



DInA POLICY BRIEF

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From Information to Action: Using Micronutrient Data to Drive Policy Change

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SUMMARY

- Deficiencies in micronutrients—vitamins and minerals the body requires in small or ‘micro’ amounts—are a significant global health problem, particularly for women and children in low- and middle-income contexts.
- Reliable national data on micronutrient deficiencies are often unavailable or outdated because it is challenging to collect.
- Collecting and utilizing micronutrient data is crucial for informing public policy and national health strategies to address deficiencies effectively.
- Countries like Nepal, Ethiopia, and Guatemala have successfully used data-driven approaches to address micronutrient deficiencies through national and subnational nutrition policies and programs.
- Key strategies include establishing political commitment and coordination, investing in surveillance systems and data integration, and aligning micronutrient information with government priorities.



Context

Micronutrient deficiencies are a significant global health problem, leading to severe and irreversible health consequences, such as impaired growth and cognitive development, blindness, and even death.¹ The lack of reliable national data for all population groups hamper efforts to estimate the true burden of these deficiencies accurately. The COVID-19 pandemic and ongoing conflicts have worsened the situation, highlighting an urgent need for improved data capturing mechanisms.²

The collection and interpretation of micronutrient data have played a pivotal role in nutrition interventions³ and national strategies^{4,5} to reduce the burden of micronutrient deficiencies. Data serves as an essential tool in the policy-making process, enabling decision-makers to understand the current nutrition landscape, monitor progress, and make evidence-based decisions.⁶ By harnessing data, policy and programs can be better tailored to address the specific needs of populations, ensuring that resources are targeted effectively and efficiently.

This policy brief highlights the critical importance of collecting, utilizing, and communicating micronutrient data to inform public policy and national health strategies. Drawing on examples from Ethiopia,⁷ Nepal,⁸ and Guatemala,⁹ it provides specific insights into how data-driven policy and program implementation can lead to improved nutrition outcomes and provides key recommendations to strengthen the data ecosystem for micronutrients.

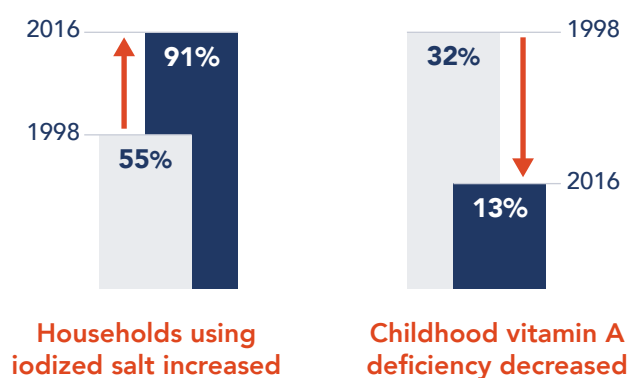
Political Commitment & Coordination

Establishing commitment and political will is crucial for advocating for data to address micronutrient deficiencies effectively, and good data are required to inform and drive effective nutrition programs and policy decisions. It is not enough to bring attention to the issue.

Achieving results requires mobilizing political institutions and systems, adopting policies and legislations, allocating resources, coordinating efforts across different sectors, and sustained action.

Nepal provides an exemplary case study of what can be achieved when there is strong commitment for data-driven decision-making. Before the 1990s, Nepal lacked a robust nutrition data ecosystem and faced some of the highest rates of undernutrition worldwide.⁵ After the first National Micronutrient Status Survey in 1998 identified micronutrient deficiencies as a serious public health problem, the government responded by developing its first comprehensive nutrition strategy, the 1998 Nepal Plan of Action for Nutrition.⁵ This strategy led to the implementation of successful micronutrient-related policies and programs. For example, the universal salt iodization program in Nepal nearly doubled the proportion of households using adequately iodized salt from 55% in 1998 to 91% in 2016, and largely eliminated iodine deficiency disorders.⁸ Additionally, the national bi-annual vitamin A supplementation program during the same period markedly reduced the prevalence of childhood vitamin A deficiency from 32% to 13%.⁸ In 2011, Nepal joined the Scaling Up Nutrition movement, through which the government created its first Multi-sectoral Nutrition Plan.⁵ This plan provided a new governance structure for actions across sectors, helped to further prioritize nutrition issues, and increased the reach and scope of nutrition programs in the country.

Good data are required to inform and drive effective nutrition programs and policy decisions



Source: Nepal National Micronutrient Status Survey, 1998 and 2016

Similarly, the Ethiopian government has made nutrition a political priority, resulting in successful collaboration and coordination across different sectors. It follows a multisector approach and has a National Nutrition Coordination Body, housed within the Ministry of Health and led by the deputy prime minister, which oversees all nutrition programs



and implementation.¹⁰ A National Nutrition Technical Committee supports the National Nutrition Coordination Body and includes both state and non-state actors, such as government ministries, academia, research institutes, and development partners. These coordination efforts demonstrate that Ethiopia's political leaders recognize the diverse factors that affect nutrition, with micronutrient information playing an important role in policy decision-making at the national level. Micronutrient data were essential in formulating the national Food and Nutrition Policy, which has led to the adoption and implementation of standards for large scale food fortification for three key commodities, and the development and endorsement of the Food and Nutrition Strategy, which will guide the country's next decade of efforts to combat malnutrition.⁷

In Guatemala, a multisectoral nutrition framework was established in 2005 with the enactment of the Law of the National System for Food and Nutrition Security.⁹ This legislation helps state actors coordinate, implement, and monitor the National Strategic Plan on Food Security and Nutrition through four governing bodies, which are led by the National Council for Food and Nutrition Security, the institute responsible for food and nutrition policy decisions.¹¹ The government has used this legislation to set standards and implement food fortification policies as one of the main strategies to reduce and address micronutrient deficiencies.⁹

Surveillance Systems & Data Integration

A national nutrition surveillance system is essential for evidence-based nutrition policies and strategies. It provides policymakers and stakeholders with the necessary information needed to make informed decisions and track progress, resulting in more successful outcomes.¹² Guatemala, Nepal, and Ethiopia have invested in and implemented national nutrition surveillance systems to collect micronutrient data, which has led to improved nutrition outcomes and stronger nutrition programs and policies.

In 2011, the Guatemalan government, in collaboration with the Institute of Nutrition of Central America and Panama and development partners, launched a successful pilot surveillance system (SIVESNU). SIVESNU gathers national-level nutrition data, including micronutrient status of vulnerable populations.⁴ It has a flexible design that allows for frequent updates to questionnaires, biomarkers, and target population groups. Data are published as they are analyzed to ensure timely access to information for researchers and policymakers.⁴ The Guatemalan government has effectively used these data to make evidence-based policy and program decisions, including scaling back the bi-annual vitamin A supplementation program when data on improved vitamin A status were published, and extending food fortification to maize with vitamin B12, in addition to ongoing fortification of other commodities (e.g., iodized salt and vitamin A fortified sugar).⁹

Ethiopia also has a well-established and integrated surveillance system for routine data collection and dissemination, the Unified Nutrition Information System.¹⁰ Data collected through this system guides the design, implementation, and evaluation of Ethiopia's national strategies, policies, and programs aimed at controlling micronutrient deficiencies, such as the National Nutrition Program. These data have been utilized to inform the implementation of double fortification of salt with iodine and folic acid, as well as establish national supplementation programs for targeted population groups.⁷ Ethiopia also has a national data management center that utilizes data collected by different sectors.¹³ This system is a proven data collection mechanism that operates every five years and as a result, Ethiopia routinely gathers data at both the individual and household level.

In Nepal, data from nationally representative surveys, information systems, and nutrition modelling have been utilized to improve the effectiveness of fortification programs and expand nutrition and health programs for target population groups. For example, nationally representative

survey data demonstrated the need to increase iron-folic acid (IFA) supplement use during pregnancy, which informed Nepal's first two Multi-sectoral Nutrition Plans. Implementation of these national nutrition plans led to an increase in IFA supplementation usage from 6% to 71% between 2001 and 2016, resulting in significant improvements in maternal and infant health outcomes.⁸

Aligning Micronutrient Information with Government Priorities

Policy- and decision-makers require diverse types of data to make informed decisions. Quantitative data are critical for understanding the prevalence and distribution of micronutrient deficiencies, while qualitative research provides context-specific insights into cultural practices, identifies barriers to intervention implementation, and evaluates policy effectiveness. Combining these types of data allows leaders to comprehensively address micronutrient malnutrition.

Moreover, it is crucial to communicate micronutrient data in a way that aligns with government priorities to maintain political relevance and secure adequate funding for nutrition programs. When data are interpreted and presented in meaningful ways, it becomes more valuable for decision-makers and facilitates advocating for its greater and more effective utilization in policymaking. Communication and advocacy efforts need to align with the urgent agendas and competing priorities of administrations to maintain political relevance across changing leaderships.

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Conclusion

Although the three countries highlighted in this brief have shown considerable progress over the past few decades in addressing micronutrient malnutrition through data-driven approaches, challenges remain. Effective coordination and implementation of nutrition initiatives, technical capacity, and data quality and utilization require further improvement. To ensure micronutrient data are prioritized and used to inform effective public health policies, the following recommendations should be considered.

Recommendations for Action

- 1. Create a multi-sectoral technical group** to advocate for the prioritization of data collection and use to combat micronutrient deficiencies. This will help foster engagement with downstream decision-makers and experts, and ensure that the decision-making process is informed by data.
- 2. Allocate resources for capacity building** among local and national program implementers and decision-makers to encourage greater use of available data and better communication of findings.
- 3. Tailor communication to policymakers** in a way that aligns with their government-set goals to maintain political relevance and secure adequate funding. It is necessary to emphasize both the economic and societal impacts of micronutrient malnutrition and demonstrate how addressing these issues can have a positive impact on overall development.
- 4. Invest in a dynamic micronutrient surveillance system** to identify specific nutrition needs of target populations, monitor progress towards achieving nutrition goals, and identify areas that need improvement. By investing in these systems, countries can ensure that their policies, regulations, and programs are targeted, safe, and effective.
- 5. Establish a central, open-accessed data repository** that integrates and harmonizes data from multiple sources. This will enable stakeholders to access current data, view trends over time, identify gaps, and inform regional and global estimates of the prevalence of micronutrient deficiencies.



The **Micronutrient Data Innovation Alliance (DInA)**, hosted by the **Micronutrient Forum**, convenes diverse national, regional, and global stakeholders to improve the availability, quality, accessibility, and use of micronutrient-related data to support national-level decision-makers.

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REFERENCES

1. Stevens GA, Beal T, Mbuya MNN, et al. Micronutrient deficiencies among preschool-aged children and women of reproductive age worldwide: a pooled analysis of individual-level data from population-representative surveys. *Lancet Glob Health*. 2022;10(11):e1590–e1599. doi:10.1016/S2214-109X(22)00367-9
2. Osendarp S, Verburg G, Bhutta Z, et al. Act now before Ukraine war plunges millions into malnutrition. *Nature*. 2022;604(7907):620–624. doi:10.1038/d41586-022-01076-5
3. da Silva Lopes K, Yamaji N, Md Obaidur Rahman, et al. Nutrition-specific interventions for preventing and controlling anaemia throughout the life cycle: an overview of systematic reviews. *Cochrane Database Syst Rev*. 2021;9(9). doi:10.1002/14651858.CD013092.pub2
4. Palmieri M, Flores-Ayala R, Mesarina K, et al. Experiences and Lessons Learned in Developing and Implementing a Population-Based Nutrition and Health Surveillance System in Guatemala 2011–2021. *Curr Dev Nutr*. 2022;6(4):nzac027. doi:10.1093/cdn/nzac027
5. Chitekwe S, Torlesse H, Aguayo VM. Nutrition in Nepal: Three decades of commitment to children and women. *Matern Child Nutr*. 2021;18(Suppl 1):e13229. doi:10.1111/mcn.13229
6. Manger MS, Brown KH, Osendarp SJM, Atkin RA, McDonald CM. Barriers to and Enablers of the Inclusion of Micronutrient Biomarkers in National Surveys and Surveillance Systems in Low- and Middle-Income Countries. *Nutrients*. 2022;14(10):2009. doi:10.3390/nu14102009
7. Micronutrient Data Alliance, Pfeiffer E. Leveraging Micronutrient Data to Catalyze Change: A Case Study of Ethiopia. Published online April 2023. https://micronutrientforum.org/wp-content/uploads/2023/05/mnf_DInA-Ethiopia-Case-Study.pdf
8. Micronutrient Data Alliance, Pfeiffer E. Leveraging Micronutrient Data to Catalyze Change: A Case Study of Nepal. Published online April 2023. https://micronutrientforum.org/wp-content/uploads/2023/05/mnf_DInA-Nepal-Case-Study.pdf
9. Micronutrient Data Alliance, Villarreal L. Leveraging Micronutrient Data to Catalyze Change: A Case Study of Guatemala. Published online April 2023. https://micronutrientforum.org/wp-content/uploads/2023/05/mnf_DInA-Guatemala-Case-Study.pdf
10. Ayele S, Zegeye EA, Nisbett N. Multi-Sectoral Nutrition Policy and Programme Design, Coordination and Implementation in Ethiopia. Published online 2020. https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/15200/MultiSectoral_Nutrition_Ethiopia_Working_Paper.pdf?sequence=1&isAllowed=y
11. Scaling Up Nutrition. Country Briefing: Guatemala. Scaling Up Nutrition MSP toolkit. Accessed June 20, 2023. <https://msptoolkit.scalingupnutrition.org/case-study/guatemala/>
12. United Nations Children's Fund, the World Health Organization. National nutrition information systems—the fundamental series, modules 1–5. Published online 2021. <https://data.unicef.org/resources/nutrition-nnis-guides/>
13. National Data Management Center for Health—NDMC. Accessed June 20, 2023. <https://ndmc.ephi.gov.et/>



The [Mighty Nutrients Coalition](#) is a evidence-based voice that drives collective advocacy for the power of vitamins and minerals—mighty nutrients—to improve health and unlock human potential. The Coalition seeks to support more resilient and effective systems—from health and social protection to agriculture and education—that better deliver micronutrients to improve and safeguard health, with a focus on vulnerable women and children. Hosted by the Micronutrient Forum, it includes over 60 organizations and 200 signatories from 52 countries.

