

DAILY **CURRENT AFFAIRS**

SPECIAL FOR UPSC & GPSC EXAMINATION

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Following an agreement between India and Pakistan on a ceasefire along the Line of Control (LoC), a tentative calm has returned to the border regions of Jammu and Kashmir. The recent escalation had resulted in civilian casualties, displacement, and widespread damage to property.

Key Issues and Themes:

1. Ceasefire and Cross-border Tensions

- The India-Pakistan ceasefire agreement has brought temporary relief to border residents.
- The LoC has historically witnessed frequent ceasefire violations, affecting thousands living in frontline villages.
- Over 18 civilians were killed in recent shelling, with Poonch district alone accounting for 14 deaths.

2. Humanitarian Crisis

- Civilian displacement due to shelling led to over 500 people taking refuge in temporary shelters like schools and government buildings.
- Emotional and psychological distress is visible, especially among children and the elderly, highlighting the hidden costs of cross-border tensions.

3. Risk of Unexploded Ordnance (UXOs)

- Return to normalcy is hindered by unexploded munitions left behind in villages near the LoC.

Displaced people hope they can return home as guns fall silent along the LoC in J&K

Peerzada Ashiq
SRINAGAR

As the guns fell silent on the Line of Control in Jammu and Kashmir after India and Pakistan agreed to a ceasefire, displaced residents of border villages on Sunday sounded hopeful of returning to their homes. However, many such villages may still remain out of bounds for residents because of scattered live explosives.

Officials said the border districts of Kupwara and Baramulla in the Kashmir Valley, and Poonch and Rajouri in the Pir Panjal Valley witnessed much-needed calm after days of shelling and cross-border firing, which left at least 18 civilians dead. Many villagers in both regions began returning to their damaged houses and resumed their daily routine.

In Baramulla's Uri, people were seen shopping in the main market. Villages around Uri were among the worst affected in Pakistan's shelling, with over a dozen structures damaged. Around 100 families had fled Silikote, Salamba, Churanda and pockets that fall near the Zero Line along the LoC.

Around 500 people had to take refuge at multiple centres, including two schools in Baramulla, after the Pakistan Army resorted to heavy shelling. Scores of children who missed school were excited to rejoin their school. "We study in a school in Uri tehsil. I have not seen my classmates for many days now. I am excited to go back to school once it reopens. I pray shelling doesn't take place again,"



Regular day: The weekly flea market in Srinagar on Sunday as calm returns to Jammu and Kashmir. IMRAN NISSAR

Sadia Ji, a student of Class 8, said.

Poonch district in the Jammu region had borne the brunt of Pakistan shelling. An official said the district police and court complexes sustained damage in the shelling. Vikas Kundal, Deputy Commissioner of Poonch, visited several localities including Qazi Mohra, Dungus, Sarain, Jammia Zia Ul Uloom, Geeta Bhawan, Kamsar and Kama Khan. "All of these areas suffered damage due to shelling," Mr. Kundal said. Out of the 18 civilian deaths in the Union Territory, 14 were from Poonch district.

Risk involved

Meanwhile, the police urged people to avoid returning to the frontline village. "We are not allowed to return. We are told the area will be cleared first," said a displaced person from Silikote at the Government Women's College, Baramulla, which is serving as a shelter for the displaced population from Uri.

The police said there was risk of "unexploded munitions after Pakistani shelling". "Dangers of ordnance remain hidden in af-

fected villages after shelling," they added.

National Conference (NC) leader and Uri MLA Sajjad Shafi said, "Unexploded shells are from Dachi to Kamalkote and Duhwa to Garkote in Uri."

"The ceasefire is on for the past 24 hours only. Let the area be sanitised and unexploded shells cleared. It will take a couple of days. We will alert people to return to their villages thereafter," Mr. Shafi said.

Former J&K Chief Minister and Peoples Democratic Party president Mehbooba Mufti visited Salamba near the LoC. "Our wounded lie in hospitals. Our families huddle in shelters. Our homes are reduced to rubble. This is why Kashmir cries out for peace, not war," Ms. Mufti said.

She said those who beat the drums of war don't hear our children weep. "They don't see our parents breaking under the weight of fear and loss. We need homes, not bunkers," the PDP president said.

In an appeal to Prime Minister Narendra Modi, Ms. Mufti said, "Decision-makers should prioritise dialogue over military escalation."

- Security forces have advised against immediate return until thorough sanitization is carried out, underlining the continuing danger despite the ceasefire.

4. Rehabilitation and Reconstruction

- Damage to public infrastructure (police stations, court complexes) and private homes demands immediate attention and state support.
- Long-term rehabilitation must include rebuilding homes, restoring schools, and offering trauma counseling.

5. Voices for Peace and Political Appeals

- Leaders across political parties have called for sustained peace and prioritization of dialogue.
- Mehbooba Mufti's appeal emphasizes the cost of war for common people and criticizes war-mongering narratives that ignore ground realities.

Conclusion:

- The recent calm along the LoC brings a flicker of hope for thousands displaced and affected by cross-border shelling. However, long-term peace depends not just on silence of guns but on political will, diplomatic engagement, and robust humanitarian rehabilitation. As the region awaits the return of its displaced residents, the episode serves as a reminder that war impacts the most vulnerable the hardest—making peace not just a diplomatic goal, but a moral imperative.

UPSC Mains Practice Question

Ques : Ceasefire agreements between India and Pakistan offer temporary relief but fail to address long-term peace and stability. Critically examine.

Fisherfolk in Tamil Nadu and Kerala are strongly opposing a proposed hydrocarbon exploration project in the Wadge Bank area near Kanniyakumari, fearing it will endanger marine biodiversity and their livelihoods.

Fishers decry hydrocarbon project in Wadge Bank, cite threat to livelihood

Shankari Nivethitha B.
KANNIYAKUMARI

Opposition to the proposed hydrocarbon exploration project in the waters of Kanniyakumari has risen among fishers in the region.

According to them, though the project had been planned at 35 nautical miles from the shore, the designated area was a vital fishing ground.

The Union Ministry of Petroleum and Natural Gas had issued a notice inviting bids under the Hydrocarbon Exploration and Licensing Policy for exploration of oil and natural gas from three areas in the south of Cape Comorin, covering 27,154.80 sq km. Of the three proposed sites, one spans 9,514.63 sq km and the other two 9,844.72 sq km and 7,795.45 sq km respectively.

The region selected for exploration includes the Wadge Bank – a marine area in the south of Cape Comorin, rich in fishery resources. Spanning approxi-



Concerns aplenty: Small-scale fishers fear that they would be forced to sail longer distances in search of fishing grounds. N. RAJESH

mately 10,000 sq km, it has long served as an abundant fishing ground.

Fishermen associations fear that implementing the project in such a sensitive area would impact the livelihood of fishers from Kanniyakumari, Tirunelveli, Thoothukudi, and Ramanathapuram districts in Tamil Nadu and parts of Kerala, besides harming one of the most ecologically valuable littoral zones in the region.

C. Berlin of Neithal Makal Iyakkam said, "The place selected for the project falls under the Central

government zone, but that does not exempt authorities from consulting the local fishing community..."

'Revoke project'

He further said that fishers who are dependent on Wadge Bank would be affected the most due to the project. Small-scale fishers would be forced to sail longer distances in search of fishing grounds, Mr. Berlin said, urging the government to revoke the proposed project.

A Journal on Petroleum and Environmental Biotechnology, released by

the Department of Environmental Sciences, Resources and Studies of University of Alaska Fairbanks, highlighted the environmental impacts of hydrocarbon exploration. According to it, drilling and production operations could release pollutants into air and water.

Justin Antony, president of International Fishermen Development Trust, said Wadge Bank was a natural barrier that protected the region from disasters. The implementation of the project in the south of Cape Comorin could weaken this barrier, he feared.

S. Rajeshkumar, MLA from Killiyoor constituency, said a plea pertaining to the project was already submitted in the Assembly and the Tamil Nadu government had not yet granted a no-objection certificate. He said there was neither any "major prior intimation" about the project from the Centre nor a public hearing. He emphasised that the Centre revoke the project.

What is the Issue?

- The Union Ministry of Petroleum and Natural Gas has invited bids for oil and gas exploration under the Hydrocarbon Exploration and Licensing Policy (HELP).
- The proposed sites (3 blocks) cover over 27,000 sq km of ocean south of Cape Comorin (Kanniyakumari).

- One of these areas overlaps with the Wadge Bank, a highly productive marine fishing ground.

About Wadge Bank:

- It is a marine zone south of Cape Comorin, spanning approximately 10,000 sq km.
- Known for abundant fishery resources, it supports small-scale fishers from multiple districts in Tamil Nadu and Kerala.
- It acts as a natural disaster buffer for the coastline.

Concerns Raised by Stakeholders:

- Livelihood threat: Fishers fear displacement from key fishing zones, longer sailing distances, and reduced catch.
- Environmental risk: Drilling may lead to marine pollution (air and water), affecting marine ecosystems.
- Lack of consultation: Local communities were not consulted before finalising the project.
- Legal and procedural lapses: No public hearing held and no-objection certificate (NOC) yet from the Tamil Nadu government.

Relevance for UPSC Prelims:

- **Themes & Concepts to Focus On:**
 - Hydrocarbon Exploration and Licensing Policy (HELP)
 - Geography of Wadge Bank (location, biodiversity significance)
 - Marine ecosystems and environmental impact of drilling
 - Rights of fishing communities and environmental governance
 - Role of Centre and States in resource projects in territorial waters

UPSC Prelims Practice Question

Ques :Consider the following statements about the Hydrocarbon Exploration and Licensing Policy (HELP):

1. It allows a uniform license for exploration and production of all forms of hydrocarbons.
2. It mandates public hearings and state approval for offshore blocks beyond 12 nautical miles.
3. It replaces the New Exploration Licensing Policy (NELP).

Which of the above statements is/are correct?

- a) 1 and 2 only b) 1 and 3 only c) 2 and 3 only d) All of the above

Ans : b)

A woman in Malappuram, Kerala, remains in critical condition due to Nipah virus infection. The state has initiated extensive contact tracing, fever surveillance, and treatment under the Nipah response protocol.

Malappuram woman affected by Nipah remains on ventilator support

The Hindu Bureau
MALAPPURAM

The condition of a 42-year-old woman from Valanchery in Malappuram district of Kerala affected by the Nipah virus remained unchanged on Sunday. She remained in a coma on ventilator support in the intensive care unit of E.M.S. Memorial Hospital, Perinthalmanna.

She was given two doses of monoclonal antibodies and other medicines as part of the State's Nipah treatment protocol. "Her condition remains stable, with neither improvement nor deterioration," District Medical Officer R. Renuka said.

State Health Minister Veena George said that 11 more people on the con-



High precaution: Eighteen more persons were included on the contact list on Sunday, raising the total to 112. K. RAGESH

tact list of the affected woman tested negative on Sunday, bringing the total number of people who have tested negative for Nipah to 42. As many as 18 more persons were included on the contact list on Sunday, raising the total number on the list to 112.

As many as 81 of them were from Malappuram district, 25 from Palakkad, three from Kozhikode and one each from Ernakulam, Idukki and Thiruvananthapuram. Ten of them have been under treatment for various ailments, and two of them have been

admitted to the intensive care unit.

The Minister reviewed the Nipah situation through an online meeting in which top health officials in the State attended on Sunday evening.

Fever surveillance

Trained health officials visited 2,087 houses in and around Valanchery on Sunday as part of the ongoing fever surveillance. They have covered 87% of the houses in the area, visiting a total of 3,868 houses so far.

The Health Department will launch a joint outbreak investigation with the support of the Animal Husbandry Department on Monday. A surveillance of domestic animals in the region will begin on Monday.

What is Nipah Virus?

- Zoonotic virus transmitted from animals to humans (primarily fruit bats of the Pteropus genus).
- First identified in Malaysia in 1998, outbreaks in India have occurred in West Bengal and Kerala (notably in 2018 and 2023).
- High fatality rate and no specific treatment or vaccine available.

- Symptoms include fever, headache, drowsiness, respiratory distress, and encephalitis.

Key Developments in the Current Case:

- The 42-year-old woman from Valanchery remains in a coma; treated with monoclonal antibodies as part of the official Nipah treatment protocol.
- 112 persons identified in her contact list, with 42 testing Nipah negative so far.
- 81 contacts are from Malappuram, others from Palakkad, Kozhikode, and a few from other districts.
- Health officials conducted fever surveillance covering over 3,800 houses, with 87% of target reached in Valanchery area.

Preventive and Containment Measures:

- Contact tracing and testing
- Quarantine and isolation for high-risk contacts
- Fever surveillance by trained health workers
- Joint outbreak investigation involving the Animal Husbandry Department to assess animal-to-human transmission
- Community awareness to avoid consumption of contaminated fruits or contact with infected individuals/animals

Relevance for UPSC Prelims:

- **Topics to Focus On:**
 - Zoonotic diseases (Nipah, Ebola, H1N1, etc.)
 - Disease surveillance mechanisms in India
 - Role of State and Central Health Departments in outbreak control
 - Use of monoclonal antibodies in treatment
 - Institutions like ICMR, NIV Pune, and their role in virus testing and research

UPSC Prelims Practice Question

Ques: Consider the following statements regarding the Nipah virus:

1. It is a zoonotic virus primarily transmitted by fruit bats.
2. There is an approved vaccine available globally for Nipah virus.
3. Human-to-human transmission of Nipah virus is possible.

Which of the statements given above is/are correct?

- a) 1 and 2 only b) 1 and 3 only c) 2 and 3 only d) All of the above

Ans : b)

The Sample Registration System (SRS) 2021 report released by the Registrar General of India (RGI) highlights important demographic trends in India, including the Total Fertility Rate (TFR), ageing population, and shifts in the working-age group.

Total Fertility Rate in India remains at 2.0; Bihar records highest count, Bengal lowest

There has been a gradual decline in the share of population in the age group of 0-14 from 41.2% in 1971 to 24.8% in 2021, shows the Sample Registration System report for 2021 released by the RGI

Vijaita Singh
NEW DELHI

The Total Fertility Rate (TFR), the average number of children born to women over their lifetime, in the country has remained at 2.0 in 2021, the same as in 2020, shows the Sample Registration System (SRS) report for 2021 released by the Registrar-General of India (RGI) on May 7.

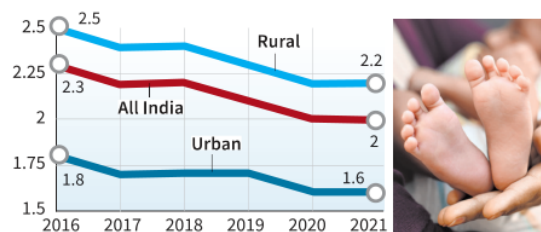
Bihar reported the highest TFR at 3.0, while Delhi and West Bengal reported the lowest of 1.4.

The report said there had been a gradual decline in the share of population in the age group of 0-14 from 41.2% in 1971 to 24.8% in 2021. The “proportion of the economically active population between 15-59 years has increased from 53.4% to 66.2% during the same period”, the report said.

The population has gone up from 5.3% to 5.9% for the 65-plus age group and 6% to 9% for the 60-plus age group.

A static trend

The Total Fertility Rate (TFR) for the country has remained at 2.0 in 2021 and 2020. The chart shows the TFR for 2016-2021



Source: SRS Statistical Report 2021

During the 2024 interim Budget, Union Finance Minister Nirmala Sitharaman had announced a high-power committee to consider the challenges arising from “population growth and demographic changes.”

Though the committee is yet to be formed, the announcement suggested there has been “fast” population growth in the country, however the SRS data says otherwise.

A comprehensive pattern will emerge after the Census is conducted, pending since 2021 and

which was last conducted in 2011.

As Census is usually counted every 10 years, the SRS is the largest demographic survey in the country mandated to provide annual estimates of fertility and mortality indicators at the State and national level.

The survey was conducted in 8,842 sample units across all States, covering about 84 lakh sample population.

Elderly population

Kerala recorded the highest percentage of popula-

tion in the age group of 60 and above with 14.4% of the total population falling under this category.

Tamil Nadu 12.9% and Himachal Pradesh 12.3% are the other two States with the highest percentage of elderly population, the report said.

On the other hand, Bihar 6.9%, Assam 7% and Delhi 7.1% have the lowest percentage of the population in the age group of 60 and above.

The mean age at effective marriage for females has increased from 19.3 years in 1990 to 22.5 years in 2021.

“It is noteworthy that the replacement level TFR, viz. 2.1, has been attained at the national level, along with Delhi 1.4, West Bengal 1.4, Tamil Nadu 1.5, Andhra Pradesh 1.5, Jammu and Kashmir 1.5, Kerala 1.5, Maharashtra 1.5, Punjab 1.5, Himachal Pradesh 1.6, Telangana 1.6, Karnataka 1.6, Odisha 1.8, Uttarakhand 1.8, Gujarat 2.0, Haryana 2.0 and Assam 2.1,” the report said.

Key Facts:

- **TFR (2021):** 2.0 (unchanged from 2020)
- **Highest TFR:** Bihar (3.0)
- **Lowest TFR:** Delhi and West Bengal (1.4)
- **Replacement Level TFR:** 2.1
- **States below replacement level:** Tamil Nadu, Kerala, Maharashtra, Andhra Pradesh, etc.

Other Vital Stats:

- **0–14 age group:** Declined from 41.2% (1971) to 24.8% (2021)
- **15–59 age group (working population):** Increased from 53.4% to 66.2%
- **60+ age group:** Increased from 6% to 9%; Kerala has the highest elderly proportion (14.4%)

Sample Size:

- Survey conducted across 8,842 sample units, covering 84 lakh people.

Key Analysis:

- **TFR:** Average number of children a woman would bear over her lifetime.
- **Population Stabilisation:** The national TFR of 2.0 indicates that India is nearing a demographic stabilisation phase, with most states below or at the replacement level.
- **Demographic Dividend:** The rise in 15–59 age group to 66.2% shows India is still in the window of demographic dividend, but the rising 60+ population warns of a future ageing burden.
- **Regional Disparities:** States like Bihar and UP still have high fertility, indicating unequal demographic transition across India.
- **Social Indicators:** Rise in mean age of female marriage (from 19.3 in 1990 to 22.5 in 2021) reflects better education, awareness, and policy impact.
- **Policy Implication:** Need for tailored state-level interventions to address high fertility in lagging states like Bihar.
- **Centre-State Coordination:** States must be consulted in demographic policy, as the Union Budget 2024 proposed a high-powered committee, which is still pending formation.
- **Ageing Challenge:** The increasing elderly population will place stress on healthcare, pensions, and social security systems in the coming decades.
- **Workforce Planning:** Decline in youth population and rise in elder population requires long-term labour policy and skill training programmes.

Conclusion:

India has achieved replacement level fertility at the national level, signaling a major demographic transition. However, regional disparities, rising ageing population, and policy delays remain key concerns. Timely Census and demographic planning are essential to manage India's socio-economic development in the next decades.

UPSC Prelims Practice Question

Ques : Which of the following statements best describes Total Fertility Rate (TFR)?

- a) The number of children a couple needs to replace themselves in the population
- b) The average number of children born to a woman during her reproductive years
- c) The percentage of population below 15 years of age
- d) The average birth rate per 1,000 population

Ans: b)

Page 09 : GS 2: Social Justice

Women across India and South Asia have been central to environmental and land rights movements - from resisting mining in Odisha and Jharkhand to opposing nuclear projects in Tamil Nadu.

- However, despite their leadership and lived experiences, their roles are often unrecognised in decision-making, legal frameworks, and climate policies. This reflects a deeper systemic gender exclusion within development and governance.

The women who remain largely invisible

Across India and South Asia, women have long been at the forefront of movements resisting unjust development, extractivism, and climate degradation. They have led protests against destructive mining, dams, and infrastructure projects. Yet, when it comes to decision-making, these women are largely invisible.

From the forests of Odisha to the coastlines of Tamil Nadu, women have led some of the most sustained resistance movements. In Sijimali (Odisha), women continue to protest mining projects threatening their forest-based way of life, often facing police violence. In Jharkhand, Adivasi women in Dewas are blocking coal mining operations to protect ancestral land. In Tamil Nadu, women from fishing communities have been at the forefront of protests against the Kudankulam Nuclear Power Plant. These movements represent a powerful assertion of community-led development and environmental protection rooted in lived realities.

Leadership not acknowledged

Despite being central to the resistance, women are systematically excluded from consultations, especially those that claim to uphold free, prior, and informed consent (FPIC). In many cases, community meetings and decisions on land are dominated by men, while women, who bear the disproportionate burden of displacement and environmental degradation, are sidelined. Women's perspectives are also frequently devalued or dismissed as emotional, despite being rooted in acute socio-environmental knowledge.

In Bangladesh's Phulbari, women resisted an open-pit coal mining project, enduring police crackdowns while organising mass mobilisations. In India's Narmada Bachao Andolan, Medha Patkar's leadership brought global attention to the devastating impact of dams. Yet, policies designed in



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Too often, women do the groundwork – organising, protesting, feeding, and sustaining movements – without having a seat at the table

response to such movements have often remained blind to the gendered impacts of displacement and rehabilitation.

Legal frameworks in South Asia do exist to protect women's land rights – at least on paper. India's Forest Rights Act (2006) and PESA Act (1996) recognise women's role in Gram Sabhas and grant equal rights to forest resources. Nepal's Joint Land Ownership Policy encourages land co-ownership between spouses. Bangladesh prioritises women in land distribution under its Khas land programme. However, these frameworks are undermined by systemic gaps: land titles often remain in the name of male household heads, with women rarely listed as joint or sole owners. Implementation mechanisms lack gender sensitivity, and Gram Sabhas are frequently held in male-dominated settings. Additionally, many displaced women are not counted as heads of households and are thus excluded from compensation.

There is no comprehensive gender-sensitive land policy at the national level in India. State land redistribution programmes often overlook single women, widows, or women without formal documentation. Despite the 2005 amendment to the Hindu Succession Act granting equal inheritance rights, customary laws and local practices frequently override statutory provisions, particularly in tribal regions. The intersection of formal legal barriers with entrenched patriarchal norms leads to a practical erasure of women from land governance processes.

This invisibility becomes even more glaring in the context of climate change. In India and beyond, extreme heat, water scarcity, and environmental pollution are deepening existing gender inequalities. Women walk farther for water, care for sick family members, and work longer for less – all while being excluded from decisions on climate

resilience, rehabilitation, or mitigation. Yet, most climate adaptation frameworks fail to integrate women's traditional ecological knowledge or ensure their participation in planning.

While FPIC is increasingly cited in international standards and development finance frameworks, its actual implementation rarely includes gendered perspectives. What use is "consultation" if it takes place in spaces where women feel unsafe to speak? What legitimacy does consent hold if it is given without understanding the long-term ecological and social impacts, or if it is granted by male leaders who don't represent women's interests?

Need for structural change

If we are serious about gender justice, climate justice, and inclusive development, this must change. Governments and corporations must ensure that consultations are not only free and prior but informed and inclusive. This means scheduling meetings at times accessible to women, ensuring women-only spaces when necessary, and providing translation and legal aid. It means recognising women as independent landowners, not just as dependents of male household heads.

At the same time, women's leadership within movements must be amplified. Too often, women do the groundwork – organising, protesting, feeding, and sustaining the movement – without having a seat at the table. Movement allies, NGOs, and policymakers must acknowledge and support women's leadership, not just on the streets but in negotiation rooms, legislatures, and compensation boards.

If development is to be democratic, if climate policy is to be just, and if resistance is to be meaningful, the voices of women must not only be heard – they must lead. Their stories are not of victimhood, but of vision. It's time our policies, laws, and institutions reflected that truth.

Key Issues Highlighted:

1. Invisibility in Decision-Making

- Women lead community resistance but are excluded from land and development consultations.
- "Free, Prior and Informed Consent" (FPIC) processes often lack meaningful female participation.
- Consultations are male-dominated, devaluing women's knowledge and concerns as "emotional" or "non-expert."

2. Legal and Institutional Gaps

- Laws like Forest Rights Act (2006) and PESA Act (1996) acknowledge women's rights, but implementation remains flawed.
- Women's names are missing from land titles; they are often not counted as household heads — excluding them from compensation.
- State land redistribution schemes overlook single women, widows, and undocumented women.
- Customary laws frequently override formal legal rights in tribal areas, weakening enforcement of gender equality.

3. Gendered Impact of Climate Change

- Environmental stress worsens women's burdens (longer walks for water, unpaid care work, health issues).
- Climate resilience and adaptation frameworks often fail to incorporate women's traditional ecological knowledge or ensure their participation in planning.
- Structural patriarchy and exclusion continue even in climate action spaces.

4. Undervalued Women's Leadership

- Movements like Narmada Bachao Andolan have seen iconic women leaders, but grassroots female activists are rarely given leadership roles in formal negotiations.
- Women remain the backbone of mobilisation but not the face of policy dialogue.

Conclusion:

- True democratic development and climate justice demand more than token participation. They require a structural shift in how governments, corporations, and civil society acknowledge and integrate women's voices - not just as victims, but as visionaries. Women's inclusion must be institutionalised at every stage: from planning and resistance to ownership and compensation. Their invisibility in policy must end, and their leadership must be empowered for a truly inclusive and resilient future.

UPSC Mains Practice Question

Ques: Despite being at the forefront of resistance movements, women in India remain invisible in development planning. Critically examine. (150 Words)

Page : 08 Editorial Analysis

A fundamental reset to drive manufacturing growth

Global manufacturing and trade is shifting rapidly toward innovation-driven, medium-high- and high-tech products. It is driven by advanced research and development (R&D), technological sophistication, high skills and a complex network of supply chains. In addition, there are the current high tariffs introduced by the United States. It is likely to redefine the manufacturing sector. Irrespective of whether there are tariffs or not, the fundamentals need to be set right. This demands policies that address challenges squarely.

India has a challenge at hand. Realising the criticality of manufacturing in the economy, the country has been making consistent efforts since the economic reforms in 1991 together with renewed efforts using flagship programmes such as the National Manufacturing Competitiveness Programme (NMCP) in 2005 and Make in India in 2014. Multiple initiatives have provided impetus to the electronics, pharmaceuticals and automobile sectors.

A close examination of basic indicators such as per capita value added in manufacturing and productivity provide useful pointers. For India, in 2023, the per capita value added has been \$0.32 K (K: 1000) and productivity stands at \$8.9 K, while the same figures are \$2 K and \$32 K, respectively, for the world average, which are significantly high in comparison, as in World Bank data on manufacturing. The total value added for India stands at \$461 billion, while that for China is \$4,658 billion and the U.S. is \$2,497 billion. On productivity linked to R&D and innovation, developed economies lead significantly (\$159 K for the U.S., \$103 K for Germany); Asian countries such as Taiwan (\$79 K), Malaysia (\$36 K), and China (\$21 K) have moved ahead. Thus, it requires raising per capita value addition to expand and focus on enhancing productivity to be competitive.

New approach to technical education

The world over, manufacturing has leveraged R&D, skill development, and progressive university education. In India, engineering educational institutions have played an important



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With global events likely to redefine the manufacturing sector, the focus must be on technical education, core engineering and innovation

role. Still, in response to emerging needs, there is a need to institute changes to advance innovation. There is a need to look at basic features such as how students are selected for admission, which laboratories and workshops are set up in departments, and which skills for medium- and high-tech manufacturing processes are imparted.

It should begin with the entrance examination. There is a need to move beyond the notion of how tough an entrance examination is. It should encourage interest in fundamental knowledge, creativity and problem-solving skills. During graduation, an over-reliance on heavy academic inputs, a culture of notes, and a focus on the 10-point grade take up most of the time and the energy of students, which should be also spent on creative problem solving. At the end of graduation, they are good at solving problems quickly that have defined contours or proven concepts. But there is also the need for an ability to visualise bigger engineering problems and undertake innovation, which demand higher-order thinking and research skills. The focus should be on the application of science and technology in solving industry problems. There should be more weightage (50%) given to practical work. This demands the development of advanced laboratories and workshops, which include tool rooms to impart skills for different manufacturing processes and product design and development. Assembly lines for select products should be set up for R&D.

Building core engineering

Semiconductor, information technology (IT), and artificial intelligence (AI) are of strategic importance. These are needed on the top of engineering systems. However, let us not get bogged down with AI and IT. These are imperative, but engineering is much bigger. Core engineering is a must. We need strong engineering skills in core streams such as civil, mechanical, automobile, production, electrical, electronics, chemical, metallurgy, textiles, and biotechnology.

There is a need in the country to have robust

engineering units to build equipment and machinery first and then a focus on technical and management capabilities to develop a variety of products, infrastructure, and transportation systems at a much higher speed for different terrain - the plains, mountains, deserts, and oceans. It will necessitate big engineering and R&D infrastructure with a sophisticated supply chain.

Ecosystem for innovation

The success of the Silicon Valley in the U.S. is attributed to the innovation ecosystem, marked by high-skilled manpower and R&D infrastructure. Many East Asian countries have benefited from policies for the creation of an innovation system and industrial infrastructure. If one looks at the success of startups in the country, it is due to the existing ecosystem, mainly in the service sector. Similarly, an industrial ecosystem needs to be created for manufacturing, which will need more capital and entail a multi-pronged systemic approach.

State-specific manufacturing parks should be set up with state-of-the-art facilities to plug and play, or quick ways to set up new units. For developing prototypes, in-house capabilities should be created within parks. The facilities for design software, measurement instruments, performance testing and product certification should be provided. Engineering institutes should focus on enhancing R&D and aligning the curriculum with skill development and innovation. Manufacturing startups should be encouraged around engineering infrastructure and labs.

To transform manufacturing, the strategy should include, first, developing advanced research labs and, second, building industrial infrastructure. This will call for raising R&D expenditure from current 0.65% of GDP to 2%, besides additional expenditure of 1% of GDP for industrial infrastructure. Finally, it necessitates a sound policy system to design innovative policies in an evolving global environment.

The views expressed are personal

Paper 03: Indian Economy

UPSC Mains Practice Question: India's manufacturing sector needs a structural reset rather than isolated reforms." Examine this statement in the context of global manufacturing trends and domestic challenges. (250 words)

Context :

India is at a critical juncture in its manufacturing journey. Despite multiple policy interventions, the sector lags behind global standards in terms of per capita value addition, productivity, and technological innovation. In a world moving towards high-tech, innovation-led manufacturing, India needs a structural reset to stay competitive.

Key Issues Highlighted:**1. Manufacturing Gap and Global Comparison**

- India's per capita manufacturing value added is only \$0.32K compared to the global average of \$2K.
- Productivity in India is \$8.9K versus the global average of \$32K.
- Countries like China, Malaysia, and Taiwan have surged ahead through focused R&D investment and industrial strategy.

2. Shortcomings in Technical Education

- Current engineering education overemphasizes academic grades, rote memorization, and standard problem-solving.
- There's limited exposure to real-world manufacturing challenges or innovation processes.
- A shift is needed to foster creativity, interdisciplinary learning, and practical engagement through advanced labs and workshops.

3. Neglect of Core Engineering

- While India emphasizes emerging fields like AI and IT, core engineering disciplines (mechanical, civil, electrical, chemical, textiles, metallurgy) form the foundation of industrial capacity.
- These sectors are essential for developing indigenous infrastructure, transportation, and industrial machinery across diverse geographies.

4. Need for an Innovation Ecosystem in Manufacturing

- India's startup success has largely been in the services sector due to a strong digital ecosystem.
- A similar manufacturing ecosystem with capital support, R&D labs, plug-and-play parks, and rapid prototyping facilities is required.
- Proposals include raising R&D spending to 2% of GDP and an additional 1% of GDP for industrial infrastructure.

5. Policy Imperatives and Strategic Focus

- Manufacturing strategy must shift from a sectoral to a systems-based approach, linking education, industry, and research.
- Design and execution of state-specific industrial parks with rapid setup mechanisms, testing labs, and certification support is essential.
- Universities and engineering colleges must realign curricula with industry needs, applied research, and product development skills.

Conclusion:

- India's path to becoming a manufacturing powerhouse lies not in chasing high-tech labels alone but in rebuilding core engineering capabilities, restructuring technical education, and investing significantly in R&D and infrastructure. With global supply chains realigning and high-tech competition intensifying, India must act with urgency to transform its manufacturing base into a globally competitive, innovation-driven ecosystem.
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