

The Rice Bowl with a Gap: Foodgrain Status and Demand in North East India

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ABSTRACT

North East India produced 7.88 million tonnes of cereals in 2024-25, just 2.4% of the national harvest against a 3.8% share of population or about 407 g per person daily versus 645 g nationally. Using NEDFi/DA&FW data, 2025 population projections and two consumption scenarios (250 g and 400 g per day), the article estimates state-wise demand gaps. Mizoram, Meghalaya and Sikkim fall short under both while Tripura, Nagaland and Arunachal Pradesh show surpluses whereas Assam and Manipur depend on diet assumptions. Falling cereal area and low yields are the concern. Recommendations include closing yield gaps, using rabi and summer crops, dietary diversification and stronger logistics.

INTRODUCTION:

The North East (NE) holds about 8 percent of India's land but only around 4 percent of its people and rice alone takes roughly 89 percent of its foodgrain area and supplies 92 percent of output (NEDFi, 2026). In 2024-25 the eight states produced 7.88 million tonnes (Mt) of cereals from 3.44

million ha, 1.8 percent more than in 2019-20 even though area shrank by 3.1 percent (Singh, 2025). That is 2.4 percent of India's 332 Mt cereal harvest against a 3.8 percent share of the 2025 population (NEDFi, 2026 and Giribabu, 2013). In per-person terms the region produces

about 407 g a day, compared with roughly 645 g nationally.

Productivity explains much of the shortfall. Only Tripura (3,110 kg/ha) beats the national yield of 3,023 kg/ha, Assam averages 2,325 kg/ha and Arunachal Pradesh, Mizoram, Nagaland and Sikkim hover near 1,700 kg/ha (Singh 2025). Hills cover over 70 percent of the NE and jhum (shifting) cultivation persists on fragile slopes which caps both yield and area. The analysis of data in the article is based on NEDFi Databank / Department of Agriculture and Farmers' Welfare (DA&FW) cereal statistics, 2019-20 to 2025-26.

State-wise status of cereal production

Assam is the region's anchor, producing 5.40 Mt or 68 percent of NE cereals for 69 percent of its people (Singh 2025 and Giribabu 2013). Output fell 11.4 percent in 2024-25 after peaking at 6.09 Mt in 2023-24 and the 1st Advance Estimate for 2025-26 shows kharif output of 4.05 Mt against 3.88 Mt a year earlier (Singh 2025). Season-wise figures shift sharply between 2021-22 and 2022-23 (rabi falls, summer rice appears), which looks like a reclassification, so season splits should be read with care.

Tripura has the best yield (3,110 kg/ha) but the steepest area loss among the large producers, down 15.3 percent since 2019-20. Nagaland lost 13.1 percent of its cereal area and produced 452.5 thousand tonnes, 12.8 percent less than in 2019-20 with a sharp dip to 223 thousand tonnes in 2021-22. Manipur is the only state with strong growth (+20.3% output, +8.8% area). Arunachal Pradesh rose 5.3 percent on a low yield of 1,688 kg/ha (Singh 2025).

Meghalaya, Sikkim and Mizoram are the weak links. Meghalaya's production slipped 6.3 percent on a flat 131 thousand ha, Sikkim fell 27.2 percent (area down 23.5%) and Mizoram collapsed 36.9 percent to 44.8 thousand tonnes

as cereal area shrank 38.2 percent, the steepest decline in the region. Some of Mizoram's fall may reflect changes in how shifting-cultivation area is recorded, so it deserves verification.

Table 1. Area, production and yield of cereals, NE states

State	Area 2024-25 (000 ha)	Production 2019-20 (000 t)	Production 2024-25 (000 t)	Change (%)	Yield 2024-25 (kg/ha)
Arunachal Pradesh	223.9	359.0	378.0	+5.3%	1,688
Assam	2,320.7	5,130.3	5,395.6	+5.2%	2,325
Manipur	195.9	396.2	476.6	+20.3%	2,432
Meghalaya	130.6	348.8	326.7	-6.3%	2,502
Mizoram	25.7	71.0	44.8	-36.9%	1,745
Nagaland	261.0	518.6	452.5	-12.8%	1,734
Sikkim	38.2	87.1	63.4	-27.2%	1,660
Tripura	240.1	834.7	746.8	-10.5%	3,110
North East (8 states)	3,436.1	7,745.7	7,884.4	+1.8%	2,295
All India	—	274,479	332,050	+21.0%	3,023

(Source: NEDFi Databank 2026) *Cereals = rice, maize, wheat and small millets; pulses are not covered. All-India production is in 000 tonnes.*

How large is the demand gap?

Official state-wise consumption of cereals in the NE is not published in a form that matches production data, so the requirement was estimated: 2025 population (Giribabu 2013) multiplied by a per-person cereal norm, plus a 10 percent allowance for seed, feed and wastage (our assumption). Scenario A uses the ICMR-NIN "My Plate for the Day" benchmark of about 250 g of cereals and millets a day for a 2,000-kcal diet (NFSA 2013). Scenario B assumes 400 g a day (about 12 kg a month), an illustrative figure for rice-based diets, well above the all-India averages of 9.4 kg (rural) and 8.0 kg (urban) reported by NSS HCES 2023-24 (ICMR-NIN 2023).

Table 2. Estimated cereal requirement and balance, 2024-25 (green = surplus, red = deficit)

State	Population 2025 (m)	Supply (g/person/day)	Need A (000 t)	Balance A, 000 t (%)	Need B (000 t)	Balance B, 000 t (%)
Arunachal Pradesh	1.59	651	160	+218 (+136.9%)	255	+123 (+48.0%)
Assam	36.38	406	3,652	+1,744 (+47.7%)	5,843	-447 (-7.7%)
Manipur	3.28	398	329	+147 (+44.7%)	527	-51 (-9.6%)
Meghalaya	3.41	263	342	-16 (-4.5%)	548	-221 (-40.3%)
Mizoram	1.26	97	127	-82 (-64.6%)	203	-158 (-77.9%)
Nagaland	2.27	545	228	+224 (+98.2%)	365	+87 (+23.9%)
Sikkim	0.70	247	70	-7 (-10.0%)	113	-49 (-43.8%)
Tripura	4.22	485	424	+323 (+76.2%)	678	+69 (+10.1%)
North East	53.12	407	5,332	+2,552 (+47.9%)	8,532	-647 (-7.6%)

Need = population x norm x 365 x 1.10. Balance = 2024-25 production minus need; % is relative to need. Excludes trade, PDS inflows and stocks.

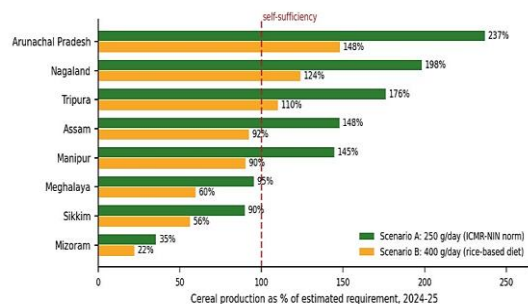


Figure 1. Production as a share of estimated requirement by state (dashed line = self-sufficiency)

Structural deficit: Mizoram, Meghalaya and Sikkim. They fall short in both scenarios, by 65% and 78% in Mizoram, 4.5% and 40% in Meghalaya, and 10% and 44% in Sikkim. Earlier studies reached the same conclusion: five NE states (Assam, Manipur, Meghalaya, Mizoram and Sikkim) were rice-deficit in 2019 (National Commission on Population 2019), and the hill region as a whole is self-sufficient in rice only on paper, with Mizoram, Meghalaya and Sikkim short (ICMR-Nin 2024).

Diet-sensitive: Assam and Manipur. At 250 g a day both show surpluses of about 48% and 45%, but at 400 g Assam is 447 thousand tonnes short and Manipur 51 thousand tonnes. Because Assam holds 68% of the region's

people, its balance decides the regional picture: the NE has a 2.55 Mt surplus under Scenario A and a 0.65 Mt deficit under Scenario B.

Surplus with a warning: Tripura, Nagaland and Arunachal Pradesh. Surpluses hold in both scenarios, but Tripura and Nagaland are losing cereal area, which is eroding their margins (Singh 2025). Surplus in one state also does not reach a deficit neighbour automatically; hilly terrain, thin storage and costly transport keep grain local.

The way forward

- **Close the yield gap.** Raising yields in the 1,700 kg/ha states toward the 3,000 kg/ha national level would do more than any area expansion, since arable land is scarce (Singh 2025 and NEDfi 2026).
- **Use the second and third crop.** Assam's summer-season yield (2,986 kg/ha) and rabi yield (4,908 kg/ha) both exceed its kharif yield (2,084 kg/ha), which points to room for irrigated summer rice and rabi cereals.
- **Stop the area erosion.** Target support (terracing, wet-rice on valley lands, jhum-to-settled transition) at Mizoram, Nagaland, Tripura and Sikkim.
- **Diversify the plate.** ICMR-NIN advises that cereals supply no more than about 45% of energy, with more pulses, vegetables and milk. Millets, maize, pulses and local foods can lower dependence on rice.
- **Back it with logistics and safety nets.** The National Food Security Act, 2013 guarantees 5 kg of subsidised grain per person per month to priority households (Konjenbam et al., 2021); storage and last-mile transport decide whether it fills state gaps.

KEY TAKEAWAYS

Regional balance is diet-dependent: a 2.55 Mt surplus at 250 g a day becomes a 0.65 Mt deficit at 400 g a day, and Assam alone swings the result.

Three states are short either way: Mizoram, Meghalaya and Sikkim meet only 22%, 60% and 56% of need at 400 g a day, and still fall short (35%, 95% and 90%) on the ICMR norm.

The trend is the worry: five of eight states produced less in 2024-25 than in 2019-20, and cereal area is down 3.1% region-wide.

Yield is the lever: six of eight states sit at or below 2,500 kg/ha against a national 3,023 kg/ha.

REFERENCES

- Giribabu M. (2013). Food and nutritional security in north east India – Some contemporary issues. *International Journal of Development Research*.3(5), 1-8 <https://www.journalijdr.com/food-and-nutritional-security-north-east-india-some-contemporary-issues>
- ICMR-National Institute of Nutrition. (2023). *My plate for the day*. https://www.nin.res.in/downloads/My_Plate_English.pdf
- ICMR-National Institute of Nutrition. (2024). *Dietary guidelines for Indians*. https://nin.res.in/dietaryguidelines/pdfs/locale/DGI_2024.pdf
- Konjengbam N S, Mahanta M and Lyngdoh A A. (2021) Rice cultivation – A way of life for the people of North Eastern Hill region of India. IntechOpen. <https://www.intechopen.com/chapters/78153>
- Laitonjam N, Singh R, Yumnam A, Kankabati K and Meena N (2018). Rice production in India: Decomposition and trend analysis. *Plant Archives*. 18. 435-438.
- National Commission on Population. (2019). *Population projections for India and states 2011–2036* (Table 8: Population as on 1 March). Ministry of Health and Family Welfare. https://nhm.gov.in/New_Updates_2018/Report_Population_Projection_2019.pdf
- NEDFi Databank. (2026). *NE: Cereal crops. State-wise and season-wise area, production and yield, 2019-20 to 2025-26* [Data set]. Department of Agriculture & Farmers Welfare, Government of India. https://data_bank.nedfi.com/ne-agriculture/cereal-crops
- NFSA (2013) *The National Food Security Act, 2013* (Act No. 20 of 2013). Government of India.
- Singh K. (2025), “Growing more, eating less: India’s cereal consumption patterns” *Centre for Economic Data and Analysis (CEDA), Ashoka University*. <https://ceda.ashoka.edu.in/growing-more-eating-less-indias-cereal-consumption-patterns/> (Accessed 16 August 2026).