



# VOLUME II: GUIDANCE ON THE FIRST INTERIM ASSESSMENT OF THE FEED THE FUTURE ZONE OF INFLUENCE POPULATION-LEVEL INDICATORS<sup>1</sup>

REVISED OCTOBER 2014

## Table of Contents

	Page
1. <a href="#">Introduction</a>	1
2. <a href="#">Background</a>	1
3. <a href="#">Feed the Future Indicators</a>	2
4. <a href="#">Zone of Influence Population-based Indicator Updates</a>	4
4.1 <a href="#">Women's Empowerment in Agriculture Index</a>	4
4.2 <a href="#">Women's Dietary Diversity Score</a>	4
4.3 <a href="#">Percent of Women and Children Consuming Targeted Nutrient-rich Value Chain Commodities</a>	7
5. <a href="#">Frequency of ZOI Indicator Data Collection</a>	8
6. <a href="#">Purpose of the Interim Assessment</a>	9
7. <a href="#">Objective of the Interim Guidance</a>	10
8. <a href="#">Selection of Interim Indicators</a>	10
9. <a href="#">Selection of Data Source of Each Indicator</a>	10
9.1 <a href="#">Data Sources for Indicators</a>	10
9.2 <a href="#">Criteria for Determining the Applicability of Secondary Sources</a>	12
10. <a href="#">Timing of Data Collection for Interim ZOI Survey</a>	12
10.1 <a href="#">Criteria for Determining Timing</a>	12
10.2 <a href="#">Seasonality of ZOI Indicators</a>	13
11. <a href="#">Date by which Final Values MUST Be Entered in FTFMS and Final Reports Made Available</a>	13
12. <a href="#">Determining Sample Size</a>	13
12.1 <a href="#">Sample Size Formulas</a>	13
12.2 <a href="#">Steps to Determine Sample Size</a>	15
13. <a href="#">Geographic Focus and Sample Frame</a>	16
14. <a href="#">Selection of Survey Implementer</a>	16
15. <a href="#">Development of Country Data Plan</a>	16
16. <a href="#">Data Analysis</a>	17

## Appendices

<a href="#">Appendix 1: Illustrative Outline for a Country Data Plan</a>	18
--	----

## Tables

<a href="#">Table 1: Feed the Future ZOI PBS, National/Regional and Implementing Mechanism Indicators</a>	3
<a href="#">Table 2: Food Groups used to Construct the WDDS and MDD-W Indicators</a>	5
<a href="#">Table 3: Creating the WDDS and MDD-W from the Food Groups in the ZOI Survey Instrument</a>	6
<a href="#">Table 4: Example of "Any Other Vegetables" disaggregation in the Interim Survey Instrument to capture targeted nutrient-rich value chain commodities</a>	8
<a href="#">Table 5: Countries for which Secondary Sources were used for the Baseline</a>	9
<a href="#">Table 6: List of ZOI-level Indicators and Possible Sources of Major International Secondary Data</a>	11
<a href="#">Table 7: Population Categories Required for FTFMS ZOI Indicator Data Entry</a>	17

## Figures

<a href="#">Figure 1: Feed the Future Results Framework</a>	1
---	---

<sup>1</sup> This guidance is based on the Feed the Future Indicator Handbook, and internal first interim assessment guidance prepared by the FTF FEEDBACK project.



## 1. INTRODUCTION

This document updates the first version of Volume 11, issued in March 2014, by providing additional guidance in planning for and conducting the first interim (2014-2015) population-level indicator assessment in the Zones of Influence (ZOI) in Feed the Future focus countries. The assessment is now referred to as “first interim” rather than “midterm” because this is the first assessment of the ZOI PBS indicators since the baseline indicator values were established, and these assessments will continue to be conducted approximately every two to three years for the foreseeable future.

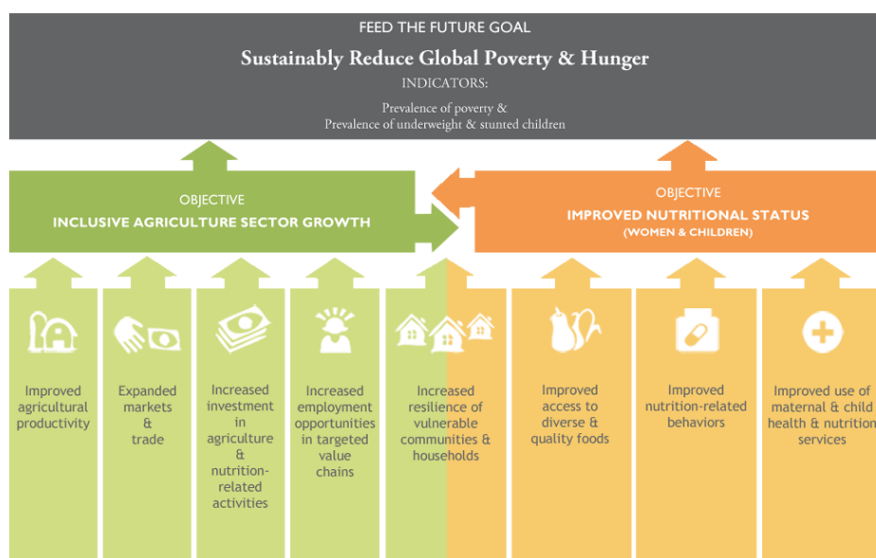
Additional guidance is provided on collecting data for three indicators: Women’s Empowerment in Agriculture Index, Women’s Dietary Diversity Score, and the prevalence of women and children consuming targeted nutrient-rich value chain commodities. An updated version of the ZOI population-based survey (PBS) instrument<sup>2</sup> to be used in the interim ZOI survey is provided in a separate [Annex](#)<sup>3</sup>. An Excel file that details, question by question, the changes made to the instrument used for the baseline is available from your BFS M&E Technical Advisor upon request.

## 2. BACKGROUND

Feed the Future monitors progress toward its goal of sustainably reducing global poverty and hunger using a suite of indicators that capture key steps along the impact pathway reflected in the Feed the Future Results Framework (see Figure 1).

Progress in reducing poverty, hunger, and under-nutrition among women and children; and increasing income, women’s empowerment, dietary diversity, and appropriate feeding practices is tracked using sixteen performance indicators measured in representative population-based surveys in the zones of influence of Feed the Future focus countries.

**Figure 1. Feed the Future Results Framework**



<sup>2</sup> The instrument reflects refinements to the Feed the Future ZOI PBS survey instrument made by the Feed the Future FEEDBACK project in preparing for conducting the interim assessment in seven Feed the Future focus countries.

<sup>3</sup> <http://feedthefuture.gov/resource/volume-11-annex-feed-future-zone-influence-interim-population-based-survey-instrument>

### 3. FEED THE FUTURE INDICATORS

Feed the Future indicators fall into one of three groups:

1. **16 indicators representing conditions of the population of the Zone of Influence (ZOI)**, collected in focus countries through a population-based survey and reported at baseline, interim (excluding anemia indicators, as explained below) and final (hereafter referred to as the ZOI indicators).
2. **4 indicators representing national- or regional-level conditions** collected through secondary data sources and reported annually. With the exception of growth in agriculture gross domestic product (GDP), all of these are contextual indicators and targets are not required for them.
3. **33 indicators representing results among Feed the Future direct beneficiaries**, collected by implementing partners and reported annually.

Table 1 on the next page presents the Feed the Future indicators in each of these three groups. The focus of this guidance is on the first group of indicators, or ZOI indicators.

**Table 1. Feed the Future Zone of Influence Population-based Survey, National/Regional and Implementing Mechanism indicators**

<b><u>Zone of Influence Population-based Survey Indicators</u></b>		<b><u>National/Regional indicators</u></b>
3.1.9-6 Prevalence of anemia among women (RiA)	3.1.9.1-4 Prevalence of exclusive breastfeeding (RiA)	3.1.9.3-1 Percentage of national budget to nutrition (RiA)
3.1.9-11 Prevalence of stunted children (R)	4-17 Prevalence of Poverty (R)	4.5-12 Percentage of national budget to agriculture (RiA)
3.1.9-12 Prevalence of wasted children (R)	4-TBD8 Depth of Poverty	4.5.2-35 Percent change in value of intra-regional trade (RiA)
3.1.9-13 Prevalence of underweight women (R)	4.5-9 Daily per capita expenditures (R)	4.5-3 Percent change in agricultural GDP (R)
3.1.9-14 Prevalence of anemia among children (S)	4.5-19 Women's Empowerment in Agriculture Index (R)	
3.1.9-16 Prevalence of underweight children (R)	4.5.2.8- TBD1 Prevalence of women consuming nutrient-rich value chain commodities (S)	
3.1.9.1-1 Prevalence of children receiving MAD (RiA)	4.5.2.8- TBD2 Prevalence of children consuming nutrient-rich value chain commodities (S)	
3.1.9.1-2 Women's Dietary Diversity (S)		
3.1.9.1-3/4.7-4 Prevalence of households with hunger (RiA)		
<b><u>Implementing Mechanism indicators</u></b>		
3.1.9-1 Number of people trained in child health and nutrition (S)	4.5.2-11 Number of food security private enterprises...and CBOs receiving assistance (RiA) (WOG)	
3.1.9-15 Number of children reached by nutrition programs (S)	4.5.2-12 Number of public-private partnerships (S)	
3.1.9.2-2 Number of health facilities with capacity to manage acute undernutrition (S)	4.5.2-13 Number of rural households benefiting (S)	
3.1.9.2-3 Number of children who received Vitamin A (S)	4.5.2-14 Number of vulnerable households benefiting (S)	
3.3.3-15 Number of beneficiaries participating in productive safety nets (S)	4.5.2-23 Value of incremental sales (RiA)	
4.5-2 Number of jobs (RiA)	4.5.2-27 Number of members of producer organizations and CBOs (S)	
4.5-10 Total increase in installed storage capacity (m <sup>3</sup> ) (S)	4.5.2-29 Value of Agricultural and Rural Loans (RiA) (WOG)	
4.5-16,17,18 Gross margin (RiA)	4.5.2-30 Number of MSMEs receiving assistance to access loans (S)	
4.5.1-17 Kilometers of roads improved or constructed (RiA) (WOG)	4.5.2-34 Number of people implementing risk-reducing practices/actions (S)	
4.5.1-24 Numbers of Policies... in stages of development (S)	4.5.2-36 Value of exports of targeted agricultural commodities (S)	
4.5.1-25 Number of households with formalized land (RiA) (WOG)	4.5.2-37 Number of MSMEs receiving business development services (S)	
4.5.1-28 Hectares under irrigation and drainage services (WOG)	4.5.2-38 Value of new private sector investment (RiA)	
4.5.1-TBD9 Number of national policies supporting regional policies	4.5.2-39 Number of technologies in phases of development (S)	
4.5.2-2 Number of hectares of land under improved technologies (RiA) (WOG)	4.5.2-42 Number of food security private enterprises...and CBOs that applied improved technologies (RiA) (WOG)	
4.5.2-5 Number of farmers and others who have applied improved technologies (RiA) (WOG)	4.5.2-43 Number of firms/CSOs operating more profitably (RiA)	
4.5.2-6 Number of individuals who have received USG supported long-term agricultural training (S)	4.5.2.8-TBD3 Quantity of nutrient-rich value chain commodities for home consumption	
4.5.2-7 Number of individuals who have received USG supported short-term agricultural training (RiA) (WOG)		
(R) = Required indicator, (RiA) =Required if Applicable indicator, (S) = Standard indicator (WOG) = Whole of Government Indicator		

## 4. ZOI POPULATION-BASED INDICATOR UPDATES

### 4.1. WOMEN'S EMPOWERMENT IN AGRICULTURE INDEX

For the first interim population-based survey, Missions may choose to streamline WEAI data collection. Specifically:

- Collecting data on the WEAI's five domains of empowerment for women in the household is required; however, collecting data on men in the same household is optional.
- Applying Module G5: Motivation for Decision Making (i.e. Autonomy in Production) is optional.

Note that:

- If data are collected for all the WEAI Modules but only for women in the household and not for men, the WEAI and Gender Parity Index (GPI) cannot be calculated; only the individual Five Domains of Empowerment (5DE) scores and individual indicator values (both raw and censored headcounts) for women can be calculated.
- If Module G5: Motivation for Decision Making is dropped from the interim survey, the 5DE and censored headcounts cannot be calculated. Only raw headcounts can be calculated for the remaining nine WEAI indicators. Although raw headcounts are useful to see changes in individual indicators among the overall population, providing a way to check-in on progress across the nine remaining WEAI indicators, they do not allow for looking at changes among the disempowered, which the censored headcounts do.
- The Volume 11a updated survey instrument in the Volume 11 Annex includes the questions needed to calculate the remaining nine WEAI indicators. Module G5: Motivation for Decision Making is not currently included in the updated instrument in the Annex. If Missions wish to collect the full WEAI during the first interim, they should add Module G5: Motivation for Decision Making from the baseline instrument to the updated instrument in the Annex.
- Missions will be required to collect the full WEAI during the second interim survey in 2016-2017 to track changes against the baseline.

Missions should describe how WEAI-related data were collected in the first interim survey and any changes from how it was collected at baseline in the survey final report and in the indicator narrative in the Feed the Future Monitoring System (FTFMS). Your BFS M&E Technical Advisor can provide additional guidance on collection and analysis upon request.

### 4.2. WOMEN'S DIETARY DIVERSITY SCORE (WDDS)

Based on results of recent research on how to improve the utility of the WDDS indicator<sup>4</sup>, Feed the Future is introducing a new indicator "Minimum Dietary Diversity – Women (MDD-W)", that captures the proportion of women of reproductive age in the ZOI who are consuming a minimum dietary diversity. The new indicator is a dichotomous one (i.e. yes/no) and should be more intuitive and understandable to our broad audience of stakeholders. It will thus be more useful

---

<sup>4</sup> See "Introducing the Minimum Dietary Diversity – Women (MDD-W) Global Dietary Diversity Indicator for Women"  
[http://www.fao.org/fileadmin/templates/nutrition\\_assessment/Dietary\\_Diversity/Minimum\\_dietary\\_diversity\\_-\\_women\\_MDD-W\\_Sept\\_2014.pdf](http://www.fao.org/fileadmin/templates/nutrition_assessment/Dietary_Diversity/Minimum_dietary_diversity_-_women_MDD-W_Sept_2014.pdf)

for reporting and describing progress towards improved nutrition for women than the current WDDS, which reports the mean number of food groups consumed by women.

Since WDDS was used to establish baselines and set targets through 2017, Feed the Future will continue to track WDDS through the second interim survey, after which it will be dropped. We will start collecting data on MDD-W in the first interim survey, set targets for it after the second interim survey, and continue to monitor only MDD-W from then on.

A woman of reproductive age is considered to consume a minimum dietary diversity if she consumed five of 10 specific food groups in the previous 24 hours. The food groups used to calculate MDD-W is slightly different from that used to calculate WDDS. MDD-W uses 10 food groups, while WDDS uses nine. Table 2 compares the food groups used in each indicator.

**Table 2. Food groups used to construct the WDDS and MDD-W indicators**

<b>WDDS 9 food groups</b>	<b>MDD-W 10 food groups</b>
1. Grains, roots and tubers	1. Grains, roots and tubers
2. Legumes, beans, nuts and seeds	2. Legumes and beans
	3. Nuts and seeds
3. Dairy products	4. Dairy products
4. Eggs	5. Eggs
5. Organ meat	6. Flesh foods including organ meat and misc small animal protein
6. Flesh foods and other misc small animal protein	
7. Vitamin A-rich dark green leafy vegetables	7. Vitamin A-rich dark green leafy vegetables
8. Other vitamin A-rich vegetables and fruits	8. Other vitamin A-rich vegetables and fruits
9. Other fruits and vegetables	9. Other fruits
	10. Other vegetables

The food groups in the interim survey “Module H Women’s Anthropometry and Dietary Diversity Nutrition” (Volume 11 Annex) are formatted so that data will be collected to support calculation of WDDS and MDD-W<sup>5</sup>. Table 3 on the next page illustrates how the food items in the survey instrument should be combined to alternatively create the nine and the 10 food groups required by the WDDS and MDD-W indicators, respectively.

<sup>5</sup> Although the food groups used to calculate the minimum dietary diversity component of Prevalence of Children 6-23 Months Consuming a Minimum Adequate Diet indicator have not changed, the food groups in the Module I. Child Anthropometry and Dietary Diversity are formatted the same way as the food groups in Module H to avoid enumerator confusion.

**Table 3. Creating the WDDS and MMD-W from the food groups in the interim survey instrument**

WDDS (9 food groups)	Food Groups in ZOI Interim Survey Instrument	MDD-W (10 food groups)
Grains, roots and tubers	<i>Food made from grains, such as bread, rice, noodles, porridge, or [other local grain food]?</i>	Grains, roots and tubers
	<i>White potatoes, white yams, manioc, cassava, [other local root crops] or any other foods made from roots?</i>	
Legumes, beans, nuts and seeds	<i>Any foods made from beans, peas, or lentils, such as [add any local legume names]?</i>	Legumes and beans
	<i>Any foods made from nuts or seeds such as [add any local nut/seed names]?</i>	Nuts and seeds
Dairy products	<i>Milk, cheese, yogurt, or other milk products?</i>	Dairy products
Eggs	<i>Eggs?</i>	Eggs
Organ meat	<i>Any liver, kidney, heart, or other organ meats from domesticated animals, such as cattle, swine, goat, chicken, or duck?</i>	Flesh foods including organ meat and misc. small animal protein
	<i>Any liver, kidney, heart, or other organ meats from wild animals, such as [names of local commonly-consumed wildlife]?</i>	
Flesh foods and other misc. small animal protein	<i>Any meat, such as beef, pork, lamb, goat, chicken, or duck?</i>	
	<i>Any flesh from wild animals, such as [names of local commonly-consumed wildlife]?</i>	
	<i>Fresh or dried fish, shellfish, or seafood?</i>	
	<i>Grubs, snails or insects such as [add any local insect names]?</i>	
Vitamin A-rich dark green leafy vegetables	<i>Any dark green leafy vegetables such as [local dark green leafy vegetables]?</i>	Vitamin A-rich dark green leafy vegetables
Other vitamin A-rich vegetables and fruits	<i>Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside or [other local yellow/orange foods]?</i>	Other vitamin A-rich vegetables and fruits
	<i>Ripe mangoes, ripe papayas or [other local vitamin A-rich fruits]?</i>	
	<i>Foods made with red palm oil, red palm nut, or red palm nut pulp sauce?</i>	
Other fruits and vegetables	<i>Any other vegetables?</i>	Other vegetables
	<i>Any other fruits?</i>	Other fruits
<b>CONSUMPTION OF THE FOLLOWING FOOD GROUPS IS NOT COUNTED IN THE DIETARY DIVERSITY SCORE</b>		
	<i>Any oil, fats, or butter, or foods made with any of these?</i>	
	<i>Any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits?</i>	
	<i>Condiments for flavor, such as chilies, spices, herbs, fish powder or [add any local condiment names]?</i>	



#### 4.3. PERCENT OF WOMEN AND OF CHILDREN CONSUMING TARGETED NUTRIENT-RICH VALUE CHAIN COMMODITIES

Feed the Future has added three new indicators (two population-based and one activity-based) to capture progress toward Feed the Future's *Intermediate Result 6: Increased Access to a Diverse and Quality Diet* and to report results under the USAID's new Multi-Sectoral Nutrition Strategy and the nutrition-sensitive agriculture sub-element under the Agriculture Program Area of the Standardized Program Structure and Definitions. The new indicators are applicable if Missions are implementing nutrition-sensitive value chain activities where a value chain commodity has been selected for nutrition objectives solely or in addition to income generation objectives. The theory of change behind these value chain nutrition objectives usually include assumptions such as 1) the commodity is "nutritious", 2) households producing these commodities will also consume them and thereby contribute to improving the quality of their diets and their nutrition (the "own production to home consumption pathway), and/or 3) the value chain activities will lead to increased availability of these nutritious commodities in the market for the broader population to purchase and consume.

Two of these three new indicators are population-based: 1) 4.5.2.8(TBD1) Prevalence of women of reproductive age who consume targeted nutrient-rich value chain commodities and 2) 4.5.2.8(TBD2) Prevalence of children 6-23 months of age who consume targeted nutrient-rich value chain commodities. The interim survey is the opportunity to establish baselines for these two indicators for Missions that wish to add them. The [Feed the Future Handbook of Indicator Definitions](#)<sup>6</sup> includes Performance Indicator Reference Sheets for the new nutrition-sensitive indicators, including criteria for defining a commodity as "nutritious", and Appendix 3 of the Handbook presents a series of Questions and Answers as an additional reference.

To measure the prevalence of women of reproductive age and children 6-23 months old consuming the targeted nutrient-rich commodities while maintaining the ability to quantify the existing WDDS and Minimum Adequate Diet for children 6-23 months of age (MAD) indicators, the interim survey instrument should disaggregate the relevant food item to create multiple response categories under the food item. There should be one category for each targeted nutrient-rich commodity that falls under the food item, and one for the remaining commodities that make up the food item. See Table 4 below for an example using the "Any other vegetables" food item.

---

<sup>6</sup> <http://feedthefuture.gov/resource/feed-future-handbook-indicator-definitions>.



**Table 4. Example of “Any Other Vegetables” disaggregation in the interim survey instrument to capture targeted nutrient-rich value chain commodities**

<b>H17A</b>	Any okra?	YES	1
		NO	2
		DON'T KNOW	8
<b>H17B</b>	Any sweet green peppers?	YES	1
		NO	2
		DON'T KNOW	8
<b>H17C</b>	Any other vegetables?	YES	1
		NO	2
		DON'T KNOW	8

When collecting data, the enumerator walks the respondent (a woman of reproductive age or the mother/caregiver of a 6-23 month old child) through a description of what she or the child consumed the previous day. The enumerator will note a “yes” under the disaggregated nutrient-rich commodity category if she mentions it being consumed, and a “yes” for the disaggregated category that contains the other commodities that make up the food item if she mentions any of them. For example and using the “Any other vegetables” example in Table 4, if the respondent says she consumed a stew made from okra, onions, and tomatoes the previous day, the enumerator would mark “yes” under the okra category, and “yes” under “Any other vegetables”. Since there is a “yes” in one or more of the disaggregated categories under the food item, the woman is counted as having consumed the food item “Any other vegetables” for purposes of WDDS. Since the woman also has a “yes” under a targeted nutrient-rich commodity disaggregated category (okra), she will be counted under the prevalence of women of reproductive age who consume targeted nutrient-rich value chain commodities indicator.

While quantities consumed are not collected in the survey, foods used in condiment amounts should not be counted as having been consumed under the food items used for tabulation of the nutrition-sensitive indicators or for WDDS, MAD, or MDD-W. As with the other food groups, the “Condiments” food group should include local examples of foods commonly eaten in very small quantities and usually added to mixed dishes to provide flavor (e.g. chilies, spices, herbs, or fish powder, and small amounts of milk in coffee or tea). Enumerators should be trained on probes to ensure food consumed in small amounts, i.e. less than a teaspoon, are counted under Condiments and not under other food groups.

## 5. FREQUENCY OF ZOI INDICATOR DATA COLLECTION

In most focus countries, baseline values for ZOI indicators were established in 2010-2013<sup>7</sup>. Baseline values were established using secondary data, where available, and primary data from representative population-based surveys in the ZOI (hereafter referred to as the ZOI surveys). Secondary sources included the country’s Living Standards Measurement Study (LSMS) or equivalent (for poverty and per capita expenditure indicators) and the Demographic and Health Survey (DHS) or equivalent (for nutrition indicators except women’s dietary diversity).

<sup>7</sup> Baseline data were collected in 2014 for Mali. Mali’s baseline was late because most USG-funded activities, including baseline data collection, were stopped after the coup until a democratically-elected government was installed.

Secondary sources were used *if* the data were collected within the two years of when the baseline survey was planned *and* a large enough sample was collected from clusters within the ZOI. Primary data were collected via population-based surveys conducted in the ZOI by Feed the Future Monitoring and Evaluation (M&E) contractors.

Secondary data from DHS, LSMS, or other internationally-sponsored surveys were used for baseline assessments in the Feed the Future focus countries shown in Table 5.

**Table 5. Countries for which secondary sources were used for the baseline**

Country	Secondary Data Source
Bangladesh	DHS
Liberia	Comprehensive Food Security and Nutrition Survey
Malawi	DHS, LSMS (IHS3)
Mozambique	DHS
Nepal	DHS, LSMS (NLSS)
Rwanda	DHS, LSMS (EICV3)
Tajikistan	Micronutrient Status Survey
Tanzania	DHS, LSMS
Uganda	DHS, LSMS (UNHS)
Zambia	DHS, RALS

The first interim assessment of ZOI indicators, with the exception of women's and child's anemia, will be conducted during 2014-2015 with results available before mid-FY2016. Final assessments will be conducted in 2016-2017 with results available before mid-FY2018. **To have the required data available to meet this time frame, focus country Missions should be planning for or conducting the first interim ZOI indicator assessment now.** The results from the first interim indicator assessment will be an important input for a possible independent review of Feed the Future that would take place in mid-2016.

## 6. PURPOSE OF THE INTERIM ASSESSMENT

The first interim assessment will provide the U.S. Government interagency partners, U.S. Agency for International Development (USAID) Bureau for Food Security (BFS), USAID Missions, host country governments and development partners with information about short-term progress of the ZOI indicators. The first interim indicator assessment is not designed to capture statistically significant changes in indicator values between the baseline and first interim, because those changes are likely to be small and therefore the sample size required to capture them would be unfeasibly large. Rather, as with other major global data collection efforts such as the DHS and LSMS, the first interim indicator assessment is designed to provide point estimates of the indicators with an acceptable level of statistical precision (see section 12 for more details). This will allow us to state what the indicator value is at the first interim but, unless the difference between the baseline and first interim values is large enough so the confidence intervals do not overlap, we will not be able to discern with certainty whether the first interim value is statistically different from the baseline value.

## 7. OBJECTIVE OF THE INTERIM GUIDANCE

The objective of this first interim assessment guidance is to support Missions in planning for and conducting the first interim assessment. Guidance is provided on which indicators to collect, selecting the data source for each indicator, determining the timing of data collection, determining sample size and sample frame, selecting a survey implementer, developing a country data plan and planning for data analysis.

## 8. SELECTION OF INTERIM INDICATORS

Missions should collect first interim data for all the ZOI indicators for which baseline values were established, except for women's and child's anemia.<sup>8</sup>

Missions may consider adding a select number of agricultural outcome indicators to the first interim questionnaire. Adding ZOI-level agricultural production- or sales-related outcome indicator(s) will assist Missions in linking project level outcomes to population-level impacts, and in tracking progress towards higher level impacts on poverty and, in some cases, nutrition. However, collecting agricultural production or sales data at the ZOI level may substantially increase the length and complexity of the survey, for example, by requiring more visits per household to complete the lengthy questionnaire. Additionally, the population-based sample frame used for the first interim indicator assessment is not optimal for collecting agriculture data, because it draws from a list of all households in the ZOI, not just agricultural households. Missions should weigh the costs and benefits of adding agricultural outcome questions to the first interim survey, especially in cases where reliable and accurate secondary data sources for these indicators exist.

Accurate and timely agriculture statistics are important for evidence-based policy and program decision-making and for efficient functioning of agricultural markets, among other things. In cases where national agricultural and rural data availability is limited, Missions should consider investing to build country systems and strengthen government capacity to regularly collect and report on these types of data. As part of the Feed the Future initiative, USAID is funding and collaborating with the United States Department of Agriculture's (USDA) National Agricultural Statistics Service (NASS) and Economic Research Service (ERS) to support improved collection and analysis of agriculture and food security related data in Feed the Future countries. Missions should contact Emily Hogue [ehogue@usaid.gov](mailto:ehogue@usaid.gov) for more information on accessing this support.

## 9. SELECTION OF DATA SOURCE FOR EACH INDICATOR

### 9.1. DATA SOURCES FOR INDICATORS

---

<sup>8</sup> Interim data collection for the two anemia indicators is not required because we are unlikely to see changes plausibly associated with Feed the Future's efforts given current coverage and focus of nutrition programs, and because they require more intrusive data collection, increase the cost of the survey, and increase the time and complexity of data collection and of obtaining in-country institutional review board approval.

There are three sources of data for the ZOI indicators:

- Major internationally-funded surveys such as the LSMS or similar (hereafter referred to as LSMS), DHS, and Multiple Indicator Cluster Surveys (MICS)
- Other surveys conducted in country
- Primary data collection by Feed the Future monitoring and evaluation contractors

As was the case with the baseline assessment, secondary data should be used whenever feasible. Section 9.2 lists the required conditions for using secondary data. Table 6 indicates possible major international secondary sources for each of the ZOI-level indicators.

Missions should carefully consider the likely availability for analysis of any secondary data when assessing the feasibility of using major international or other surveys being conducted in-country. Missions should consult with in-country planning teams, the national statistical office (or equivalent), and other donors to see if other surveys are being conducted during 2014 or 2015. If data are being collected in these years, confirm that the data sets could be analyzed for or made available to USAID within an acceptable timeframe. Given the requirement that first interim data be reported before mid-FY2016, it is unlikely that the major international sources can be used in most cases.

When in doubt, it is better to plan to collect the data and drop the related questions from the questionnaire later if it becomes clear that data will be available. This is preferable to running the risk that secondary data will not be available for your country when the independent review of Feed the Future performance is conducted in 2016.

**Table 6. List of ZOI-level indicators and possible sources of major international secondary data**

ZOI Indicator	Possible Secondary Sources
Prevalence of underweight children	DHS, MICS
Prevalence of poverty	LSMS
Prevalence of stunted children	DHS, MICS
Prevalence of wasted children	DHS, MICS
Prevalence of underweight women	DHS
Per capita expenditures (as a proxy for incomes)	LSMS
Women's empowerment in agriculture index	None. Requires ZOI survey
Prevalence of households with moderate or severe hunger	None. Requires ZOI survey
Prevalence of children 6-23 months receiving a minimum acceptable diet	DHS <sup>9</sup>
Women's dietary diversity	None. Requires ZOI survey
Prevalence of exclusive breastfeeding	DHS, MICS
Prevalence of anemia among children 6-59 months	DHS
Prevalence of anemia among women of reproductive age	DHS

<sup>9</sup> The DHS collects exclusive breastfeeding and acceptable diet (MAD) only on the youngest child in the eligible age range in the household, which differs from the recommended World Health Organization (WHO) and Feed the Future approach of collecting the information for all children or a randomly chosen child in the eligible age range in the household. However, because it is important to align Feed the Future ZOI indicators with the same country-level indicators collected by country governments, it is acceptable to use DHS data for this indicator despite this difference.

## **9.2. CRITERIA FOR DETERMINING THE APPLICABILITY OF SECONDARY DATA SOURCES**

To determine whether secondary data sources can be used to calculate indicator values for the first interim indicator assessment, Missions should consider the following issues:

1. When the data from the secondary source was or will be collected. To be used for the first interim, the majority of data collection should have taken place in January 2014 or later, and the timing should be at least two years after baseline data for the indicator(s) were collected. This means that secondary data sources where data collection began in calendar year 2013 could be used if at least 75% of the data collection in the ZOI occurred in calendar year 2014.
2. As much as possible, the data collected from the secondary sources should be collected in the same season of the year in which the data used for the baseline surveys were collected (either through the ZOI survey or from other secondary sources used for the baseline).
3. The data must be collected using a comparable survey instrument with the same questions and recall period. Variation in who in the household serves as a respondent is allowed.
4. The data must be available in time to be analyzed for the first interim indicator assessment, meaning the data must be available in time for FY2015 reporting.
5. The sample size for the indicator to be reported must be sufficient in the ZOI. Section 12 contains more information on determining whether the size of the sample that falls within the ZOI is adequate.
6. The sample design has to be representative of the population within the ZOI. This means that the sample frame for the survey must include all of the households within the ZOI.

## **10. TIMING OF DATA COLLECTION FOR INTERIM ZOI SURVEY**

### **10.1. CRITERIA FOR DETERMINING TIMING**

The following issues need to be considered in deciding when field data collection should take place:

- Time of year when baseline data was collected. See Section 9.2.
- Date by which final values must be entered in the Feed the Future Monitoring System (FTFMS) and final reports made available. See Section 11.
- Seasonal issues (e.g., major holidays, weather). See Section 10.2.
- Political and security issues (timing of elections or other events that may preclude fieldwork).
- USAID Mission requirements.

## 10.2. SEASONALITY OF ZOI INDICATORS

All of the ZOI indicators, including stunting, are likely to vary seasonally. So it is important to collect data at the same time of year at baseline and interim assessments. In countries where all baseline indicator data came from the same survey, Missions should schedule the first interim data collection for the same time of year. In countries where baseline indicator data came from primary and secondary data sources, the months during which data were collected for different indicators will vary. In these cases, Missions will need to determine what time of year is most appropriate for the first interim.

While there is some seasonality in stunting, it is not as significant as possible seasonal variation in the expenditures of poor households. Since prevalence of poverty is one of the highest level Feed the Future performance indicators, is the focus of the majority of Feed the Future funding, and is based on household expenditures, the first priority should be to base the timing of first interim data collection on the timing of baseline expenditure data collection. If expenditure data were collected in a year-long survey, which is often the case for secondary data from the LSMS, first interim data should be collected at the time of year during which the majority of other indicators were collected.

## 11. DATE BY WHICH FINAL VALUES MUST BE ENTERED IN FTFMS AND FINAL REPORTS MADE AVAILABLE

BFS recognizes that ZOI indicator values may not be available by the time FTFMS closes for implementing partner-level data entry in December 2015. However, if they are, please enter them. Otherwise, **indicator values and population numbers** should be **entered in the FTFMS** and **final reports** should be available by the **end of March 2016** to inform the 2015 Progress Report and the possible Feed the Future independent review.

## 12. DETERMINING SAMPLE SIZE

As stated in Section 6, the purpose of the first interim indicator assessment is to provide estimates of the population-based indicators with an acceptable level of statistical accuracy. **The first interim surveys will therefore calculate sample sizes for point estimates of indicator values rather than estimating sample sizes to detect statistically significant changes in indicator values over time.**

### 12.1. SAMPLE SIZE FORMULAS

Standard formulas can be used to calculate sample size for point estimates. Equations to calculate the sample size for continuous variables and proportions are given below.

Sample sizes for point estimates of continuous variables, such as expenditures, can be calculated with:

$$N = Deff \left( \frac{Z_{\alpha/2} \sigma}{M} \right)^2$$

Where  $N$  is the sample size,  $Deff$  is the design effect,  $Z_{\alpha/2}$  is the Z value (1.96 for 95% confidence level),  $\sigma$  is the standard deviation and  $M$  is the mean value times the percent margin of error.

Sample sizes for point estimates of proportions, such as poverty, stunting and wasting, can be calculated with:

$$N = Deff \frac{Z_{\alpha/2}^2 (p(1-p))}{M^2}$$

Where  $p$  is the proportion and  $M$  is the proportion margin of error.

For each indicator used in the sample size calculations, Missions should use the actual design effect observed in the baseline data for  $Deff$  and the baseline standard deviation for  $\sigma$ . The mean value in  $M$  for continuous indicators and the proportion  $p$  for proportion indicators should be estimated based on the Mission's 2015 targets.

The margin of error in these equations determines the degree of precision of the indicator estimates. For continuous variables such as expenditures, the margin of error should be based on the mean indicator value times 0.10, which implies that the margin of error in the confidence interval of the indicator estimate does not exceed 10% of the mean value. The margin of error for proportions (poverty, stunting, and wasting) should be calculated with 0.10, which implies an error of 10% of the indicator value range from 0 to 1. BFS recommends using a 10% margin of error because this provides an acceptable level of precision for performance monitoring purposes at reasonable cost. Lower margins of error (e.g., 5%) can result in very large sample sizes for some indicators in many cases.

Sample size should be adjusted to account for households that decline to be interviewed (i.e., non-responding households), and households without children under five. To compensate for these two factors, the base sample size should be inflated to ensure data will be collected from enough households or individuals to reach sample requirements for stunting and underweight, even after screening out households that decline to be interviewed and households without children under five<sup>10</sup>.

Missions should use actual non-response rates from the baseline survey to adjust for households that are likely to refuse to participate in the first interim ZOI survey. If non-response rates are not available, the rule of thumb is to increase the sample size by 10%.

To compensate for households without children under five, Missions will need to determine how many households must be visited to capture the required number of children for the stunting and underweight indicators. Assuming all children under five within the household would be measured, the formula to estimate the number of households that would need to be visited to encounter the required stunting or underweight sample is<sup>11</sup>:

$$N_A = N / (1 - \exp^{-PP \times HHSZ})$$

<sup>10</sup> Enumerators will apply the non-child-related modules in households with no children under five; these households will only be screened out for application of the child-related modules.

<sup>11</sup> See 2012 addendum to Magnani, Robert. 1999. Sampling Guide. Washington, D.C.: FHI 360/FANTA. [http://www.fantaproject.org/sites/default/files/resources/Sampling-1999-Addendum-2012-ENG\\_0.pdf](http://www.fantaproject.org/sites/default/files/resources/Sampling-1999-Addendum-2012-ENG_0.pdf)



where

N = sample size for stunting or underweight

N<sub>A</sub> = number of households to visit to find N children 0-59 months of age

PP = proportion of the ZOI population that is 0 – 59 months old

HHSZ = average household size in the ZOI

## 12.2. STEPS TO DETERMINE SAMPLE SIZE

A key part of calculating the sample size is determining the indicators upon which to base the sample size calculations. The Feed the Future guidance on population-based surveys lists poverty, child underweight and child stunting as the primary indicators for calculating sample size ([\*Volume 8: Population-Based Survey Instrument for Feed the Future Zone of Influence Indicators with Revised WEAI Module\*](#)<sup>12</sup>). Because changes in expenditure levels are likely to precede changes in poverty and are more likely to have occurred by the first interim than reductions in poverty or child under-nutrition, BFS has added the daily per capita expenditure indicator to this list of indicators that should be used to determine sample size for the first interim.

The steps for calculating sample size are:

1. Calculate the sample size and required number of households for each of the key Feed the Future indicators (poverty, daily per capita expenditures, stunting and underweight).
2. If any of the four key indicators will be available from secondary data sources, determine whether the secondary source sample size within the ZOI will be large enough, based on the sample size calculation from Step 1.
3. If any of the four key indicators will need to be collected in the ZOI survey, use the indicator with the largest sample size to drive the survey. If the sample size that results is larger than the resources available for the survey can support, select the next largest sample size.
4. If none of the four key indicators will need to be collected in the ZOI survey because they will all be available with sufficient sample size and in a timely manner from secondary data sources, calculate the required sample size for the Percent of Households with Moderate or Severe Hunger (HHS) and the Women's Dietary Diversity Score (WDDS) indicators, and use whichever is larger to determine ZOI survey sample size.
5. Once the ZOI survey sample (N) has been determined by following steps 1 to 4 above, check to make sure that at least 70 children between 0 - 5 months are likely to be encountered if N households are visited, to enable statistically valid estimates of exclusive breastfeeding rates by sex. The formula to estimate the number of households that would need to be visited to encounter 70 children 0 – 5 months old is<sup>13</sup>:

<sup>12</sup>[http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf)

<sup>13</sup> See 2012 addendum to Magnani, Robert. 1999. Sampling Guide. Washington, D.C.: FHI 360/FANTA. [http://www.fantaproject.org/sites/default/files/resources/Sampling-1999-Addendum-2012-ENG\\_0.pdf](http://www.fantaproject.org/sites/default/files/resources/Sampling-1999-Addendum-2012-ENG_0.pdf).

$$N_c = 70 / (1 - \exp^{-PP \times HHSZ})$$

where

$N_c$  = number of households to visit to find 70 children 0-5 months of age

PP = proportion of the ZOI population that is 0 – 5 months old

HHSZ = average household size in the ZOI

6. If the number of households that need to be visited to find at least 70 children 0 – 5 months old ( $N_c$ ) is greater than the sample size (N) calculated in steps 1-4 above, use  $N_c$  as the ZOI survey sample size rather than N.

### 13. GEOGRAPHIC FOCUS AND SAMPLE FRAME

The geographic focus of the first interim, and thus the geographic areas that are reflected in the ZOI survey's sample frame, is the Feed the Future ZOI in the country. This will be the same as the baseline sample frame unless the Mission has changed the ZOI definition since the baseline. If the ZOI definition has changed, Missions should contact their BFS M&E POC with detailed information about the areas added to or removed from the ZOI to determine whether and how the sample design for the first interim survey should be modified.

If areas have been removed from the ZOI, baseline indicator values will need to be recalculated on the basis of the sample falling within the revised ZOI for comparison with the first interim estimates. If new areas have been added to the ZOI, they would probably be added as a separate stratum to the first interim sample frame.

### 14. SELECTION OF SURVEY IMPLEMENTER

As discussed in Section 8, a priority of Feed the Future is strengthening national agricultural and rural statistics systems. Many Missions have on-going relationships with national statistics institutions, including capacity strengthening efforts and collaboration with and support for country data collection exercises directly or via global efforts. BFS encourages active involvement in the first interim indicators assessment by national statistics organizations. Missions also use data needs as an opportunity to strengthen private sector capacity to provide data collection and analysis services. Regardless of whether public, private, or a combination of organizations is contracted, Missions must ensure that a well-qualified survey organization conducts the ZOI survey. Prior direct experience in organizing large-scale household surveys, and collecting and analyzing the types of data required for the Feed the Future indicators are essential.

### 15. DEVELOPMENT OF COUNTRY DATA PLAN

Missions should consider documenting the proposed approach to completing the first interim indicator assessment in a country data plan, which can then feed into the contract SOW and ZOI survey protocol. Appendix 1 contains an illustrative outline for a country data plan.

## 16. DATA ANALYSIS

Missions should ensure that the following basic information is included in the first interim assessment report for all FTF indicators at the overall and disaggregate levels: unweighted N, indicator value (mean or proportion), standard deviation for continuous indicators, 95% confidence interval, statistical significance at 5% or less of differences between disaggregate categories and between other analytic variable categories, DEFF, and non-response rate. Reports should also include estimates of the ZOI population in the categories listed in Table 7 below. Instructions for how to analyze and present WEAI data can be found in the Instructional Guide on the Women's Empowerment in Agriculture Index<sup>14</sup>. As discussed in Section 8, if required, BFS will provide Missions with guidance on data collection and analysis for any new population-based indicators when the Feed the Future indicator review process concludes.

The baseline and first interim ZOI data sets are a resource beyond quantifying Feed the Future indicators. Missions should consider if staff would benefit from training in how to use the ZOI survey data sets for more in-depth analysis, and include such capacity-building in the first interim assessment contract.

**Table 7. Population categories required for FTFMS ZOI indicator data entry**

<b>Total population of individuals</b>
Population in male and female adults households
Population in female adults only households
Population in male adults only households
Population in child no adults households
<b>Total number of households</b>
Number of male and female adults households
Number of female adults only households
Number of male adults only households
Number of child no adults households
<b>Women of reproductive age (15-49 years)</b>
WRA non-pregnant
WRA pregnant
<b>Children 0-59 months</b>
Males 0-59 months
Females 0-59 months
<b>Children 6-59 months</b>
Males 6-59 months
Females 6-59 months
<b>Children 6-23 months</b>
Males 6-23 months
Females 6-23 months
<b>Children 0-5 months</b>
Males 0-5 months
Females 0-5 months

<sup>14</sup> See [http://www.ifpri.org/sites/default/files/weai\\_instructionalguide.pdf](http://www.ifpri.org/sites/default/files/weai_instructionalguide.pdf). An updated instructional guide will be provided for the modified WEAI, if required.

## Appendix 1. Illustrative Outline for a Country Data Plan

1. Purpose of the first interim assessment and country data plan
2. Indicators to be reported for the first interim
  - 2.1. Feed the Future population-based indicators
  - 2.2. Mission-specific indicators
3. Sources of data for indicators
  - 3.1. Description of possible secondary sources
  - 3.2. Planned data source for each indicator (Table)
    - 3.2.1. Source of data
    - 3.2.2. Timing of baseline data collection
    - 3.2.3. Timing of first interim data collection
    - 3.2.4. Timing of data availability
4. Geographic focus of the first interim
  - 4.1. Zone of influence
    - 4.1.1. Summary of geographic coverage of ZOI
    - 4.1.2. Map
  - 4.2. Changes in geographic definition of ZOI (if relevant)
  - 4.3. Implication of change in ZOI definition
    - 4.3.1. Sample design
    - 4.3.2. Baseline-first interim-second interim comparisons
5. Timing of first interim data collection
  - 5.1. Proposed timing for first interim data collection with rationale
  - 5.2. Timing of data collection for first interim vs. baseline
    - 5.2.1. Difference of timing by indicator
    - 5.2.2. Implication of change in timing on comparisons with baseline
  - 5.3. Potential logistical or other challenges to conducting fieldwork in this timeframe and contingency plans
6. Sample Size
  - 6.1. Method for calculating sample size
  - 6.2. Sample size requirements for 4 key indicators, and for HHS and WDDS if required. Table with baseline value, *Deff* and standard deviation (if a mean), estimated first interim value, margin of error (based on .1), sample size to capture estimated first interim value before adjusting for non-response and number of households that need to be visited, final sample size for each indicator
  - 6.3. Justification for selection of indicator that will determine ZOI survey sample size
7. Sample Design
  - 7.1. Number of clusters and number of households per cluster
  - 7.2. Stratification and sample allocation
  - 7.3. Stages of sampling
  - 7.4. Source/process of household listing
8. Timeline for first interim indicator assessment
  - 8.1. Dates for contract award, in-country ethical review, survey material preparation and pre-test, training including pilot, field work, data cleaning and analysis, entry of information into FTFMS, production of survey report, and provision of Open Data data sets
9. Process for contracting the survey