill has raised significant concerns regarding constitutional validity, centralisation of power, erosion of institutional autonomy, and weakening of social justice commitments.
- A close analysis reveals that the Bill, in its current form, represents a shift away from **democratic** and **federal principles** toward bureaucratic and centralised governance.

Major Concerns Surrounding the VBSA Bill

- **Erosion of Institutional Autonomy and Participatory Governance**
 - The Bill reduces the role of higher education institutions (HEIs) in decision-making processes and replaces consultative mechanisms with bureaucratic control.
 - For instance, it **dilutes** provisions of the University Grants Commission (**UGC**) **Act**, which mandates consultation with universities before inspections.
 - Under the VBSA framework, prestigious institutions such as IITs, IIMs, and Inter-University Centres risk losing their governing autonomy.
 - Bureaucrats are positioned as central actors in transforming higher education, which raises concerns about the marginalisation of academic voices.
- **Ideological and Structural Concerns**
 - Critics argue that this approach risks privileging a **narrow cultural perspective**, potentially undermining India's pluralistic and multicultural intellectual traditions.
 - Additionally, the emphasis on global rankings and output-based metrics, such as patents and publications, reflects a shift toward market-driven, **corporate-oriented education**
 - This orientation may neglect broader educational goals such as social justice, national innovation, and self-reliance.

- **Flaws in Regulatory and Accreditation Mechanisms**
 - The proposed regulatory architecture introduces multiple councils for governance, accreditation, and standards.
 - However, these bodies are **heavily centralised** and lack adequate representation from States and academic communities.
 - The **Regulatory Council** is granted sweeping powers, including the authority to recognise or close institutions, often without requiring State consent.

The Path Forward to Address These Concerns

- **Need for Democratisation and Federal Balance**
 - A key recommendation is the inclusion of **State Higher Education Councils (SHECs)** in decision-making processes.
 - Ensuring equal representation, such as a 50% weightage for both State and Union bodies, would help restore **federal balance** and promote cooperative governance.
- **Reimagining Funding and Public Responsibility**
 - A significant structural reform proposed is the creation of a Higher Education Grants Council (HEGC) to manage funding.
 - This body should ensure **equitable distribution of resources**, particularly to State universities that have historically been underfunded.

Conclusion

- While the VBSA Bill aims to reform and modernise higher education in India, its current framework raises serious **constitutional, institutional, and social concerns**.
- The centralisation of power, erosion of autonomy, and neglect of equity threaten to undermine the foundational principles of India's education system.
- Meaningful reform requires a shift toward **democratic governance, federal cooperation**, and a renewed commitment to education as a public good.
- Only through **inclusive and balanced policymaking** can the transformative potential of higher education be fully realised.

BOLSTERING DETERRENCE THROUGH SUBMARINE DOMINANCE

- Defence Minister Rajnath Singh's cryptic post on X mentioning the word 'Aridhaman' recently sparked widespread speculation about the quiet **commissioning of INS Aridhaman** — India's third nuclear ballistic missile submarine (SSBN) in the Indian Navy's programme.
- This follows the commissioning of INS Arihant in 2016 and INS Arighat in 2024.

About INS Aridhaman

- **Evolution of India's SSBN Programme**
 - India's SSBN programme began with INS Arihant (2016), followed by INS Arighat (2024), and now INS Aridhaman, marking steady progress in strengthening sea-based nuclear capabilities.
 - INS Aridhaman represents a significant upgrade over its predecessors.
 - It is a larger 7,000-tonne vessel capable of carrying up to **24 K-15 Sagarika missiles** and up to eight nuclear-tipped K-4 or K-5 missiles — nearly double the capacity of INS Arihant and INS Arighat, which could each carry twelve K-15 and four K-4 missiles.

Strategic Significance

- **Completing the Nuclear Triad**
 - The commissioning of INS Aridhaman further consolidates India's nuclear triad — the ability to launch nuclear weapons from land, sea, and air.
 - Notably, apart from India, only the P5 nations (USA, Russia, China, France, UK) possess full nuclear triad capabilities.
 - India's nuclear doctrine remains anchored on its No First Use (NFU) policy.
- **Strengthening Sea-Based Deterrence**
 - Sea-based deterrence has emerged as a critical priority in India's nuclear strategy, particularly given the rapidly worsening strategic environment in the Indian Ocean.

- **Boost to Indigenous Defence Production**

- The SSBN programme has significantly advanced India's goal of self-reliance in defence production.
- With active global conflicts straining international defence supply chains, and the Russia-Ukraine war highlighting the risks of over-dependence on traditional partners like Moscow, indigenisation has become a strategic necessity for India.

Evolving Nature of Modern Warfare

- Modern warfare no longer operates in isolated silos. The West Asia conflict, which began as air campaigns but quickly acquired a maritime character with the Strait of Hormuz emerging as the epicentre, is a stark illustration.
- Similarly, Operation Sindoor — India's counter-terror response against Pakistan — demonstrated that a naval dimension to such operations remains a real possibility.

Key Challenges

- The primary challenges ahead include efficiently balancing resource allocation between upgrading existing submarines and inducting new ones, and integrating emerging technologies such as Artificial Intelligence and Autonomous Systems into submarine design and production.
- Keeping pace with China's rapidly expanding naval roster will remain a defining benchmark for the Indian Navy going forward.

Road Ahead

- A fourth vessel of the Arihant class is expected to be inducted soon.
- Additionally, India aims to commission its first fully indigenously designed nuclear attack submarine (SSN) by 2036, followed by a second by 2038 — signalling that submarine dominance is fast becoming central to India's deterrence strategy.

Conclusion

- INS Aridhaman marks a crucial step in India's deterrence strategy, but sustaining submarine dominance will require technological innovation, resource optimisation, and sustained focus on indigenous capabilities.

WHAT IS THE PACE SATELLITE?



- The Plankton, Aerosol, Cloud, and ocean Ecosystem (PACE) is a NASA satellite mission that studies global ocean biology, aerosols, and clouds.

- It was **launched** in 2024 into a Sun-synchronous orbit.
- It provides the **world's first and only hyperspectral coverage of the globe every 1-2 days.**
- PACE's **primary instrument** is the **Ocean Color Instrument (OCI)**, a highly advanced **optical spectrometer** to **measure the ocean's colour across a spectrum** from ultraviolet to shortwave infrared.
- It also features **two polarimeters** – the **Spectro-polarimeter for Planetary Exploration (SPeXone)** and the **Hyper Angular Research Polarimeter (HARP2)**.
- The data from PACE allows researchers to **study microscopic life in the ocean and particles in the air**, advancing the understanding of issues including **fisheries health, harmful algal blooms, air pollution, and wildfire smoke.**
- With PACE, scientists also can **investigate how the ocean and atmosphere interact** with each other and are affected by a changing climate.

METHANOL



- It is also **known as wood alcohol**, is the simplest alcohol (CH_3OH).
 - This fuel is **generally produced by steam-reforming natural gas** to create a synthesis gas. Feeding this synthesis gas into a reactor with a catalyst produces methanol and water vapor.
 - It appears as a **colorless fairly volatile liquid** with a **faintly sweet pungent odor** like that of ethyl alcohol.
 - It can **completely mix with water.**

- It has a **high-octane**, clean-burning fuel that is a potentially important substitute for gasoline in automotive vehicles.
- **Applications:** Used to **make chemicals**, to **remove water from automotive** and aviation fuels, as a solvent for paints and plastics, and as an ingredient in a wide variety of products.
- **Benefits of Methanol:**
 - Methanol can be an alternative to conventional transportation fuels.
 - **Lower production cost:** Methanol is **cheap to produce** relative to other alternative fuels.
 - **Improved safety:** Methanol has a **lower risk of flammability** compared to gasoline.
 - **Increased energy security:** Methanol can be manufactured from a variety of domestic carbon-based feedstocks, such as biomass, natural gas, and coal.

MORCHELLA MUSHROOM



- It is an **edible mushroom** from the Ascomycota group.
- Morels or Morchella is locally **known as Kangaech or Gucchi** mushroom.
- It grows naturally in specific **high elevation forest ecosystems** during a narrow rainy season.
- It traditionally belongs to the family morchellaceae of the Ascomycota.
- **Properties:** It is a **highly valued gourmet mushroom** known for its intense and distinct flavour, superior nutritional profile and medicinal properties.
- **Appearance:** They are pale yellow in colour with large pits and ridges on the surface of the cap, raised on a large white stem.
- **Climatic conditions for Growth:** Ideal weather conditions for the great morel are daytime temperature is between 15 and 20 Celsius and night-time temperatures are in the five to nine.

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- **Distribution:** They grow in conifer forests across temperate regions, and the foothills in Himachal Pradesh, Uttaranchal, and Jammu and Kashmir.
- These mushrooms usually grow in clusters on logs of decaying wood, leaves or humus soil.
- They may or may not grow in the same spot the next season, which only makes the process of collection more tedious.
- It is known to be one of the most expensive mushrooms.



SHREE CHAMUNDESHWARI TEMPLE

- It is a Hindu temple located on the top of Chamundi Hills in Karnataka.
- It is dedicated to Goddess Chamundeshwari, who is an avatar of Durga.
- The original shrine is considered to be built by the Hoysala rulers from the 12th century and later by the Vijayanagara Empire in the 17th century.
- Notable though are the 1000-odd, stone stairway steps that lead to the temple carved sometime in mid-17th CE by Maharaja Dodda Devaraja of Mysuru.
- It is considered as Shakti Peetha and is one among the 18 Maha Shakti Peethas.
- **Architecture:**
 - The temple is of a quadrangular structure.
 - Built in Dravidian style, it consists of the main doorway, entrance, Navaranga Hall, Antharala Mantapa, Sanctum Sanctorum, and
 - There is a beautiful seven-tier Gopura, or pyramidal tower, at the entrance and a 'Vimana' (small tower) atop the sanctum sanctorum.
 - The gopuram, adorned with colourful sculptures of gods, goddesses, and mythical figures, is visible from miles away.
 - The tower at the entrance has a small image of Lord Ganesha on the doorway.
 - The doorway is silver-plated and has the images of the Goddess in different forms.