BAJIRAO IAS ACADEMY

THE HINDU ANALYSIS

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CASTE CENSUS

The Air Quality Puzzle

THE AIR QUALITY PUZZLE

There is a piece missing. It must be informed by principles of atmanirbharta

GUFRAN BEIG AND SHAILESH NAYAK

THE CENTRE'S MAKE in India initiative has boosted the morale of the country's youth. From space technologies and the Moon Mission to Covid-19 vaccines and Vande Bharat trains, the country has proved its mettle. However, when it comes to improving air quality and mitigating the health impacts of pollution, we lag behind. Every year, reports rank multiple Indian cities among the world's most polluted. These rankings are often produced by foreign entities under foreign-funded projects. Air pollution remains one of India's most pressing challenges, yet we have not fully grasped its complexities. Some experts cite a lack of funds, yet pollution control boards frequently return unspent funds.

Industry collaborations with Indian R&D institutions are now being actively promoted — something that was missing in the past. A key example is the Anusandhan National Research Foundation, which signals the government's commitment to strengthening research and innovation with industrial contribution. Yet, the air quality crisis persists.

We often come across headlines about ambitious air quality projects where a small country attracts international funding, ties up with well-known and well-funded Indian institutions and initiates studies on India's air pollution. This raises two related questions: Why are developed countries, with no direct stake in India's air quality, so keen on studying it? Two, why are Indian institutes not leading such research? These concerns become even more pressing in the era of climate justice, and unequal climate sanctions. Recent reports of the shutdown of climate research at key US agencies under the Trump administration have raised worldwide alarm — they expose a critical vulnerability due to the over-dependence on data generated by global agencies for climate and weather forecasting. Many of our own weather, climate and air quality prediction systems rely on these data sets. The disruption is a wake-up call. Why not launch polar-orbiting satellites and gather global data to fulfil our model requirements?

Despite initiatives like Make in India, unspent funds, an abundance of talent, a young workforce, and openness to industry sponsorship, why are we still struggling to achieve true 'atmanirbharta'? Are our resources disproportionately funnelled into a select few institutions? Is there a gap in expertise? A majority of international collaborations or foreign funding is centred around elite institutions. Alarmingly, even some government-funded research institutions seem to be aligning with this foreign-dependent model.

India has a notable history of air quality advancements. We pioneered the National Ambient Air Quality Monitoring Programme in 1984. Delhi's rapid transition to a CNG-based public transport fleet was another landmark. A significant scientific milestone came in 2010, when India developed its first indigenous air quality forecasting system, SAFAR (System of Air Quality and Weather Forecasting and Research), despite resistance from foreign agencies. Despite its success, however, SAFAR remained limited to just four cities.

Some Indian states are now taking commendable steps such as the rapid EV transition. India also has world-class agencies like the Earth System Science Organisation (ESSO) and India Meteorological Department (IMD). A stronger collaboration between ESSO-IMD and the Central Pollution Control Board (CPCB) could set a global benchmark in air quality management and forecasting.

This begs a question: Despite initiatives like Make in India, unspent funds, an abundance of talent, a young workforce, and openness to industry sponsorship, why are we still struggling to achieve true "atmanirbharta"? Are our resources disproportionately funnelled into a select few institutions? Is there a gap in expertise? A majority of international collaborations or foreign funding is centred around elite institutions. Alarmingly, even some government-funded research institutions seem to be aligning with this foreign-dependent model.

The core challenge lies in the absence of an integrated air quality resource framework. A unified platform is needed to foster a science-based information system and a knowledge hub. This would empower decision-makers and the private sector to take informed action. Under the auspices of the office of the Principal Scientific Advisor, the National Institute of Advanced Studies has undertaken a study exploring a new approach of airshed management, combined with finely gridded source emissions. This initiative aims to accelerate pollution control strategies, which could also contribute to the net-zero goal. This led to envisaging the concept of a resource framework, NARFI, designed to act as a catalyst for inter-organisational collaboration, interdisciplinary research and evidence-based decision-making. Now is the time to rethink air quality strategies by scientifically integrating broader airshed factors rather than adopting city-centric approaches. We need to prioritise health-centric measures and food security. That would mean real *atmanirbharta*.

Beig is Chair Professor, NIAS and Founder Director, SAFAR. Nayak is Director, NIAS and Former Secretary Ministry of Earth Sciences

Context

- Concerns over India's over-dependence on foreign-funded air quality research, coupled with recent disruptions in global climate data networks (e.g., under the Trump administration in the US), have reignited the debate on the need for self-reliance (Atmanirbharta) in India's air pollution strategy.

Existing Gaps in India's Air Quality Management

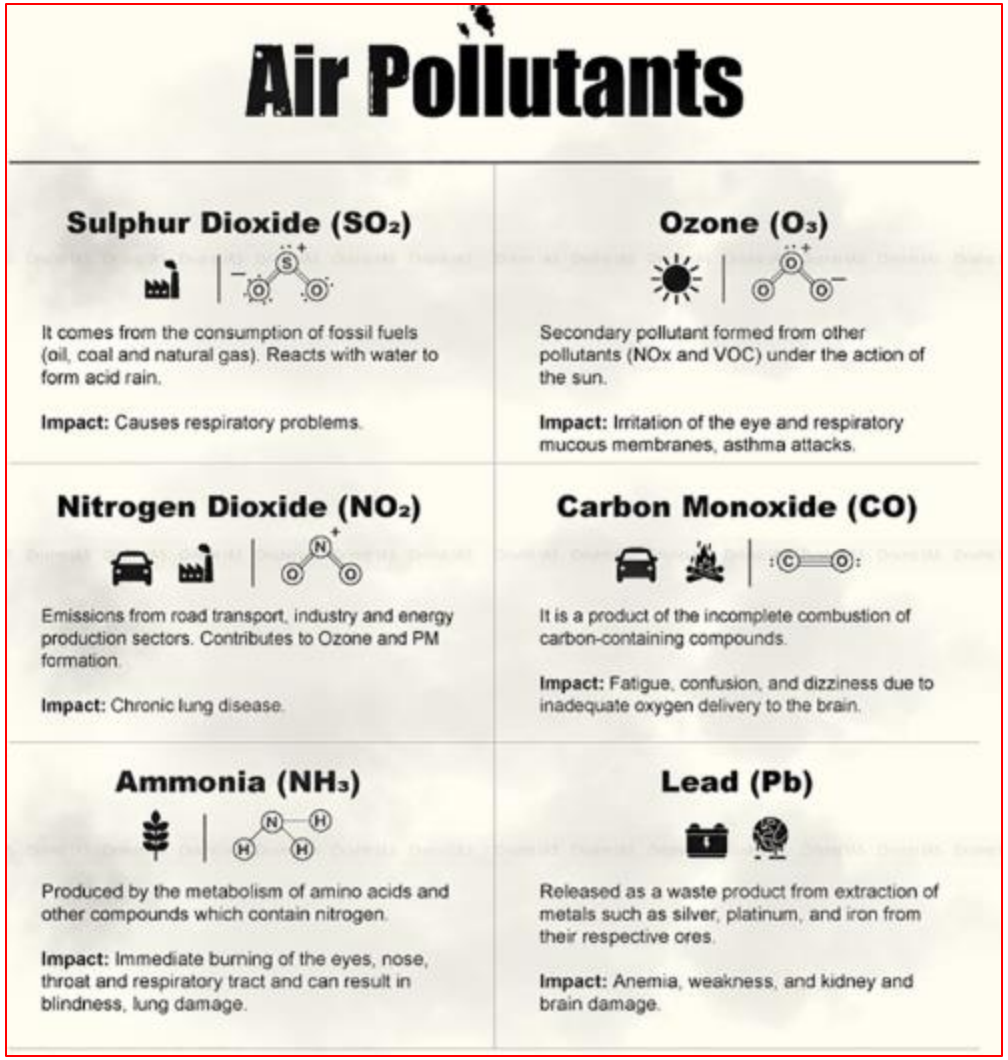
- Overdependence on Foreign Initiatives as Several studies on India's air pollution are funded and led by foreign entities, despite being conducted on Indian soil using Indian talent and infrastructure.
- Underutilisation of Domestic Resources Pollution Control Boards regularly return unspent funds, and many Indian institutions fail to lead despite being well-funded and capable.
- Most foreign collaborations and funding are channelled to elite institutions, marginalising broader national capacity building.

Missed Opportunities Despite Indigenous Capacity

- India's SAFAR system (2010) was a scientific breakthrough but remained confined to just four cities.
- Strong Domestic Institutions and Agencies like IMD and ESSO are world-class, yet coordination with CPCB and state agencies remains inadequate.
- Despite schemes like Make in India, scientific self-reliance in air quality data, monitoring, and forecasting has not materialised at scale.

Way Forward

- Atmanirbhar Air Quality Strategy Creation of Unified Resource Framework such as NARFI (National Air Quality Resource Framework of India) is proposed as a collaborative, evidence-based, and interdisciplinary knowledge platform.
- Moving beyond city-specific models, India must adopt a regionally-integrated airshed management system, using fine-gridded emissions data.
- Health and Food Security Centric Strategy Future policy must integrate air quality with public health and food production goals to build a robust, autonomous environmental strategy.



Why farmers prefer rice, wheat..?

Why farmers prefer rice, wheat

The reason isn't assured MSP procurement alone. It is also because of the two cereal crops receiving priority in public breeding and research support, reflected in steady yield increases over time

HARISH DAMODARAN

FARMERS, LIKE businessmen tend to be, are rational and risk-averse. Everything else being the same, they will choose to grow crops that offer reasonable price as well as yield assurance.

No surprise, then, that rice and wheat are their most preferred crops — more so when they have access to basic irrigation that can supplement natural rainfall.

Between 2015-16 and 2024-25, the area planted under rice has increased from 29.8 to 32.4 lakh hectares (lh) in Punjab, while from 10.5 lh to 47 lh in Telangana. Both wheat and rice acreages in Madhya Pradesh have, likewise, gone up from 59.1 lh to 78.1 lh and from 20.2 lh to 38.7 lh respectively over this 10-year period.

The most obvious explanation for the above expansion is the government's near-guaranteed purchases of the two crops at minimum support prices (MSP).

This kind of government backstop does not exist for other crops, discouraging their cultivation, save in years when market prices are good. Thus, Punjab's cotton area has plunged from 3.4 lh in 2015-16 to one lh in 2024-25. It rose from 17.7 lh in 2015-16 to 23.6 lh in 2020-21 for Telangana, only to fall to 18.1 lh in 2024-25.

In MP, area under chana (chickpea) has declined from 30.2 lh in 2015-16 to 20.1 lh in 2024-25. So has it under soyabean (from 59.1 lh to 57.8 lh), after touching 66.7 lh in 2020-21 when prices went through the roof.

Not prices alone

But it isn't just MSP assurance that makes farmers more inclined to plant rice and wheat.

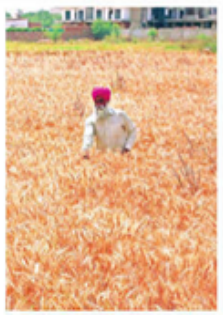
No less significant is yield risk, which is relatively less in the two crops because of their being grown largely under irrigated conditions and also receiving priority with regard to public breeding and research support.

Take wheat. The traditional tall varieties with slender stems yielded only 1-1.5 tonnes of grain per hectare. The new Green Revolution varieties were semi-dwarf with strong stems and didn't "lodge" — bending over and even falling flat — when their panicles or earheads were heavy with well-filled grains. Being non-lodging made them more responsive to fertiliser and water application.

The first generation of Green Revolution wheat varieties such as Kalyan Sona and Sonalika, released in the late-1960s, yielded an average 3.8 tonnes of grain per hectare under normal growing conditions in farmers' fields. Potential yields — the maximum realised under trial conditions with perfect weather, no pest or diseases, and ample supply of nutrients and water — were 4.6 tonnes.

The accompanying chart shows a steady increase in wheat yields, both average and potential, through successive varieties developed even after Kalyan Sona. These were bred for not only higher yields, but also for resistance against rust diseases (caused by fungal pathogens) and climate-smart traits.

The HD-3385 variety released in 2023, for example, yields an average of 6 tonnes per hectare and potential of over 7.3 tonnes. It is, moreover, resistant to all major rusts — yellow (stripe), black (stem) and brown (leaf) — and can be sown early (October 15 to November 2-3) as well as normal time (November 4-25) and late (after November 25). Amenability to early sowing reduces the risk of the crop being exposed to temperature spikes in March at the final grain formation and filling stages.



YIELDS OF GREEN REVOLUTION WHEAT VARIETIES

Variety Name	Release Year	Average Yield	Potential Yield
Kalyan Sona	1969	3.76	4.6
HD-2329	1985	4.84	6.08
PBW-343	1996	4.92	6.1
HD-2967	2011	5.04	6.6
HD-3086	2014	5.43	7.11
HD-3385	2023	5.97	7.34
HD-3386	2024	6.25	7.69

Source: Indian Council of Agricultural Research

The Green Revolution wheat varieties not only had better yield, they were rust-resistant. *Archives*

More grain in less time

In rice, too, yields have risen over time. The traditional tall varieties produced 1-3 tonnes of paddy (rice with husk) per hectare over 160-180 days, from seed sowing to grain harvesting.

IR-8, the first ever semi-dwarf rice variety released in late-1966, yielded 4.5-5 tonnes/hectare over just 130 days. Samba Mahsuri (BPT-5204), released in 1986, gave an average of 4.5 tonnes with a potential yield of 6.5 tonnes.

Earlier this month, the Indian Council of Agricultural Research (ICAR) unveiled a genetically-edited (GE) mutant line of Samba Mahsuri. It has been developed by "editing" a gene coding for an enzyme that suppresses cytokinin levels in rice. Cytokinins are plant hormones that help increase the number of grains per panicle. ICAR scientists have basically used CRISPR-Cas GE technology to cut and modify the DNA sequence of the said 'Gn1a' gene, in order to reduce its expression and promote cytokinin accumulation, leading to higher grain numbers.

The new GE mutant, called Kamala, produces 450-500 grains per panicle, as against 200-250 grains in the parent Samba Mahsuri variety. The result is not only higher average and potential yields of 5.37 tonnes and 9 tonnes per hectare. Kamala also matures in 130 days, 15-20 days earlier than Samba Mahsuri. Lower duration translates into water savings. Kamala also has more root biomass area, which enhances the plant's ability to mobilise available phosphorous and nitrogen in the soil for its growth and development. That, in turn, helps save the use of urea and phosphate fertilisers as well.

ICAR scientists have used CRISPR-Cas technology to similarly "edit" a DST (drought and salt tolerance) gene in another popular rice variety, Cottondora Sannalu (MTU-1010). The DST gene acts as a negative regulator, inhibiting the rice plant's tolerance to abiotic stresses such as heat and salinity. Reducing its expression through editing, then, makes cultivation of Cottondora Sannalu — the GE mutant line of this variety is called Pusa DST Rice 1 — viable even under conditions of water, salinity and alkalinity stress.

Implications for other crops

In short, continuous breeding improvements in wheat and rice — focusing on raising yields, resistance to diseases and pests, resilience to abiotic stresses from drought and salinity to extreme temperatures, and lowering of maturity periods — have increased the attractiveness of growing the two crops. This is on top of the assured MSP procurement and access to irrigation, whether through canals or groundwater, they enjoy.

Other crops haven't received the same extent of agricultural research and development support. Cotton has seen no new breeding breakthroughs after the genetically modified (GM) Bt cotton hybrids commercialised during 2002-06.

Since then, no new GM event (entailing the introduction of genes from unrelated species into host plants) has been approved, be it in cotton, mustard or brinjal.

While yields in most oilseeds, pulses and other field crops have been flat or registered modest increases, this isn't the case with rice and wheat. In rice, there are hybrids today that give up to 10 tonnes/hectare yield within 120-125 days duration. And with direct seeding technology — requiring no nursery sowings, transplantation of seedlings and flooding of fields — there is further saving of water along with labour.

The economics, in terms of yield and price stability, aren't as favourable in other crops. And that's showing in their fluctuation acreages.

Context

- Despite various policy efforts to promote crop diversification, rice and wheat continue to dominate Indian agriculture across regions, including Punjab, Madhya Pradesh, Telangana, and even parts of Eastern India like Uttar Pradesh and Chhattisgarh.

- This pattern is not incidental. It is shaped by a combination of price support, yield reliability, irrigation access, and continuous technological advancements.

Why India opts for rice and wheat?

- In India, agriculture is not just an economic activity but also a high-risk livelihood—subject to unpredictable monsoons, input cost volatility (fertilisers, labour), market price crashes and crop failure due to pests or weather.

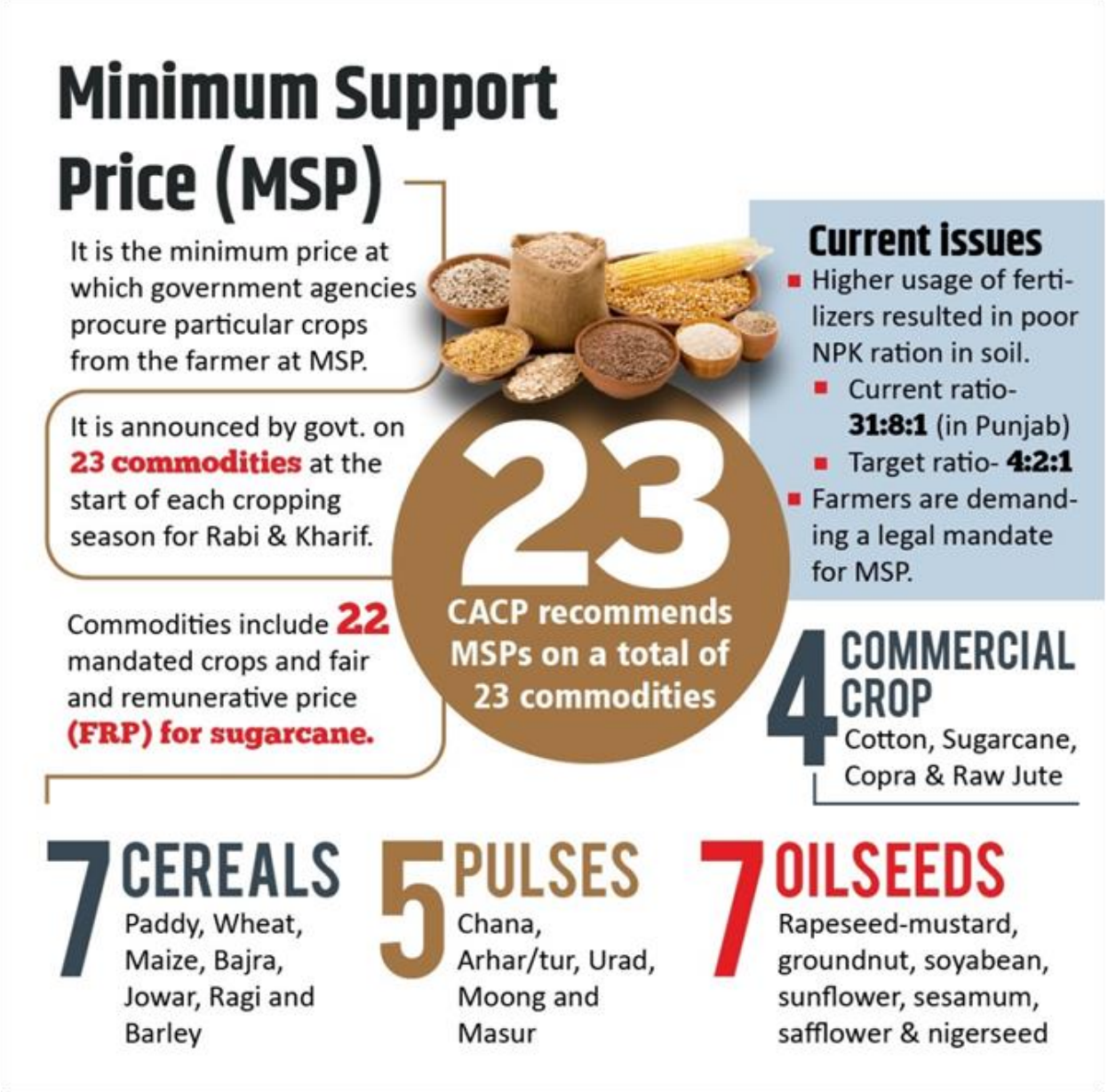
- In such a risky environment, farmers naturally prefer crops that give them assured prices, stable yields, government procurement support, low probability of complete crop loss and this is where rice and wheat fit perfectly.

- Minimum Support Price (MSP) system: The biggest driver behind India's rice and wheat dominance is the MSP system, backed by actual government procurement.

- The Food Corporation of India (FCI) and other agencies procure wheat and rice in bulk. Procurement is almost guaranteed, especially in states like Punjab, Haryana, Madhya Pradesh, and Telangana.

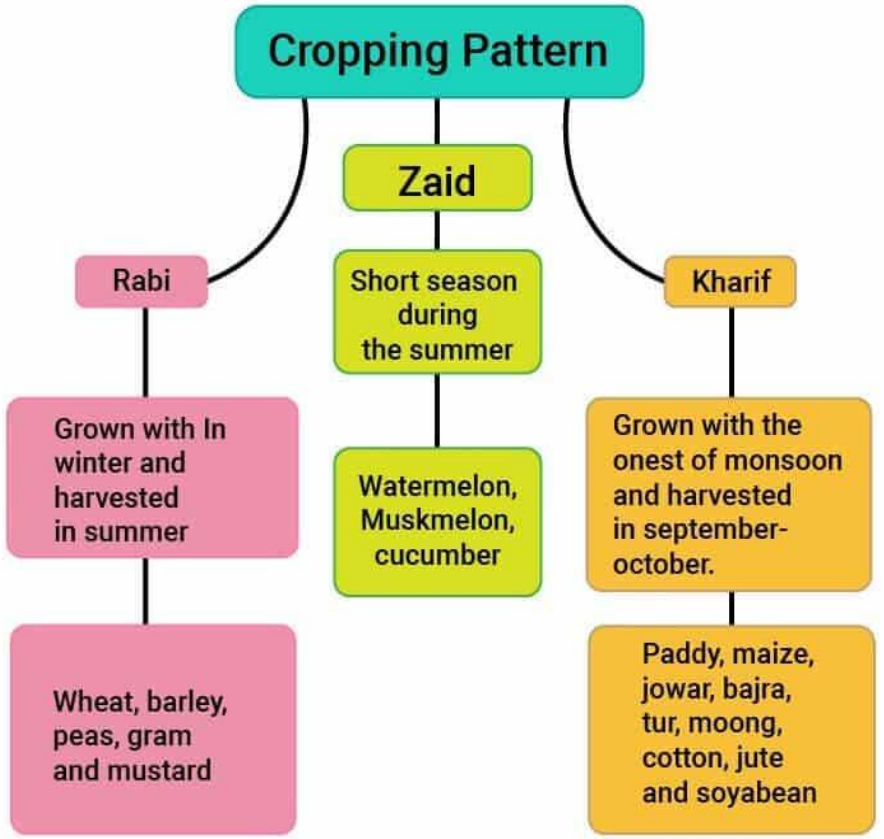
- Even if market prices crash, farmers get the pre-announced MSP, which acts like an insurance cover.

- Irrigation Advantage + Low Yield Risk: Rice and wheat are extensively grown under irrigated conditions, which reduces dependence on rainfall.
- Rice traditionally requires a lot of water, but is supported by canal irrigation in states like Punjab or by groundwater pumping in Telangana.
- Because of this, these two crops have less chance of total failure. They are more fertiliser-responsive and have predictable outcomes.
- R&D Breakthroughs particularly The Green Revolution made India self-sufficient in food grains and its gains have been heavily concentrated in rice and wheat.



What's happening to other crops?

- Crops like cotton have not seen any major breeding breakthroughs after Bt cotton (2002–2006).
- The lack of approval for new GM crops (e.g., in mustard, brinjal, etc.) further limits productivity gains in other sectors.
- This absence of innovation, coupled with weak procurement systems, makes pulses, oilseeds, and millets less economically attractive, despite their nutritional and ecological importance.
- Crops like millets, pulses, or oilseeds may be more suited to India's agro-climate, especially in rainfed areas, but: Their price realisations are unstable.
- They don't enjoy mass procurement or assured markets. They face higher yield risk due to less irrigation and poor research attention.



Caste Census in India

Why India must get the Caste Census right

The Narendra Modi government's decision to include caste enumeration in the next Census is one that is bold, transformative and commendable. Counting caste is not capitulation to identity politics. It is a mirror to the lived realities of millions. It marks a vital step towards evidence-based policymaking to build a more just and inclusive India. A nation that refuses to see itself cannot hope to heal itself.

Post-Independence, India attempted to abolish caste while simultaneously pursuing social justice – a textbook example of policy schizophrenia, as the two goals are fundamentally incompatible. The refusal to count caste in the Census was a corollary of the policy of caste blindness. But the Constitution explicitly mandates the pursuit of social justice through reservations in education, public employment, and electoral constituencies – measures that require precise, disaggregated caste data. Although the Constitution uses the term "class", the Supreme Court of India has repeatedly ruled that caste is a valid, and often necessary, proxy for identifying backwardness and has insisted on detailed caste-wise data to uphold reservation policies.

In his 1955 essay, 'Thoughts on Linguistic States', Dr. B.R. Ambedkar denounced the omission of caste tables from the 1951 Census as an act of "petty intelligence". Visibility in data is the first step toward meaningful inclusion. Caste data collection across all major social groups is essential not only for administering reservations, but also for equity-driven planning, targeted policymaking, and tracking disparities over time. Not collecting it has rendered many of India's marginalised communities invisible in official statistics. Worse, a narrow elite of upper castes and dominant Other Backward Classes (OBCs) has entrenched its grip over wealth, opportunity and power behind the smokescreen of caste anonymity. In hindsight, this ranks among India's gravest policy failures.

A legal and administrative necessity

Since 1951, the Census has enumerated Scheduled Castes (SCs) and Scheduled Tribes (STs) but excluded OBCs, even though all three groups are constitutionally eligible for reservations in education and public employment. The usual justification, that OBCs lack reserved seats in Lok Sabha and State Legislative Assemblies (that SC/ST have) collapsed with the 73rd and 74th Amendments, which mandated OBC reservation (in addition to SC/ST reservation) in electoral constituencies of panchayats and municipalities. Implementing these provisions requires granular, area-wise OBC data. With the introduction of reservations in education and public employment for the Economically Weaker Sections (EWS) among upper castes (2019), a comprehensive enumeration of all castes has now become a legal imperative.

K. Ashok Vardhan Shetty

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Counting caste is a mirror to the lived realities of millions and a vital step toward evidence-based policymaking

India's reservation policy currently operates in an evidence vacuum, leaving it vulnerable to arbitrary demands from powerful caste groups and politically expedient decisions by governments. With reliable caste data, the demands of the Marathas, Patidars, Jats, and others can be assessed transparently and on merit. The limited data we do have reveal deep inequities. According to submissions made by the Government of India to the Justice G. Rohini Commission, just 10 OBC castes cornered 25% of all public jobs and education seats reserved for OBCs, while a quarter of OBC castes secured 97% of the benefits. Shockingly, 38% of OBC castes received only 3% of the benefits, and another 37% got nothing at all.

Hence, caste enumeration is also an administrative imperative – to prevent the elite capture, enable rational sub-categorisation within social groups, and allow a more precise definition of the "creamy layer".

Collection of caste data must go beyond the decennial Census. All periodic government surveys should enumerate OBCs and upper castes alongside SCs and STs. The era of partial counting must end.

Learning from failure and success

In 2010, Parliament unanimously resolved to count caste in the 2011 Census. The 1931 Census had recorded 4,147 castes (excluding the then-called Depressed Classes). The Anthropological Survey of India has identified 6,325 castes. But the Socio-Economic and Caste Census (SECC) of 2011, conducted by the United Progressive Alliance-II government, was a debacle. It produced a ludicrous figure of 46 lakh castes and was never released.

What went wrong? First, the SECC 2011 was not conducted under the Census Act, 1948 and lacked legal authority. Second, it was conducted through the Union Ministries of Rural Development and Urban Development with no expertise for handling a complex socio-anthropological survey. Third, its open-ended questions about caste created confusion. Undertrained enumerators conflated castes, aliases, sub-castes, *gotras*, clan names, surnames and broader caste groups. The result was a chaotic, unusable data set. Was it sabotage or incompetence? Either way, a historic opportunity was squandered.

In contrast, in Bihar's caste survey, enumerators were given a vetted list of 214 castes specific to the State, with a 215th option for "Other Castes". The survey was well-planned, well-executed, and showed that a credible caste count is entirely feasible.

Blueprint for a successful Caste Census

To avoid repeating the SECC 2011 fiasco, here is what must be done.

First, legal backing. Amend the Census Act, 1948 to explicitly mandate caste enumeration and insulate the process from shifting political agendas.

Second, the right institution. Entrust the exercise solely to the Office of the Registrar General and Census Commissioner of India, and not Ministries that lack domain expertise.

Third, a standardised questionnaire. Use closed-option questions with dropdown menus covering sub-caste, caste (including aliases), broader caste group, and caste-linked surname (optional). Having 'caste' alone as an option can lead to errors since some caste names such as Rao, Naik, Singh or Bhandari span multiple communities. Assign unique digital codes to avoid duplication and semantic confusion (e.g., grouping "Iyer" and "Aiyar" under one code).

Fourth, State-specific caste lists. Develop draft lists in consultation with State governments, sociologists, and community leaders. Publish them online and invite public feedback before finalisation. Use a similar participatory approach for questionnaire design.

Fifth, enumerator training. Conduct region-specific training sessions with mock examples, clear dos and don'ts, and guidance on local caste nuances.

Sixth, digital tools. Equip enumerators with handheld devices that are preloaded with validated caste lists. Restrict data entry to predefined options to minimise human error.

Seventh, representative staffing. To ensure data integrity, deploy enumerators from diverse communities and in areas where they have no conflict of interest.

Eighth, independent oversight. Establish district-level committees to audit samples and monitor data integrity.

Ninth, pilot testing. Run trials in diverse States such as Tamil Nadu, Gujarat, Uttar Pradesh and Assam to refine methodology before nationwide rollout.

In every Census since 1951, the Government has successfully enumerated nearly 2,000 castes and tribes under the SC/ST categories. Counting the remaining 4,000-odd OBCs and upper castes (most of them State-specific) is not only doable but also long overdue. The delayed 2021 Census offers a rare chance to finally close this data gap. The time for denial and delay is over. The time to get the Caste Census right is now.

Context

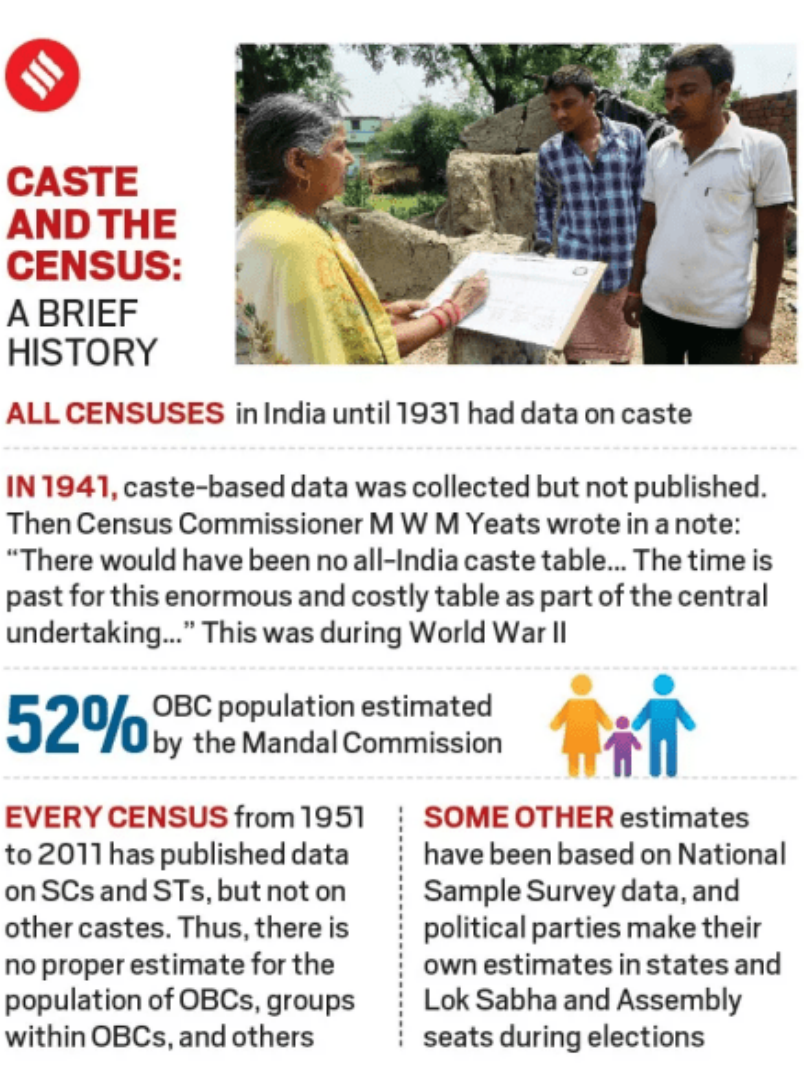
- The Government of India has announced that the upcoming Census will include caste enumeration—a major shift in policy that could transform social justice planning and reservation systems.
- This decision follows long-standing debates on the need for comprehensive caste data, especially after the failure of the 2011 Socio-Economic and Caste Census (SECC) and the success of Bihar's caste survey.

Constitutional Mandate and Policy Contradictions

- While the Constitution mandates social justice through reservations in education, employment, and elections, the Indian state has historically avoided counting caste (except SC/ST), leading to a contradiction in policy intent and execution.

- The Supreme Court has consistently ruled that caste is a valid proxy for identifying backwardness and has demanded granular data to justify reservations, reinforcing the need for caste-based enumeration.

- R. Ambedkar criticized the exclusion of caste tables from the 1951 Census, calling it an act of "petty intelligence," emphasizing that visibility in data is foundational to meaningful inclusion and equity-driven planning.

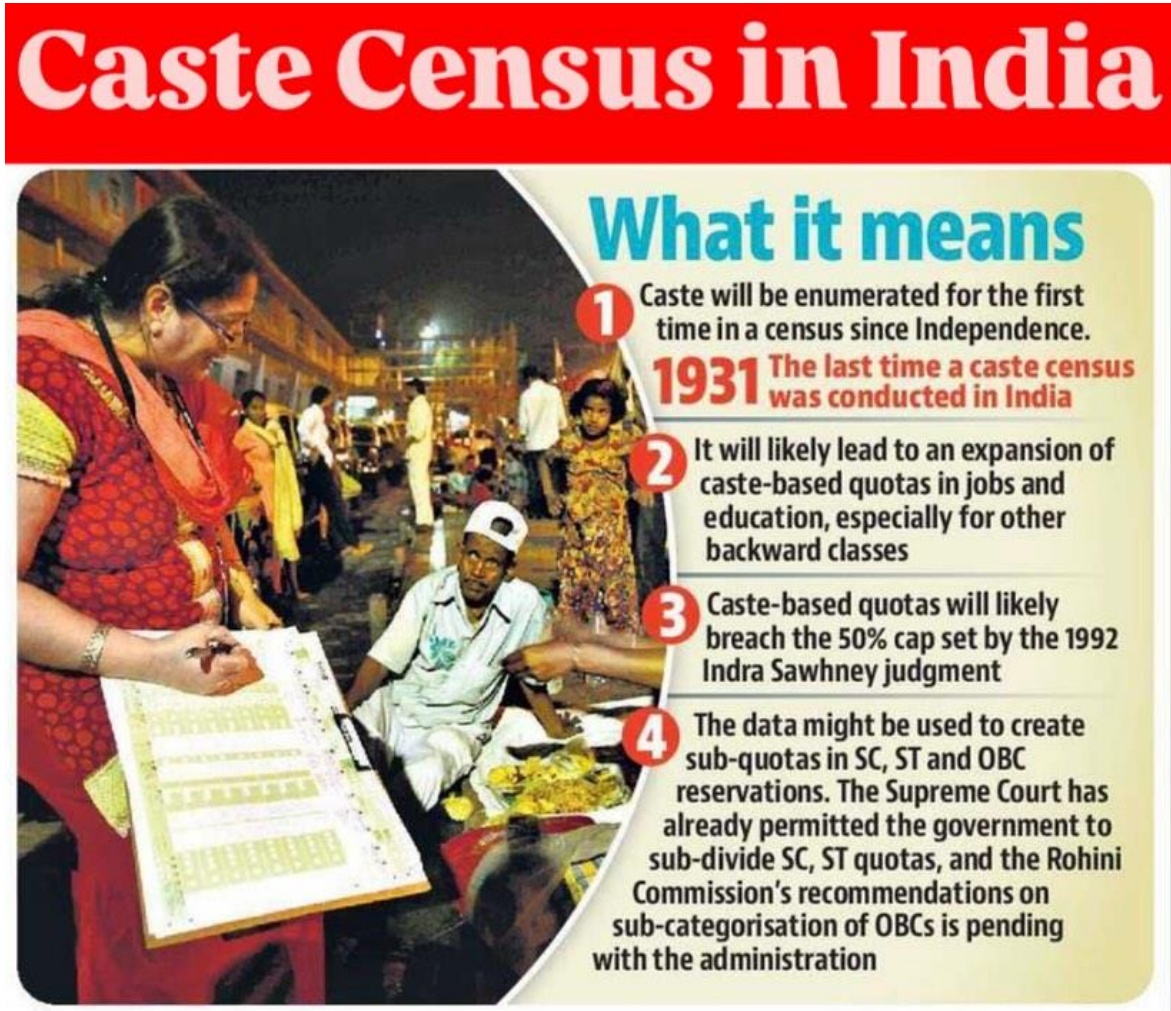


Administrative Necessity and Data Inequity

- Although OBCs are constitutionally entitled to reservations (especially post 73rd and 74th Amendments), the absence of their data in the decennial Census obstructs rational implementation, especially in local governance .

- Current reservation policy lacks reliable caste data, leading to overrepresentation by dominant OBCs—10 OBC castes enjoy 25% of reservations while 38% get only 3%, and 37% get nothing, according to data presented to the Justice G. Rohini Commission.

- Limiting caste data to once-a-decade surveys is insufficient; all government surveys should include disaggregated caste data across all groups to enable ongoing social auditing and policy recalibration.

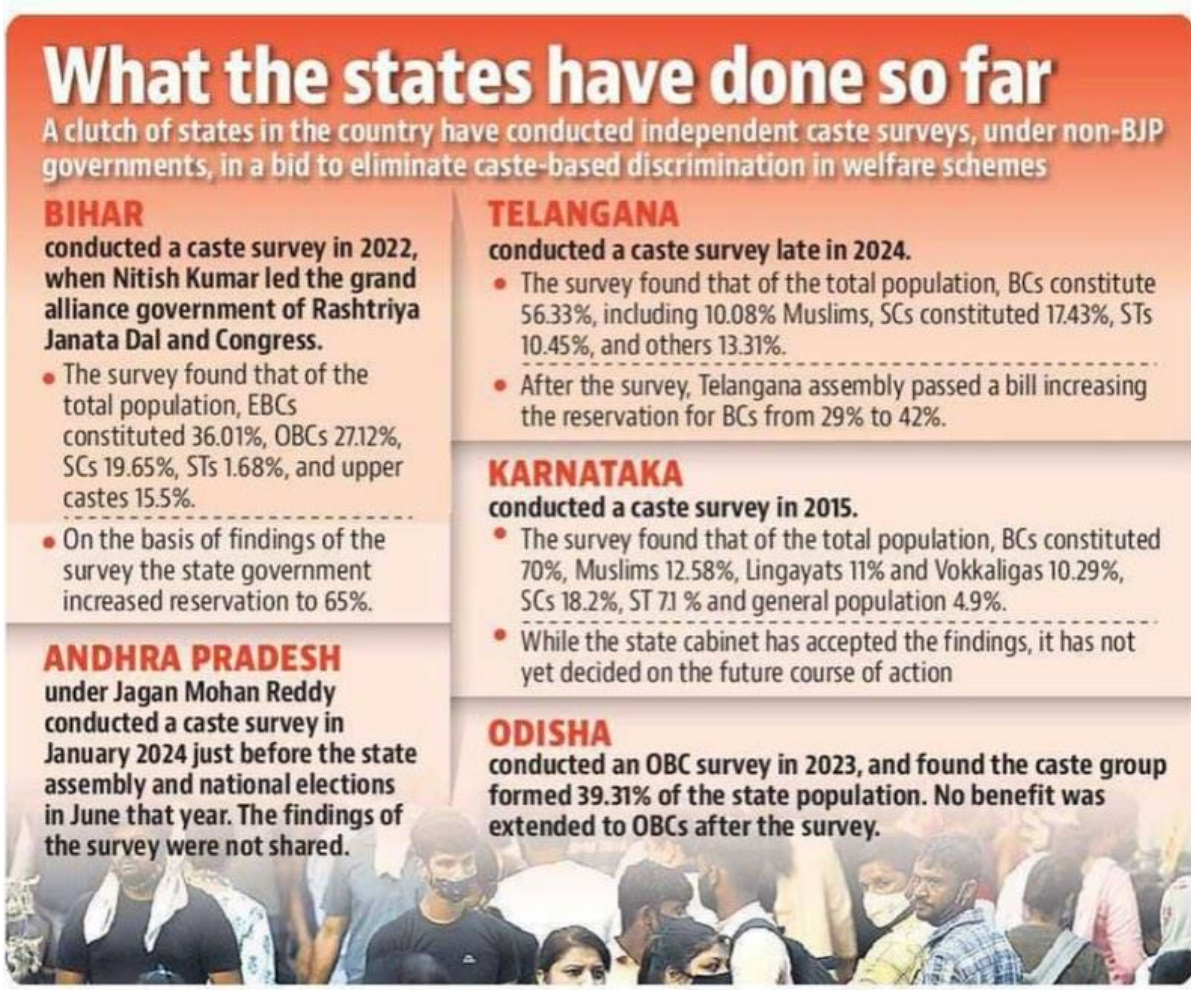


Learning from Past Failures and Future Roadmap

- The SECC-2011 failed due to lack of legal mandate, poor institutional coordination, and unstructured data collection methods, producing an unusable dataset claiming 46 lakh castes, which was never officially released.

- Bihar's approach—using a pre-vetted list of 214 State-specific castes and structured enumeration—demonstrated that a credible caste count is achievable with proper planning and methodology.

- The article outlines nine actionable steps, including amending the Census Act, empowering the Census Commissioner, using digital tools, closed-option questionnaires, State-specific caste lists, rigorous training, and piloting in key States before rollout.



Total Fertility Rate in India

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.

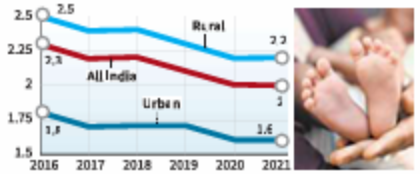
Bihar reported the highest TFR at 3.0, while Delhi and West Bengal reported the lowest of 1.4.

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 population 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.

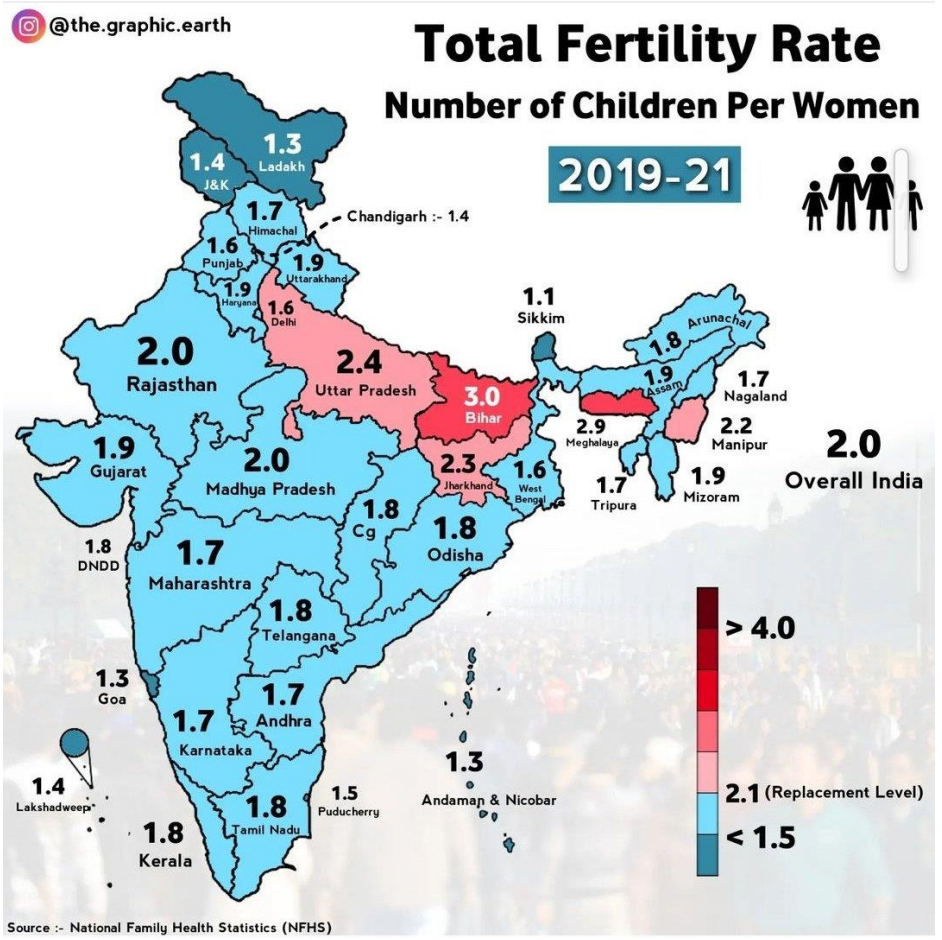
"It is noteworthy that the replacement level TFR, viz. 2.1, has been attained at the national level, along with Delhi 1.4, West Bengal 1.4, Tamil Nadu 1.5, Andhra Pradesh 1.5, Jammu and Kashmir 1.5, Kerala 1.5, Maharashtra 1.5, Punjab 1.5, Himachal Pradesh 1.6, Telangana 1.6, Karnataka 1.6, Odisha 1.8,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

Context

- New data from the Sample Registration System (SRS) 2021 has revealed that fertility rates in South India have fallen more sharply than previously estimated.
- All five southern states—Tamil Nadu, Kerala, Andhra Pradesh, Telangana, and Karnataka—now report Total Fertility Rates (TFRs) between 1.5 and 1.6, which is significantly below the replacement level of 2.1.

What is Total Fertility Rate (TFR)?

- TFR is the average number of children a woman is expected to have during her lifetime, based on current age-specific fertility rates.
- The replacement level fertility is about 2.1 children per woman.
- This ensures that each generation can replace itself without growing or shrinking in size.
- A TFR below 2.1 means the population will eventually start declining, unless offset by immigration or other demographic factors.
- This measure is not just about births, but about maintaining the balance between generations—crucial for economic stability and a sustainable society.



Thank you

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