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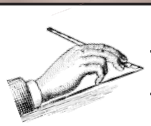

IMPORTANT

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GS 2: POLITY

THE HINDU PAGE : 1

Centre mulls delimitation based on 2011 Census to implement women's quota

Nistula Hebbar
NEW DELHI

The Union government on Monday indicated that it would bring an amendment Bill proposing a delimitation exercise based on the 2011 Census, to ensure the implementation of the Women's Reservation Act, 2023 ahead of the 2029 Lok Sabha election. Under the proposed amendments, the number of Lok Sabha seats will increase from 543 to 816, with 273 seats reserved for women. The amendments could be brought in the ongoing Budget Session or in a Special Session called for the purpose.

Though the draft of the amendments are yet to be circulated, it is understood by sources that care would be taken so that the existing proportion of seats will be maintained for all States, amid concerns that States that had showed success in population programmes would lose out on representation vis a vis more populous States. Southern States had in particular expressed this concern. Overall, each State is likely to see a 50% rise in seats, but the pro rata basis would be maintained.

As per Article 82 of the Constitution, the next delimitation exercise was to be done based on the first Census after 2026, but these amendments could mean that the 2011 Census data will be applied and the remaking of constituencies can proceed without the current Census being concluded. The proposals may include the expansion of State Assemblies as well.

If the Bill is passed, seats in Lok Sabha will increase to 816, out of which 273 will be reserved for women. PTI

Extensive consultations

The Act originally passed in September 2023 envisaged the conduct of the Decadal Census, followed by delimitation of constituencies. The 2021 Decadal Census, which got delayed because of COVID, is beginning next month. As per the current timelines, implementation of the Act could be pushed beyond 2030. However, by bringing in fresh amendments, the government is now seeking to bring forward the implementation of the Act.

Government managers, including Union Home Minister Amit Shah, met with leaders of several Opposition parties on Monday, including the Nationalist Congress Party (SP)'s Supriya Sule, YSR Congress Party's P.V. Midhun Reddy, the All India Majlis-e-Ittehadul Muslimeen's Asaduddin Owaisi and the Shiv Sena (UBT)'s Arvind Sawant, among others. The Trinamool Congress and the Left skipped the meeting. A separate meeting of NDA partners was held later on Monday evening. The government managers had consulted the Congress and the Samajwadi Party earlier. The Congress will hold a meeting of Opposition floor leaders on Tuesday morning to go through the proposals put forward by the government.

"The amendments will require a two-thirds majority of both Houses, which is why extensive consultations are being held with the Opposition," said a government source.

GS 2: HEALTH

THE HINDU PAGE : 8

A curated selection of articles on the Editorial and Opinion pages for World TB Day, March 24

The evolving diagnostic landscape for tuberculosis

Dr. Soumya Swaminathan

is Chairperson of the M.S. Swaminathan Research Foundation and National Science Chair, Anusandhan National Research Foundation (ANRF)

Two weeks ago, in the run-up to World Tuberculosis (TB) Day (which falls on March 24), the World Health Organization (WHO) formally recommended the use of new near point-of-care (NPOC) molecular tests for diagnosing TB. WHO also endorsed the use of tongue swab samples for TB testing and sputum pooling strategies to potentially improve testing efficiencies at scale. These are the latest developments in what has been an unusually remarkable decade for the TB diagnostic landscape, a decade when new technologies have not only emerged but have also been tested, swiftly recommended and utilised to advance global efforts to eliminate TB.

Probably the best example is the rapidly expanding use of portable chest X-ray (CXR), in tandem with artificial intelligence (AI) solutions for TB screening. In India, the National Tuberculosis Elimination Programme (NTEP) has made available hundreds of portable CXR machines that are being utilised for the Pradhan Mantri TB Mukt Bharat Abhiyaan, in an effort to take active TB screening into the community.

Until recently, X-ray access was limited to hospital settings and dependent on the availability of technicians and radiologists to record the X-ray and interpret the findings. Today, active case-finding efforts are in full swing through mobile vans equipped with portable CXR with AI, making it more convenient. While this takes diagnostic services into the community, we must ensure on-the-spot collection of sputum samples for those with any CXR findings to significantly reduce attrition in the diagnostic cascade. Further, those with CXR lesions other than TB (for example, lung cancer) must get the referral and treatment services they need. Systematic microplanning will also help to refine these screening efforts to focus on those who are most vulnerable, particularly in urban and tribal settings.

The use of AI also presents a credible option for opportunistic screening. Tens of thousands of X-rays are performed daily across India in public and private clinics and hospitals for various reasons. Installing AI algorithms in digital X-ray machines that can swiftly identify suspicious lesions, whether for TB or other respiratory disorders, can reduce delays in diagnosis. Building health system capacity, particularly at the service delivery level, to use AI effectively is an important first step.

The diagnostic landscape is shifting

India has long relied on sputum smear microscopy as the primary test for diagnosing TB, despite its low sensitivity and inability to identify drug-resistance. In 2016, India began scaling up molecular testing – starting with the Cartridge-based Nucleic Acid Amplification Test (CBNAAT) and later adopting the indigenous Truenat in 2020. Today, many more Indian products are available, and decentralised access to molecular testing is central to the TB programme.

However, access to up-front molecular testing remains uneven. To achieve 100% testing through NAAT prior to treatment initiation, we must also strengthen sputum collection and transportation mechanisms, especially for the elderly, people with disabilities, and those who live in hard-to-reach areas. To complete the diagnostic cascade swiftly, we must reduce delays in first-line and second-line drug resistance testing and work with the general health system to leverage diagnostic human resource capacity. Minimising test turnaround time will ensure that people with drug-resistant TB are started on the correct treatment regimen at the earliest.

With WHO's endorsement of near point-of-care Nucleic Acid Amplification Tests (nPOC-NAAT), there are now more options for molecular testing at the primary-care level that are not heavily dependent on infrastructure. The use of non-sputum samples, such as tongue swabs, are especially useful for those who find it difficult to produce a good sputum sample, including children.

It is important to acknowledge that none of these tools is a complete solution in itself. What this growing collection of new tests offers is a comprehensive toolbox for TB diagnosis. Diagnostic network optimisation can help identify which tools to best use, individually and in combination, and where they should be located, to establish a diagnostic cascade that is accessible, affordable and person-centered. India must field-test these tools through robust implementation research that matches the pace of innovation, so that solutions can be tested in specific settings and decisions taken for scale-up.

Indian innovators have made a significant contribution, bringing to the market screening and diagnostic tools for global use, and will continue to play an important role in taking them to scale across the country. Over the years, we must examine the evidence to evolve clear diagnostic algorithms that are operationally feasible, involving the use of both AI-enabled CXR and molecular tests for diagnosing TB and identifying any antibiotic resistance.

Research and innovation priorities

Simultaneously, we must streamline innovation assessment and procurement pathways so that all evidence is rigorously reviewed by the Indian Council of Medical Research (ICMR), comprehensive health technology assessments address clinical, social, economic, and ethical concerns, and only recommended tools are procured and distributed in both public and private sectors. Several areas still require research and innovation.

First, as India is scaling up testing for TB infection and access to TB preventive therapy (TPT), we need more cost-effective and easy-to-use biomarkers that can identify and predict those at high risk for disease progression. Studies have shown that 'test and treat' approaches are more likely to convince people with TB infection to start on TPT, if they are at higher risk for disease, particularly in the private sector.

Second, the National TB Survey shows that asymptomatic TB is a serious issue, making symptom-based screening alone insufficient. Increased access to chest X-ray is a step in the right direction but we also need faster, less invasive diagnostic tools that use saliva and other non-sputum samples. More feasibility studies are required to understand utility and performance in real-world settings, particularly among individuals with low bacterial load.

Third, diagnosing TB in children remains challenging. Children cannot produce sputum as they often have low bacillary levels. Testing using stool samples has been tried in some countries and we need more implementation research in this area. We need far greater investment – and urgency – in finding the right new tools for diagnosing TB in children.

Finally, diagnosing extra-pulmonary TB (EP-TB) – which is almost a quarter of India's TB burden – remains difficult, often inaccessible and very expensive. Misdiagnosis as well as delayed diagnosis of EP-TB contributes to both catastrophic costs for families and poor outcomes for individuals. There are some pilots being done globally using AI-enabled portable ultrasound devices alongside molecular testing using new tools; we need India-specific evidence on this, including on cost-effectiveness.

Investing in strengthening the diagnostic landscape can be the greatest return on investment for the public health system. The sooner a person with TB is diagnosed, ideally before they are very ill, the more likely they are to recover fully, with fewer long-term post-treatment morbidities. Early diagnosis can not only improve treatment outcomes and long-term lung health but also dramatically reduce transmission within communities. A careful but swift and streamlined public sector expansion of diagnostics can also significantly reduce out-of-pocket expenditure for families affected by TB. An evidence-based, strong and expanded diagnostic toolbox can be a powerful lever to accelerate pathways to TB elimination in India.

Strengthening the tuberculosis testing infrastructure with an expanded diagnostic toolbox will improve outcomes and support TB elimination efforts

GS 2: INTERNATIONAL RELATIONS

THE HINDU PAGE : 10

Nepal's political shift opens a strategic window for India

The new government in Nepal extends an opportunity to fashion a forward-looking bilateral relationship

K.V. Rajan
Atul K. Thakur

The election results in Nepal have been described as a political earthquake. There has been an emphatic and comprehensive rejection of old leaders and established parties. A younger generation of professionals and tech savvy figures, enjoying the support of Gen Z activists is set to take over.

Challenges ahead

By giving the Rastriya Swatantra Party (RSP) a two thirds majority, Nepali voters have granted Balendra Shah and his government, a powerful mandate for Nepal's complete transformation. It now has a huge responsibility to answer wide-ranging expectations--enough jobs for the youth, reversing the migration for work abroad, stimulate economic growth, and ensure good governance. It needs to be noted, however, that while voters have demonstrated their impatience with the old order and its decades- old insensitivity to their aspirations, this is not a positive vote for a clear-cut new agenda for reform, political or economic, since it was never spelt out and placed before them.

There is a real possibility of frustration and disillusionment that the new government will have to deal with as it settles down. The first warning shots were fired by the caretaker Prime Minister Sushil Karki even before the election, when she reminded the political class that the agitations of September 2025 had erupted because of the frustrations of people insisting on good governance, and a recurrence was inevitable if the situation lapsed into the same old pattern.

Hopefully the people of Nepal will give the new leaders enough time to address the country's problems.

Restructuring India-Nepal ties

For now, Nepal deserves every encouragement possible. India has been quick to extend it, without being loud or patronising. India has not been an issue during the election campaign. Its relationship with Nepal in recent years has focused on the right priorities – development, infrastructure, digital connectivity, energy. It has played its cards well and can continue to capitalise on the existing goodwill as the new leaders in Nepal seek to respond to development needs of the people.

Restructuring of the India-Nepal relationship has been long overdue. For far too long it has been trapped in the shadows of the legacy of British India days. Hopefully India and Nepal will seize every opportunity to fashion a forward-looking relationship based on today's realities and the immense potential for expanding cooperation. For this it will be necessary for policy makers on both sides to discard old mindsets, address long standing irritants with fresh approaches, and prioritise people-centric policies which can be delivered to keep pace with people's expectations and needs.

India also needs to look at the recent developments in Nepal as part of a wider regional phenomenon since happenings in Bangladesh, Sri Lanka and elsewhere also fall into the same pattern–agitations led by frustrated youth incidentally toppling pro-India political figures, demanding faster development and better governance. Labeling new political leaders being thrown up everywhere as anti-India just because of the legacies of the past does not seem justified, as seen from the pragmatic readiness shown in Bangladesh and Sri Lanka to cooperate with India, by parties and leaders once seen as unfriendly. Nepal could be a good partner for India in the evolving geopolitical scenario, if both countries try seriously to fashion a clear cut sub-regional strategy for rapid growth.

(K.V. Rajan is former Indian Ambassador to Nepal and Atul K. Thakur is a policy professional. They are the authors of 'Kathmandu Chronicle: Reclaiming India-Nepal Relations'. Views are personal.)

THE GIST

- The people of Nepal have granted Balendra Shah and the RSP a powerful mandate for Nepal's complete transformation. The government now faces the challenge of addressing the issues of unemployment and providing good governance
- India has been quick to extend encouragemnet to the new leadership. Hopefully India and Nepal will seize every opportunity to fashion a forward- looking relationship based on today's realities

GS 3: SCIENCE AND TECHNOLOGY

INDIAN EXPRESS PAGE : 4

• NO IMMEDIATE CRISIS, SAY EXPERTS, BUT SOME LABS BEGINNING TO FEEL THE PRESSURE

War in Gulf raises concern over helium supplies, critical for MRI machines

Ankita Upadhyay
New Delhi, March 23

THE DISRUPTION in the global supply of helium because of the severe restrictions on trade through the Strait of Hormuz has triggered concern over the cost of magnetic resonance imaging (MRI) scans and the installation of MRI machines in India.

Industry experts said the situation has not yet escalated into a shortage of helium, but supply disruptions, especially from Qatar, which supplies about a third of the world's helium exports, have driven up prices significantly.

"Prices are now almost double what they were before the war started," an industry expert said, attributing the spike to a supply-demand imbalance rather than complete unavailability. Helium, a colourless, odourless, gas, is a non-renewable resource that is rare on Earth. Commercially, helium is produced by extracting it from natural gas by a process of cryogenic distillation. Qatar is the world's third largest exporter of natural gas after the United States and Russia.

Helium is critical for operating MRI machines. Liquid helium is used to cool the intensely powerful superconducting magnets that are at the heart of MRI machines. The superconducting coils work at cryogenic temperatures, and helium, which is chemically inert and has the lowest boiling point of any element (minus 269 degrees Celsius), is the only practical coolant for these machines.

Experts said the extent of the disruption depends significantly on the type of MRI systems that are involved.

Jitesh Mathur, Chief Revenue Officer, MedikaBazar, said MRI systems can be of the "helium-free", "zero boil-off", and "non-zero boil-off" types.

"While helium-free systems (which often use less than 10 litres of helium) are immune to supply disruptions, zero boil-off systems still require limited refilling of around 100-150 litres annually, and larger volumes during installation or emergencies," Mathur said.

Helium is necessary to cool the superconducting magnets that are at the heart of MRI machines. EXPRESS ARCHIVE

"The older, non-zero boil-off systems are the most vulnerable, which may consume up to 600 litres of helium each year," he said.

According to Mathur, the financial burden has risen sharply for the labs that have older MRI systems. Many facilities are delaying non-essential refilling, or postponing new installations in the hope that prices would stabilize soon, officials of machine-manufacturing companies said.

A senior official of such a company said each MRI machine may need up to 1,500 litres of helium during installation, and periodic refilling to maintain the stability of the magnet. If helium levels fall below a critical threshold – typically around 40% – the functioning of the magnet can be jeopardised.

If the Strait of Hormuz isn't opened soon and supply chains don't begin to normalise, wider consequences could follow, experts said: increased costs for patients, delays in MRI installations, and potential shutdowns of machines that cannot be refuelled in time. According to this official, of the 5,000-odd MRI machines in the country, only about 100-150 are fully "helium-free". "Roughly 3,500 machines are of zero boil-off technology, requiring smaller quantities of helium for maintenance. Another 1,000 are older, non-zero boil-off systems with significantly higher annual consumption," the official said.

Around 250 new MRI machines are installed every year in the country, which, due to the initial helium requirement of up to 1,500 litres per machine, adds up to a substantial annual demand for the element, the official said.

That said, there was no reason for immediate panic, experts said. Dr Harsh Mahajan, founder of Mahajan Imaging, said that modern MRI systems are designed to minimise helium loss.

"If three years ago the helium in my machine was at 80% level, today it will still be at the 80% level," he said, underlining the efficiency of zero boil-off technology. "There is no cause for alarm."

Mathur said: "As of now, there is no shortage, especially for facilities that are using advanced systems. However, new installations could face delays due to the need for large initial helium volumes."

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GS 3: ENERGY

INDIAN EXPRESS PAGE : 13

• THE CONCEPT OF DEDICATED STRATEGIC RESERVES WAS FIRST MOOTED IN 1973, AFTER THE FIRST OIL CRISIS

Of India's 5.33 mn tonne of strategic oil reserve capacity, 36% is empty

Sukalp Sharma
New Delhi, March 23

INDIA'S STRATEGIC petroleum reserves (SPRs), which have a capacity to store 5.33 million tonnes (mt) of crude oil, are currently holding 3.37 mt of oil, or just about two-thirds of their total storage capacity, the Ministry of Petroleum and Natural Gas said in the Rajya Sabha on Monday (March 23).

The SPRs — spread across three locations in Andhra Pradesh and Karnataka — are meant to act as a buffer for short-term supply shocks and have been in focus in view of the West Asian conflict, which has disrupted energy flows to India. At full capacity, the three SPRs cover around 9.5 days of India's crude oil supplies.

"Quantity of the crude available in the caverns varies depending on market conditions. Currently, ISPRL (Indian Strategic Petroleum Reserve) has around 3.372 mmt (million tonnes) of crude stock available which is around 64% of the total storage capacity," of State for Petroleum and Natural Gas Suresh Gopi said in a written response in the Rajya Sabha. "The actual reserve is a dynamic number depending on the stocks and actual consumption, both of which are not static," Gopi added.

What are strategic petroleum reserves?

The concept of dedicated strategic reserves was first mooted in 1973, after the first oil crisis. Western strategic reserves have been tapped during the first Gulf War (1991), after Hurricane Katrina (2005), and in 2022 after a surge in oil prices following Russia's invasion of Ukraine.

India is the world's third-largest consumer of crude oil and depends on imports to meet over 88% of its requirement. WEBSITE PHOTO

International Energy Agency (IEA) members have now decided to release 400 million barrels of oil from their emergency in view of the current supply disruption and oil price surge caused by the West Asia war. Countries such as the US, China, and Japan maintain massive strategic petroleum reserves.

In India, ISPRL is a special purpose vehicle floated as a wholly-owned subsidiary of the Oil Industry Development Board for building and managing the strategic crude storage. Currently, it has three underground caverns at Visakhapatnam (1.33 mt), Mangaluru (1.5 mt), and Padur (2.5 mt). In July 2021, the Centre had approved the establishment of two more commercial-cum-strategic petroleum reserves with a cumulative storage capacity of 6.5 mt to 4 mt in Odisha's Chandikhol and another 2.5 mt in Karnataka's Padur. Besides these, there were plans to have reserves in places like Bikaner and Rajkot, which would have raised the total SPR capacity by another 6 mt. Decisions on these reserves are yet to be taken.

India is the world's third-largest consumer of crude oil and depends on imports to meet over 88% of its requirement. The IEA recommends countries to hold oil stocks equivalent to at least 90 days of their net oil imports. IEA members are obligated to maintain these levels of reserves; India is not its full-time member but an associate member. This 90-day reserve holding can include strategic reserves, as well as commercial inventories.

As per Gopi, the current total national capacity to store crude oil and petroleum products is 74 days, including commercial stocks with refiners. It is still lower than what the IEA recommends.

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