

# **Micronutrient Forum** 6th Global Conference

The Hague, the Netherlands & Online 16-20 October 2023

Large-Scale Food Fortification: Data for Decision Making—Contextual Assessment Methods of Diets, Markets, Industry, and Policy









# Welcome

# Introduction to the Session and Objectives

Gwyneth Cotes, Technical Lead for Global Engagement

USAID Advancing Food Fortification Opportunities to Reinforce Diets (AFFORD)







# **USAID** and Large-Scale Food Fortification

Ingrid Weiss, Senior Nutrition Advisor, Center for Nutrition

USAID Bureau for Resilience, Environment, and Food Security (REFS)





Methods to Assess Diets, Markets, and the Diet Cost for Large-Scale Food Fortification (LSFF) Needs Assessment and Design

Monica Woldt, USAID Advancing Nutrition
October 17, 2023



Photo Credit: JSI/SPRING Project





# Background

Feb. 2022: USAID LSFF Programming Guide published



January–June 2023: Draft guide piloted in Nigeria and Zambia





Sept. 2023: Methodology documents published—USAID Advancing Food Fortification Opportunities to Reinforce Diets (AFFORD) takes next steps in use



Aug./Sept 2022: Literature review and draft guide completed



July 2023: Small technical consultation completed





# What questions can the assessment answer regarding diets?

- Which micronutrients are consumed in inadequate amounts?
- Which populations are most affected?
- Which fortifiable foods could serve as a food vehicle for fortification?
- What would be the potential contribution of LSFF to micronutrient adequacy?



Photo Credit: Liam Wright, Smart Food, ICRISAT





# What questions can the assessment answer regarding markets?

- What is the domestic supply of potential food vehicles?
- Are they imported or locally produced?
- What proportion of the domestic supply comes from fortifiable sources/producers?









# What questions can the assessment answer regarding diet cost?

- What is the cost of an adequate diet without and with LSFF?
- What proportion of the population cannot afford an adequate diet, without and with LSFF?



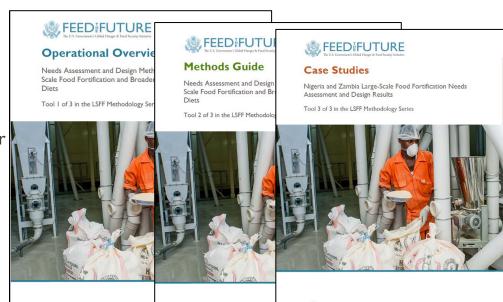
Photo Credit: USAID NEAT





## Assessment Approach and Tools

- Start with the **Operational Overview**.
  - The overview responds to the "what."
    - What questions do you want to answer?
    - What are the existing data sources to answer those questions?
  - Figure I is a key tool in the operational overview.
- Then use the **Methods Guide** for the "how."
- Refer to the case studies document for examples of results and interpretation.



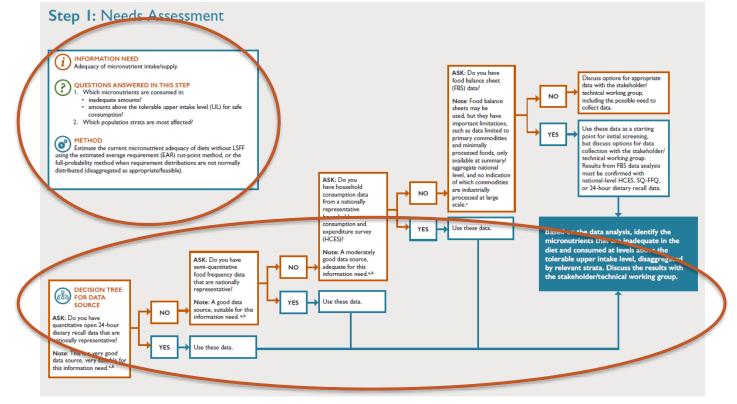
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Assessment Approach and Tools, continued —Figure I







# Assessment Approach and Tools, continued—Figure 1

Step I: Needs Assessment



#### **INFORMATION NEED**

Adequacy of micronutrient intake/supply.



#### **OUESTIONS ANSWERED IN THIS STEP**

- I. Which micronutrients are consumed in:
  - · inadequate amounts?
  - amounts above the tolerable upper intake level (UL) for safe consumption?
- 2. Which population strata are most affected?



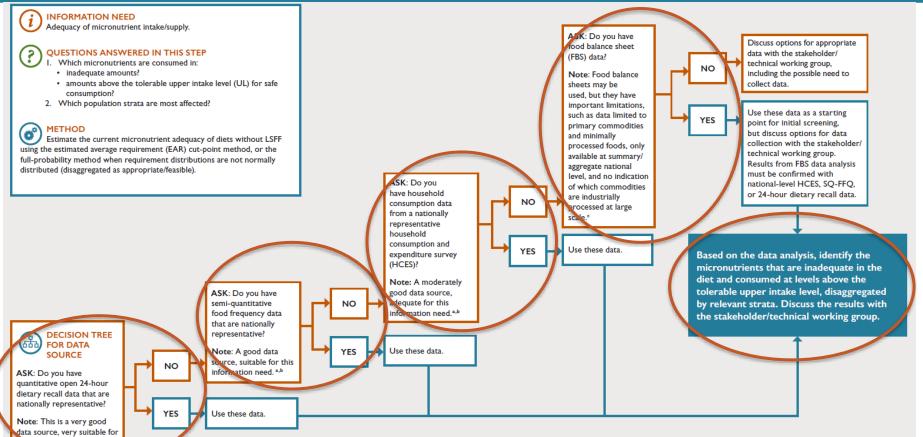
#### **METHOD**

Estimate the current micronutrient adequacy of diets without LSFF using the estimated average requirement (EAR) cut-point method, or the full-probability method when requirement distributions are not normally distributed (disaggregated as appropriate/feasible).





the information need. a,b





Estimates of Cost, Time, and Technical Expertise

Type of Data/Analysis	Cost (USD)	Time	Technical Expertise
Diets: Micronutrient adequacy without LSFF, fortifiable food consumption, and modeling the contribution of LSFF to micronutrient adequacy	100,000-	~ 6 months	High to relatively high (e.g., senior level staff with high level of specialized training, capacity and experience with the data sources and analysis methods).
Markets: Availability of fortifiable foods in markets	40,000– 60,000	~ 3 months	Moderate (e.g., staff with general background in nutrition, public health, and/or markets; some knowledge and experience in use of the data source).
Cost and affordability of the diet without and with LSFF	100,000-	~ 5 months	Relatively high (e.g., senior and mid-level staff with training, capacity, and experience in use of the tools and data sources).





#### Lessons Learned

- LSFF and nutrition stakeholders in country are critical—we could not have conducted the pilot activity without them. Stakeholder group meetings are an opportunity for learning and exchange for all.
- The steps in the methodology need to link to the industry assessment earlier in the process:
  - Conduct the needs assessment to estimate micronutrient adequacy.
  - Assess fortifiable food consumption.
  - Link to industry assessment and feasibility for industry.
  - Model the contribution of LSFF to micronutrient adequacy considering industry feasibility.



Photo Credit: TechnoServ





# Acknowledgements

#### University of California Davis

- Katherine P. Adams
- Emmanuel Antwi Gyimah
- Reina Engle-Stone

#### Global Alliance for Improved Nutrition

- Svenja Jungjohann
- Liezel Engelbrecht
- Valerie Friesen

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#### USAID Advancing Nutrition

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- Noni Alexander

#### Stakeholder Group Members

- Nigeria Stakeholder Group
- Zambia Stakeholder Group



Thank you again so very much!





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Email: info@advancingnutrition.org Web: advancingnutrition.org USAID Advancing Nutrition is the Agency's flagship multi-sectoral nutrition project, addressing the root causes of malnutrition to save lives and enhance long-term health and development.

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# Contextual Assessment Methods of Industry



Photo Credit: TechnoServe

Chrissy McCurdy, TechnoServe Feed the Future Market Systems and Partnerships Activity (MSP) October 17, 2023





# Background: Industry Assessment

#### **USAID LSFF Results Framework—Intermediate Result 2 (IR2):**

LSFF in compliance with national fortification standards expanded and sustained by private sector

**IR2.1** Business development, technology, quality control, and marketing guidance

**IR2.2** Improved access to finance and financing terms



#### Rationale for IR2:

- Essential role of *industrial-scale* staple processors to LSFF
- Higher compliance of processors via whole-of-business approach

#### **Purpose of Assessment:**

- - Evaluate capacity of industrial-scale staple processors to fortify
  - Identify context-relevant strategies to engage processors in LSFF, aligned with IR2





# What questions can the assessment answer?



In country X, what are the greatest opportunities to introduce/expand LSFF of staple foods & condiments in collaboration with the food industry?

Which staple foods/condiments present the greatest opportunity for impact, given—

- given—
  - key market dynamics
  - food industry structure
  - processor capacity?

What do industrial-scale processors require to be able to introduce/improve fortification?

What actions are likely to address challenges commonly shared by processors?





# Assessment Approach

Potential foods/condiments for exploration High-level landscape analysis for a broad set of staple foods/condiments • 2° research • Expert input Status of mandate; compliance; % domestic processing; industry structure; trends in demand Deep dive into a subset that exhibit dynamics conducive to LSFF • 2° research 3 levels of analysis: market, processor capacity/interest, enabling environment I° research **Prioritize foods/condiments** with highest impact potential Expert input Validation meeting Identify LSFF program activities with greatest estimated value-add,





#### Assessment Tools

#### I. Output Template:

- Defines the critical data points & insights to be generated
- Provides structure to translate data points & insights 

   LSFF activity recommendations

#### 2. Research Protocol:

- Guides gathering of critical data points & insights
- 3-level analysis: market, industry, enabling environment
- 7 components of an LSFF program:



- I. Nature of the market
- 2. Technical feasibility



- 3. Commercial viability for processors
- 4. Technical viability for processors
- 5. Processor access to finance



- 6. Government & regulatory role
- 7. Monitoring & enforcement procedures

#### 3. Interview Guides

- Food processors and importers
- Industry/professional organizations
- Premix suppliers
- Retailers
- Finance providers
- Regulatory/enforcement agencies and international institutions





## Assessment Application: Zambia (1 of 3)

% **Share industrial scale:** share of local processing done by industrial/large-scale processors

#### High-level market landscape analysis:

- 7 foods/condiments explored
- **5** shortlisted for a deep-dive assessment

	Sugar	Salt	Maize flour	Wheat flour	Edible Oil	Rice	Pasta/Noodles
	Jugai	Jail	Maize Hour	Wileat Hour	Luible Oil	Rice	rasta/Noodies
% Households consuming	60%	>80%	>80%	45%	60%	20%	<20%
% Processed in Zambia	99%	10%	100%	67%	33%	33%	75%
% Share industrial scale	90%	NA	40%	100%	70%	•	100%
Daily food supply (kcal/ capita/ day)	115	NA	1089	64	186	23	$\bigcirc$
Domestic food supply(000MT)	235		2818	119	161	56	$\bigcirc$
Food supply growth %	2%	•	1%	-1%	3%	-2%	60%
LSFF program feasibility	•	•	•	•	•	0	$\bigcirc$



## Assessment Application: Zambia (2 of 3)

#### **Deep-dive assessment:**

- 2° research + 40 stakeholder interviews
- 3 foods/condiments prioritized for LSFF programming

\* Sugar compliance: (2017 study)

• 11.3% samples met 10 mg/kg requirement

• Median: 3.1 mg/kg

• 25th-75th percentiles: 1.8-5.5 mg/kg

• Range: 0.2-29.9 mg/kg

#### LSFF Program Feasibility

i casibility					
	Salt	Sugar	Wheat flour	Edible oil	Maize meal
Consumption (% HH)	> 80%	60%	45%	60%	> 80%
LSFF Regulation	Mandatory	Mandatory	Voluntary	No standard	Voluntary
Estimated Compliance	89%	II% <u>at retail</u>	-	-	-
% Processed in Zambia	10%	99%	67%	33%	100%
% Industrial Scale	N/A	90% (3-4 players)	100% (7-10 players)	~70% (8-12 players)	40% (~30 players)
LSFF Capabilities of Processors	Limited technical capacity of importers	Strong technical & commercial capacity	No FF experience. Strong core commercial capacity. Lack of FF marketing experience	No FF experience. Strong core commercial capacity	Some FF experience. Strong core commercial capacity for industrial processors, weak for small
Interest Among Processors	-	Low estimated compliance highlights delivery problem	See potential. Barrier is consumer demand	Appears contigent on mandatory regulation	Require regulation & consumer demand





# Assessment Application: Zambia (3 of 3)

	Sugar	Wheat flour	Edible oil
Technical Strategy	Explore issue of low estimated compliance at retail. Strengthen processor & enforcement capabilities; Micronutrient Fortification Index to create positive incentives between brands	Support processors with efforts to drive brand differentiation via fortification, while supporting shifts in regulatory environment	Verify feasibility & stability of vitamin A in locally- produced oil; Support development of standards and a shift in the regulatory environment toward mandatory fortification
Support to Processors	Technical assistance (TA) to address fortification delivery challenges, resulting in low estimated compliance at retail	TA to introduce fortification line and build fortification into brand narrative     Support on commercial and sourcing adaptations in light of business impacts from Russian War in Ukraine and exchange rate volatility	TA to introduce fortification line, build fortification into brand narrative, improve packaging of small containers (UV-opaque), and ensure low peroxide levels     Support on commercial adaptations to mitigate high raw material costs and reduce fear/risk of pricing products out of market
Improvements to Enabling Environment	<ol> <li>Investment in monitoring agencies, quality assurance/quality control (QA/QC) systems, labs outside Lusaka, and improving operational processes</li> <li>Introduce brand/marketing indices to boost industry compliance</li> </ol>	<ol> <li>Investment in monitoring agencies, QA/QC systems, labs outside Lusaka, and improving operations</li> <li>Consider aligning fortification standards of wheat flour with standards in South Africa so that trade reinforces policy</li> </ol>	3. Explore policy opportunities to increase competitiveness of domestic product and to reduce prices of raw material  4. Collaborate with World Health Organization leading the process to develop normative guidance for an oil standard  5. Work with regional edible oil associations as they evaluate fortification of edible oil
Changes to Enabling Markets	Support shift in pre-mix economics: long- term pricing arrangements and stimulation of local premix production	Stimulate local production of premix to drive-down premix costs	Stimulate local production of premix to drive- down premix costs



### Lessons Learned



#### HIRE THE RIGHT TALENT TO LEAD THE ASSESSMENT

- Expertise: food science/food technology/food processing; business advisory/analysis
- Familiar with local food processing landscape; well-networked across local food sector; local presence



#### **OPTIMIZE THE ASSESSMENT PROCESS**

- Avoid conducting assessment during stakeholders' busiest months
- Obtain support from key stakeholder groups from the beginning
- Hold periodic check-ins between the implementing partner and main stakeholder organization
- Organize a validation session(s) with key stakeholders to confirm the accuracy of assessment findings



#### **CONDUCT EFFECTIVE AND EFFICIENT INTERVIEWS**

- Conduct interview requests and interviews in-person
- To avoid interview fatigue: a) trim # of questions; b) validate vs. collect key data points
- For ease of analysis and comparing across orgs: a) use structured questions; b) record responses digitally
- Save sensitive financial questions for the end of interviews



#### COORDINATE RESEARCH AND SHARE INFORMATION

- **Researchers:** nutrition studies targeting the same processors → research weariness
- **Projects:** lack of data sharing → inefficient research processes, use of resources
- **Regulatory agencies:** limited information sharing → lack of collaborative regulation





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# Method to Assess the Policy Enabling Environment for Large-Scale Food Fortification (LSFF)

**Veronique Theriault,** Lilian Kirimi, Ayala Wineman, Ephiphania Kinyumu, and David Tschirley

October 17, 2023









# **Background**

The success of LSFF programs depend heavily on the policy enabling environment.

But what exactly is a policy enabling environment for LSFF?

We define and develop a simple, logical, and cost-effective method to assess the policy enabling environment for LSFF and then apply it to Kenya.











## What questions can the assessment answer?

We understand the **policy enabling environment for LSFF** to be the whole policy landscape that influences and enables or disables fortification activities.

The assessment method sheds light on—

- what makes a policy environment supportive to LSFF
- what is working well and where improvements are needed to ensure successful and sustainable programs.









#### **Assessment Method**













#### Assessment Method

#### **Data collection**

- Review of existing documentation
- Key informant interviews
- Online stakeholder perception survey
- Validation workshop

#### Calculation of the score

- Information is assessed and a four-point Likert scale is used to score each indicator.
- Each indicator is then summed to arrive at an overall score that conveys whether the policy enabling environment is "marginally", "moderately", or "highly" favorable for LSFF activities.











# **Application to Kenya**











# Assessment Application

#### Literature review

#### **Key informant interviews**

• 21 respondents

# **Stakeholder perception** survey

46 respondents

#### Validation workshop

Domains	Elements	Indicators	Scores
	Policy	Major events	4
	prioritization	Presence of powerful advocates	4
Policy agenda		Consultation with stakeholders	4
setting	Policy formulation	Existence of laws and regulations	4
-		Clarity of legislation	4
		Program meets needs	4
	Stakeholder engagement	Sustained consultation	4
Policy implementation		Effective coordination	2
		Continued support from stakeholders	3
	Capacities	Capacity of industries	2
		Capacity of regulatory agencies	2
		Level of compliance	2
Policy monitoring and evaluation	Oversight and enforcement	Guidelines for monitoring	2
		Guidelines for enforcement	2
		Enforcement of standards/regulations	2
	Evaluation and	Existence of assessment data	1
		Program reach and effectiveness	2
	reform	Consumer education and awareness	1











#### Lessons Learned

The program is on a positive trajectory and has achieved the greatest success around policy agenda setting

Implications for the program to be more successful—

Investment in data around LSFF

This assessment method is ready to be applied to other settings and over time.









# THANK YOU!









This work is made possible by the generous support of the American people through the United States Agency for International Development (USAID) through funding to the Feed the Future Innovation Lab for Food Security Policy Research, Capacity, and Influence (PRCI) under grant 7200AA19LE000001. The contents are the responsibility of the study authors and do not necessarily reflect the views of USAID or the United States Government. Copyright © 2023, Michigan State University. All rights reserved. This material may be reproduced for personal and not-for-profit use without permission from but with acknowledgment to MSU. Published by the Department of Agricultural, Food, and Resource Economics, Michigan State University, Justin S. Morrill Hall of Agriculture, 446 West Circle Dr., Room 202, East Lansing, Michigan 48824, USA.









# Reflections on Using Data and Data Gaps for LSFF—Zambia **Country Experience**

Musonda Mofu

October 17, 2023







## Background on LSFF in Zambia

1967: National Food and Nutrition Act passed

1994: Mandatory fortification of salt with iodine begins

1998/99: Mandatory fortification of maize flour failed

2020: Food and Nutrition Act No. 3 replaces the 1967 Act

1978: Legislation passed for fortification of margarine with vitamins A and D

1998: Mandatory fortification of sugar with vitamin A begins

2004/06: Mandatory fortification of maize flour failed a second time





## The Data Environment for LSFF in Zambia

- In Zambia, there has been inadequate data availability on—
  - micronutrient deficiencies among different strata of the population
  - food consumption patterns, consumption of specific foods, and micronutrient intake among different strata in the population
  - market data
  - capacity of industries to fortify foods.
- Major challenges associated with filling the above data gaps include lack of financial and human resources required to collect and analyze dietary intake, micronutrient status, and market associated data.
- Such limitations have affected the design/redesign of LSFF programs in Zambia.







### LSFF Needs Assessment and Design Methodology in Zambia—Filling Data Gaps

- Methodology filled gaps using existing data:
  - 2015 Zambia Living Conditions Monitoring Survey (LCMS) to assess micronutrient intake, fortifiable food consumption, and modeling the contribution of LSFF to micronutrient adequacy
  - Food Balance Sheet data and various online data sources to estimate fortifiable food vehicle volume share
  - 2015 LCMS and Consumer Price Index data (adjusted for inflation) to model the cost and affordability of an adequate diet
- New national-level 24-hour dietary recall data from a 2020/21 Food Consumption and Micronutrient Status Survey and 2022 Zambia LCMS not yet available



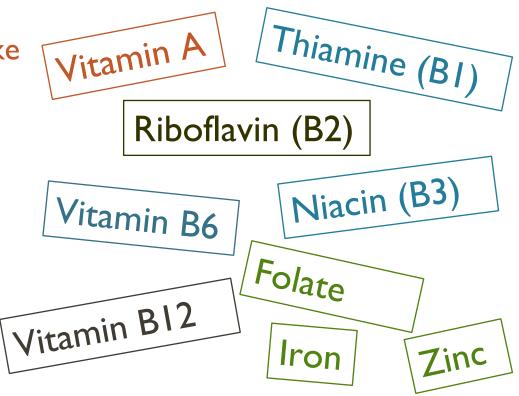
Photo credit: SPRING





## Inadequate Micronutrient Intake

- Based on the analysis using the 2015 LCMS data, the prevalence of inadequate intake was high for all the micronutrients studied—
  - especially in the lowest socioeconomic status groups in rural and urban areas (except zinc in urban areas).







## Modeling the Contribution of LSFF to Micronutrient Adequacy

- Current fortification of sugar with vitamin A improves vitamin A intake
  - improving industry compliance and adding fortified oil could improve it even more
  - except for the rural poor.



Photo Credit: SPRING





## Modeling the Contribution of LSFF to Micronutrient Adequacy, continued

- Fortifying wheat flour, maize flour, and rice with B vitamins and iron contributes to improved intake
  - except for rural populations
  - Especially the rural poor (folate, **BI2**)
  - in some cases the **urban poor** (riboflavin, B6).









## LSFF Industry Assessment in Zambia

- Helped stakeholders better understand the potential for new mandatory fortification vehicles:
  - A stakeholder shared that they never would have considered oil as a fortification vehicle before seeing the study results.
  - Maize flour as a potential fortifiable food still has challenges given in part the low level of industrial production.
  - Rice is a poor candidate for fortification in Zambia.
- Generated important information on quality assurance and the need for transparent data on quality/micronutrient content of fortified foods (e.g., sugar).
- Such results can be used to plan for policies, review of legislation, incentives to strengthen industry, and improvements to quality assurance.









## Lessons Learned/Recommendations from the Zambia Experience

#### **Supporting country-led efforts**

- Disseminate the methods and engage in high-level advocacy and capacity strengthening on how to use the methods to design LSFF investments.
- Publish the results to inform decision-making; engage the Ministry of Planning and other agencies responsible for fortification.

#### Collaborating at country level to advance data for decision making

- · Assessments should always include engaging with country-level LSFF and nutrition stakeholders, focusing on operationalizing the approach.
- Support the application of the methodology at country level when new data becomes available (e.g., in Zambia, when the new 24-hour recall and LCMS data become available).



Photo Credit: TechnoServe





Thank you so very much!





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### The Way Forward

USAID Advancing Food Fortification Opportunities to Reinforce Diets

(USAID AFFORD)

Brent Wibberley, Project Director

October 17, 2023











### What is USAID AFFORD?

### **OBJECTIVE**

Safely and sustainably reduce micronutrient inadequacies and improve diets, particularly for women and children, via LSFF of staple foods and condiments

- Five-year USAID funded program, September 2022–2027
- Both global and country level mandate
- Partnership: TechnoServe, Nutrition International, Food Fortification Initiative, ISF Advisors



Photo Credit: TechnoServe







### APPROACH—USAID's LSFF Results Framework

- 1. Strengthen the LSFF enabling environment through the public sector (IRI).
- 2. Expand and sustain LSFF interventions through **private sector (IR2)** engagement.
- 3. Strengthen the effectiveness of LSFF interventions and increase public and private sector accountability through **civil society (IR3)** engagement.
- 4. Mobilize global (IR4) commitment, leadership, and investment in support of LSFF



# Food industry at center

Right-sized regulatory practices/incentives, motivating compliance

2

#### Data driven decision making

Timely, localized data, empower decision makers 3

# Convergence of innovations

Whole of society approach, adopt best practices

4

#### **Ecosystem approach**

Coordinated, complementary key actors aligned to larger goal







## **ASSESSMENT TOOLS**

# **USAID AFFORD** will incorporate and refine these tools:

- 1. Proof of concept
- 2. Refined
- 3. Package of tools that can be scaled for use
- 4. Improve data for decision









### **EXAMPLE**

#### Senegal

USAID Senegal: best opportunity to invest in Senegal's LSSF program?

- What are the dietary needs of the population?
- How can they be met by fortification and what would this cost?
- What is the existing enabling environment? What fortification policies and practices are in place?
- What is the industry producing and how feasible is it for them to fortify their products?

#### **USAID AFFORD:**

- Adapted, refined, and referred to the latest tools
- Validated data
- Data informed recommendations for the Mission
- In the process helps the local government inform their own fortification strategy











# Thank you!





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