

“Uneven Progress: Declining Undernutrition and Rising Over-nutrition in Nepal”

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Background

Nutritional status indicates:

- Child's health and nutritional status, and
- Inequities in social development.

Malnutrition includes

- undernutrition (i.e., underweight, wasting, and stunting), and
- over nutrition (including overweight and obesity).

Malnutrition as a Global and National Issue

- Major public health challenge globally, affecting growth, development, and productivity.
- Traditionally, Nepal has faced a high burden of undernutrition, especially among children and women
- Recent decades show a nutrition transition, with rising overweight/obesity alongside persistent undernutrition

This has led to the emergence of:

Double burden of malnutrition (DBM)

Triple burden of malnutrition (TBM)

Double burden of malnutrition and Triple burden of malnutrition

Double burden of Malnutrition

- The coexistence of undernutrition (such as stunting, wasting, underweight, or micronutrient deficiencies) along with overweight, or obesity). Prevalence in adults ranging from 1 % to 35.4 %, highest being low- and middle-income countries.

Triple burden of malnutrition

- The simultaneous presence of three forms of malnutrition:
 1. Undernutrition,
 2. Overweight/obesity, and
 3. Micronutrient deficiencies (often called “hidden hunger”),

Evidence on double and triple burden of malnutrition

Coexistence of:

- Child undernutrition (stunting/wasting)
- Maternal overweight/obesity
- Micronutrient deficiencies (anemia)

Studies using NDHS data confirm simultaneous presence of multiple forms of malnutrition within households

Reflects a complex, overlapping burden rather than isolated problems

Context of Nepal-Persistent Undernutrition

Nepal has made significant progress in reducing undernutrition, but levels remain high

Stunting prevalence:

- 40.5% (NDHS 2011)
- 35.8% (NDHS 2016)
- ~24–25% (NDHS 2022)

Wasting remains a concern:

- 10.9% (2011) → 9.7% (2016) → ~7–8% (2022)

Data indicates chronic and acute undernutrition still persist, especially among vulnerable population

Emerging nutrition and transition

Increasing trend of overweight and obesity, especially among women:

- 13.5% (NDHS 2011)
- 22.2% (NDHS 2016)

Urbanization, a rapid nutrition transition, dietary shifts, and processed food consumption are key drivers.

Micronutrient deficiencies- prevailing hidden hunger

High prevalence of anemia reflects micronutrient deficiencies:

- Children (6–59 months): ~43% (NDHS 2022)
- Women (15–49 years): ~34% (NDHS 2022)

Rational for this review

Rational:

- Nepal shows mixed and uneven nutritional improvements
- Understand coexistence and transitions over time
- Inform integrated nutrition policies and interventions
- Support Nepal's progress toward SDG 2 and WHA targets

Aim:

- Trends of undernutrition, overnutrition, and micronutrient deficiencies
- Magnitude and patterns of double and triple burden of malnutrition in Nepal
- To provide evidence to design integrated nutrition policies.

Methodology



Data Source, Study Design & Population

Study Design

- Secondary data analysis and narrative review of nationally representative datasets
- Focus on trend analysis (2011–2022) and projection of malnutrition indicators

Data Sources

- Nepal Demographic and Health Survey 2011, 2016, & 2022

Study Population

- Children under five years (0–59 months), Women of reproductive age (15–49 years) &
- Households (for DBM/TBM assessment at household level)

Key Indicators

Undernutrition

- Stunting (Height-for-age < -2 SD)
- Wasting (Weight-for-height < -2 SD)
- Underweight (Weight-for-age < -2 SD)

Over nutrition

- Overweight/obesity in women (BMI ≥ 25 kg/m²)

Micronutrient Deficiency

- Anemia (Hb < 11 g/dl for children, < 12 g/dl for non-pregnant women)

Quality assurance, & Analysis

Data Management and Analysis

Data extracted from NDHS reports and cleaned to ensure indicator consistency across surveys

Descriptive statistics used:

- Prevalence (%), Mean and standard deviation (where applicable)

Trend analysis (2011-2022)

Compared prevalence, direction and magnitude of indicators across three time points

- Absolute change (%) and Relative percentage change

Visualization tools:

- Line graphs
- Bar charts for DBM and TBM distribution

Projection Approach and Assumption

Projection techniques:

- Linear trend extrapolation based on NDHS data points
- $\text{Future Value} = \text{Current Value} + (\text{Rate of Change} \times \text{Time})$

Assumptions:

- Trends remain constant over time
- No major policy or environmental disruptions

Assessment of DBM, TBM & limitations

Constructed composite indicators at:

- Individual level (child + mother pair)
- Household level (where applicable)

Identified:

- Coexistence patterns
- Population groups at higher risk

Limitations:

- Cross-sectional nature limits causality
- Projection based on limited time points (3 surveys)
- Potential underreporting of micronutrient deficiencies

Descriptive Results (DBM & TBM in Nepal)

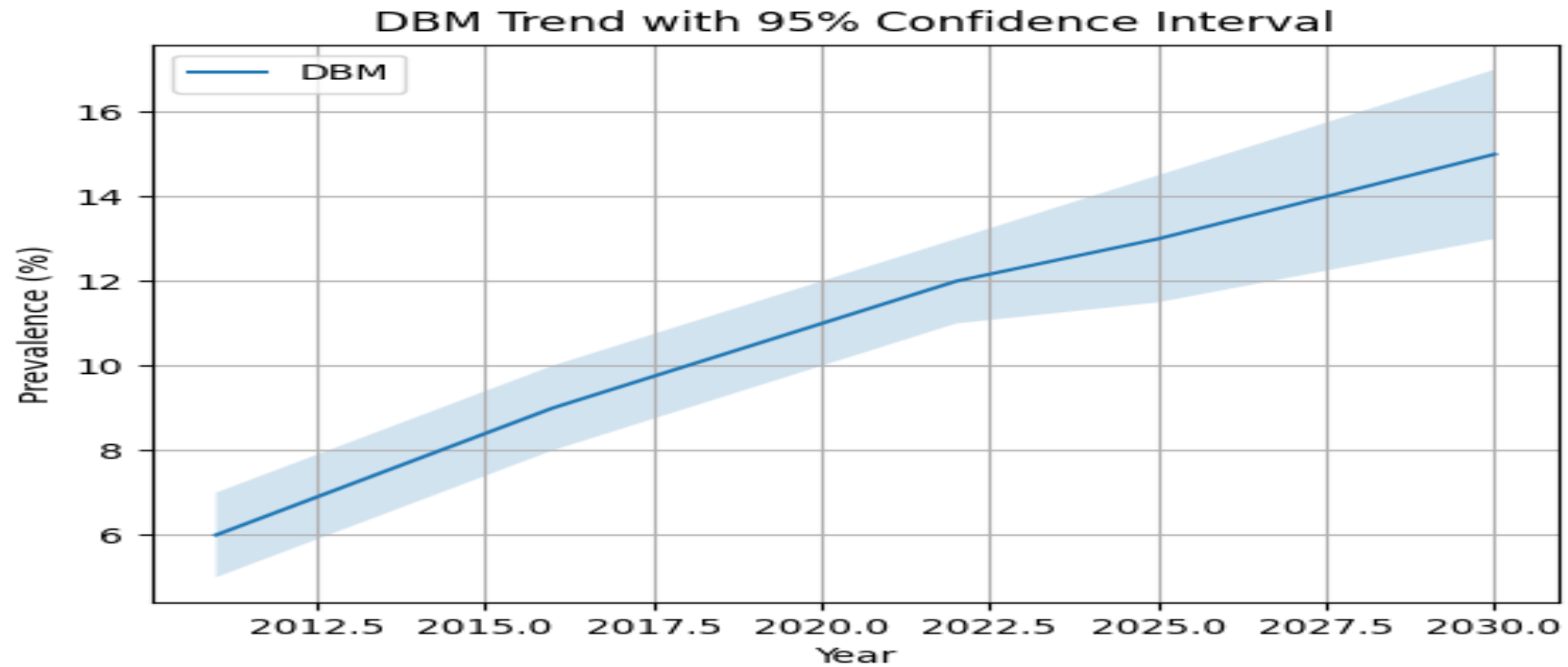
Year	Stunting (%)	Wasting (%)	Underweight (%)	Overweight (%)	Anemia (%)	DBM (%)	TBM (%)
2011	40.5	10.9	~29*	-	46.2	6	4
2016	35.8	9.7	27.0	2.1	52.7	9	6
2022	24.8	7.7	19.0	1.0	43.4	12	8
2026*	19.2 (15.5–22.9)	6.9 (5.5–8.3)	16.1 (13.0–19.2)	3.7 (2.8–4.6)	42.3 (39.0–45.6)	14.2 (10.8–17.6)	9.4 (7.0–11.8)
2030*	13.5 (9.0–18.0)	5.8 (4.2–7.4)	13.3 (9.5–17.1)	4.5 (3.2–5.8)	41.5 (37.5–45.5)	16.4 (12.5–20.3)	10.9(8.0-13.8)

**projected*

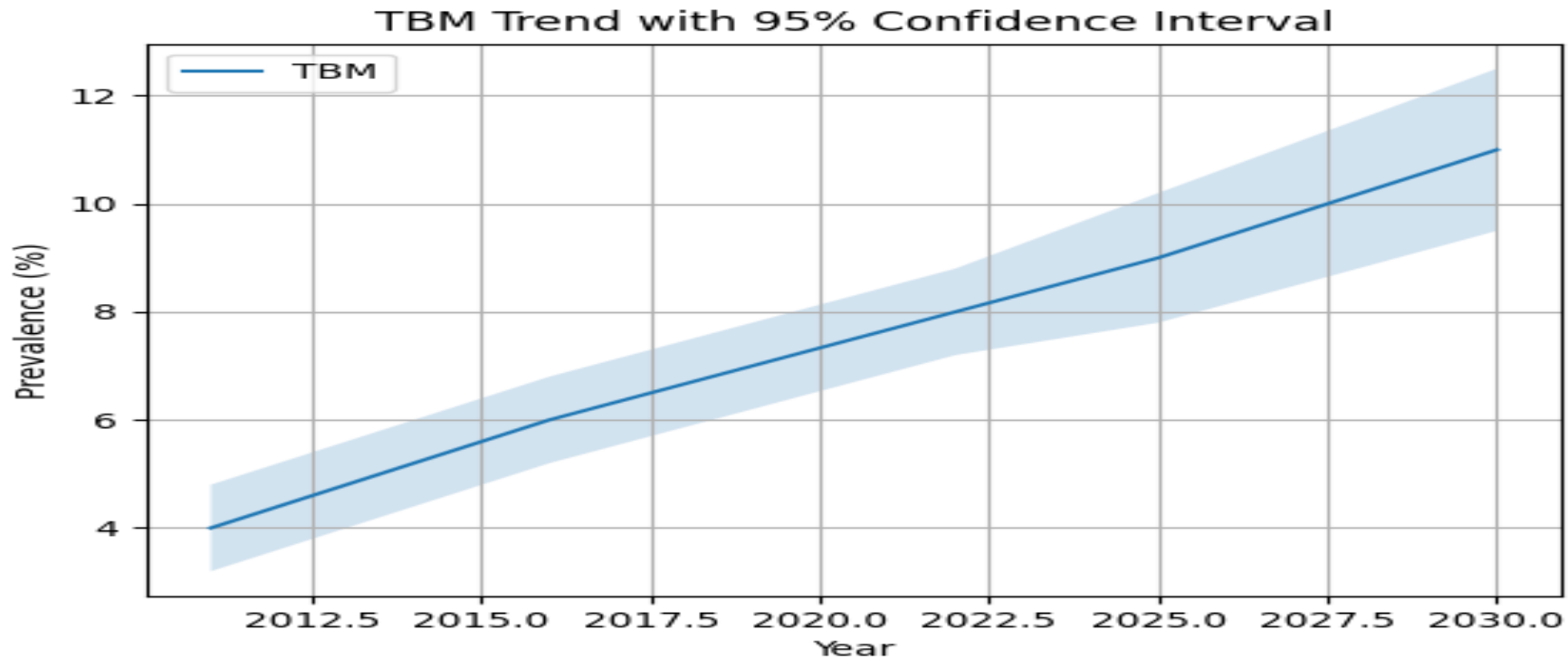
Province-wise Projection of DBM & TBM

Province	DBM 2026	DBM 2030	Target	Status	TBM 2026	TBM 2030	Target	Status
Koshi	12.7	15.4	<5%	● +10.4	8.1	10.0	<3%	● +7.0
Madhesh	14.7	17.4	<5%	● +12.4	10.1	12.0	<3%	● +9.0
Bagmati	13.7	16.4	<5%	● +11.4	9.1	11.0	<3%	● +8.0
Gandaki	12.7	15.4	<5%	● +10.4	8.1	10.0	<3%	● +7.0
Lumbini	13.7	16.4	<5%	● +11.4	9.1	11.0	<3%	● +8.0
Karnali	9.1	11.0	<5%	● +6.0	6.0	7.3	<3%	● +4.3
Sudurpashchim	11.3	13.6	<5%	● +8.6	8.1	10.0	<3%	● +7.0

DBM trends and projection



TBM trends and projection



Conclusion

- Nepal has achieved substantial reductions in undernutrition (stunting, wasting) across NDHS 2011–2022
- However, progress is uneven across provinces and population groups
- Simultaneously, overweight/obesity is rising, reflecting rapid nutrition transition
- Persistent micronutrient deficiencies (anemia) indicate ongoing *hidden hunger*
- This has resulted in a growing double burden (DBM) and triple burden (TBM) of malnutrition

“Nepal transitioning from overlapping multi-burden of malnutrition, with no province on track to meet 2030 nutrition targets.”

Recommendations

Double-Duty Actions

Design interventions that simultaneously address undernutrition and overnutrition integrating

- Maternal & child nutrition
- NCD prevention strategies
- Prioritize micronutrient-focused interventions, improve Screening and treatment of anemia

Transform Food Systems

- Promote nutrition education
- Regulate ultra-processed foods and sugary beverages

Recommendations

Province-Specific Strategies

High-burden areas (target high-risk populations identified e.g., Madhesh, Karnali):

- Address DBM and TBM simultaneously focusing on low-burden but rising (e.g., Karnali)

Strengthen Data & Monitoring Systems

- Include DBM and TBM indicators in routine surveillance

Multi-Sectoral Coordination

- Align efforts across: Health, Agriculture ,Education, Urban planning

Promote “nutrition-sensitive policies”



Author's Biography

- An aspiring public health and nutrition researcher/Dietitian/Food scientist with an academic background in Nutrition and Dietetics (M.Sc.).

THANK YOU

