Annexes

Annex A. Final Agenda

Africa Regional Dialogue on Data for Action in Food Fortification

October 28 - 30, 2025 | Addis Ababa, Ethiopia | Skylight Hotel - Abay Ballroom, Ground Floor, New Building

Agenda

Day 1: Opening and Country Experiences Across the Large-Scale Food Fortification (LSFF) Data Value Chain Objectives: - Frame the need to collect, analysis, and use data to inform LSFF decisions - Share country-specific and regional LSFF data landscapes and facilitate cross-country exchange - Better understand the data needs of LSFF actors		
Time	**Topic / Objective(s)**	**Speaker(s)**
7:45 – 8:45	**Registration:** Participants to register at registration desk on arrival before 8:45	
Morning Moderator: Doreen Marandu, Senior Program Officer, Non-Communicable Diseases (NCDs), Food Security and Nutrition Cluster, East, Central, and Southern African Health Community (ECSA-HC); Eastern and Southern Africa Regional Coordination Mechanism on Food Fortification (ESA RCM) Co-Chair		
9:00 – 10:15	**Official opening & welcome** Set the tone and demonstrate political and regional commitment to data for LSFF 1. Welcome and introduction (10 min) 2. Welcoming note (5 min) 3. Welcome remarks by co-organizer, ESA RCM (10 min) 4. Welcome by Gates Foundation (10 min) 5. Welcome by African Union Commission (10 min) 6. Keynote speech by Minister of Industry (10 min) 7. Keynote speech by Minister of Foreign Affairs (5 min)	1. Saskia Osendarp, Executive Director, Micronutrient Forum 2. Hiwot Darsene, Lead Executive Officer, Nutrition Coordination Office, Ministry of Health, Federal Democratic Republic of Ethiopia 3. Raymond Chikomba, Senior Nutrition Specialist, Social and Human Development Unit, Southern African Development Community (SADC); co-chair, ESA RCM 4. Jonathan Gorstein, Senior Program Officer, Gates Foundation

	8. Official opening by the Government of Ethiopia representative (10 min)	5. Prof. Julio Rakotonirina, Director for Health and Humanitarian Affairs, African Union Commission – Video message 6. H.E Ato Tarekegn Bululta, State Minister of Industry, Federal Democratic Republic of Ethiopia 7. H.E Demeke Mekonen, Former Deputy Prime Minister and Minister of Foreign Affairs, Federal Democratic Republic of Ethiopia, Founder and Board Chair, YADAM Foundation 8. H.E. Dr. Derge Duguma, State Minister, Ministry of Health, Federal Democratic Republic of Ethiopia
10:15 – 10:45 TEA / COFFEE BREAK		
10:45 – 12:00	**Introductions & Setting the Stage** Introduce delegations and contextualize LSFF data value chain; highlight Ethiopia case 1. Country introductions (15 min) 2. Setting the stage for the meeting (15 min) 3. Overview of LSFF data value chain (15 min) 4. Evolution and current status of LSFF in Ethiopia (15 min) 5. Ethiopia's LSFF data chain in action: Showcase of Ethiopia's LSFF data system (15 min)	1. Doreen Marandu, Senior Program Officer, NCDs, Food Security and Nutrition Cluster, East, Central, and Southern African Health Community (ECSA-HC); ESA RCM Co-Chair 2. Sorrel Namaste, Program Lead for the Micronutrient Data Innovation Alliance (DInA), Micronutrient Forum 3. Rizwan Yusufali, Millers for Nutrition Program Director, TechnoServe 4. Shibru Kelbessa, Advisor, LSFF, Ministry of Industry, Ethiopia 5. Masresha Tessema, Director of Nutrition, Environmental Health and NCD Research Directorate, Ethiopia Public Health institute (EPHI)
12:00 – 13:00 LUNCH		
Afternoon Moderator: Ludi Omollo, Senior Associate, Global Advocacy, LSFF, Global Alliance for Improved Nutrition (GAIN)		

13:00 – 13:15	**Data landscape scope and methods** Overview of methods and purpose of the LSFF country landscapes	Phillip Makhumula, Consultant, DInA, Micronutrient Forum
13:15 – 14:15	**Country data: Marketplace of LSFF data landscapes** Poster presentations of the LSFF data landscapes by each country; interactive exchange of achievements, challenges, lessons learned across their LSFF data value chain	Half of countries present: Ethiopia, Kenya, Lesotho, Mozambique, Namibia, Nigeria
14:15 – 14:45 TEA / COFFEE BREAK		
14:45 – 15:45	**Country data: Marketplace of LSFF data landscapes cont'd** Poster presentations of the LSFF data landscapes by each country; interactive exchange of achievements, challenges, lessons learned across their LSFF data value chain	Half of countries present: Malawi, Rwanda, Senegal, Tanzania, Uganda, Zambia, Zimbabwe
15:45 – 16:15	**Regional data landscape results and country reflections** Summary presentation of cross-country findings from the country LSFF landscape.	Phillip Makhumula, Consultant, DInA, Micronutrient Forum
16:15 – 17:00	**PANEL 1: LSFF data needed for decision-making from different actors' perspectives** Panel session of key stakeholders sharing their data needs and what their and others' roles are in meeting these data needs.	**Moderator:** Reed Atkin, Senior Advisor, Micronutrient Forum Panelists: 1. Yvonne Mavhunga, Director of Programmes, Food and Nutrition Council, Zimbabwe 2. Peninah Kingori, Mombasa Maize Millers 3. Stanley Chitekwe, Chief of Nutrition Section, UNICEF Ethiopia 4. Roselie Asis, Advisor, Regional Bureau for Eastern Africa, World Food Programme (WFP) 5. Jacqueline Njonjo, Africa Lead, Food Safety, Food Loss Prevention, Food Fortification Advisor, International Finance Corporation (IFC)

		6. Masresha Tessema, Director of Nutrition, Environmental Health and NCD Research Directorate, Ethiopia Public Health institute (EPHI)
17:00 – 17:15	Wrap up	Ludi Omollo, Senior Associate, Global Advocacy, LSFF, GAIN
18:00 – 19:30 SOCIAL EVENT (DRINKS and APPETIZERS)		

Day 2: Prioritizing LSFF Data, Tools and Resources, and Filling Data Gaps Objectives - Prioritize LSFF data needs and indicators - Share guidance, resources, and tools to support the collection and use of LSFF data - Strengthen capacity through presentations and country examples of using existing resources and tools - Facilitate the sharing of innovations in filling data gaps		
Time	**Topic**	**Speaker(s)**
Morning Moderator: Phillip Makhumula, Consultant, DInA, Micronutrient Forum		
8:30 – 9:00	**Recap Day 1 and Introduction to Day 2**	Phillip Makhumula, Consultant, DInA, Micronutrient Forum
9:00 – 9:15	**Prioritization of data needs and LSFF indicators for decision making** Setting the stage for small group work on prioritizing data needs (including minimum information needed to make decisions) and associated LSFF indicators.	Sorrel Namaste, Program Lead, DInA, Micronutrient Forum Helena Pachón, Research Director, Food Fortification Initiative; Global Fortification Data Exchange (GFDx) Data Steward
9:15 – 10:15	**Small table group work** Discuss data needs and indicators, draw on information identified in the LSFF data landscapes. Rapporteurs: 1. Kristina Michaux (MNF)	Seven tables, each group has an appointed rapporteur; facilitators nominated by table. Tables group based on the following topics: 1. Selection of nutrients 2. Creating policies, legal, and regulatory environment

	2. Naïl Lazrak (OECD) 3. Rizwan Yusufali (TechnoServe) 4. Annette Nyangaresi (GAIN) 5. Adetola Otunla (GAIN) 6. Saskia Osendarp (MNF) 7. Shruthi Cyriac (MNF)	3. Selection of food vehicle 4. Monitoring LSFF program 5. Implementing LSFF program 6. Evaluating impact of LFSS program 7. Integrating with other programs
10:15-10:45	**Report back from group work on data needs and indicators for decision-making** Reflections on data needs and indicators.	Facilitators: Sorrel Namaste, DInA, Micronutrient Forum and Helena Pachón, Research Director, Food Fortification Initiative; GFDx Data Steward Feedback from rapporteur from each group plus Q&A.
10:45 – 11:15 TEA / COFFEE BREAK		
11:15 – 11:30	**Mapping of LSFF resources and tools** Presentation on available resources and tools related to the collection and use of LSFF data. Presentation will include mapping of resources and tools related to data in: A blueprint for the design and implementation of large-scale food fortification programs	Bernard Makene, Global Portfolio Manager, LSFF, Africa, Nutrition International
11:30-12:00	**Dashboards** 1. Overview of existing resources and tools (GFDx, Micronutrient Database, Hunger Map Live, FAOSTAT, Access to Nutrition initiative (ATNi VitaMin-Premix supplier Index, and other relevant tools/resources (20 min) 2. Using GFDx for regional decision-making (10 min)	1. Shruthi Cyriac, Senior Program Manager, DInA, Micronutrient Forum 2. Rosemary Mwaisaka, Regional Coordinator, Eastern and Southern Africa, Iodine Global Network (IGN)
12:00-12:30	**Regulatory environment** **1.** Overview of existing resources and tools (Organisation for Economic Co-operation and Development (OECD) Regulatory governance of LSFF, Regulatory monitoring of national food fortification program guideline, ECSA guidelines and other relevant tools/resources) (20 min) 2. Applying the LSFF regulatory measurement framework in Nigeria (10 min)	1. Naïl Lazrak, Policy Analyst, Regulatory Policy Division, OECD 2. Edefe Ojomo, Consultant, OECD

12:30-13:30 LUNCH		
Afternoon Moderator: Saskia Osendarp, MNF		
13:30-14:00	**Justifying and evaluating fortification** 1. Overview of existing resources and tools (Micronutrient survey manual and toolkit, Vitamin and Mineral Nutrition Information System (VMNIS), Micronutrient survey analyser, HCES/World Bank's LSMS microdata library, Modelling and Mapping Inadequate Micronutrient Intake (MIMI), Micronutrient Intervention Modeling Project (MINIMOD), Micronutrient Action Policy Support (MAPS), and other relevant tools/resources) (20 min) 2. Use of the MIMI modeling tool in Senegal (10 min)	1. Frances Knight, Team Lead, MIMI, World Food Programme 2. Ndeye Fatou, Coordinator of the National Alliance for Food Fortification (COSFAM), Senegal
14:00-14:30	**Compliance and coverage** 1. Overview of existing resources and tools (FortifyMIS, Digital Fortification Quality Traceability Plus (DFQT+), Fortification assessment coverage toolkit (FACT), DHS-9 recommended fortification module, Fortification Market Application (FortiMApp), FORTIMAS, FRAT) (20 min) 2. Use of the Micronutrient Fortification Index in Nigeria (10 min)	1. Annette Mongina Nyangaresi, Technical Specialist, Knowledge Leadership, LLSF & Nutrient Enriched Crops/Biofortification, GAIN 2. Ayodele Tella, Country Program Manager, TechnoServe, Nigeria
14:30-15:15	**Debrief on LSFF data resources and tools** Reflections on use of resources and tools, implications for their country, and how tools can be improved and/or what new tools are needed	Frances Knight, Team Lead –MIMI, WFP
15:15– 15:45 TEA / COFFEE BREAK		
15:45-17:15	**Innovative approaches to filling LSFF data needs** 1. ATNi's VitaMin Premix Supplier Assessment (10 min)	Facilitator: Masresha Tessema, Director of Nutrition, Environmental Health and NCD Research Directorate, EPHI 1. Nadine Nasser, ATNi 2. Edefe Ojomo, Consultant, OECD

	2. Supporting cross-sector understanding of LSFF data related terminology: DInA lexicon and primer (10 min) 3. Leveraging infectious disease and other surveillance systems for LSFF data (10 min) 4. Real time digital compliance and dashboards for LSFF (10 min) 5. Enabling equity: FACT household and market level assessment (10 min) 6. Unlocking Insights: Analyzing co-coverage of food fortification and other nutrition interventions (10 min) 7. Q&A and Discussion (30 min)	3. Mike Mazinga, Project Coordinator MicroNUT Project and private consultant, Central Public Health Laboratories, Uganda 4. Gwao Gwao, Director, Government Relations and Policy, East Africa & Adise Fitamo, Senior Manager, Government Relations, Ethiopia, Sanku 5. Svenja Jungjohann, Senior Technical Specialist, Knowledge Leadership, GAIN 6. Rebecca Heikdkamp, Associate Research Professor and Lead, DataDENT, John Hopkins Bloomberg School of Public Health
17:15-17:30	Wrap up	Saskia Osendarp, Executive Director, Micronutrient Forum

Day 3: Filling data gaps and data governance

Objectives
- Advance data governance and cross-sector collaboration
- Strengthen national regional and national LSFF coordination on data
- Identify priority actions at the country and regional level to strengthen the data value chain
- Way forward: next steps

Time	**Topic**	**Speaker(s)**
Morning Moderator: Rizwan Yusufali, Millers for Nutrition Program Director, TechnoServe		
8:30 – 9:00	Recap Day 2 and Framing for Day 3	Rizwan Yusufali, Millers for Nutrition Program Director, TechnoServe
9:00 – 10:15	**PANEL 2: LSFF data governance and coordination** Panel discussion on governance and coordination from perspective of National Fortification Alliances, regional organizations, others	**Moderator:** Sisay Sinamo, Senior Program Manager, Seqota Declaration, Federal Program Delivery Unit, Ministry of Health, Ethiopia Panelists:

		1. Gwao Gwao, Director, Government Relations and Policy, East Africa, Sanku; Tanzania National Fortification Alliance 2. Raymond Chikomba, Senior Nutrition Specialist, Social and Human Development Unit, SADC; co-chair, ESA RCM 3. Hiwot Darsene, Lead Executive Officer, Nutrition Coordination Office Ministry of Health, Federal Democratic Republic of Ethiopia 4. Eduarda Mungoi, Senior Specialist in Nutrition and Food Technology, Ministry of Industry and Commerce, Mozambique 5. Brendah Nakhumicha, Head of Food Safety, Kenya Public Health Institute
10:15 – 10:45 TEA / COFFEE BREAK		
10:45 – 11:00	**Filling gaps to strengthen the LSFF data chain** Instructions for small table group work.	Kristina Michaux, Program Manager, DInA Micronutrient Forum
11:00 – 12:00	**Small table group work** Map common data collection and use gaps to potential opportunities for filling these gaps, including how to overcome gaps identified in the LSFF data landscapes. Rapporteurs: Ethiopia - Mitsiwat Abede (Ambo University) Kenya – Annettee Nyangaresi (GAIN) Lesotho – Marina Plyta (ATNi) Malawi – Phillip Makhumula (DInA) Mozambique – Kristina Michaux (DInA/MNF) Namibia – Saskia Osendarp (DInA/MNF) Nigeria – Ayo Tella (TechnoServe) Rwanda – Maurine Wado (DInA/MNF) Senegal – Frances Knight (WFP)	Tables organized by country (n=13); include country delegates plus global/regional partners. One dedicated rapporteur assigned per table. Facilitators nominated by tables. Identify 3–5 priority actions per each of the following stages of the LSFF data value chain: 1. Prioritization 2. Data collection 3. Analysis 4. Use

	Tanzania – Roselie Asis (WFP) Uganda – Sorrel Namaste (DInA/MNF) Zambia – Rosemary Mwaisaka (IGN) Zimbabwe – Helena Pachon (FFI/GFDx)	
12:00 – 12:30	**Report back from group work on prioritization of actions needed to strengthen the LSFF data chain**	Reed Atkin, Senior Advisor, Micronutrient Forum. Feedback from small group work plus Q&A
12:30 – 12:45	**Summary and next steps** Discuss lessons learned, remaining challenges, and way forward	Reed Atkin, Senior Advisor, Micronutrient Forum
12:45 – 13:00	**Closing remarks**	1. Dr. Jonathan Gorstein, Senior Program Officer, Gates Foundation 2. Doreen Marandu, Senior Program Officer, NCDs, Food Security and Nutrition Cluster, ECSA-HC; ESA RCM Co-Chair
13:00 – 14:00 LUNCH		
Afternoon: ESA RCM organized meeting		

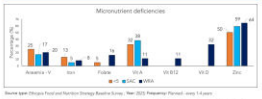
Annex B. Country LSFF Data Landscapes

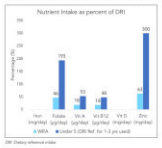
Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Ethiopia Large-Scale Food Fortification (LSFF) Data Landscape

Masresha Tessema[1], Shibru Kelbessa[2], Sofonyas Mendesil[2], Mulatu Tesfaye[3], Sisay Sinamo[4]
[1]Ethiopia Public Health Institute (EPHI), [2]Ministry of Industry, [3]Ethiopian Food and Drug Administration (EFDA), [4]Ministry of Health

Data on Selection of Nutrients





- Anemia, vitamin A and zinc deficiency are prevalent in children under 5 (U5), school age children (SAC), and women of reproductive age (WRA); vitamin D deficiency in prevalent in WRA.
- Iodine status (not shown) nearing excess (≥ 300 µg/L).
- Lack of integrated biomarker data in routine surveillance.

Data on Food Vehicles



Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	○	✓✓	●	●	✗	✗	✗	✗	✓✓	✗	●	
Wheat flour	○	✓✓	●	●	✗	✗	✗	✗	✓✓	✗	●	2022
Milk	●	●	○	○	●	●	●	●	●	●	●	
Oil	●	○	✓✓	✓✓	●	●	●	●	●	●	●	2022
Salt	○	●	●	●	●	●	●	●	●	●	✓✓	2017
Sugar	●	●	●	●	●	●	●	●	●	●	●	
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No Fortification
✓✓ - Added to address known deficiency
✗✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data

- Wheat and oil fortification has been mandatory only since 2022; enforcement started in 2024 with 2-year grace period
- 61/364 (18%) wheat millers and 28/39 (72%) oil processors fortify their products

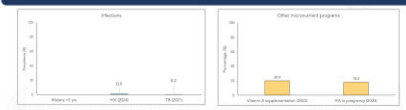
Opportunities for Data-Driven Decision-Making

Innovation
- Develop novel methods to jointly interpret micronutrient and fortification data so these data can be presented in simpler form for public health practice.
- Food science research to identify new appropriate vehicles that can reach the most vulnerable (e.g., double fortified salt with iodine and folate, cost-efficient and sustainable medium-scale maize flour fortification).
- Review suitability of DHIS-2 to link clinical data to program activities.

Monitoring
- EPHI and EFDA continue to pool their expertise in evidence synthesis and laboratory facilities.
- Implement a digital platform (aka a fortification dashboard) that integrates data from industry and regulatory agencies, while maintaining current focus of activities on effective implementation of regulations.
- Synchronize the training of regional regulatory bodies with EFDA to ensure consistency in enforcement of regulations.
- Support the analysis of existing data from inspection reports that are currently underutilized due to staffing and resource challenges.
- Conduct and disseminate the results of retail evaluations to signal trust in the quality of fortified foods – extend beyond risk mitigation as the reason for dissemination.

Prioritization
- Continue using the EPHI-chaired National Food and Nutrition Strategy platform to generate and review LSFF data to ensure stakeholder ownership
- Communicate strategic and timely LSFF data on production and consumption at key policy meetings, such as the joint planning sessions of the Prime Minister's Nutrition Council, the National Fortification Steering and Technical Committee, and regional District Committees.

Data on LSFF-Related Health Conditions & Programs



- Health system data are variable in quality (i.e., administrative/routine data) .
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Compliance varies by food vehicle: salt (73%), oil (51%), *[Salt and edible oil commercial monitoring data, 2024]*.
- Compliance testing is carried out as part of the Readiness Assessment of the manufacturers; data from compliance testing is not widely shared.
- Need to jointly evaluate data from testing of foods at import, production, and retail level; EFDA have the data and EPHI has the research synthesis expertise.
- Majority of compliance monitoring is based on post-market surveillance data and funded by outside agencies.
- Risk based approaches to monitoring due to shortage of personnel and initial stages of enforcement and program implementation.
- Internal industry QA/QC data are mainly used to tweak actual production, not regularly used for monitoring quality of the final fortified food product.

Data on Coverage of Fortified Food



* Testing was only conducted for salt; based on self-report for other food vehicles. Source: Estimated data from Ethiopia Food and Nutrition Strategy Baseline Survey; Year: 2023

- Universal salt iodization achieved in Ethiopia; high household coverage of iodized salt and high median urinary iodine levels warrants a review of the iodine content of salt.
- Household coverage reflects production quality – the numerous wheat mills (364) need more resources than the oil processors (40); there are gaps in compliance at the production level leading to downstream differences in fortification quality at the household level.

Impact of LSFF

- Limited studies evaluating the impact of LSFF on biomarkers and health outcomes, except iodine status.
- Data collection funded through donors – not sustainable.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

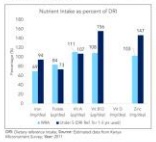
Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Kenya Large-Scale Food Fortification (LSFF) Data Landscape

John Maina Mwai[1], Nuria Mohamed Yussuf[1], Brendah Obura[2]
[1]Kenya Ministry of Health, [2]Kenya National Public Health Institute

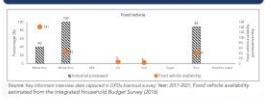
Data on Selection of Nutrients





- Anemia, iron, and zinc deficiency prevalent in children under 5 (U5), school age children (SAC), and women of reproductive age (WRA).
- Iodine status adequate (>100 µg/L) in SAC (208 µg/L), and WRA (168 µg/L).
- Biomarker and nutrient intake data are over 10 years old and not considered in recent fortification program reviews.

Data on Food Vehicles



Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✓✓	●	●	✗	✗	✗	✗	✓✓	✗	●	2019
Wheat flour	✓✓	✓✓	●	●	✗	✗	✗	✗	✓✓	✗	●	2019
Milk	●	●	○	○	●	●	●	●	●	●	●	
Oil	●	○	✓✓	✓✓	●	●	●	●	●	●	●	2019
Salt	○	●	●	●	●	●	●	●	●	●	✓✓	2021
Sugar	●	●	○	○	●	●	●	●	●	●	●	2022
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No Fortification
✓✓ - Added to address known deficiency
✗✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data

- Potential overestimation of nutrient intake (food availability from food balance sheets (FBS) or from Household Expenditure and Consumption Surveys (HCES)).
- Industry data on production are infrequently shared.

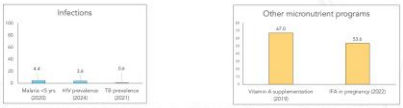
Opportunities for Data-Driven Decision-Making

Data sharing
- Leverage Kenya National Food Fortification Alliance (NFA) meetings to conduct focused sessions on data sharing for program decisions.
- Incentivize data sharing by industry – e.g., small-grant matching funds and subsidies for common data platforms between industry and regulators.
- Integrate food fortification data monitoring while tracking progress towards Universal Health Care.
- Bilateral data sharing between county and national governments through Council of Governors and inter-county committees.

Monitoring
- Continue annual routine surveillance of food fortification vehicles by Ministry of Health (MoH) and Jomo Kenyatta University of Agriculture and Technology.
- Conduct joint training and sensitization exercises for data collectors from MoH, Kenya Bureau of Standards (KEBS), and country health inspectors.

Prioritization
- Review following data inputs during budget prioritization:
  - Industry compliance data by MoH, KEBS.
  - Production, market surveillance, and border inspection data.
  - Disaggregated population subgroup micronutrient status and nutrient intake data, when available.
- Prioritize partnerships between Kenya National Public Health Institute and private sector to better utilize industry data to improve quality and reach of fortified products.

Data on LSFF-Related Health Conditions & Programs



- Health system data are variable in quality (i.e., administrative/routine data) .
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards



- Routine surveillance is a valuable source of data, but data are only available for maize and wheat flour.
- Risk based approaches to monitoring of production sites are conducted by KEBS on a quarterly basis.
- Compliance data are not always shareable due to issues of confidentiality and data format.
- Surveillance data that are collected and presented at the NFA are used to inform the performance of the food fortification program under MoH. A monitoring and evaluation sub-committee analyzes data used for decision making; however, limitations include infrequent surveillance data collection and subcommittee meetings.

Data on Coverage of Fortified Food

- Iodized salt coverage at household level is 99.6% (2022); only analyzed qualitatively
- No qualitative or quantitative data on other food vehicles.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcome
- Data collection funded through donors – not sustainable

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Lesotho Large-Scale Food Fortification (LSFF) Data Landscape

Tsietsi Portas,[1] Matseleng Molulela Mojakhomo,[2] Dingaan Mann[3]
[1]Ministry of Trade, Industry and Business Development, [2]Food and Nutrition Coordinating Office, [3]Lesotho Flour Mills



Data on Selection of Nutrients

- High anemia prevalence in under-five children (U5; 70%) and women of reproductive age (WRA; 39.6.7%), based on hemoglobin measured in capillary blood samples (2023 Lesotho DHS).
- No data on iodine status or dietary iodine intake, but some cases of goiter noted in the highlands.
- Fortification levels for vitamin A, iron, and iodine are aligned with the South African Development Community (SADC) minimum fortification standards.

Data on Food Vehicles



Source: Industrial processed- Key informant interview data captured in GFDx biannual survey (2018-2020); Food vehicle availability – FAO Supply Utilization Accounts (2020)

Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✗	●	✓✗	●	●	●	●	●	●	●	●	2020
Wheat flour	✓✗	●	✓✗	●	●	●	●	●	●	●	●	2020
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓✗	●	●	●	●	●	●	●	●	
Salt	●	●	●	●	●	●	●	●	●	●	✓✗	1999
Sugar	●	●	✓✗	●	●	●	●	●	●	●	●	
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓/ - Added to address known deficiency
✓✗- Added but unknown deficiency status
○- Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data

- Maize flour consumption is high but since it is mainly produced at home, making LSFF challenging.
- National mandatory fortification standards for oil, wheat flour, and maize flour are not finalized – these are being developed based on SADC fortification standards.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems

- Establish a multisectoral plan for collecting and managing fortification data in a structured, coordinated manner – plans underway to gather all stakeholders.
- Involve development partners working in nutrition (e.g., WHO and Nutrition International) to support the Technical Working Group on Food Fortification..
- Explore the feasibility of a database to track test results from border checkpoints to household level.
- Partner with researchers from the National University of Lesotho to identify and leverage health system surveillance data for food fortification decision-making.

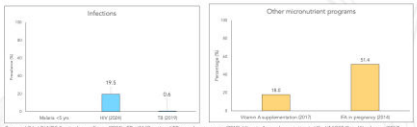
Monitoring

- Implement an effective import monitoring scheme to ensure fortification compliance for flours and salt imported from South Africa.
- Continue process of developing cheaper, more sustainable testing methods for food vehicles to replace iCheck kits.
- Establish an effective testing protocol within the Lesotho Standards Institution to enable rapid confirmation of test results from the enforcement agencies at borders and production sites.

Prioritization

- Develop a plan for generating baseline data on micronutrient status to inform targeted fortification strategies.
- Assess extent of flour fortification compliance, especially for imports from South Africa, where medium-scale have been found noncompliant to fortification requirements.
- Identify alternative, cost effective data generation plans to reduce reliance on expensive national micronutrients surveys and external partners.

Data on LSFF-Related Health Conditions & Programs



Source: HIV - UNAIDS Sentinel surveillance (2020); TB - WHO national TB prevalence surveys (2019); Vitamin A supplementation in U5 - UNICEF Data Warehouse (2017); Iron-folic acid (IFA) supplementation – Lesotho DHS 2014.

- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Some monitoring conducted by the Environmental Health Inspectors, but the results are not systematically shared; to be improved with leadership from the Technical Working Group on Food Fortification.
- Regulatory laboratory lacks reagents for food quality testing since they use proprietary kits like the iCheck system that is dependent on donors for resupply.
- Import monitoring of salt and flours is inconsistent, and no reports are shared; however, informal studies have confirmed presence of non-fortified flours from South Africa produced by medium scale millers.
- Production site monitoring by regulatory agencies is focused on manufacturing and not on enforcement of national fortification standards – large-scale millers depend on third-party auditing companies to be certified.
- Without national fortification standards, Lesotho Flour Mills uses South Africa standards for its products and is committed to compliance with SADC standards despite lax national enforcement.

Data on Coverage of Fortified Food

- Household coverage of iodised salt – 85% (reanalyzed data from 2014 Lesotho DHS).

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

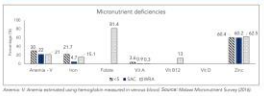
Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Malawi Large-Scale Food Fortification (LSFF) Data Landscape

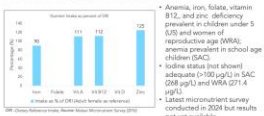
Jason Chigamba[1], Lusungu Mwaungulu[2], Tifness Banda[1]
[1]Ministry of Health, [2]Ministry of Trade and Industry



Data on Selection of Nutrients



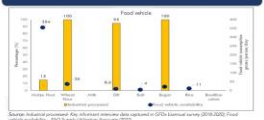
Anemia: V- Anemia estimated using hemoglobin measured in venous blood. Source: Malawi Micronutrient Survey (2016)



DRI- Dietary Reference Intake; Source: Malawi Micronutrient Survey (2016)

- Anemia, iron, folate, vitamin B12,, and zinc deficiency prevalent in children under 5 (U5) and women of reproductive age (WRA); anemia prevalent in school age children (SAC).
- Iodine status (not shown) adequate (>100 µg/L) in SAC (268 µg/L) and WRA (271.4 µg/L).
- Latest micronutrient survey conducted in 2024 but results not yet available.
- Dietary intake of iron, vitamin A, vitamin B12, and zinc adequate.

Data on Food Vehicles



Source: Industrial processed- Key informant interview data captured in GFDx biannual survey (2018-2020); Food vehicle availability – FAO Supply Utilization Accounts (2020)

Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✓✓	✓✓	●	✓✓	✓✓	✓✓	●	✓✓	✓✓	●	2011
Wheat flour	✓✓	✓✓	✓✓	●	✓✓	✓✓	✓✓	●	✓✓	✓✓	●	2011
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓✓	●	●	●	●	●	●	●	●	2012
Salt	●	●	●	●	●	●	●	●	●	●	✓✓	1998
Sugar	●	●	✓✓	●	●	●	●	●	●	●	●	2012
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓/ - Added to address known deficiency
✓✗- Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- Maize fortification is mandatory only if flour is packed/branded, regardless of production capacity of the mill.
- Malawi imports all salt.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems

- Develop integrated tools to consolidate data from different systems for data-informed decision making e.g., health information system (DHIS2), national information system, surveys, Bureau of Standards, and nutrition lab.
- Establish district-level market surveillance by incorporating fortification indicators into Environmental Health Officers' monthly reporting forms.
- Ministry of Health is considering adopting a mobile data collection system that feed district-level data into a database for program management.

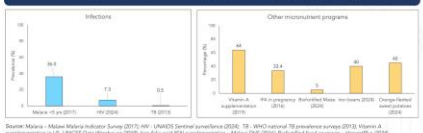
Monitoring

- Develop of a real-time dashboard for compliance data that automatically updates from collection points to enable timely analysis and decision-making.
- Leverage existing sentinel surveillance (established by UNICEF in collaboration with Nutrition Laboratory at Public Health Institute) due to limited support for national surveys.
- Establish quarterly data-sharing protocols for the Bureau of Standards to utilize inspection and sample collection data for program monitoring.

Prioritization

- Maintain coordination through the National Fortification Alliance with the Ministry of Trade, Health, Agriculture, and other key partners, including the Central Laboratory , the Bureau of Standards, and the Chancellor College's reference laboratory.
- Review and compare results from forthcoming 2024 micronutrient survey with the 2016 survey to identify gaps and inform future intervention strategies.
- Re-establish bi-annual sentinel surveillance targeting urban areas, rural districts, and vulnerable districts identified through the Malawi Vulnerability Assessment.

Data on LSFF-Related Health Conditions & Programs



Source: Malaria – Malawi Malaria Indicator Survey (2017); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2013); Vitamin A supplementation in U5- UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Malawi DHS (2016); Biofortified food coverage – HarvestPlus (2024)

- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

Vehicle (nutrient)	%Fortified	Std. range (mg/kg)	Weighted average (mg/kg)	% above lower end of std. range
Salt (iodine)	99	30-60	59	88
Sugar (Vit. A)	56	6-22	13	56
Maize flour (Vit. A)	52	0.5-1.4	0.9	100
Maize flour (iron)	52	21-41	34	100
Wheat flour (iron)	73	21-41	30	93
Wheat flour (Vit. A)	73	0.5-1.4	0.7	93
Oil (Vit. A)	47	20-40	21	52

Std. range- *Range of permissible concentration for the nutrient in the food vehicle, as per standard.* Source: GAIN Supported National Market Assessment (2018).

- Supervisory monitoring of industry and inspection data exists, but stakeholders do not regularly receive the information.
- Lack of adequate resources to respond to non-complying industries; need to strengthen enforcement and hold industries accountable.
- Salt compliance high (99%), with weighted average of iodine close to maximum permissible concentration.
- Maize and wheat flour compliance not high, but good compliance for positive samples.
- Compliance for oil is 47%, but average vitamin A concentration close to the minimum of the standard range.

Data on Coverage of Fortified Food

- Household coverage of fortified salt – 80% (2022).
- Data awaited from latest micronutrient survey (2024).

Impact of LSFF

- Micronutrient survey (2016) that was conducted three years after introducing fortified sugar indicated vitamin A deficiency of 4% - not a public health problem.
- Follow up study conducted in 2024 but results not available yet.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Mozambique Large-Scale Food Fortification (LSFF) Data Landscape

Eduarda Zandamela Mungoi[1], Mualide de Sousa[2], Edna Possolo[3]
[1]Ministry of Industry and Commerce, [2]Merec Industries, [3]World Food Programme, Mozambique Country Office

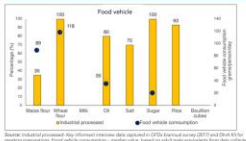
Data on selection of nutrients



Anaemia: C. Anemia estimated using hemoglobin measured in capillary blood. Source: Anaemia: C. Mozambique DHS (2022). Other micronutrient status data: Mozambique Micronutrient Survey (2012-13)

- Anemia in women of reproductive age (WRA) associated with iron, vitamin A, folate, and vitamin B12 deficiencies.
- Anemia in children under 5 (U5) decreases with increasing age; associated with iron deficiency and inflammation.

Data on food vehicles



Source: Industrial processed: Key informant interview data captured in GFDx biannual survey (2017) and DHA Kit for making preparations. Food vehicle consumption – median value, based on adult male equivalents from data collected in the Mozambique Micronutrient Survey (2012-13)

- Fortification of 5 foods is mandated: wheat flour, maize flour, salt, sugar and oil) to tackle the deficiencies within the region (vit. A, iron, zinc, and folate)

Nutrient → / Food vehicles	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓/✗	✓/✗	✓/-	●	✓/✗	✓/✗	✓/✗	✓/✗	✓/-	✓/-	●	2016
Wheat flour	✓/✗	✓/✗	✓/-	●	✓/✗	✓/✗	✓/✗	✓/✗	✓/-	✓/-	●	2016
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓/✗	✓/✗	●	●	●	●	●	●	●	2016
Salt	●	●	●	●	●	●	●	●	●	●	✓/-	2000
Sugar	●	●	✓/-	●	●	●	●	●	●	●	●	2016
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓/- : Added to address known deficiency
✓/✗: Added but unknown deficiency status
O : Can potentially be added to the vehicle
● : No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data

- In rural areas, 73 percent of fortifiable maize flour is milled at community mills.
- Rice consumption is high and almost 95% is imported from India and Pakistan.

Opportunities for data-driven decision-making

New Vehicle
- Consider small-scale maize flour fortification (as maize consumption is high but industrial production is low) to reach most of the population with nutrients.
- Standard for fortified rice developed; mandating rice fortification for imports considered as rice consumption is high and most of it is imported.

Monitoring
- Continue to strengthen recent monitoring efforts that confirm the need for strict monitoring, e.g., Pull Assessment 2025 (supported by UNICEF/Food Fortification Initiative):
  - Build on results from the 2025 Pull Assessment to focus on enforcement of maize, wheat flour, and sugar.
  - Consider excess in salt iodization monitoring as 40% of the brands had iodine content beyond the maximum recommended level by the national standard (55mg/kg).

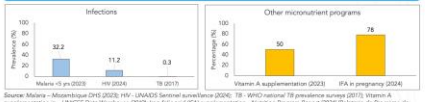
Prioritization
- Enforce monitoring of fortified foods at production and market by regulators.
- Adopt cost effective means of generating data for surveillance.

Impact of LSFF

- Contribution of the National Food Fortification Program (PNFA) to the daily Recommended Nutrient Intake (RNI) calculated by the proportion of households meeting at least 50 percent of the RNI:
  - Vitamin A: 45% percent in urban areas; 25% in rural areas.
  - Iron: 24% percent in urban areas; 20% percent in rural areas.
- Contribution of PNFA to the RNI within for all vulnerability groups:
  - Vitamin A: 45% and 24% among the least vulnerable in urban areas and rural areas, respectively.
  - Iron: 25% and 18% among the least vulnerable in urban areas and in rural areas, respectively.

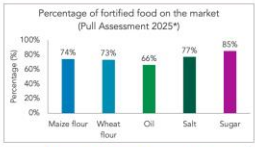
Source: Evaluation of the Coverage and Benefit Incidences of Food Fortification in Mozambique (2019)

Data on LSFF-Related health conditions & programs



Source: Malaria – Mozambique DHS (2022); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2017); Vitamin A supplementation in – UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Nutrition Program Report (2024) (Relatorio do Programa de Nutricao 2024 S15-M4/ DHS 2)

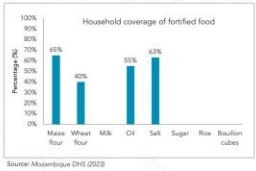
Compliance to fortification standards



Pull assessment * (2025)	Number of brands tested (Composite)	Required range (Standard) mg/kg	Average content (mg/kg)	% brands containing minimum requirement
Maize flour (iron)	14	20-41	13 (5-18)	0%
Wheat flour (iron)	10	33-65	12 (1-28)	0%
Oil (vit. A)	18	17.4-22.6	22 (5-34)	67%
Sugar (vit. A)	15	10-22	8 (0.7-17)	33%
Salt (iodine)	56	25-55	55 (0.6-177)	70%

Source: (Unpublished) Pull Study 2025 conducted in 4 major cities (July 2025).

Data on coverage of fortified food



Source: Mozambique DHS (2022)

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

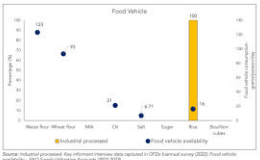
Namibia Large-Scale Food Fortification (LSFF) Data Landscape

Helena Meke Shikwambi,[1] Josef Shikongo[2]
[1]Ministry of Health and Social Services, [2]Ministry of Industry, Mines, and Energy

Data on Selection of Nutrients

- High anemia prevalence in under-five children (U5; 47.4%) and women of reproductive age (WRA; 20.7%), based on hemoglobin measured in capillary blood (2013 Namibia DHS 2013).
- No data on iodine status or dietary iodine intake.
- Last micronutrient survey completed in 2010.
- The District Health Information System (DHIS) collects data every quarter on anemia prevalence in pregnant women (measured during their first visit to the antenatal clinic), but the aggregated national data are not used to inform the fortification program.

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in GFDx biannual survey (2022); Food vehicle availability – FAO Supply Utilization Accounts (2013-2017)

Nutrient → / Food vehicles	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓/✗	●	✓/✗	●	●	●	●	●	✓/✗	●	●	
Wheat flour	✓/✗	●	✓/✗	●	●	●	●	●	✓/✗	●	●	
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓/✗	●	●	●	●	●	●	●	●	
Salt	●	●	●	●	●	●	●	●	●	●	✓/✗	1992
Sugar	●	●	●	●	●	●	●	●	●	●	●	
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓/- : Added to address known deficiency
✓/✗: Added but unknown deficiency status
O : Can potentially be added to the vehicle
● : No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- Strategy being developed to make fortification of maize flour, wheat flour, and oil mandatory; strategy launch planned for 2026.
- Currently most of the food vehicles are imported from South Africa except for salt which was mandated in 1992.

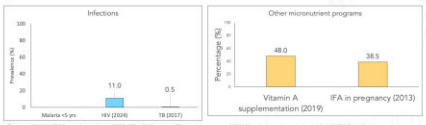
Opportunities for Data-Driven Decision-Making

Collaboration for data systems
- Leverage DHIS platform to streamline data collection from health facilities for fortification monitoring.
- Namibia uses Smart Surveys to reduce reliance on lengthy population survey cycles and provide timely data to inform food fortification program decisions.
- Integrate fortification indicators into the annual Vulnerability Assessment and Analysis Report, conducted by the Prime Miniters Office.

Monitoring
- Strengthen fortification monitoring at import sites, given that most fortified foods are imported from South Africa and domestic industry monitoring is limited outside of salt.
- Establish robust import site monitoring systems in preparation for mandatory fortification implementation in 2026.

Prioritization
- Finalize the fortification strategy with full engagement of key stakeholders – Ministries of Agriculture, Health, and Industry, Mines and Energy, along with the standards bodies, research institutions (e.g., University of Namibia School of Medicine), and UN agencies (e.g., FAO, WFP, WHO, and UNICEF).
- Include fortification indicators in the Prime Minister's Office food and nutrition security monitoring system, with quarterly reporting of national food and nutrition security.
- Formalize mandatory fortification and finalize national fortification to enable effective compliance monitoring.

Data on LSFF-Related Health Conditions & Programs



Source: HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2017); Vitamin A supplementation in US- UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Namibia DHS 2013.

- Vitamin A supplementation data for U5 are also available in the DHIS every quarter.
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Namibia Agronomic Board and health inspectors conducts monitoring of food production units but do not test the foods for compliance to standards and regulations.
- Since fortification of maize flour, wheat flour, and oil is voluntary, testing is done internally by the food producers—they face issues related to insufficient laboratory capacity and high price of testing.
- Data from industry are shared only when there are food safety concerns, otherwise testing data are not shared.
- Anecdotal observations indicate that large-scale mills are voluntarily fortifying - conversion of voluntary to mandatory requirement would not adversely affect the program.
- Salt monitoring is largely nonexistent and no reports for compliance are available.

Data on Coverage of Fortified Food

- Household coverage of iodised salt – 73.6% (Namibia DHS 2013).
- Data from the Vulnerability Assessment and Analysis (with the Office of the Prime Minister) assesses fortification coverage at the retail and household level though assessment of labeling on foods.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

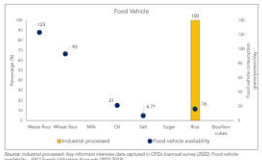
Namibia Large-Scale Food Fortification (LSFF) Data Landscape

Helena Meke Shikwambi,[1] Josef Shikongo[2]
[1]Ministry of Health and Social Services, [2]Ministry of Industry, Mines, and Energy

Data on Selection of Nutrients

- High anemia prevalence in under-five children (U5; 47.4%) and women of reproductive age (WRA; 20.7%), based on hemoglobin measured in capillary blood (2013 Namibia DHS 2013).
- No data on iodine status or dietary iodine intake.
- Last micronutrient survey completed in 2010.
- The District Health Information System (DHIS) collects data every quarter on anemia prevalence in pregnant women (measured during their first visit to the antenatal clinic), but the aggregated national data are not used to inform the fortification program.

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in OFDs biannual survey (2022); Food vehicle availability - FAO Supply Utilization Accounts (2013-2019).

Nutrient → / Food vehicles ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✗	●	✓✗	●	●	●	●	●	✓✗	●	●	
Wheat flour	✓✗	●	✓✗	●	●	●	●	●	✓✗	●	●	
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓✗	●	●	●	●	●	●	●	●	
Salt	●	●	●	●	●	●	●	●	●	●	✓✗	1992
Sugar	●	●	●	●	●	●	●	●	●	●	●	
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓/✗ - Added to address known deficiency
✓/✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- Strategy being developed to make fortification of maize flour, wheat flour, and oil mandatory; strategy launch planned for 2026.
- Currently most of the food vehicles are imported from South Africa except for salt which was mandated in 1992.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems

- Leverage DHIS platform to streamline data collection from health facilities for fortification monitoring.
- Namibia uses Smart Surveys to reduce reliance on lengthy population survey cycles and provide timely data to inform food fortification program decisions.
- Integrate fortification indicators into the annual Vulnerability Assessment and Analysis Report, conducted by the Prime Miniters Office.

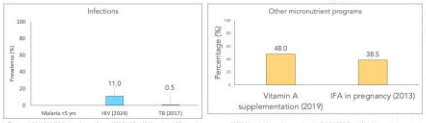
Monitoring

- Strengthen fortification monitoring at import sites, given that most fortified foods are imported from South Africa and domestic industry monitoring is limited outside of salt.
- Establish robust import site monitoring systems in preparation for mandatory fortification implementation in 2026.

Prioritization

- Finalize the fortification strategy with full engagement of key stakeholders – Ministries of Agriculture, Health, and Industry, Mines and Energy, along with the standards bodies, research institutions (e.g., University of Namibia School of Medicine), and UN agencies (e.g., FAO, WFP, WHO, and UNICEF).
- Include fortification indicators in the Prime Minister's Office food and nutrition security monitoring system, with quarterly reporting of national food and nutrition security.
- Formalize mandatory fortification and finalize national fortification to enable effective compliance monitoring.

Data on LSFF-Related Health Conditions & Programs



Source: HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2017); Vitamin A supplementation in U5- UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Namibia DHS 2013.

- Vitamin A supplementation data for U5 are also available in the DHIS every quarter.
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Namibia Agronomic Board and health inspectors conducts monitoring of food production units but do not test the foods for compliance to standards and regulations.
- Since fortification of maize flour, wheat flour, and oil is voluntary, testing is done internally by the food producers—they face issues related to insufficient laboratory capacity and high price of testing.
- Data from industry are shared only when there are food safety concerns, otherwise testing data are not shared.
- Anecdotal observations indicate that large-scale mills are voluntarily fortifying - conversion of voluntary to mandatory requirement would not adversely affect the program.
- Salt monitoring is largely nonexistent and no reports for compliance are available.

Data on Coverage of Fortified Food

- Household coverage of iodised salt – 73.6% (Namibia DHS 2013).
- Data from the Vulnerability Assessment and Analysis (with the Office of the Prime Minister) assesses fortification coverage at the retail and household level though assessment of labeling on foods.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.

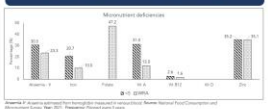
Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Nigeria Large-Scale Food Fortification (LSFF) Data Landscape

Eva O. Edwards[1], Emmanuel Abatta[2]
[1]National Agency for Food and Drug Administration and Control (NAFDAC), [2]Federal Ministry of Health and Social Welfare (FMOHSW)

Data on Selection of Nutrients



Anaemia: Prevalence estimated from hemoglobin measured in venous blood. Source: National Food Consumption and Micronutrient Survey, Year 2021. Frequency: Planned every 5 years.



WRA - women of reproductive age. Source: National Food Consumption and Micronutrient Survey (2021)

- Anemia, vitamin A, and zinc deficiency prevalent in children under 5 (U5) and WRA; folate deficiency in WRA; data needed in school age children.
- Iodine status (not shown) adequate (>100 µg/L) in WRA (292.7 µg/L).
- Dietary inadequacy of iron, zinc, folate, vitamins A, B12, B1, and B2.

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in OFDs biannual survey (2017-2020); Food vehicle coverage and consumption - National Food Consumption and Micronutrient Survey (2021).

Nutrient → / Food vehicles ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✓✓	●	●	✓✗	✓✗	✓✗	✓✗	✓✓	✓✓	●	2021
Wheat flour	✓✓	✓✓	●	●	✓✗	✓✗	✓✗	✓✗	✓✓	✓✓	●	2021
Milk	●	●	✓✗	✓✓	●	●	●	●	●	●	●	2021
Oil	●	●	✓✓	●	●	●	●	●	●	●	●	2021
Salt	●	●	●	●	●	●	●	●	●	●	✓✗	2021
Sugar	●	●	✓✓	✓✓	●	●	●	●	●	●	●	2021
Rice	●	●	●	●	●	●	●	●	●	●	●	2021
Bouillon cubes	✓✓	✓✓	●	●	●	●	●	●	✓✓	✓✓	●	2021

Mandatory Fortification | Voluntary Fortification | No fortification

✓/✗ - Added to address known deficiency
✓/✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- Industry data on production are infrequently shared.

Opportunities for Data-Driven Decision-Making

Data sharing

- Triangulate results from product testing at the retail level, done by NAFDAC, with data at production site on good manufacturing practices, QA/QC, and production information (done by Standards Organisation of Nigeria [SON]), annually is possible.
- Leverage the National Fortification Alliance (NFA) Steering Committees, chaired by an industry representative, to share and discuss LSFF data from regulators and industry (*"make it a safe space for better outcomes"*).

Monitoring

- The Digital Fortification Quality Traceability Pilot (DFQT+) tool that tracks information on fortified food vehicles along the data value chain from premix to fortified product could be used as the only data sharing platform.
- Incentivize industry to share data using multiple approaches (e.g., encourage industry to contribute to the Micronutrient Fortification Index, anonymized reporting, inventive schemes).

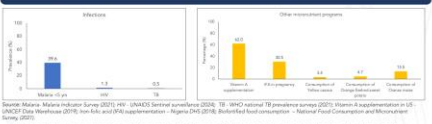
Innovation

- Identify and collect key fortification indicators within the Mini-Demographic and Health Surveys (Mini-DHS).
- Identify and explore the feasibility of using Electronic Health Records for surveillance tracking for fortification.

Prioritization

- Synchronize the review of data inputs at NFA meetings with budget prioritization cycles.

Data on LSFF-Related Health Conditions & Programs



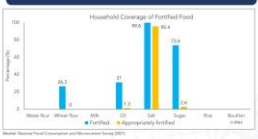
Source: Malaria: Malaria Indicator Survey (2021); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2021); Vitamin A supplementation in U5 - UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Nigeria DHS (2018); Biofortified food consumption – National Food Consumption and Micronutrient Survey, (2021).

- Higher malaria prevalence could decrease the impact of micronutrients on outcomes due to decreased absorption of the nutrients.
- Data on consumption of biofortified varieties of cassava, sweet potatoes, and maize provides more information on other micronutrient delivery vehicles.
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Compliance data are not always shareable due to the data format and issues of confidentiality.
- Risk based approaches to monitoring at production sites are conducted by SON and NAFDAC.
- Compliance data presented at NFA meetings have limited utility for decision making as the meetings do not coincide with budgetary cycles.
- Inspection staff at regulatory agencies are under-resourced and over-worked leading to lax enforcement and gaps in data – investments in human resources would help improve the situation.

Data on Coverage of Fortified Food



Source: National Food Consumption and Micronutrient Survey (2021)

- National surveys are expensive and take a long time; household surveillance can fill the gap (e.g., household level testing in Federal Capital Territory.)

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.
- Data collection funded through donors – not sustainable.

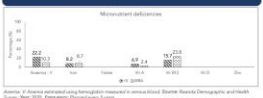
Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Rwanda Large-Scale Food Fortification (LSFF) Data Landscape

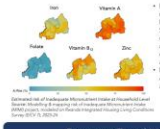
Joselyne Mugeni[1], Damien Ndizeye[2], Jeanine Ahishakiye[3]
[1]Rwanda Food and Drugs Authority (FDA), [2]Rwanda Consumers' Rights Protection Organization (ADECOR), [3]College of Medicine and Health Sciences (CMHS), University of Rwanda

Data on Micronutrient Deficiencies



Anemia: % Anemia estimated using hemoglobin measured in venous blood. Source: Rwanda Demographic and Health Survey, Year: 2020. Frequency: Planned every 5 years

- Anemia, and vitamin B12 deficiency prevalent in children under 5 (U5) and women of reproductive age (WRA); no data for school age children.
- Iodine status (not shown) adequate (>100 µg/L) in WRA.



- Estimation of risk of inadequate nutrient intake (from Household Expenditure and Consumption Surveys (HCES)) can provide context and guide in-depth assessments with subsequent confirmation in biomarker status and dietary intake data.
- Risk of inadequate intake of vitamin A and zinc at the household level are high.

Estimated risk of inadequate Micronutrient Intake at Household Level
Source: Modelling & mapping risk of inadequate Micronutrient Intake (MIMI) project, modelled on Rwanda Integrated Housing Living Conditions Survey (EICV 5). 2021-22

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in GFDx biannual survey (2017-2021). Food vehicle availability - FAO. Supply Utilization Accounts (2010-2020)

Nutrient → / Food vehicle ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✓✓	✓✓	★	✓X	✓X	✓X	✓X	✓X	✓✓	★	2012
Wheat flour	✓✓	✓✓	✓✓	★	✓X	✓X	✓X	✓X	✓X	✓✓	★	2019
Milk	★	★	✓✓	★	★	★	★	★	★	★	★	
Oil	★	★	✓✓	★	★	★	★	★	★	★	★	2020
Salt	★	★	★	★	★	★	★	★	★	★	✓✓	2013
Sugar	★	★	✓✓	★	★	★	★	★	★	★	★	2013
Rice	★	★	★	★	★	★	★	★	★	★	★	
Bouillon cubes	★	★	★	★	★	★	★	★	★	★	★	

Mandatory Fortification | Voluntary Fortification | No fortification

✓✓ - Added to address known deficiency
✓X - Added but unknown deficiency status
O - Can potentially be added to the vehicle
★ - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA-key informant interview data

- Industry data on production are infrequently shared.
- Limited data from informal markets that represent consumption for poor households.
- Enforcement of mandatory fortification is less than ideal.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems
- Strengthen dietary data collection from underrepresented communities by conducting collaborative surveys involving local governments, health centers, academic and research partners, and civil society organizations, especially in among households in the lowest socioeconomic brackets (e.g., Ubudehe 1 & 2).

Monitoring
- Need for an integrated national fortification dashboard that includes production level compliance, retail-level and market surveillance data, and real-time tracking of fortified product availability.
- Invest in financial and human resources to strengthen analytical capacity for food fortification within regulatory agencies.

Prioritization
- Review following data inputs during National Fortification Alliance meetings to bridge the gap in data sharing between regulatory bodies:
  - Rwanda Standards Bureau (RSB); industry compliance
  - Rwanda FDA; food safety and regulatory enforcement
  - Ministry of Health (MOH); nutrition surveillance.
  - Ministry of Trade and Industry and Rwanda Revenue Authority; import and production.

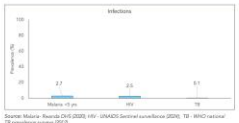
Compliance to Fortification Standards

- Compliance data are not shared publicly due to the confidential nature of the data but are available to RSB and Rwanda FDA.
- Limited time and resources to carry out data synthesis with production-level inspection and testing raw data.

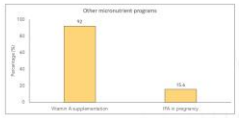
Data on Coverage of Fortified Food

- Iodized salt coverage at household (Rwanda DHS 2020):
  - Fortified: 90.5%
  - Adequately fortified: 47.2%
- No qualitative or quantitative data for other food vehicles.

Data on LSFF-Related Health Conditions & Programs



Source: Malaria - Rwanda DHS (2020); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2012)



Source: Vitamin A supplementation for U5 - UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Rwanda DHS (2020)

- Health system data are variable in quality (i.e., administrative/routine data).
- Uncertainty around interpreting and integrating other micronutrient intervention data.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcome.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

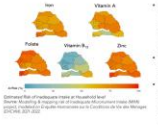
Senegal Large-Scale Food Fortification (LSFF) Data Landscape

Ndeye Fatou Ndiaye[1], Moussa Siby[2], Mamadou Sadji[3]
[1]Comité Sénégalais pour la Fortification des Aliments en Micronutriments (COSFAM), [2]Directorate of Internal Trade, Ministry of Industry and Trade, [3]Nutrition International

Data on Selection of Nutrients



Anemia: % Anemia estimated using hemoglobin measured in venous blood. Source: Senegal National Nutrition Survey (2018)



- Anemia, iron and zinc deficiency are prevalent in children under 5 (U5) and women of reproductive age (WRA); folate deficiency is prevalent in WRA.
- Median urinary iodine (252 µg/L) is nearing excess (≥300 µg/L).
- Modeling shows risk of inadequate intake for all nutrients; HCES (left) are not as accurate as 24-hour dietary recall in measuring intake.

Estimated Risk of Inadequate Intake at Household level
Source: Modelling & mapping risk of Inadequate Micronutrient Intake (MIMI) project, modelled on Uganda Homes survey on Conditions for the Ate Refugee (UCRNA, 2021-2022)

Data on Food Vehicles



Source: Industrial processed: Key informant interviews (2025); Food vehicle coverage: Opinions captured in biannual survey of key informants conducted by GFDx for food vehicle production (2020-2025); Food vehicle availability: FAO. Supply Utilization Accounts (2020)

Nutrient → / Food vehicle ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Yr. of Decree
Maize flour	★	★	★	★	★	★	★	★	★	★	★	
Wheat flour	✓✓	✓✓	✓✓	★	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	★	2005
Milk	★	★	★	★	★	★	★	★	★	★	★	
Oil	★	★	✓✓	★	★	★	★	★	★	★	★	2009
Salt	★	★	★	★	★	★	★	★	★	★	✓✓	2006
Sugar	★	★	★	★	★	★	★	★	★	★	★	
Rice	★	★	★	★	★	★	★	★	★	★	★	
Bouillon cubes	★	★	★	★	★	★	★	★	★	★	★	

Mandatory Fortification | Voluntary Fortification | No fortification

✓✓ - Added to address known deficiency
✓X - Added but unknown deficiency status
O - Can potentially be added to the vehicle
★ - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA-key informant interview data

- Industry data on LSFF production is not shared widely as it is considered business information
- Senegal is considering adding zinc to wheat flour and iron, zinc, and folate to rice –carried out by the COSFAM in accordance with the needs of the country and within the framework of the ECOWAS standardization system.

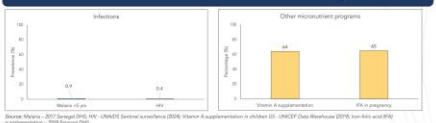
Opportunities for Data-Driven Decision-Making

Prioritization of data use
- Utilize the harmonized monitoring platform to collect industry data – simultaneously provide incentives to industry to share their data (e.g., anonymized reporting of business information).
- Explore the integration of LSFF data sharing within the One Health committee platform at the Ministry of Health.
- Studies and data on the risk of overfortification to need be included in program decision making.
- Identify data elements needed for rice fortification—nutrient status, standards, monitoring system—and apply learning from wheat flour and oil fortification.

Monitoring
- Develop tools for monitoring the nutritional and health quality of fortified foods, and methods for monitoring the availability, accessibility, and use of fortified foods; monitor the LSFF program and evaluate potential positive impact in terms of public health strategy.
- Train, equip, and empower Administrative Agents to collect samples and liaise with laboratories for testing fortification quality at the household level.
- Increase inspection and enforcement at the border to dissuade the entry of unfortified food vehicles that fall under mandatory fortification requirements.

Capacity strengthening
- Assess and bridge gaps in equipment needed to assess industry compliance (e.g., rapid test kits and laboratory-based devices) and promote quality assurance internally within industries.
- Train industry personnel on fortification processes and provide incentives for sharing data.
- Continue to use COSFAM as a political advocacy platform, to analyze and highlight gaps in data related to local and sustainable food systems, and to consider the needs of all stakeholder.

Data on LSFF-Related Health Conditions & Programs



Source: Malaria – 2017 Senegal DHS; HIV - UNAIDS Sentinel surveillance (2024); Vitamin A supplementation in children U5 - UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – 2019 Senegal DHS

- Health system data are currently not considered in LSFF programming.

Compliance to Fortification Standards



Source: USAID AFFORD 2023 Market Assessment published in Current Developments in Nutrition 9 (2025): DOI https://doi.org/10.1016/j.cdnut.2025.107480

- Production level monitoring is done at various levels during manufacturing and marketing: at authorization, production, retail level testing by Administrative Agents
- Industry-submitted production data is not widely shared due to concerns of confidentiality of business information.
- Coordinated actions on enforcement between Division of Consumption and Consumer Safety on wheat flour and oil, and Directorate of Internal Trade for salt leads to better compliance to standards.

Data on Coverage of Fortified Food

- Household iodised salt coverage (Salt and Sodium Intake Survey 2023)
  - Any iodised salt - 34.9%
  - Adequately iodised salt (>15 ppm) – 18.6%.
- Qualitative and quantitative testing data at household level not available for other food vehicles.
- Funding and technical resources are needed to collect this data on a regular basis.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcome.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Tanzania Large-Scale Food Fortification (LSFF) Data Landscape

Sylvester P. Kato[1], Hadijah A. Mbwana [2]
[1]Tanzania Ministry of Health, [2]Sokoine University of Agriculture (SUA)



Data on Selection of Nutrients



Source: Tanzania Demographic and Health Survey and Malaria Indicator Survey 2017 and 2022 | Frequency: Planned every 5 years; Anemia (↓ Anemia estimated using hemoglobin measured in venous blood

Nutrient	Apparent Intake
Iron (mg/day)	15.8
Folate (µg/day)	No data
Vit A (µg/day)	322.0
Vit B12 (µg/day)	12.5
Vit D (mg/day)	No data
Zinc (mg/day)	11.1

Source: Tanzania Household Consumption and Expenditure Survey (HCES) (2018). Potential overestimation of intake from HCES data; individual dietary intake estimates needed for confirmation.

- Anemia, iron, and vitamin A deficiency prevalent in children under 5 (U5) and women of reproductive age (WRA).
- Data needed on school age children.
- Iodine status (not shown) adequate (>100 µg/L) in WRA (196.3 µg/L) [Tanzania DHS 2022].
- Data consistency (changes in results across time in surveys) needs to be addressed.

Data on Food Vehicles



Source: Industrial processors' Key informant interview data captured in GFDx biannual survey (2016-2021). Food vehicle coverage - National Fortification Assessment Coverage Toolkit (FACT) Survey in Tanzania, 2015; Food vehicle availability - FAO, Supply Utilization Accounts (2019-2022); MoH - Ministry of livestock and Fisheries

Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✓✗	✱	✱	✱	✱	✱	✱	✓✗	✗✗	✱	2019
Wheat flour	✓✓	✓✓	✓✓	✱	✓✗	✓✗	✓✗	✓✗	✓✗	✓✗	✱	2019
Milk*	✱	✱	○	○	✱	✱	✱	✱	✱	✱	✱	
Oil	✱	✱	✓✓	✱	✱	✱	✱	✱	✱	✱	✱	2019
Salt	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✓✓	2021
Sugar	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	
Rice	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	
Bouillon cubes	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	
Mandatory Fortification	Voluntary Fortification	No fortification	✓✓ - Added to address known deficiency ✓✗ - Added but unknown deficiency status ○ - Can potentially be added to the vehicle ✱ - No data / Not applicable									

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- A good rationale is needed for adding nutrients when deficiency status is unknown.
- Industry data on production are infrequently shared.

Opportunities for Data-Driven Decision-Making

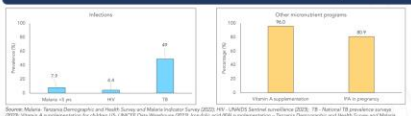
Data sharing
- Develop a data sharing agreement between all stakeholders under the umbrella of the National Food Fortification Alliance meetings; allow sharing across agencies.
- Aggregate local-level data shared in regional meetings at the national level.
- Incentivize industry to share their data (e.g., anonymous sharing, tax incentives tied to compliance) and highlight case studies where data sharing by industry has led to a boost in business due to increased visibility of brand.

Monitoring
- Build on the success of the pilot study on use of village health officers for collecting and sharing monitoring results using the National Sanitation Management Information System.
- Need for a real time data system that can track information flows from health officers and regulatory agencies to the Ministry of Health.

Prioritization
- Prioritize frequent reporting on food fortification indicators in the President's Nutrition Compact; commitment by the government to combat malnutrition through agreements with regional authorities.
- Implement the food fortification guidelines (to be released end of 2025) and harmonize the following across each regulatory agency:
  - Roles and responsibilities as per their mandate.
  - List of indicators.
  - Frequency of enforcement at village/ward (monthly), district (quarterly), and national (annual).

Collaboration
- Partner with the Research and Academia Network to fill the gaps in monitoring and impact data (at retail and household level) and identify solutions to challenges in program implementation and compliance.

Data on LSFF-Related Health Conditions & Programs



Source: Malaria - Tanzania Demographic and Health Survey and Malaria Indicator Survey (2022); HIV - UNAIDS Sentinel surveillance (2023); TB - National TB prevalence surveys (2023); Vitamin A supplementation for children U5 - UNICEF Data Warehouse (2023); Iron folic acid (IFA) supplementation – Tanzania Demographic and Health Survey and Malaria Indicator Survey (2022)

- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- Program monitoring data collected by health officers at retail and household level are utilized locally but not pooled nationally.
- Data on production level compliance available with Tanzania Bureau of Standards but not easily interpretable due to how the data are stored.
- No shared data system available to record results for the food fortification program.
- The Tanzania Bureau of Standards faces geographical challenges in accessing manufacturing maize flour facilities.

Data on Coverage of Fortified Food



Source: Fortifact - Tanzania nationwide milk census report (2022) & Tanzania National Nutrition Survey (2018); Adequately fortified - National Fortification Assessment Coverage Toolkit (FACT) Survey in Tanzania (2016)

- Pilot programme for the rapid testing of foods at production and household level possible through health officers, under their mandate in the Public Health Act of 2009.
- The food fortification guideline currently under development proposes that Community Health Workers assess household coverage.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.
- Data collection funded through donors – not sustainable.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

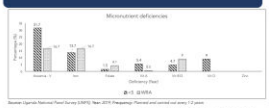
Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Uganda Large-Scale Food Fortification (LSFF) Data Landscape

Sarah Ngalombi[1], Ketra Nakayenga[2], Mike Mazinga[3]
[1]Ministry of Health, [2]Ministry of Trade Industry and Cooperatives, [3]Central Public Health Laboratories



Data on Selection of Nutrients



Source: Uganda National Food Survey (UNFS) 1&2 - 2019 | Frequency: Planned and carried out every 12 years

- Anemia prevalent in children under 5 (U5); Data needed on school age children.
- Iodine status (not shown) adequate (>100 µg/L) in women of reproductive age (WRA; 231 µg/L).
- Vitamin A and iodine deficiencies are under control.
- Biomarker data suggest folate supply from diet and fortified foods are adequate, and iron and vitamin B12 levels in diet need to be increased.
- Dietary data on micronutrients may help identify food sources, and additional food vehicles.

Data on Food Vehicles



Source: Industrial processing- GFDx biannual survey of key informants (2017-2021); Food coverage - Fortification Assessment Coverage Toolkit (FACT) (2015); Food vehicle availability - FAOSTAT (2022)

Nutrient → / Food vehicle↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Reg. Yr
Maize flour	✓✓	✓✗	✱	✱	✓✗	✓✗	✓✗	✓✗	✓✓	✓✓	✱	2011
Wheat flour	✓✓	✓✗	✱	✱	✓✗	✓✗	✓✗	✓✗	✓✓	✓✓	✱	2011
Milk*	✱	✱	○	○	✱	✱	✱	✱	✱	✱	✱	
Oil	✱	✱	✓✓	✱	✱	✱	✱	✱	✱	✱	✱	2011
Salt	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✓✓	1993
Sugar	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	2012
Rice	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	✱	
Bouillon cubes*	○	○	○	○	○	○	○	○	○	○	○	
Mandatory Fortification	Voluntary Fortification	No fortification	✓✓ - Added to address known deficiency ✓✗ - Added but unknown deficiency status ○ - Can potentially be added to the vehicle ✱ - No data / Not applicable									

Reg.Yr – Year of regulation. *Claims by companies of fortification of yogurt with vitamin A and bouillon cubes with iron; Source: Micronutrient status data; Legislation status; DHA key informant interview data

- Uganda data value chain incorporates the whole-of-business approach to fortification, where industry data on production, quality, and certification (critical to carrying out business operations) are considered alongside government data on enforcement and incentives for producers.
- Gaps in data on other potential food vehicles to address existing deficiencies e.g., bouillon cubes and rice

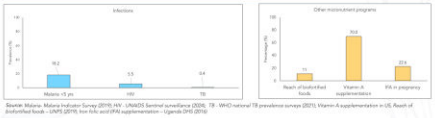
Opportunities for Data-Driven Decision-Making

Data sharing
- Integrate national and regional data hubs that includes training materials for industry with the digital platforms used by enforcement agencies, allowing compliance data to be viewed alongside regulatory requirements.
- Consider piloting data sharing platform housed with the National Working Group on Food Fortification (NWGFF) containing data from all levels ranging from the border to the household level data, especially addressing enforcement issues related to industry compliance, e.g., misinterpretation of standards, premix enforcement.
- Integration of data flows into existing data collection mechanisms, e.g., the food fortification module at the UNPS.
- Government incentives could motivate industry to better fortify their products, e.g., recognition/awards for companies whose food products consistently meet national fortification standards.

Monitoring
- Use results of risk-based prioritization to allocate enforcement resources to support poorly performing industries .
- Strengthen existing management information systems to integrate fortification related indicators.

Prioritization
- Increase visibility of food fortification by strategically including pre-selected food fortification indicators into various policy platforms, including:
  - policy and monitoring and evaluation frameworks
  - Ministries, Departments, and Agencies (MDA) annual plans and budgets
  - Programme Implementation Action Plans in the National Development Policy–4 (2025) for the Private Sector, Agro-industries, and Human Capital.
- Implement processes for institutional data approvals within MDAs, which will make it easier to share data between agencies.

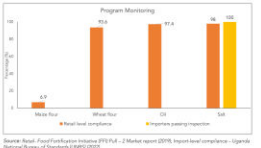
Data on LSFF-Related Health Conditions & Programs



Source: Malaria- Malaria Indicator Survey (2019); HIV - UNAIDS Sentinel surveillance (2020); TB - WHO national TB prevalence surveys (2021); Vitamin A supplementation in US; Reach of biofortified foods – UNPS (2019); Iron folic acid (IFA) supplementation – Uganda DHS (2016)

- Country-led efforts on leveraging infectious disease surveillance programs to integrate routine micronutrient data.

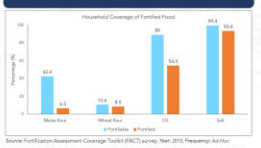
Compliance to Fortification Standards



Source: Retail - Food Fortification Initiative (FFI) FLA – 2 Market report (2019), Import-level compliance – Uganda National Bureau of Standards (UNBS) (2022)

- Production level compliance (maize flour – 47%; wheat flour- 42%; Oil - 55%; salt – 91%) is based on samples submitted to UNBS and not necessarily representative of the food vehicle.
- Adoption of digital platforms by enforcement agencies – UNBS, Uganda Revenue Authority, National Drug Authority: Uganda Electronic Single Window for import, and laboratory and standards management information systems.
- Risk based approaches to monitoring of production sites are conducted by Uganda National Bureau of Standards (UNBS) but data are not widely shared outside the laboratory.
- Compliance data are not always shareable due to issues of confidentiality.

Data on Coverage of Fortified Food



Source: Fortification Assessment Coverage Toolkit (FACT) survey; Year: 2015, Frequency: Ad Hoc

- FACT survey was a starting point for fortification data – Uganda Harmonized and Integrated Survey (previously called UNPS) is now the source for updates on biomarker status and fortified food coverage data.

Impact of LSFF

- Consider modeling studies to evaluate the impact of LSFF on biomarkers and health outcomes, using existing data.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

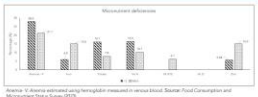
Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Zambia Large-Scale Food Fortification (LSFF) Data Landscape

Mathews Mhuru[1]
[1]National Food and Nutrition Commission (ZFNC)



Data on Selection of Nutrients



Anemia: V. Anemia estimated using hemoglobin measured in venous blood. Source: Food Consumption and Micronutrient Status Survey (2023).

- Anemia, folate, and vitamin A deficiency prevalent in children under 5 (U5) and women of reproductive age (WRA); no data for school age children.
- Iodine status (not shown) adequate (>100 µg/L) in school age children (244 µg/L) and WRA (215 µg/L).
- Data needed on nutrient intake in population groups.

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in GFDx biannual survey (2018-2022) and 2023 Zambia LSFF Feasibility Assessment by USAID/Market Systems Partnership Report; Food vehicle availability – FAO Supply Utilization Accounts (2022).

Nutrient → / Food vehicles ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	○	✓✓	●	✓✓	✓✓	✓✓	✱	○	○	●	2001
Wheat flour	✓✓	○	✓✓	●	✓✓	✓✓	✓✓	✱	○	○	●	2001
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	●	●	●	●	●	●	●	●	●	
Salt	●	●	●	●	●	●	●	●	●	●	✓✓	1992
Sugar	●	●	✓✓	●	●	●	●	●	●	●	●	1998
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓✓ - Added to address known deficiency
✗✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- All salt is imported; 67% of oil is imported, 33% is manufactured locally, and 70% of locally produced oil is large scale.
- Maize flour, wheat flour, and oil are potential vehicles for mandatory fortification based on recent food consumption data.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems

- The National Statistics Office reviews Household Expenditure and Consumption Survey data to determine consumption patterns of potential food vehicles.
- Latest Food Consumption and Micronutrient Survey report published in 2024; data from this survey will inform the fortification strategy.
- Food fortification is supported by an elaborate policy framework, including the 8th National Development Plan (2022–2026) (MFNP 2022).

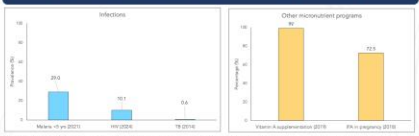
Monitoring

- Environmental Health Officers conduct market monitoring of salt and sugar, in collaboration with Import Inspection officers placed at key ports of entry – especially for Namibia and Tanzania – for salt monitoring. UNICEF has supported these efforts by providing equipment to test iodine content during inspections, in partnership with the Ministry of Health National Public Health Laboratory.
- Harmonize and enforce regional standards – i.e., by the Southern African Development Community (SADC) and the East, Central and Southern Africa Health Community (ECSA-HC) – can strengthen enforcement, as Zambia imports foods from neighboring countries.
- Use the National Fortification Alliance (NFA) as a key forum for data sharing.
- Strengthen inter-ministerial collaboration to ensure compliance to food standards – e.g., triangulated data from Commerce and Compulsory Standards Authority would reveal inconsistencies.

Prioritization

- Food and Nutrition Commission (ZFNC) can coordinate sharing of compliance data from the Compulsory Standards Authority with the NFA.
- Encourage provincial authorities to conduct regular market assessments of compliance; this will provide national picture of compliance status and complement industry inspections.
- To address funding gaps, develop an investment case for food fortification within the Nutrition Fund being instituted under the National Food and Nutrition Policy (2025); financing for the fund derives from proposed taxes on sugar-sweetened beverages.

Data on LSFF-Related Health Conditions & Programs



Source: Malaria – Zambia Malaria Indicator Survey (2021); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2014); Vitamin A supplementation in U5- UNICEF Data Warehouse (2019); Iron-folic acid (IFA) supplementation – Zambia DHS (2018)

- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards



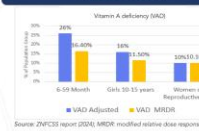
Source: Consultancy report to GAIN and ZFNC (F Mathuma) - July 2018; Assessment of the monitoring system for fortified sugar and iodized salt in Zambia and market surveillance for compliance (2024); Zambia Food Consumption and Micronutrients Status Survey (ZNFCSS) report (2024).

- Average fortificant amount in salt and sugar below minimum standards (2018): 15mg/kg for iodine (salt) and 10mg/kg for vitamin A (sugar).
- Industry inspection conducted on a quarterly basis by the Compulsory Standards Authority.
- Industry-level data on food quality are not routinely shared.

Data on Coverage of Fortified Food

- Household coverage of fortified salt – 88.4% (2014).
- The Living Conditions Survey and routine health data collection can potentially be used to assess fortified food consumption; logistics and costs need to be assessed.

Impact of LSFF



Source: ZNFCSS report (2024); MRDR: modified relative dose response.

- 2024 national survey shows decline in VAD from 2003; VAD adjusted for inflammation AGP and CRP.
- Same survey shows a decrease in anemia prevalence in U5: 28% in 2024 compared to 58% in 2003 (data not shown).

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Africa Regional Dialogue on Data for Action in Food Fortification
Addis Ababa, Ethiopia | 28-30 October 2025

Zimbabwe Large-Scale Food Fortification (LSFF) Data Landscape

Handrea Njovo[1], Dayford Nhema[2], Yvonne Mavhunga[3]
[1]Ministry of Health and Child Care, [2]Ministry of Industry and Commerce, [3]Food and Nutrition Council Zimbabwe



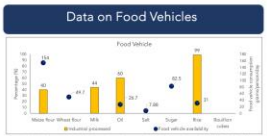
Data on Selection of Nutrients



Anemia: C. Anemia estimated using hemoglobin measured in capillary blood. Source: Anemia: Zimbabwe Demographics and Health Survey (2006); Vit. A, iodine: Zimbabwe National Micronutrient Survey Results (2012)

- Anemia and vitamin A deficiency prevalent in children under 5 (U5) and women of reproductive age (WRA); no data for school age children (SAC).
- Iodine status (not shown) adequate (>100 µg/L) in SAC (130 µg/L) and WRA (112 µg/L).
- Last micronutrient survey in 2012 – planned update survey in 2022 was not carried out due to limited resources.

Data on Food Vehicles



Source: Industrial processed: Key informant interview data captured in GFDx biannual survey (2017-2018); Food vehicle availability - FAO Zimbabwe Food Balance Sheets (2020)

Nutrient → / Food vehicles ↓	Fe	Zn	Vit A	Vit D	B1	B2	B3	B6	Folate	B12	Iodine	Std. Yr
Maize flour	✓✓	✗✗	✓✓	●	✗✗	✗✗	✗✗	✗✗	✗✗	✗✗	●	2016
Wheat flour	✓✓	✗✗	✓✓	●	✗✗	✗✗	✗✗	✗✗	✗✗	✗✗	●	2016
Milk	●	●	●	●	●	●	●	●	●	●	●	
Oil	●	●	✓✓	✗✗	●	●	●	●	●	●	●	2016
Salt	●	●	●	●	●	●	●	●	●	●	✓✓	2000
Sugar	●	●	✓✓	●	●	●	●	●	●	●	●	2016
Rice	●	●	●	●	●	●	●	●	●	●	●	
Bouillon cubes	●	●	●	●	●	●	●	●	●	●	●	

Mandatory Fortification | Voluntary Fortification | No fortification

✓✓ - Added to address known deficiency
✗✗ - Added but unknown deficiency status
○ - Can potentially be added to the vehicle
● - No data / Not applicable

Source: Micronutrient status data; Legislation status; DHA key informant interview data.

- Food balance sheet do not capture individual consumption patterns and can overestimate nutrient intakes (e.g., sugar) and raise unnecessary concerns about overconsumption.

Opportunities for Data-Driven Decision-Making

Collaboration for data systems

- Use a sentinel surveillance system to address gaps in micronutrient status data.
- Strengthen existing data systems to better support fortification - e.g. consider use of the Health Management Information System (HMIS) to capture data on neural tube defects.
- Incorporate fortification indicators into the annual Zimbabwe Livelihoods and Assessment Committee (ZIMLAC) study, shared with Cabinet and partners to support decision making processes.

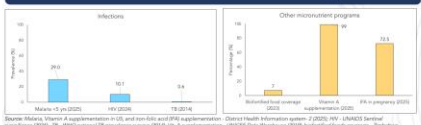
Monitoring

- Expand field testing capacity by providing additional test kits for inspectors to enable them to assess program performance in smaller localities beyond major urban centers.
- Use risk-based prioritization approaches for inspection and monitoring, with coordination between the Ministries of Health and Industry.
- Strengthen laboratory capacity for micronutrient testing.
- Consider including industry data in the HMIS to allow for data transparency and open access.

Prioritization

- Incorporate fortification indicators into the ZIMLAC assessment framework for sustainable data collection not dependent on external funding.
- Implement a national fortification monitoring program to collect and share compliance data with key stakeholders, focusing on industry and market data.
- Establish an annual government-funded assessment (with partner support) to collect data for planning and programming, with wide dissemination to inform policy and practice.

Data on LSFF-Related Health Conditions & Programs



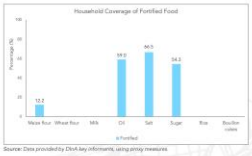
Source: Malaria, Vitamin A supplementation in U5, and iron-folic acid (IFA) supplementation - District Health Information system -Z (2025); HIV - UNAIDS Sentinel surveillance (2024); TB - WHO national TB prevalence surveys (2014); Vit. A supplementation - UNICEF Data Warehouse (2019); biofortified foods coverage - Zimbabwe Livelihood Assessment Committee 2022 Rural Assessment Report (2023).

- Uncertainty around interpreting and integrating other micronutrient intervention data.

Compliance to Fortification Standards

- The Minister of Industry and Commerce is responsible for the production of the goods that will be fortified.
- The Ministry of Health's and Environmental Health Services department handles industry and market inspections and sample collection, with testing conducted by a government analyst laboratory.
- No recent data on fortification compliance available.

Data on Coverage of Fortified Food



Source: Data provided by DHA key informants, using proxy measures

- Ministry of Health and Child Care's role is to advocate for fortification, implement and monitor the program, and mobilize the population to increase the demand for fortified foods.
- The only testing of fortification levels in foods is salt; for other foods, equipment is available from private laboratories, but assessment protocols differ from those used in regulatory testing.

Impact of LSFF

- No studies evaluating the impact of LSFF on biomarkers and health outcomes.
- Food Nutrition Council is a department within government and mostly involved in data collection and providing evidence for decision making for government and partners.

Disclaimer
This country profile may not capture the full scope of the country's large-scale food fortification data value chain and reflects information gathered through key informant interviews and publicly available data as part of meeting preparations.

Annex C. List of LSFF Data Tools and Resources

- Assessment of iodine deficiency disorders and monitoring their elimination: a guide for programme managers – WHO; a guidance document on using surveillance indicators and monitoring methods to prevent, control, and monitor iodine deficiency disorders, including salt iodine monitoring and population surveys.
- Blueprint for Food Fortification Program Design and Implementation – FFI, Nutrition International; a guide for individuals or entities involved in leading or supporting the design and implementation of LSFF, including government agencies, supporting organizations, and/or individuals.
- Fortification Coverage Questionnaire –a list 8 new household staple food fortification coverage indicators for DHS-9 that complement the existing coverage of fortified salt indicators. AVAILABLE UPON REQUEST.
- Digital Fortification Quality Traceability Plus (DFQT+) – GAIN; a digital platform that tracks and monitors the quality of fortified foods in real-time throughout the supply chain.
- eCatalogue of indicators for micronutrient programmes – WHO, CDC; a digital resource that provides standard process and impact indicators for tracking performance of public health programs implementing micronutrient interventions.
- FAOSTAT – FAO; a large statistical database on food and agriculture, providing free access to data for over 245 countries and territories from 1961 to present.
- Fortification assessment coverage toolkit (FACT) – GAIN; a toolkit that provides standardized methods for the collection, analysis, and synthesis of data on quality, coverage, and consumption of fortified foods to evaluate the effectiveness of large-scale food fortification programs.
- Fortification Market Application (FortiMApp) – GAIN; a mobile and web application that support the FACT to record key market data across the supply chain data to assess the quality, coverage, and consumption of fortified foods.
- FortifyMIS – FFI; an online system for monitoring food fortification, using data collection and tracking to improve program performance and reduce monitoring costs.
- FORTIMAS – FFI; a population-level data collection approach designed to track whether the micronutrient status of people who regularly consume fortified flour is improving.
- Fortification Rapid Assessment Tool (FRAT) – Nutrition International; a questionnaire that combines 24-hour recall and food frequency questionnaires to allow users to make decisions about the most appropriate food vehicle(s) for fortification.
- Fraym Fortifiable Foods Dashboard – an interactive dashboard is designed to help decision-makers improve micronutrient uptake at a geographic level.
- Global Fortification Data Exchange (GFDx) – FFI, GAIN, IGN, Micronutrient Forum; an online analysis and visualization platform, providing free access to data on food fortification for 196 countries and five food vehicles.
- Global Individual Food Consumption Data Tool – WHO, FAO; an online data platform that provides access to harmonized individual food consumption data.
- Guidance for Salt Fortification with Iodine: A Renewed Commitment to Achieve Optimal Iodine Nutrition – UNICEF; guidance to renew global salt iodization efforts by addressing challenges and preventing iodine deficiency reemergence.

- Guidelines for internal and external monitoring of fortified edible oil, salt, sugar, wheat flour and maize flour – ECSA-HC; import and export monitoring guidelines for the Eastern, Central, and Southern Africa (ECSA) member states.
- Guidelines on food fortification with micronutrients (2006) – WHO, FAO; comprehensive guidelines to support countries in designing and implementing food fortification programs. Updated guidelines to be published in 2026.
- HungerMap Live – WFP; an online global hunger monitoring system that combines data sources, including information on food security, weather, population size, conflict, hazards, nutrition and macro-economics, to assess and predict food insecurity in near real-time.
- INTAKE24 – Newcastle University, Cambridge University; an open-source self-completed computerized dietary recall system based on multiple-pass 24-hour recall.
- Intake Monitoring, Assessment and Planning Program (IMPAPP) – Iowa State University; a software to estimate usual nutrient intake distributions and impact of fortification on dietary adequacy.
- Manual for inspection of fortified foods at the points of entry and market surveillance in the East, Central, and Southern Africa (ECSA) region – ECSA-HC; a harmonized guideline for inspecting fortified foods at points of entry and markets to strengthen food control activities and ensure the delivery of safe, quality fortified foods to ECSA member state populations.
- Micronutrient Action Policy Support (MAPS) project – LSHTM; R manual for nutrition analysis of Household Consumption and Expenditure Surveys.
- Micronutrients Database – WHO; interaction online platform that provides nationally representative data published in reports or manuscripts on the micronutrient status if populations.
- Micronutrient Fortification Index – TechnoServe; a framework that assesses essential elements of quality management and fortification in food processing businesses through a self-assessment tool, product quality testing, and expert group discussions.
- Micronutrient Intervention Modeling Project (MINIMOD) – UC Davis; a modeling approach that helps policymakers identify the most cost-effective strategies for addressing micronutrient deficiencies in children and women.
- Micronutrient survey analyser – WHO; an online tool for performing comprehensive analysis of micronutrient status survey data for all populations aligned with WHO guidelines for assessing micronutrient status of individuals and populations.
- Micronutrient survey manual and toolkit – CDC, Nutrition International, UNICEF; an online resource to guide micronutrient survey planning, implementation and reporting.
- Modelling and Mapping Inadequate Micronutrient Intake (MIMI) – WFP; the application of novel analytical approaches to model and map micronutrient intake gaps to inform national decision-making on food fortification programs.
- Monitoring flour fortification to maximize health benefits: a manual for millers, regulators, and programme managers – WHO; a manual that provides guidelines and a framework for monitoring fortification of wheat and maize flour, using WHO/CDC indicators to ensure the population receives safe and adequately fortified products.
- Optima Nutrition Learning Tool – World Bank; a quantitative tool that provides guidance to governments on how to allocate budgets across nutrition programs.

- Regulatory governance of large-scale food fortification: A measurement framework – OCED; a comprehensive framework for solid regulatory governance of large-scale food fortification.
- Regulatory monitoring of national food fortification program guideline – GAIN, Project Healthy Children (PHC), IGN, FFI TechnoServe; a policy guidance document that proposes a standardizes systems-based approach for determining compliance to food fortification standards.
- UNICEF Data: Iodized salt data – UNICEF; a global database on household consumption of iodized salt, which provides country-level trends of household consumption of salt with any iodine.
- Vitamin and Mineral Nutrition Information System (VMNIS)- WHO; an online database that systematically collects and summarizes global data on vitamin and mineral status in populations to track progress toward eliminating micronutrient deficiencies.
- VitaMin-Premix supplier Index – ATNi; an evaluation of the world's largest fortificant producers, assessing their policies and practices to support effective food fortification.
- Living Standards Measurement Survey (LSMS) microdata library – World Bank; a household survey program aimed a strengthening the availability, quality, relevance, and timeliness of household surveys implemented in low- and middle-income countries, for improved policymaking and better livelihoods.

This document is also available online. To access the full list of LSFF-related data resources, scan the QR code below:

Annex D. Breakout Session Handout: Prioritization of Data Needs and LSFF for Decision Making

Prioritization of Data Needs and Large-Scale Food Fortification (LSFF) Indicators for Decision Making

Breakout Session | 29 Oct 2025

Instructions for table work

Assign a facilitator for the table (a rapporteur has already been assigned). The facilitator will help manage time to ensure the discussion covers all relevant topics, encourage balanced participation, help keep discussion focused, and work with the assigned rapporteur to summarize key points in the final minutes for report-back.

Rapporteurs will be responsible for taking clear notes in the provided notetaking template for real time report back to the session facilitator(s). Notes should be clear and succinct rather than verbatim, with uncertainties confirmed in the moment.

Identify priority data needed for LSFF decision-making. Use the discussion questions as a guide to identify data needs for your group's topic area.

Discussion questions

- What data are typically used to make decisions for your topic area? Which stakeholder(s) needs these data and why?
- What data would help you make better decisions for your topic area? Which stakeholder(s) needs these data and why?
- What do you see as the most critical data to make decisions for your topic area? Which stakeholder(s) needs these data and why?

Topics

Selection of nutrients

Your group is focused on data needed for identifying the rationale for a LSFF intervention and to inform the design of your country's program. This includes whether you are fortifying with the right nutrients and the amount of nutrients a food should be fortified. For mature programs, this refers to data to help you decide if the target nutrients need to be changed.

Selection of food vehicle

Your group is focused on data needed to choose the appropriate food vehicle(s) for your country's LSFF program. By food vehicles we mean food, beverage, and condiments commonly fortified. For mature programs, this refers to data to help you decide if food vehicle(s) needs to be changed or new vehicle(s) added.

Creating policies, legal, and regulatory environment

Your group is focused on data needed to create an enabling environment and establishing the legal system for LSFF programming. This includes policies (e.g., inclusion in national

nutrition strategies), legislation (e.g., mandatory or volunteer fortification), regulation (e.g., labeling of food vehicle), and standards (e.g., the type and amount of nutrient compound added to food vehicle). For mature programs, this refers to data to help you decide if the policy, legal, and regulatory environment needs to be changed.

Monitoring LSFF program

Your group is focused on data needed to determine if food vehicles are being fortified according to national fortification standards (i.e., compliance). This includes government monitoring: 1) external monitoring of domestic production facilities; 2) import monitoring for foods entering the country; 3) commercial monitoring at retail sites. It also includes internal monitoring done by food industry and premix providers (i.e. quality assurance and quality control).

Implementing LSFF program

Your group is focused on data needed to assess whether fortified foods are having the desired dietary impact. This includes the population that consumes the fortified food, the additional amount of micronutrients available to the population through fortified food, fortified food intake, and micronutrient intake from fortified food. This also addresses equity of access (e.g., what population groups consume the food and added nutrients and in which geographies).

Evaluating impact of LSFF program

Your group is focused on data needed to assess the impact/success of the LSFF program on the target population. This includes determining if the program has led to improvements in micronutrient or health status and assessing the cost-effectiveness of the intervention.

Integrating with other programs

Your group is focused on data needed to ensure LSFF is coordinated and integrated with other relevant health, nutrition, and agricultural programs (e.g. nutrition-specific and nutrition-sensitive actions) to maximize overall impact and efficiency.

Annex E. Breakout Session Handout: Filling Gaps to Strengthen the LSFF Data Value Chain

Filling Gaps to Strengthen the Large-Scale Food Fortification (LSFF) Data Value Chain

Breakout Session | 30 Oct 2025

Instructions for table work

Assign a facilitator for the table (a rapporteur has already been assigned). The facilitator will help manage time to ensure the discussion covers all relevant topics, encourage balanced participation, help keep discussion focused, and work with the assigned rapporteur to summarize key points in the final minutes for report-back.

Rapporteurs will be responsible for taking clear notes in the provided notetaking template for real time report back to the session facilitator(s). Notes should be clear and succinct rather than verbatim, with uncertainties confirmed in the moment.

Session aim: Develop 3–5 concrete actions for each of the following stages of the fortification data value chain:

1. **Prioritization**: determining data priorities based on decision makers priorities and goals, including indicators.
2. **Data collection**: generation and collection of data through different methods (e.g., surveys, routine monitoring, administrative systems), including the source, frequency, and access.
3. **Analysis**: synthesis of data, including summarizing and modeling data.
4. **Use**: strategic use of data to inform decisions, policies, program adjustments, advocacy, and investment, including feedback to refine future data cycles.

To function well, the data value chain also depends on three cross-cutting enablers: 1) leadership, governance, and coordination across sectors; 2) financing for data systems; and 3) capacity strengthening. Consider including concrete actions that will strengthen these three enablers.

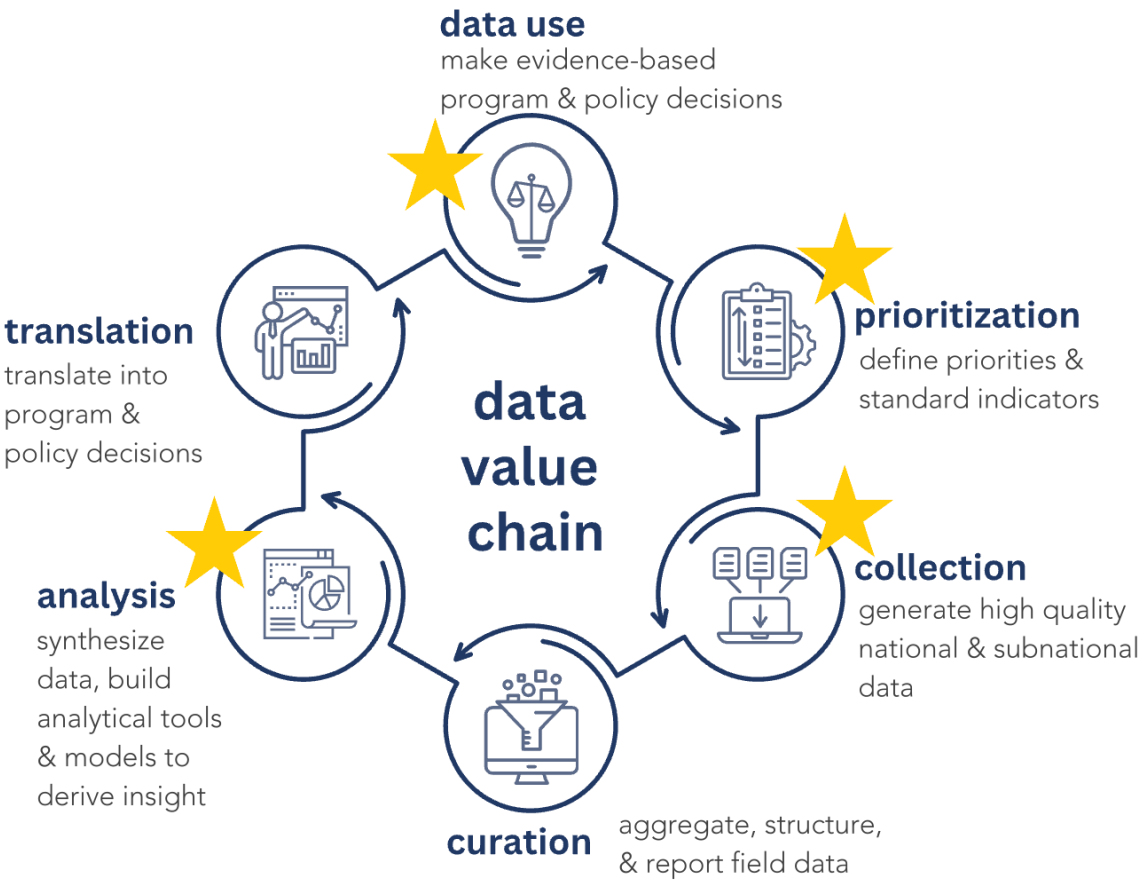
For each action, specify

- Action statement (verb + outcome)
- Owner (lead institution/person) and partners
- Timeline
- Resources/costing needs (what's funded vs gaps)
- Identify if cross-country (likely relevant to multiple countries)

What is the data value chain?

The data value chain is a framework for how data flows through a system, from identifying what data are needed to using information to inform action. This framework can help guide

discussions on where to strengthen LSFF data systems and what actions are needed at each stage.



Source: Available at: https://datadent.org/revisiting-the-nutrition-data-value-chain-an-updated-framework-to-promote-data-use/

Annex F. Draft Country Prioritized Actions for LSFF Data

Ethiopia

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Standardized Indicators, Identifying Percentage of food that we fortified (production)	MOI	2026	Government and Partner
	Identifying premix quality check required	EDFA	Q2 (2026)	EFDA, MOI
	Assess the data conformity mechanism	ECAE	2026	ALL sectors need to involve
	Prioritize Standardized indicators by all sectors	MOI MOH	Q2 (2026)	Sector wide
	Conduct post market survey	MOI		
	Operationalize food fortification information system			
Data Collection	Strengthen data collection	EPHI	Ongoing	To be mobilized
	Strengthen digitalization FFIS (web-based data collection) innovative of way /harmonized data collection	MOI/MOH	Ongoing	Available

	Support the industries in QA and QC indicators directly linked to regulatory bodies (work on compliance) Volume of production fortified food	MOI/EFDA	Medium term (2nd Q)	
	Conduct premix quality check, Post market Survey Conduct import reporting collection, Toxicity tracking at community	EFDA, MOTRI and RHB EPHI Custom Commission	Ongoing	Gov and partners
Analysis	Centralized way of analysis data	NIPN	Ongoing	Available /mobilize for capacity building
	Organization of data	EPHI, and Others		
	Innovative data collection and analysis	EPHI	Ongoing	Govt and partner
Use	Translate to action for all stakeholders	ALL	Ongoing	Government and partner
	Utilized available data for action, advocacy	ALL	Ongoing	Government and partner
Cross Cutting Enablers	Capacity building	All	Ongoing	Government and partners

	Strengthen the governance structure	All	Ongoing	Government and partner
	Establish data focal points	MOH/MOI		
	Traceability data in demand vs supply side			

Kenya

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Food fortification impact assessments: Start with market availability data, volumes that are fortified and model impact on consumption Household data can then be used to verify or confirm the impact: Food consumption patterns, quantities, and adequacy	MOH-Department of Nutrition	ASAP	No resources at the moment. To be consolidated from government and different partners
	Compliance testing for premix and products			
	Have a forum to share experience for cross learning amongst food			

	industries. Learnings can be around analysis methods, import issues, mainly around fortified foods			
Data Collection	Routine monitoring at market and industry levels	Industry data – KEBS Market data - Public Health Samples analysed at NPHLS	Quarterly basis	
Analysis	Analysing and synthesizing their own data, preparing reports and taking action	industry, MOH-Public Health, KEBS, academia-when collaborating with the different regulators in surveillance),		
Use	Quality assurance, and informs standards development and review	Industry		
	Corrective actions	Regulators		
	Program improvement, policy direction, review of standards	Academia		

Lesotho

Stage of Nutrition Data Value Chain)	**Action**	**Owner (lead institution/person) and partners**	**Timeline**	**Resources/costing needs (what's funded vs gaps)**
Prioritization	Establish and operationalize a National Fortification Committee chaired by the Nutrition Coordinator in the Office of the Prime Minister	Lead: OPM (Nutrition Coordinator); Partners: MoH, MoT, academia, millers, development partners	Committee revived before end of year; quarterly meetings (4 per year)	Government and development partner funded; need minimal operational budget for meetings and coordination secretariat

	(OPM), including MoH, Ministry of Trade, academia, development partners, and private secto			
	Develop and adopt a National Fortification Plan outlining data priorities, decision indicators, and coordination mechanisms	Lead: MoH & OPM; Partners: MoT, academia, SUN secretariat, development partners	Draft by Q1 next year; endorsement by mid-year	TA needed for drafting and consultation process
	Map all key stakeholders and fortifiable products to clarify data sources and responsibilities across the value chain. Integrate fortification data priorities into national nutrition and food security	Lead: Fortification Committee; Partners: MoH, MoT, Bureau of Statistics, private sector Lead: OPM; Partners: MoH, MoA, MoT	Within 6 months Within 12 months	Government staff time; TA and data management support required Policy review supported by development partners
Data Collection	Develop and implement a multi-source fortification data collection system (including surveys, clinic data, consumer feedback, and market monitoring).	Lead: MoH; Partners: Bureau of Statistics, MoT, OPM, development partners	Design by Q2 next year; pilot by end of year	Need digital data tools, survey costs, data analyst

	Conduct baseline data collection on nutrient status and product fortification levels across regions (vitamins, trace elements).	Lead: MoH; Partners: labs, universities, MoT	Within 12 months	Funding needed for lab testing, logistics
	Establish a routine monitoring system through health facilities and market inspections to verify fortification compliance and labeling accuracy	Lead: MoT (for product monitoring) & MoH (for nutrition surveillance); Partners: Bureau of Standards, local councils	Integrate into existing routine monitoring systems by next fiscal year	Requires additional inspectors, lab testing kits
	Train district nutrition officers and small millers on data generation and record-keeping.	Lead: MoH (Nutrition Dept); Partners: Development partners, private sector	Training rollout in next 12 months	TA and training materials funded by partners
	Use existing national vulnerability assessments (Disaster Management Unit, PM Office) to incorporate fortification indicators twice a year.	Lead: Disaster Management Unit; Partners: OPM, MoH	Integrate starting next cycle	Minimal cost, coordination only
Analysis	Analyze consumption patterns of fortified foods and correlate	Lead: MoH (Nutrition Dept); Partners: Academia, MoT	Annually	Data analysts and software; TA support needed

	with nutrient status trends.			
	Conduct quality assurance and cross-check of premix data (testing premix independently, not only relying on supplier certificates).	Lead: MoT & MoH; Partners: National labs, importers	Set up system within 12 months	Requires testing equipment and lab support
	Model regional differences in nutrient deficiencies to tailor fortification premixes by region.	Lead: MoH (Nutrition Unit); Partners: academia, private sector	Within 18 months	Support for data modeling and analysis software
	Develop data dashboards and summaries for decision-makers (accessible visualizations on fortification status and compliance).	Lead: OPM (Committee Secretariat); Partners: MoH, MoT	Prototype in 9 months	Software, TA from partners
Use	Provide regular feedback and data updates during quarterly fortification committee meetings.	Lead: Fortification Committee (OPM)	Ongoing (quarterly)	Funded by government/partners
	Use analysis to inform policy revisions and enforcement actions (e.g.,	Lead: MoT & MoH; Partners: Revenue Authority, Standards Bureau	Within 1 year	Requires regulatory framework review

	penalties for false fortification claims, tax rebates for compliant producers).			
	Conduct public awareness and consumer education campaigns to increase demand for fortified foods and improve acceptance.	Lead: MoH (Nutrition Campaign Team); Partners: MoT, media, civil society	Ongoing (linked to district campaigns)	Campaign budget and materials needed
	Share findings with regional partners and explore cross-border collaboration (especially with South Africa on premix and product trade).	Lead: OPM; Partners: SADC, MoT	Annually	Requires travel and coordination support
	Establish incentive mechanisms for compliant fortifiers (e.g., recognition, rebates) and strong penalties for non-compliance.	Lead: MoT; Partners: MoF, MoH	Within 12–18 months	Requires legal review

Malawi

Stage of Nutrition Data Value Chain	**Action**	**Owner (lead institution/person) and partners**	**Timeline**	**Resources/costing needs (what's funded vs gaps)**

Prioritization	Engage Industry to comply with fortification standards	Lead Institution: Department of Nutrition (MOH), Partners: Academia, Statistics Office, UNICEF, WFP, EU, WB	Nov 2025 - April 2026	Logistics for travel and meetings
	Establish community sentinel sites to monitor consumption of fortified foods at household level compliance data			
	Identify potential data sources in Malawi and collect all available information			
Data Collection	Prepare data collection tools based on MN defined in the standards of the foods for mandatory			
	For data already available: Contact institutions with data and prepare a report with information from previous survey			
	For outstanding MN Status report: Engage Statistics Office and Public Health Institute accelerate and facilitate completing of samples analysis and reporting			

Analysis	Grouping data to determine national situation and relate to cut off points (mild, severe, moderate)			
	Synthesis of data based individual micronutrients and compile a report on status from previous surveys			
	For the outstanding report analysis will be conducted based on protocol			
Use	Develop appropriate programs to address micronutrient deficiencies identified			
	Align findings from the reports with the current National Nutrition and Policy and Strategic Plan			
	Recommend appropriate actions to address identified deficiencies			

Mozambique

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Set up a functional FF monitoring and evaluation system that captures key data from production to market and use, building from existent systems and infrastructure and looking at global tools and experience elsewhere.	CONFAM	Jan 2026 - Dez 2027	Technical and financial
	Enforce monitoring of fortified foods at production and market by regulators: production disaggregated by fortifiable, fortified, adequately fortified); non-compliance at market,			
	Conduct Micronutrient deficiencies and coverage of FF survey			
	Build from the M&E session of the National FF strategy and prepare an M&E Logistical			

	framework and costed plan			
	Operationalize the FortifiMIS tool			
	Leverage from the ongoing HH Expenditure Survey and conduct MIMI			
Data Collection	Data Collection - generate high quality national and sub-national data			
	Engage with National Institute Statistics (INE) to integrate food fortification questions within national surveys (DHS, IOFs)			
	Engage SETSAN can also integrate the questions in the food security vulnerability assessments.			
	Engage with National Institute of Health (INS) to integrate in HIV, Malaria and TB surveys and surveillance systems (this latter explore the experience of the Public Health Institute of Uganda).			
	Leverage on data sharing, technology and existent tools			

	shared in this event			
Curation	Establish a digital information data collection tool for food processors, inspectors and civic society to collect data			
	Conduct surveillance exercises (frequency TBD) per producers under each category to confirm training and support needs, including new industries	CONFAM	At least 1x'/year	
	Addressing data security concerns, providing proper incentives			
	Improve data quality			
Analysis	Define and conduct a training of trainers on FF to ensure the country has a pool of experts in different areas, especially the fortification data technology and internal quality control processes.			
Communication	Translate into program & policy decisions			
Use	Make evidence-based programme & policy decisions			
	Leverage modern data-sharing technologies			

Namibia

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Updating the micronutrient status data (iodine, iron, folic acid, vitamin B12, zinc) as the last data are of 2013 (DHS)	Government- Ministry of Health, Namibia Standards Institution UN agencies, FFI, CSOs, WHO and other partners	December 2026	Technical and financial support, currently no funding is allocated to support the activity
	Development of food fortification standards and regulation	Government- Ministry of Health, Namibia Standards Institution UN agencies, FFI, CSOs, WHO and other partners	December 2026	Technical and financial support, currently no funding is allocated to support the activity
Data Collection	Use of simplified and less costly tools to collect the data	Government Partner: UN agencies, FFI, CSOs, WHO, academia	December 2026	Technical and financial support, no funding is available
	Integrate micronutrient indicators in the 2026 DHS and VAA	Government Partner: UN agencies, FFI, CSOs, WHO, academia	December 2026	Technical and financial support, no funding is available
	Integrate fortification indicators in the DHIS	Government Partner: UN agencies, FFI, CSOs, WHO, academia	December 2026	Technical and financial support, no funding is available
Analysis	Engagement of academia, Namibia Statistics	Government (Ministry of Health, Ministry of	2027	Technical and financial support, no funding is available

	Agency and Office of Prime Minister to support analysis and interpretation of data	Industries, Ministry of Trade and International Relationship, National Planning Commission, Ministry of Agriculture and other relevant institutions Partners: UN agencies, academia, INGOs, SADC		
	Technical support from international and regional partners to interpret the data	Government (Ministry of Health, Ministry of Industries, Ministry of Trade and International Relationship, National Planning Commission, Ministry of Agriculture and other relevant institutions Partners: UN agencies, academia, INGOs, SADC	2027	Technical and financial support, no funding is available
Use	Inform development of food fortification standards and regulation	Government - Ministry of Health Partner:UN agencies, INGOs, academia	2026/27	Technical and financial support
	To inform review of other nutrition relevant policies and programs	Government - Ministry of Health Partner:UN agencies, INGOs, academia	2026/27	Technical and financial support

Nigeria

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Data on SMEs for vegetable oil and maize flour (Identify /mapping SMEs in the value chain)	Lead: FMOH, FMITI Support: SON, NAFDAC, NFA, Partners	Q1 2026	Budget allocation
	Weak regulatory capacity for monitoring SME's (Develop structures for bringing them on board)			
	Strengthen cross-border surveillance and controls	Customs, regulatory agencies, FMITI, FMF		Cooperation with Benin republic, Cameroun, Chad on cross-border trade & regulation
Data collection	Develop a standard methodology for compliance data collection, interpretation and reporting	NFA	Q2 2026	Technical assistance Capacity building
Analysis	Increase human capacity, and investment in private and public laboratories.	Public and private sector, IPAN, Partners	Q3 2026	Technical, financial resources

Rwanda

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Identify food vehicles to be prioritised to reduce Micronutrient deficiencies amongst children and WRA	MOH, NCDA, and FDA	5 years for DHS; 3yrs for Govt	Funding to conduct food consumption surveys to determine prevalence of micronutrient deficiencies
	Create an enabling environment to inform policy decisions and support implementation	Govt, NCDA and FDA	Annually	Support for advocacy activities such as advocacy policy consideration, policy change, harmonization of the legal framework
	Strengthen the Rwanda National Fortification Alliance	Ministry of Health, Ministry of Trade, NCDA, FDA, International NGOs and CSOs	Continuous	Need to increase budget allocation for nutrition specifically for food fortification, and support from international and development partners
	Strengthen the enforcement of Food Fortification Regulations through capacity building of all relevant stakeholders	MOH, FDA, RSB,	Annually	Government budget allocation under the Standards and Regulations Programmes
	Share findings with national, and regional partners and explore cross-border collaboration	MOH, Rwanda FDA, including national and international partners	Continuous whenever data findings are available	Government funds

Data Collection	Include national data for food fortification to the DHS e.g. compliance data, and consumption and market for fortified foods	MOH, and NCDA	Team proposed every 3 years	Government funds allocated to Food Fortification
	Enhance availability of data for production and premix use	private sector, millers, oil refineries, and regulators	Annually	Support from the private sector, Government
Analysis	Standardize methodologies for analysis			
Data Use	Strategic dissemination of data - to Govt., NFA, and the civil society, research institutions, and academia.			
	Enhance behaviour change communication for the population based on study findings.			

Senegal

Stage of Nutrition Data Value Chain	**Action**	**Owner (lead institution/person) and partners**	**Timeline**	**Resources/costing needs (what's funded vs gaps)**
Prioritization	Prioritise collection of micronutrient data			
Data Collection	Collect data to understand the status of MND through a national-level micronutrient survey	COSFAM	2026	Would need full funding

	Collect information on coverage of all fortified foods - salt, wheat and edible oils and rice in pilot areas, could include a component to understand MN consumption within population	COSFAM		Would need full funding
	Investigation to understand sources of iodine intake in the population - because there is evidence of high urinary iodine in some geographies	COSFAM	Already planned, want to start this year	HKI providing some finance, more financing may be needed
	Utilise harmonised monitoring platform to collect industry data on compliance using digital data collection tools - the existing platform needs revamping to encourage and facilitate use	COSFAM		
	Establish mechanism for regular data submission from industry - following an administrative note from government to make clear that industry have a mandatory responsibility to be			

	doing this. Government also to put a formal request to partners (NI, WFP, M4N etc.) to be there provide support to industry			
Analysis	Training for national partners to apply MIMI approach to HCES data to answer policy questions in real-time as the emerge	COSFAM and partners	Next 6 months	Use existing resources under MIMI project
	Conduct study of nutrient stability and losses in fortified foods across different cooking and preparation methods (e.g. bread, cooked oil etc.)	COSFAM with local universities		
	Continue to use available approaches and tools (MIMI, MINIMOD, FORTIMAS, FACT) to conduct analysis to answer relevant policy questions	COSFAM. Ensure that data are as disaggregated as possible.	Next 12 months	Most partners have resources to do this now
	Rice fortification cost effectiveness study - to complement costing study and building on MIMI results.	COSFAM, with support from NI and WFP	Next 12 months	Likely possible under MIMI(WFP) and NI already using modelled data of effectiveness

Use	Develop friendly outputs from analyses - report, national meeting, policy briefs etc. AND technical notes for government to take decisions in a very friendly way. Starting point needs to be a report - then other materials build on this. Where possible also publish in peer-reviewed journals as important for credibility.		Next 12 months	Most partners have resources to do this now
	Use data to inform discussions on scaling up rice fortification and build enabling environment and capacity for this. This will need data - mid-term evaluation from the SF programme.			
	Conduct REVIEW of nutrient stability and losses in fortified foods across different cooking and preparation methods (e.g. bread, cooked oil etc.) leveraging evidence from other countries and partners	COSFAM with local universities		

Tanzania

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Finalizing the monitoring and evaluation Framework		December 2025 finalization	
	Strengthening the conduct of coverage of fortified product consumption	National Bureau of Stats & MoH	Every 5 years	
	Scaling up FORTIMAS (currently 5 out of 26 regions) to all region			
	Strengthening market data collection	Reported through NSMIS	Monthly data collection by MoH in all regions	Funding gap on digital platform for data collection and reporting NSMIS. Cost estimate is 4000 USD per district. There are 184 districts in Tanzania.

Uganda

Stage of Nutrition Data Value Chain	Action	Owner (lead institution/person) and partners	Timeline	Resources/costing needs (what's funded vs gaps)
Prioritization	Revive, adapt and update the FortifyMIS for real-time data collection and	Ministry of Trade	6 months	Technical capacity from GAIN; financial resource from development partners to gather

	ownership by the Uganda technical working group on Food Fortification; ensure buy in from all stakeholders			experts, train them on the system, develop a legal framework
Data Collection	Advocate for the inclusion of the nutrition models that include FF indicators into all future population surveys	Ministry of Health together with Uganda Bureau of Statistics	TBD on depending on time of surveys	
	Collect cost data need to conduct a cost effectiveness evaluation of the Food fortification program	Ministry of Health		
Analysis	Analyze existing data to provide information on the impact evaluations of Uganda's FF program, Data Sources: Uganda national panel survey, Uganda integrated HH survey, food and nutrition security survey, biomarker data from sentinel surveillance, birth defects surveys	Ministry of Health		
Data Use	Develop a template for reporting insights from regulatory agencies (UNBS -	Development of template led by the secretariat for the technical working group on Food	Reporting should be done on a quarterly basis	

	URA, NDA, local government at the district level - they give permits for industry to be active), share data in a manner that members of the technical working group can use to inform their actions	fortification and supported by all stakeholders that are part of the WG		
	Increase visibility of FF by strategically including pre-selected and well-defined food fortification indicators (including the denominator / numerator) into various policy platforms and program documents, to ensure funding / resources form various ministries are secured,	National food fortification working group		

Zimbabwe

Stage of Nutrition Data Value Chain	**Action**	**Owner (lead institution/person) and partners**	**Timeline**	**Resources/costing needs (what's funded vs gaps)**	
Prioritization	Advocate for strengthening of laboratory capacity for micronutrient testing and analysis for biomarkers and foods	Ministry of Health (lead) Ministry of Industry Food and Nutrition Council WHO UNICEF WFP	6 mo-12 mo and ongoing	No cost	Yes, SADC region Can be raised with Council of Ministers at SADC

	(from industry and market)	FAO Academia			Health Ministers Ministers responsible for industry
	Implement a national fortification monitoring program to collect and share compliance data with key stakeholders focusing on industry and market data NFA mandate: do it when there are resources	Ministry of Health (lead) Ministry of Industry Food and Nutrition Council WHO UNICEF WFP FAO Academia Private sector	Annually	50,000 USD annually	Yes, because of trade across countries
	Resuscitate regular coordination meetings of NFA	Ministry of Health (lead) Ministry of Industry Food and Nutrition Council WHO UNICEF WFP FAO Academia	Meet twice per year	5000 USD annually for coordination meetings	No
	Prioritize data collection and analysis tools; and build capacity in prioritized tools	Ministry of Health Ministry of Industry Food and Nutrition Council (lead) WHO UNICEF WFP FAO Academia	12 months	Consultant 50,000 USD	No
	Develop financial mechanism	Ministry of Health (lead) Ministry of Industry	12 months	Consultant 25,000 USD	No

	for monitoring of food fortification strategy	Food and Nutrition Council Ministry of Finance WHO UNICEF WFP FAO Academia			
Data collection	Incorporate fortification indicators into the ZIMLAC assessment framework for sustainable data collection.	Ministry of Health Ministry of Industry Food and Nutrition Council (lead) WHO UNICEF WFP FAO Academia	6 months	100,000 USD annually	Yes, because feeds into regional information system
	Strengthen port of entry data collection and monitoring of imported food vehicles	Ministry of Health (lead) Ministry of Industry Food and Nutrition Council WHO UNICEF WFP FAO Academia	Ongoing	Training Sample testing 100,000 USD annually	Yes, because food comes from other countries
Analysis	Analysis of ZIMLAC data is already contemplated.				
Use	Develop policy briefs on why fortification (investment case)	Ministry of Health Ministry of Industry Food and Nutrition Council (lead) WHO UNICEF WFP FAO Academia	12 months	10,000 USD	No
Use	Build capacity of NFA to utilize data	Ministry of Health (lead) Ministry of Industry	12 months &	National workshop Mentorship 60,000 USD	

		Food and Nutrition Council WHO UNICEF WFP FAO Academia	ongoing	annually	