Spatial Distribution of Severe Acute Malnutrition and its Association with Service Coverage and Disease Burden among Under-Five Children in CER

Background

- Severe acute malnutrition in under-five children prevails as a global challenge.
- In 2020, the estimated prevalence of SAM was 7.1% in SSA.
- Ethiopia was among the top 10 countries with the highest number of children affected by severe acute malnutrition in 2022.
- Ethiopia has adopted SDG with a target to end all forms of malnutrition by 2030, including achieving by 2025.
- Although the country made some progress towards achieving the target for SAM, still 5% of children under 5 years of age have acute malnutrition.
- Understanding the distribution of SAM by time and place, and mapping high-risk areas and identifying the associated factors is crucial to achieve this target.
- Despite this, the spatial patterns of SAM and its variation by service coverage and disease burden haven't

Key Finding

- The annual prevalence of the SAM was highest in 2024/2025 with increasing trend between 2022/2023 and 2024/2025.
- There was a spatial variation in prevalence of SAM across the districts of the CER.
- As shown in the map below, the districts with high prevalence of SAM was distributed in south western, Southern, central and eastern parts of the region from 22/2023-2024/ 2025(**Figure 1**).
- A hotspot areas with high-rate clusters were observed at Mirab soro, Siraro Badewacho, Tembaro special district, Dalocha district, Lanfuro districts and Tora town as shown in red and pink colors in the map below (**Figure 2**).

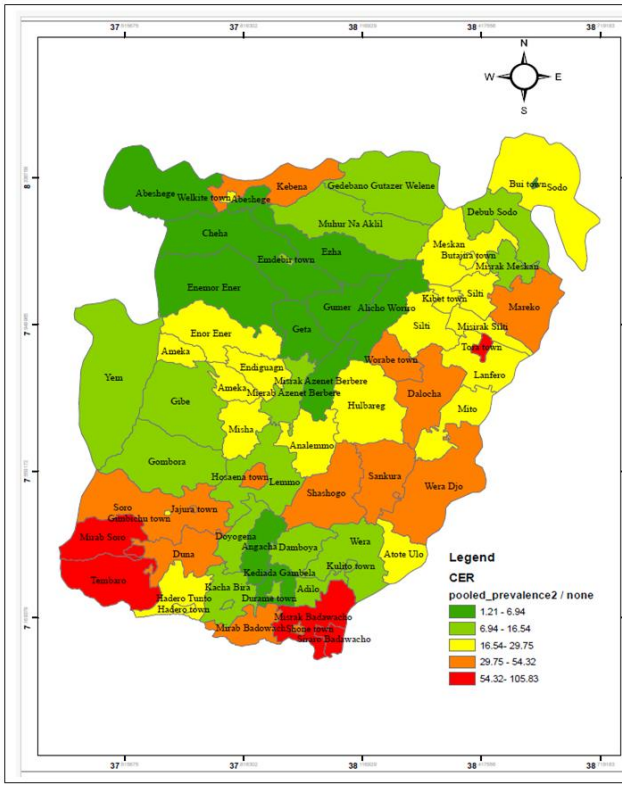

Figure 1: Spatial distribution of pooled prevalence of SAM, 22/2023-2024/2025.

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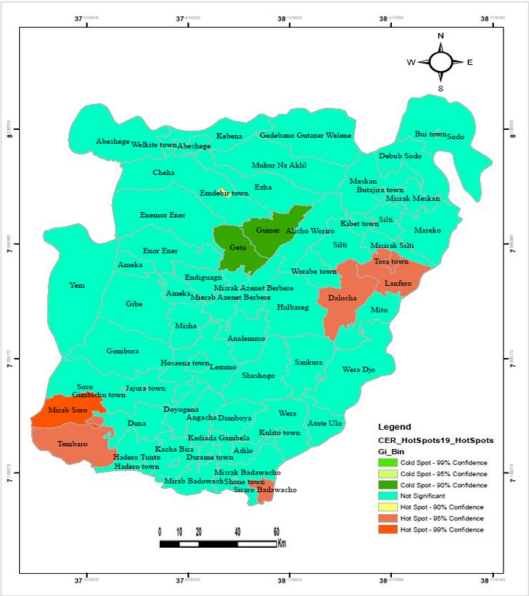

Figure 10: Hot spot area identification based on pooled annual prevalence of SAM among districts of Central Ethiopia region between 2022/2023 and 2024/2025, January 2026.

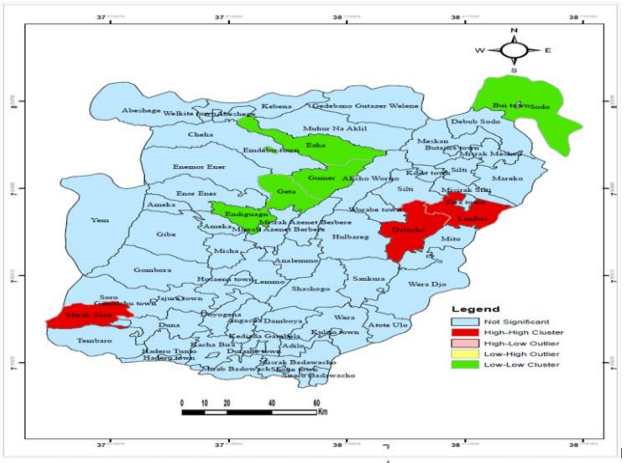

Figure 11: spatial cluster of pooled annual prevalence of SAM among children in CER from July 8, 2022-July 7, 2025, January 2026.

- Spatial clusters with high-high SAM prevalence were identified in Dalocha, Lanfero and Mirab soro districts and Worabe town as shown in red color in the map below(**Figure 3**).
- Factors such as altitude, API, clean drinking water coverage, annual incidence of diarrhea, and coverage of vitamin A second dose were significantly associated with SAM.
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Conclusion and recommendation

- The annual prevalence of SAM was higher than the national average (1%) among 6-59 months children.
- The trend of the prevalence of the SAM was increasing with the peak prevalence in 2024/2025.
- SAM was clustered with in eastern parts, southern and south western parts of the region.
- A hotspot areas with high-rate clusters were observed in eastern parts, southern and south western parts of the region.
- Altitude, API of malaria, annual incidence of diarrhea, and coverage of vitamin A second dose were significantly associated with SAM.
- Integrating both malaria_control strategies and nutritional intervention programs is warranted to decrease the high prevalence of SAM in districts with high malaria prevalence.
- Also the integrated management of SAM and malaria should be strengthened in health facilities.
- Integrated prevention strategies for SAM and diarrheal diseases should be strengthened. Screening a child with diarrhea for SAM is warranted.

Acknowledgment

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