

# *VAM GUIDANCE PAPER*

## Conducting Food Security Assessments using Household Expenditure Surveys (HES)



**World Food Programme**



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## PURPOSE OF THIS GUIDE

Although it is not their main objective, most national **household expenditure surveys** (HES) generate accessible and reliable food security information. To date, however, WFP has rarely used these rich data sources for conducting food security analysis.

The purpose of this guide is to familiarise VAM officers with the largely untapped pool of food security information available from HES datasets. This guidance is largely based on key sections from IFPRI's comprehensive and highly recommended technical guide: *Measuring Food Security Using Household Budget Surveys*, which is available online: <http://www.ifpri.org/sites/default/files/publications/sp3.pdf>. A VAM officer who plans to make use of an HES for food security analysis should become familiar with the approach from this guide but will also need to refer to the IFPRI guidance for more detailed instructions.

It is important to note that this guide refers to large, national surveys, which are undertaken by the statistical office in a country. WFP does not have control over the timing, sampling or implementation of these surveys. Rather, WFP is a user of the survey data. WFP, when appropriate, can advocate for the inclusion of additional questions relevant to food security analysis in the existing survey. In some cases, WFP has contributed funding to the survey and been able to add specific modules.

The intent of this guide is to encourage VAM officers to seek out and identify existing data sources for conducting food security analysis. In many cases, a household expenditure survey will have sufficient information to conduct a food security assessment, saving WFP from having to conduct an additional survey.

Specifically, this guide aims to equip VAM officers with:

- A general **understanding** of the types of food security analyses and indicators derivable from HES datasets;
- The **knowledge** to determine whether a particular household expenditure survey questionnaire or dataset is capable of generating food security information suitable for WFP's needs.

This guide does not<sup>1</sup>:

- Explain how to **process** and **clean** HES datasets to prepare them for food security analysis;
- Demonstrate step-by-step the process for **calculating** and **interpreting** each of the main HES food security indicators presented in this report.

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<sup>1</sup>For these important technical processes, VAM officers are directed to aforementioned IFPRI guidance document in which this content is well detailed.

## Overview

<b>1. Background</b>	Explains household expenditure surveys (HES) and outlines their utility for food security analysis.
<b>2. WFP-NSO Partnerships</b>	Explains the considerations for WFP when working with the main HES data providers– i.e. National Statistics Offices.
<b>3. Food security indicators from HES</b>	Describes six key food security indicators that can be derived from a typical HES.
<b>4. Annexes</b>	Presents three case studies of WFP food security assessments conducted using HES.

## 1. BACKGROUND

### 1.1 What are household expenditure surveys?

Most national statistics offices (NSOs) collect expenditure and consumption data from households. While the instruments used for these survey activities vary in design and title, they are most commonly referred to as either household budget surveys, living standard surveys, or, income and expenditure surveys. This guide refers to all of these collectively as household expenditure surveys or HES.

Generally, the main purpose of a HES is to:

- 1) Measure and report on a population's poverty level and living standards
- 2) Understand households' monetary expenditure for calculating consumer price indices

In recent years, the data generated by HES have been employed additionally for food security analyses. A good example is from Smith and Weismann (2007) using data from 16 HES in Sub Saharan Africa and South Asia to compare food insecurity between these regions.

### 1.2 Getting more mileage out of household expenditure surveys

Many recent studies from IFPRI<sup>2</sup> and others<sup>3,4</sup> have demonstrated that HES can generate information that is highly relevant for assessing a population's food security.

Almost all HES capture highly detailed food consumption data, including measurements of quantity and value of consumption. Based on this, and given the fact that data collection exercises are so costly and time consuming, it is incumbent upon VAM officers to explore opportunities to utilise HES data for food security assessments.

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<sup>2</sup> (Smith & Subandoro, Measuring Food Security Using Household Expenditure Surveys, 2007); (Smith, Alderman, & Aduayom, Food Insecurity in Sub-Saharan Africa. New Estimates from Household Expenditure Surveys, 2006); (Smith & Wiesmann, Is Food Insecurity More Severe in South Asia or Sub-Saharan Africa? A Comparative Analysis Using Household Expenditure Survey Data, 2007)

<sup>3</sup> (FAO, 2008)

<sup>4</sup> (De Weerd, Beegle, Friedman, & Gibson, 2014)

Such opportunities are more widespread than VAM officers might expect. Since 1990, there have been at least 760 nationally representative household expenditure surveys undertaken in 129 developing countries<sup>5</sup>. By comparison, WFP has conducted around 100 nationally representative food-security baseline studies (i.e. CFSVAs<sup>6</sup>) in the past 10 years. The vast majority of WFP's baseline studies involve large-scale primary data collection exercises. As it is increasingly difficult to raise funds for surveys, the importance of utilising existing data sources is clear.

There may still be instances when a HES is not a sufficient substitute for a WFP-led data collection exercise. For example, the timing of the survey, WFP's assessment objectives, and the comprehensiveness of food consumption data, may still warrant a primary data collection exercise. See section 1.5 for some topics to consider. It should be clear, however, that WFP's food security analysis service is increasingly able to utilise these rich sources of representative data. Indeed, many HES datasets collected in countries in which WFP operates have generated comprehensive data for assessing the food security situation.

### 1.3 What can WFP measure using household expenditure surveys?

Expenditure surveys can typically be used to generate the following household food security measurements:

- Diet quantity
- Diet quality
- Economic vulnerability

**Section 3** of this guide explains these measurements in further detail. In addition to these measurements, the analyst should take advantage of other information available from the HES. Typical HES capture information spanning education, gender, health and livelihoods. Some HES datasets will also include modules on shocks experienced by the household and/or anthropometric information. Equipped with full access to this data, the analyst can develop a meaningful narrative to contextualise the findings from the key indicators and develop a comprehensive assessment. The following are some examples of how HES data have been used for CFSVAs by WFP and partners:

- [Ethiopia CFSVA 2014](#)
- [Tanzania CFSVA 2013](#)
- [Nepal Thematic Report on Food Security and Nutrition 2013](#)

### 1.4 Adding WFP modules to national surveys

It should be noted that traditional WFP food security modules are increasingly appearing in HES. For instance, six World Bank Living Standards Measurement Studies (LSMS) now incorporate modules which generate two key WFP food security indicators: the food consumption score and the coping strategies index.

In addition, many national statistics offices have included WFP's food consumption module in other surveys. For example, the Jordan Living Conditions Survey (2011-12), the Ethiopia Welfare Monitoring Survey (2011), the Afghanistan National Risk And Vulnerability Assessment (2008-09 & 2011-12), the Cambodia Socio-Economic Survey (2011-12), the Kenya Demographic Health Survey (2014), and the Burundi Enquête sur les Conditions de Vie des Ménages au Burundi (2013), all include WFP modules.

A separate VAM guidance is being prepared which documents standard modules which may be included in HES and other national surveys. The objective of that guidance is to inform

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<sup>5</sup>(De Weerd, Beegle, Friedman, & Gibson, 2014)

<sup>6</sup> Comprehensive Food Security and Vulnerability Analysis

WFP staff on how modules should be structured, how questions should be asked, and broadly how that information is used for food security analysis. The guidance will be published on the [VAM Resource Centre](#) once complete.

## 1.5 Food security analysis using HES data – key considerations

Food security assessments which make use of HES data can save money and time. But there are a number of factors the VAM officer must consider carefully to determine how well a given HES meets the needs of a WFP food security assessment. The table below describes four topics: data access, questionnaire design, level of representativeness and accompanying information.

Topic	Considerations
<b>Access to data</b>	<p>NSOs sometimes share HES datasets freely. However, the timing of data release can be tricky. Occasionally, the entire dataset will be available shortly after the data collection is complete and the data has been cleaned. Even in this case, it will be several months after the data collection began before the process is complete and the data is available. More often, delays occur and data access may take between 6-12 months after the data has been cleaned. In the case of LSMS surveys, the World Bank aims to release the data 12 months after the end of data collection.</p> <p>Delayed access to HES data limits the <b>timeliness</b> of published findings. In cases when a baseline study is delayed due to slow data access, the published report should explain the degree to which WFP considers the results as still valid. If WFP considers the situation has likely changed since the data collection, the report should describe the expected nature of these changes using whatever recent evidence is available.</p>
<b>Questionnaire design</b>	<p>The quality of the food security data generated from an HES hinges on the questionnaire design. The analyst must consider the following issues related to the design of food consumption/expenditure modules in an HES:</p> <ul style="list-style-type: none"> <li>• <b>Length of the recall period:</b> For greatest degree of accuracy, this should be less than 2 weeks. However, we sometimes find recall periods based on 30 days or even a year.</li> <li>• <b>Comprehensiveness and specificity of the list of food items:</b> This list should contain all types of food and beverages which make up the local diet. The length of the list can vary from 40 to 100s of items.</li> <li>• <b>Food sources:</b> The survey should ask households about foods obtained via a number of sources including purchases, own-production, in-kind and food consumed outside the household.</li> <li>• <b>Distinction between food purchases (expenditure) and food consumption:</b> Households should be asked about actual consumption of foods rather than merely food purchases.</li> <li>• <b>Quality of data collected on foods consumed away from home:</b> This is especially relevant in urban areas where meals consumed outside of the home are an important consideration.</li> <li>• <b>Accounting for seasonality:</b> Household expenditure surveys often spread data collection across a 12 month period to capture seasonal variation in food consumption/expenditure patterns. Sometimes a shorter period of fieldwork is undertaken, typically 3 months. It is then important to discuss how this period relates to seasonal patterns in the country.</li> </ul>

<b>Representative-ness of survey</b>	It is important that the analyst is aware of the survey's sampling strategy. HES results are usually representative at the <b>administrative level 1</b> , although they are sometimes representative at a lower level as well. Typically, HES are conducted using multi-stage cluster sampling designs. This ensures full geographic coverage and enables the analyst to present meaningful findings for the different regions throughout a country. The level of representativeness of the survey may not produce results disaggregated to the level that a WFP programme would require. It is important to manage this expectation accordingly.
<b>Accompanying information</b>	Household expenditure surveys are often undertaken in conjunction with individual-level, agricultural and community-level surveys. These additional datasets enable deeper analysis and will support the development of a contextual narrative to complement the household-level food security indicators. For example, the LSMS surveys which have added WFP modules are also in-depth agricultural surveys. Others may include anthropometric data. This information is highly useful and an important benefit of using the HES for food security analysis.

Questionnaires for HES are not specifically designed for food security analysis. Therefore, we will have to consider all of the elements above to decide whether it is useful for food security purposes. Ultimately, a decision weighing the costs and benefits of using an HES for food security analysis vs. a new primary data collection exercise will need to be made at the country office level.

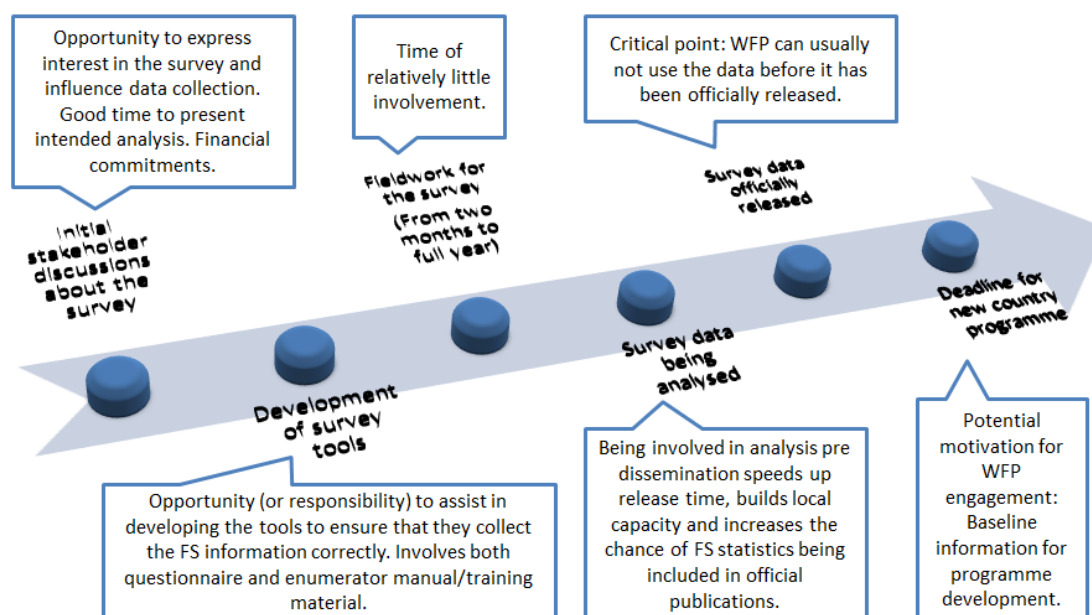
## 2. WFP-NSO PARTNERSHIPS

National statistics offices (NSOs) are usually the body responsible for undertaking household expenditure surveys. The in-country VAM officer should seek out ways to strengthen the working relationships with the NSO. The goals of this relationship are to influence official data collection to include food security information, as well as to obtain timely access to the data. This section provides several suggestions for VAM officers regarding their interactions with NSOs.

### 2.1 Learn about NSO activities

First, it is important that VAM officers know the NSO's activity calendar. By knowing when relevant survey activities are scheduled, the officer can plan an engagement strategy aimed at ensuring that WFP gains early access to HES data, and to possibly influence questionnaire design. Be aware that the HES production period from discussion of tools (questionnaire) to dissemination of statistics can take as long as three years depending on funding, technical capacity, the methods used and official data policies. Often, the NSO will not release the data until its own survey reports are published. It is particularly useful to see if an HES will take place at a time when WFP plans a baseline assessment, usually linked to a new country programme document.





A good source of information on the NSO activities schedule is the National Strategy for Development of Statistics (NSDS) or the NSO Masterplan.

## 2.2 Engage with the NSO

Second, WFP should seek high-level engagement with NSOs, particularly with regard to future possibilities of integrating food security data in national surveys. This requires advising the NSO of WFP's interest in survey data, and pointing to the mutually beneficial elements of collaboration. There is a need to have a formal Letter of Understanding (LOU) between WFP and the NSO spelling out the nature of collaboration, including data access policies.

## 2.3 Aim to harmonize survey work

Third, it is important that VAM officers are aware of fatigue among donors with respect to various food security reporting mechanisms and players. By harmonising our food security analyses with that of NSOs, we can enjoy both cost-efficiency gains, and generate more credible and unified findings.

Donors are particularly interested in seeing surveys, which are often very costly and slow, more efficiently implemented. WFP should seek to reduce duplication of data collection efforts, also referred to as survey harmonisation. The use of HES data for WFP food security assessments reduces the need for another survey.

It is worth contacting relevant donors to find out about the organisations and activities they are planning to support. For HES, these organisations are often the World Bank, UNDP or regional Development Banks, but there may be others as well. This is another way of learning about upcoming surveys and ideally harmonising those efforts.

## 2.4 Support the NSO on the use of HES for food security information

VAM has a role in-country to improve the national monitoring of the food security and nutritional status in a population. VAM's longer term aim should be for the NSOs to monitor

these indicators independently. To achieve this, VAM can offer capacity building opportunities around food security measurements for statistics offices and other relevant partners in government. The ideal outcome is that the NSO, and other relevant government partners such as the Ministry of Agriculture, are empowered to independently improve survey design to capture food security information, and to produce food security statistics on an on-going basis.

## 3. FOOD SECURITY INDICATORS FROM HES

### 3.1 HES indicator overview

This section introduces the main food security indicators obtainable from a typical HES. Taken together, the right combination of HES-derived indicators can provide sufficient information to underpin a comprehensive food security assessment.

The food security measurements that can be calculated from HES fall into three categories<sup>7</sup>:

1. Diet quantity
2. Diet quality
3. Economic vulnerability

#### DIET QUANTITY

Diet quantity indicators measure the *amount of food* people consume—specifically, in terms of calories. Inadequate calorie consumption (or food energy) is a key cause of under-nutrition. Food energy deficient individuals are vulnerable to many food-security related health risks including increased risk of mortality, impaired ability to undertake physical activity and concentrate, and increased risk of infection and infectious disease.

**Section 3.2** presents two HES-derived diet quantity indicators:

- 1) Individual daily calorie intake
- 2) Food energy deficiency for the household

#### DIET QUALITY

Diet quality indicators describe the *types and variety of food* people consume. The nutritional composition of a person's diet is linked closely to their health. A person can consume sufficient calories (food energy) but, due to nutrient deficiencies<sup>8</sup>, may be prevented from leading an active and healthy life. Inadequate nutrient intake can lead to increased risk of mortality and long term impact on health and learning abilities.

**Section 3.3** presents two HES-derived diet quality indicators:

- 1) Diet diversity
- 2) Staple-share

#### ECONOMIC VULNERABILITY

Economic vulnerability to food insecurity relates to people's ability to acquire food. Economically vulnerable households are those who are monetarily unable to purchase food – i.e. poor households, and households whose food expenditure accounts for a large share of their budget. These households are likely to compromise the quantity and/or quality of

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<sup>7</sup> These are described in detail in the IFPRI guidance by Smith and Subandoro (2007).

<sup>8</sup> Specifically protein and micronutrients such as iron, vitamin A and iodine.

their diet, or reduce expenditures on basic, non-food needs, which may further undermine their food security status.

**Section 3.4** presents two HES-derived economic vulnerability indicators:

- 1) Food expenditure share
- 2) Poverty line

## Summary table of HES-derived food security indicators

The table below exemplifies how key food security indicators can be reported using HES. When undertaking a food security assessment using HES data, we recommend the analyst presents indicators by the main analytical strata. Those strata may be geographic, socio-economic, or demographic.

**Table 1: Summary table of HES-derived food security indicators**

Example summary table showing indicators								
Column:	Diet Quantity			Diet Quality			Economic Vulnerability	
	A	B	C	D	E	F	G	H
Population group	Daily energy consumed per capita (Kcals)	Percent households food energy deficient <sup>1</sup>	Percent households highly food energy deficient	Average Diet Diversity over seven days (number of food groups out of 7) <sup>2</sup>	Percent households with low Diet Diversity <sup>3</sup>	Percent households with 'very high' proportion of food energy from staple foods <sup>4</sup>	Percent households with a 'very high' share of expenditures devoted to food <sup>5</sup>	Percent households below the poverty line
National	2,096	43.0	29%	5.3	21%	32%	32%	21%
Rural	1,941	48%	33%	5.3	23%	38%	38%	23%
Urban	2,540	31%	20%	5.4	16%	18%	18%	16%
Zone								
Northern	2,040	45%	29%	5.2	25%	40%	40%	25%
Eastern	2,047	44%	29%	5.7	12%	21%	21%	12%
South	1,686	56%	46%	5.3	24%	30%	30%	24%
West	2,063	42%	26%	5.4	20%	30%	30%	20%
Male-headed household	2,114	43%	29%	5.4	19%	32%	32%	19%
Female-headed household	2,031	43%	29%	5.2	25%	32%	32%	25%

1) Food Energy Deficient households are those which, given the age sex composition of household members, do not meet the daily recommended energy intake. Light physical activity is assumed.

2) the food groups are (1) cereals, roots, and tubers; (2) pulses and legumes; (3) dairy products; (4) meats, fish and seafood, and eggs; (5) oils and fats; (6) fruits; and (7) vegetables.

3) low diet diversity accounts for households with 4 or less food groups consumed during one week period.

4) Very High: Staple foods contribute more than 75% of household calorie intake (staples comprise of cereals, roots and tubers).

5) More than 75% of household expenditures.

## 3.2 Diet quantity indicators

HES-derived indicators designed to measure diet quantity focus on kilocalories consumed. This section describes two key diet quantity indicators typically obtainable from HES and the data required for generating these indicators. A detailed step- by-step guide on how to calculate these indicators can be found in IFPRI's guidance and is not repeated here<sup>9</sup>.

### **Diet quantity: Data Requirements**

For calculating diet quantity indicators outlined in this section, the HES data collected must be capable of generating/deriving the **metric quantity** of *all* foods **consumed/acquired** by households over a specific time period. The food item list needs to be exhaustive – i.e. all commonly consumed food items having a single food line item in the survey. As we are interested in knowing about all foods consumed, the survey must also attempt to capture foods consumed from all potential **food sources** (purchased, own-production, received in-kind) as well as food consumed outside of the household.

This detailed consumption data should be made available by the NSO. If it is not available and must be generated from the raw data, an analyst with experience in generating kilocalorie data from an HES is needed. To estimate the calories consumed per person and per food item, the analyst must find and refer closely to an appropriate **food composition table**. Please see [Annex B](#) for more details related to the data requirements for assessing diet quantity.

### 3.2.1 Daily calorie intake, per capita

The **daily calorie intake** indicator estimates the average daily amount of food energy (i.e. kilocalories) consumed by a household member.

*Daily calorie intake* can be calculated either **per capita** (total household calories divided by the number of household members), or **per adult equivalent** (total household calories divided by the number of adult equivalents in the household).

The total calories consumed in the household are determined by taking the quantity consumed per household for each food item multiplied by its energy value (calories). The calories are aggregated for the different food items. Ideally, the NSO has already included kilocalories consumed by a household for each food item in the dataset shared with the analyst. If this data is not present, contact the NSO to acquire it.

Under the **per capita** approach, the analyst must take the total energy (in calories) in the food consumed by a household over the survey reference period and divide it by the *number of household members*. It will be necessary to convert the per capita calories to per day by dividing by the reference period during which the food was consumed. For example, if the recall period is one week, divide by seven to get the daily figure.

To interpret the results, IFPRI suggests that the average requirement for light activity (2,050 kilocalories per capita), serve as a threshold for a very low kilocalorie intake (see table below). However, it is important to note that locally established kilocalorie requirements may exist and should be considered in the analysis.

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<sup>9</sup> Smith and Subandoro (2007)

**Table 2: IFPRI guidance for interpreting daily kilocalorie intake per capita**

Daily kilocalorie intake, per capita	Guideline for interpretation
3,000+	High
2,500	Medium
2,050-2,500	Low
<2,050	Very low

For an example of how *daily calorie intake* (per capita) can be reported, see **Table 1, column A**.

### 3.2.2 Daily calorie intake, per adult equivalent

Per capita daily calorie intake ignores the demographic structure of a household. This is not necessarily an adequate method for classifying household level diet quantity. A more precise way to report *daily calorie intake* is by looking at **per adult equivalents**. This method takes into account the fact that individual food needs vary by age and sex. For example, using this approach, the calorie requirements of a household consisting of five adults will be different from that of a household consisting of one adult and four small children.

Using the calorie recommendations included in [Annex A](#), in terms of 'adult equivalents' a household with five male adults aged 20 to 30 would have five adult equivalents (and a collective requirement of 12,750 calories per day), while a household with one female aged 30, and four girls aged 10 years, would have approximately 3.5 adult equivalents (and a calorie requirement of around 8,825 per day).

Because the **per adult equivalent** approach increases the precision regarding household food energy needs, when possible, analysts should use it when conducting household food security analysis rather than the **per capita approach**.

Keep in mind that the consumption data is collected at household level. Therefore neither method is truly measuring how food is actually allocated in the household. These are approximations of individual consumption based on household data.

### 3.2.3 Food energy deficient households

A useful way to report on the population's calorie intake is to classify each household by whether its members collectively meet their overall food energy needs. A household which does not consume sufficient calories, given the age-sex composition of its members, is classified as *food energy deficient*.

This approach has been documented and is used by IFPRI<sup>10</sup>. In determining the recommended calorie intake for households, WFP analysts should consult with the NSO to see if any standards or criteria exist in the country (for example activity level in rural areas is assumed higher than urban). If this information does not exist, the analyst could assume

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<sup>10</sup> FAO's methodology for calculating Undernourishment (PoU) takes another approach than the one described here. FAO's methodology is based on a statistical approach and often uses the food balance sheet in the calculation. Smith, Alderman, and Aduayom (2007) compared the two approaches. They argue that the difference in results from the two approaches lies in differences in the national-level parameters used to generate the estimates (mean calories consumed/available, energy requirement, and distribution across households) rather than in the method itself. Note that FAO uses a lower requirement level than IFPRI and that calories per capita are often calculated from the food balance sheet. FAO's approach provides only population estimates, and does not tag each household as energy deficient or sufficient. For WFP's purpose for doing comprehensive analyses on food security status in the household and its factors the IFPRI methodology is better suited. ADEPT is the software that enables statistical outputs to be generated from the complex statistical analysis for calculating FAO's undernourishment using HES data. Also other food security indicators are calculated in the software package.

all household members undertake only 'light activity' (see Annex A for daily recommendations by age and sex).

For an example of how the *food energy deficient* indicator can be reported see Table 1, column B. Table 1 also presents an indicator identifying households which are *highly food energy deficient* (in column C). Such an indicator is useful for identifying and reporting the food energy deficient households who are experiencing a larger caloric deficiency - or, as described by FAO, a greater *depth of hunger*<sup>11</sup>.

In this instance (Table 1), *highly food energy deficient households* are those households whose total food energy intake falls short of their recommended daily calorie intake by *more* than 300 calories (as per FAO's depth of hunger). If the analyst chooses to construct this indicator, they must clearly define these households in terms of the size of the calorie shortfall.

### 3.3 Diet quality indicators

Diet quality indicators derived from HES focus on the *types of foods* consumed. They serve as a proxy for understanding the nutritional adequacy of a household's diet. This section describes three key diet quality indicators obtainable from HES.

#### 3.3.1 Diet diversity

The *household diet diversity* indicator measures the number of food groups consumed by a household over the reference period<sup>12</sup>. Typically seven food groups are considered<sup>13</sup>. This differs slightly from the eight food groups used for the food consumption score. The seven group approach does not consider sugar. The recall period is also typically seven days. There are two ways to report on diet diversity – it can be done using an average (i.e. average number of food groups consumed) or a prevalence of low dietary diversity. Both are designed to show how varied diets are within a target population.

The **dietary diversity score**<sup>14</sup> shows the number of food groups (out of seven) consumed by households during the recall period, which is typically seven days (see Table 1). However, if the food consumption module is based on a longer recall period we could still calculate this indicator, although it cannot be compared to one based on a shorter recall. To construct this indicator, the listed food items in the household food consumption module must be categorized into one of the seven food groups<sup>15</sup>.

**Prevalence of low dietary diversity** can be used to identify the percentage of households considered to have a poor quality diet. *Low diet diversity* is based on consuming less than a certain number of food groups during the course of the recall period. Though there is no universal standard for low dietary diversity, a typical threshold is four or fewer food groups over a seven day recall. In the absence of strong rationale to use another threshold, VAM officers are advised to use four or fewer groups as the threshold for low diet diversity.

A prevalence of households with *low diet diversity* can then be reported for a population and each key strata. For an example of how household *diet diversity* can be reported see **Table 1, columns D and E**.

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<sup>11</sup> See: <http://www.fao.org/docrep/x8200e/x8200e03.htm>

<sup>12</sup> Definition provided by IFPRI: <http://www.ifpri.org/sites/default/files/publications/sp3.pdf>

<sup>13</sup> The food groups are (1) cereals, roots, and tubers; (2) pulses and legumes; (3) dairy products; (4) meats, fish and seafood, and eggs; (5) oils and fats; (6) fruits; and (7) vegetables.

<sup>14</sup> see [http://newgo.wfp.org/documents/wfp-indicator-compendium\\_p.99](http://newgo.wfp.org/documents/wfp-indicator-compendium_p.99) for corporate guidance on the DD

<sup>15</sup> The analyst will need to recode all consumed food items into the 7 groups.

### 3.3.2 Staples-share

This indicator reports the percentage of food energy (i.e. calories) derived from staple food groups (cereals, roots, and tubers) that households consume over the reference period. It is calculated for each household by dividing the total number of calories consumed from staple foods, by the overall total number of calories.

A higher value indicates lower diet quality, because energy-dense starchy staples have small amounts of bio-available protein and micronutrients, leaving those filling up on large amounts of them vulnerable to protein and micronutrient deficiencies (IFPRI, 2007). Put another way, when a high share of a household's diet is comprised of the less-nutritious, 'cheap' calories found in cereals, roots and tubers, it is indicative of a poor diet.

The IFPRI guidance document provides the following thresholds for interpreting household share of energy from staples:

#### **Diet quality: Data Requirements**

The diet *quality* indicators are derived from modules also required by diet *quantity* indicators. Specifically, the key data requirements are:

- ▶ A household consumption reporting module with comprehensive food item list
- ▶ A suitable food composition table reporting calories of food items in questionnaire

For example questionnaire modules, see [Annex B](#).

**Table 3: IFPRI guidance for interpreting percentage of energy from staples**

Percentage of food energy from staples	Guideline for interpretation
75+	Very high (very poor diet quality)
60-75	High
40-60	Medium
<40	Low

This indicator can be presented as the prevalence of all households with the most severe classification – i.e. those households with a *very high staples intake* (>75%). The analyst may also consider reporting the prevalence of households with a high percentage (60-75%) of food energy from staples. This decision may need to be based on the distribution of the categories noted in Table 3. For an example of how *staples-share* can be reported see **Table 1, Column F**.

## 3.4 Economic vulnerability indicators

HES-indicators designed to measure *economic vulnerability* focus on households' economic access to food. This section describes two of the key economic vulnerability indicators derived from an HES: food expenditure share and poverty. These indicators are typically calculated by the statistical office, and if not already included in the dataset received, are available in an auxiliary file by requesting the NSO. Details on the general approach to calculate these variables in an HES can be found in Deaton and Zaidi (2002).

### 3.4.1 Food expenditure share

This indicator measures the percentage of each household's total expenditures devoted to food. It is an access measure based on the following premise: the greater the burden of food within a household's overall budget (relative to other consumed items/services), the more economically vulnerable the household. That is households that spend a large share



on food are highly vulnerable to food insecurity regardless on their current consumption status.

The 'food expenditure share' indicator is essentially constructed by dividing the total **household food expenditures by the total household expenditures**. It should be noted that in this case, an expenditure is not just a monetary purchase. Here, expenditure also refers to consumption of non-purchased items. For example, if a household consumed 10kgs of maize from their own production, it would be included as a food expenditure. Often, the term **consumption aggregates** is used in the context of an HES to describe expenditures more accurately by including consumption, regardless of whether the item was purchased or non-purchased. By including both non-purchased foods and purchased foods within the overall food 'expenditure' share estimate, the indicator can compare households whose means of accessing food vary.

It is important to note that this approach of classifying the percentage of expenditures on food differs from what is usually done in WFP surveys. The household budget is the primary focus of an HES. Therefore, the modules on expenditures and consumption are highly detailed and can take a huge amount of time to collect. In WFP surveys, we place less emphasis on the household budget details as it is extremely time consuming. Often in expenditure modules of WFP surveys, we only consider expenditure of foods consumed. This lighter approach is not accurate for describing the economic vulnerability of households who derive a significant portion of their food consumption from their own production. An HES module does not have this issue as it considers all food consumed by a household, regardless of the source. Because the methods are quite different, they are not comparable.

IFPRI provides the following guidelines for interpreting household percentage of expenditures on food:

**Table 4: IFPRI guidance for interpreting percentage of expenditures on food**

Percentage of expenditures on food	Guideline for interpretation
75+	Very high (very economically vulnerable)
65-75	High
50-65	Medium
<50	Low

This indicator can be presented as the prevalence of all households with the most severe classification, i.e. those households with a *very high expenditure share*. For an example of how *expenditures-share* can be reported see **Table 1, Column G**.

### 3.4.2 Poverty status

Assessing whether a household falls above or below the national *poverty line* and *food poverty line* is a standard approach for determining a household's **poverty status**. Again, this indicator is based on the consumption aggregate per adult equivalent (or sometimes per capita). The aim is to determine whether household members are able to meet basic food and non-food needs.

The poverty line represents the value, in local currency, of a standard bundle of goods and services deemed adequate for an average adult to live satisfactorily. This method for constructing the poverty line is called the cost of basic needs (CBN).

The *food poverty line* is part of the poverty line and measures the cost of basic food needs. The approach takes into account the local diet and the actual cost of foods locally. Essentially, it's the minimum cost of a food basket required to ensure sufficient calorie consumption. Note that the term food poverty line and what it measures may be used differently.



Sometimes the food poverty line is used as a measure of extreme poverty, to describe the ultra-poor. In that case, it essentially measures whether a household's consumption aggregates (**food and non-food**) are so low that a household cannot even meet a minimum food need. For our analysis, we are interested in the food poverty line as a measure of whether household **food** consumption aggregates (excluding non-food) are sufficient to meet basic food needs.

The HES dataset should already contain a poverty indicator which identifies those households who fall below the poverty line. If this indicator was not included, but the consumption aggregate information was included, classifying households as above or below the poverty line is straightforward. For example, if a household's consumption aggregate is \$5,000 and from the NSO, we know that the poverty line is \$7,500, this household will be classified as poor. If these two pieces of information are not available (household consumption aggregate and the official poverty line), we cannot conduct this analysis.

Similarly, the food poverty line is established by the NSO. The analyst will need to know the threshold of the food poverty line and the consumption aggregates for food items (separate from the total consumption aggregate). Households are then classified as being above or below the food poverty line by assessing their consumption aggregate of food items. Those below do not meet basic food needs.

For an example of how *poverty status* can be reported see **Table 1, Column H**.

#### **Economic Vulnerability: Data Requirements**

Both economic vulnerability indicators presented in this section require HES data which includes **very detailed food and non-food expenditure lists**. Ideally, these lists will be exhaustive, capturing all household expenditures within a reporting period. Further to this, non-purchased food consumption should also be collected – either in quantities, or value (as estimated by the household). The end result of this data collection should be household level consumption aggregates.

Only surveys in which an original objective is to measure poverty using poverty lines are suitable for reporting on poverty status.

For example questionnaire modules suitable for generating these indicators, see [Annex B](#).

*This technical guidance document and several other useful tutorials and documents for conducting food security analysis are available on the **VAM Resource Centre**.*

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## 4. ANNEXES

### Annex A: Example table of recommended daily calorie intake, by age and sex

Kilocalories per day			Kilocalories per day		Kilocalories per day	
Age group (years)			Age group (years)		Age group (years)	
Infants and young children	Boys	Girls	Older children and adolescents	Boys	Older children and adolescents	Girls
<1	650	600	6-7	1,350	6-7	1,225
1-2	950	850	7-8	1,450	7-8	1,325
2-3	1,125	1,050	8-9	1,550	8-9	1,450
3-4	1,250	1,150	9-10	1,675	9-10	1,575
4-5	1,350	1,250	10-11	1,825	10-11	1,700
5-6	1,475	1,325	11-12	2,000	11-12	1,825
			12-13	2,175	12-13	1,925
			13-14	2,350	13-14	2,025
			14-15	2,550	14-15	2,075
			15-16	2,700	15-16	2,125
			16-17	2,825	16-17	2,125
			17-18	2,900	17-18	2,125
			Adults	Men	Adults	Women
			18-30	2,550	18-30	2,025
			30-60	2,500	30-60	1,980
			>60	2,075	>60	1,775

Source: 'Human Energy Requirements: Report of a joint FAO/WHO/UNU Expert Consultation' (2004).

In this example table, for adults, a weight of 65 kilograms for males and a weight of 55 kilograms for females is assumed. All caloric values are rounded to the nearest 25 kilocalories.

The example table above assumes light physical activity for households. The analyst should typically assume light physical activity unless other standards are already used in the country. The option to apply different activity levels (moderate/heavy) is available and can be used for some households if there is sufficient evidence and the analyst considers it to be warranted. Reasons for applying different activity levels could be climatic (cold environment requires more calories), or that a large part of the population is known to be engaged in heavy activity, such as farming. All such decisions must be well documented.

In the above table, the **reference adult individual** should be the 18-30 year old male, who requires 2,550 kilocalories per day. By dividing the recommended intake by 2,550, the analyst can determine the **adult equivalent** of each household member. For instance, a household containing a 10 year old boy, a 10 year old girl, and a 35 year old woman comprise 2.17 adult equivalents<sup>16</sup>.

It is critical that the analyst documents whichever recommended intake table they use, and it is preferable to use a national standard if that exists and is in use. More information about how to apply recommended calorie intakes can be found in Smith and Subandoro (2007).

<sup>16</sup>  $(1,825/2,550) + (1,700/2,550) + (1,980/2,550) = 2.17$  adult equivalents

## Annex B: Example HES modules and data requirements

HES food consumption modules vary greatly. For the purpose of food security analyses, there is a minimum level of data which these modules must produce. This annex describes the minimum data requirements for generating the diet quantity and quality indicators. It also includes some example modules.

### **Key HES module requirements:**

- ▶ A household consumption module with a comprehensive food item list<sup>17</sup>: all food groups need to be well represented by actual foods consumed by the local population.
- ▶ A household food consumption/expenditure module which captures the quantity of each food item consumed, and/or captures the monetary value of the item which can be used in combination with an available metric price to calculate quantities;
- ▶ A household roster reporting the age and sex of all members;
- ▶ Ideally, a consumption recall period of seven days; longer periods may not be usable for calculating key indicators;
- ▶ The monetary value of foods consumed outside the household;

### **Other requirements:**

- ▶ A national food composition table (or a suitable alternative from a regional table or a neighbouring country) containing detailed data on the nutritionally important components (i.e. calories, protein, carbohydrates, fats) of the food items in the HES as well as the edible portion of each food. See FAO's collection of composition tables: <http://www.fao.org/infoods/infoods/tables-and-databases/en/>
- ▶ A national, regional or global food energy requirement scale, by age, sex and activity level. See the example shown in [Annex A](#).

### **Example modules:**

Household expenditure surveys typically contain two food consumption modules measuring: 1) *at home* consumption, and 2) *outside home* consumption. Examples of these modules follow.

The data generated by HES consumption modules for those foods consumed/prepared *at home* can be used to facilitate an estimation of the number of calories consumed outside the home. To do this the analyst should generate the 'calories per dollar/shilling/etc.' for foods consumed *inside* the home, and then apply it to the total cost of foods consumed outside the home. The more detailed the 'consumption outside home' module in terms of food type, the more detailed this estimation can be (i.e using only the relevant 'at home' food item consumption for the calories-per-cost estimation).

---

<sup>17</sup> It is important to ensure that each of the following food groups are well represented in the module: (1) cereals, roots, and tubers; (2) pulses and legumes; (3) dairy products; (4) meats, fish and seafood, and eggs; (5) oils and fats; (6) fruits; and (7) vegetables.

## Example HES consumption 'at home' modules:

I'm going to ask you some questions about the food brought into your home in the last week for your family to eat. I want to know about all the foods that you bought with money, ate from your farm or garden, or got from other people, such as friends, someone a family member worked for, or the government. Please tell me about a food even if you haven't eaten it yet.

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	UNIT CODES
Since last [day of week today] did you or others in your household acquire any [name of food item]?			How much did you buy?		How much money did you spend?	How much did you eat from your own production?		How much money would you spend if you bought it?	How much did you receive from other people?		How much money would you spend if you bought it?	<b>DEMONSTRATE BOLD FACED CODES</b> 1 KILOGRAM 2 GRAM 3 LITER 4 MILLILITER 5 CENTIMETER 6 PACKET 7 LOAF 8 UNITIES 9 MARG. TIN, 1 KG 10 MARG. TIN, ½ KG 11 CUP, ¼ LITER 12 SPOON
GO THROUGH ENTIRE LIST FIRST. THEN GO TO Q3-Q11 FOR ITEMS WITH "YES."	Y 1 N 2	ITEM CODE	QUANTITY	UNIT	(SH)	QUANTITY	UNIT	(SH)	QUANTITY	UNIT	(SH)	
<b>Cereals</b>												
Maize, grain		101										
Maize, flour		102										
Rice, local, paddy		103										

SECTION K: CONSUMPTION OF FOOD OVER PAST ONE WEEK												QUESTIONS 3, 5, 6: USE CODES FROM QUESTION 2			
I T E M  C O D E	1. Within the <u>past 7 days</u> , did the members of this household eat/drink any [...] within the household?		2. How much in total did your household consume in the <u>past 7 days</u> ?		3. How much came from purchases during the <u>past 7 days</u> ?		4. How much did you spend?		5. How much came from own-production?		6. How much came from gifts and other sources?				
	PLEASE ONLY LIST ITEMS CONSUMED WITHIN THE HOUSEHOLD AND EXCLUDE FOOD CONSUMED OUTSIDE THE HOUSEHOLD.  ASK THIS QUESTION FOR ALL ITEMS, BEFORE MOVING ON TO THE NEXT QUESTIONS FOR ITEMS WITH YES		YES... 1 NO... 2 (→NEXT)		KILOGRAMS..... 1 GRAMS..... 2 LITRE..... 3 MILLILITRE.... 4 PIECES..... 5		IF NONE WRITE 0 FOR QUANTITY AND LEAVE UNIT BLANK ▶5		THIS QUESTION REFERS TO THE QUANTITY IN QUESTION 3		IF NONE WRITE 0 FOR QUANTITY AND LEAVE UNIT BLANK ▶6		EXCLUDE FOOD TAKEN OUTSIDE THE HOUSEHOLD  IF NONE WRITE 0 FOR QUANTITY AND LEAVE UNIT BLANK		
			UNIT	QUANTITY	UNIT	QUANTITY	TSH		UNIT	QUANTITY	UNIT	QUANTITY			
<b>Cereals and Cereal products</b>															
0101	Rice (paddy)														
0102	Rice (husked)														
0103	Maize (green, cob)														
0104	Maize (grain)														
0105	Maize (flour)														
0106	Millet and sorghum (grain)														
0107	Millet and sorghum (flour)														
0108	Wheat, barley grain and other cereals														
0109	Bread														
0110	Buns, cakes and biscuits														
0111	Macaroni, spaghetti														

4.1 Weekly Consumption expenditure on Food and Drink						
Item	Code	unit	Consumed *			
			Qty	Value (Rs.)	Home grown/ Freely received (Rs.) *	
1	2	3	4	5	6	
<b>1. Cereals</b>						
1.	Rice - (white Kekulu - normal )	0101	grams			
2.	Rice - (white Kekulu Samba)	0102	grams			
3.	Rice - (Red Kekulu - normal )	0103	grams			
4.	Rice - (Red Kekulu Samba )	0104	grams			
5.	Rice -Samba	0105	grams			
6.	Rice - Nadu Red	0106	grams			
7.	Rice - Nadu White	0107	grams			
8.	Rice - Basmati	0108	grams			
9.	Rice - Other	0109	grams			
10.	Rice flour	0110	grams			
11.	Wheat flour	0111	grams			

### Example HES consumption 'outside home' modules:

	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11
Since last [day of week today] did you or others in your household acquire any [name of food item]?			How much did you buy?		How much money did you spend?	How much did you eat from your own production?		How much money would you spend if you bought it?	How much did you receive from other people?		How much money would you spend if you bought it?
GO THROUGH ENTIRE LIST FIRST. THEN GO TO Q3-Q11 FOR ITEMS WITH "YES."	Y 1 N 2	ITEM CODE	QUANTITY	UNIT	(SH)	QUANTITY	UNIT	(SH)	QUANTITY	UNIT	(SH)
<b>Foods consumed outside of home</b>											
Dish or food 1		1301									
Dish or food 2		1302									
Dish or food 3		1303									
Dish or food 4		1304									
Dish or food 5		1305									
Dish or food 6		1306									
Dish or food 7		1307									
Other _____		1398									
Other _____		1399									

SECTION F: FOOD CONSUMPTION OUTSIDE THE HH															
DO NOT INCLUDE GIFTS OF [ITEM] GIVEN OUT BY [NAME] BUT DO INCLUDE GIFTS OF [ITEM] RECEIVED BY [NAME]. IF CONSUMED BUT NOT PURCHASED ASK MARKET VALUE.															
I N D I V I D U A L  I D	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
	Did [NAME] consume any meals/ snacks/ drinks outside the household in the past 7 days?	In the past 7 days did [NAME] consume any full meals ( <u>breakfast, lunch or dinner</u> ) outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>barbecued meat, chips, roast bananas and other snacks</u> prepared on charcoal outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>kibuku and other local brews</u> outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>wine, commercial beer and spirits</u> outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>sodas and other non-alcoholic drinks</u> outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>sweets, ice-cream</u> outside of the household?	What was the value of this consumption?	In the past 7 days did [NAME] consume any <u>tea, coffee, samosa, cake and other hotel snacks</u> outside of the household?	What was the value of this consumption?
	YES...1 NO...2	YES...1 NO...2		YES...1 NO...2		YES...1 NO...2		YES...1 NO...2		YES...1 NO...2		YES...1 NO...2		YES...1 NO...2	
	▶NEXT	(▶4)	TSH	(▶6)	TSH	(▶8)	TSH	(▶10)	TSH	(▶12)	TSH	(▶14)	TSH	(▶NEXT)	TSH
1															
2															
3															

## Annex C: WFP assessments using household expenditure surveys

### Tanzania, 2012

The [2012 Tanzania CFSVA Report](#)<sup>1</sup> was based on data generated by the Tanzania National Panel Survey (NPS). Details of the NPS and how its data were used for food security analysis are outlined below.

<b>Survey Name and Dates</b>	Tanzania National Panel Survey (NPS). October 2008 to October 2009 (phase 1) and October 2010 to September 2011 (phase 2).
<b>Data/metadata available online</b>	<a href="#">Yes</a> <sup>2</sup>
<b>Data Collection Agency</b>	Tanzania National Bureau of Statistics (NBS)
<b>Survey purpose</b>	The main objective of the NPS is to provide household level data to monitor poverty dynamics in Tanzania – in particular to track progress of the country's MKUKUTA poverty reduction strategy (NSGRP, 2010), and evaluate the impact of other major, national-level government policies.
<b>Sample Design and Size</b>	<ul style="list-style-type: none"> <li>Nationally, NPS interviewed 3,265 households in phase 1 and 3,846 households in phase 2.</li> <li>The NPS was based on a stratified, multi-stage cluster sample design. Explicitly, four analytical strata were incorporated into the sample design: Dar es Salam, other urban areas in mainland, rural areas in mainland and Zanzibar.</li> <li>In total 409 clusters were selected, each containing eight randomly selected households. Clusters were selected randomly within each stratum to form the primary sampling units; the probability of cluster selection was proportional to population size.</li> <li>Urban based clusters matched census enumeration areas, while rural clusters matched villages.</li> </ul>
<b>Key indicators used</b>	<ul style="list-style-type: none"> <li>Food energy deficient</li> <li>Low diet diversity</li> <li>Nutrition indicators (stunting, wasting, underweight)</li> <li>reduced coping strategies index</li> </ul>
<b>Calorie Conversion Source</b>	' <i>Tanzania Food Composition Tables</i> ' jointly prepared by the Harvard School of Public Health; Tanzania Food and Nutrition Centre; and, Muhimbili University of Health and Allied Sciences (Lukmanji, 2008). Available online <sup>3</sup> .
<b>Data cleaning and processing steps</b>	<ul style="list-style-type: none"> <li>Non present household members excluded from calorie intake</li> <li>Calories for meals outside household estimated based on cost-per-calories at home</li> <li>Consumption quantity outliers treated at individual food-item level</li> <li>Per capita food item quantities consumed &gt;3SD above median were inspected; outlying quantities replaced with mean consumption intake for food item in household's zone.</li> <li>Guest meal calories were deducted from total household calories.</li> </ul>

<sup>1</sup> <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp259829.pdf>

<sup>2</sup> <http://nbs.go.tz/tnada/index.php/catalog/15>

<sup>3</sup> <http://www.hsph.harvard.edu/nutritionsource/files/2012/10/tanzania-food-composition-tables.pdf>



The following tables briefly describe two recent WFP food security assessments undertaken using HES data. Full reports accessible online.

### Nepal, 2013

In 2013, WFP released the [Nepal Thematic Report on Food Security and Nutrition 2013](#)\* and was based on data generated by the Nepal Living Standards Survey (NLSS). The 2010/11 NLSS was the third of its kind in Nepal. Details of the NLSS and how its data were used for food security analysis are outlined below.

<b>Survey Name and Dates</b>	Nepal Living Standards Survey 2010-11 (NLSS-III), data collected from February 2010 to January 2011, inclusive. The first and second rounds were collected in 1995-96 and 2003-04.
<b>Data/metadata available online</b>	<a href="#">Yes</a> **
<b>Data Collection Agency</b>	Central Bureau of Statistics (CBS)
<b>Survey purpose</b>	The main objective of the NLSS-III is to update data on the living standards of the people. The survey aimed to assess the impact of various government policies and programs on the socioeconomic changes in the country. Further, the survey aimed to track changes experienced by previously enumerated households during the past fifteen and seven years.
<b>Sample Design and Size</b>	NLSS NLSS-III enumerated 7,200 households, of which 5,988 households were from the cross-section sample and the remaining 1,200 were from the panel sample (meaning they were interviewed in the earlier rounds of the survey (NLSS-I or NLSS-II, conducted in 1995-96 and 2003-04 respectively).
<b>Key indicators used</b>	<ul style="list-style-type: none"> <li>• Food energy deficient population</li> <li>• Kilocalories per capita</li> <li>• Percent energy from staples</li> <li>• Percent households with low diet diversity</li> <li>• Average diet diversity</li> <li>• Food expenditure share</li> </ul>
<b>Calorie Conversion Sources</b>	This process was already undertaken by the National Statistics Office and World Bank prior to WFP's access to the data.
<b>Data cleaning and processing</b>	Most data cleaning had already been undertaken by the National Statistics Office and World Bank. Regarding food consumption analysis, the calories for the "other" food groups and meals outside household based expenditures were estimated using cost-per-calories (of calories consumed at home).

\* Available online: <http://documents.wfp.org/stellent/groups/public/documents/ena/wfp256518.pdf>

\*\* <http://microdata.worldbank.org/index.php/catalog/1000/study-description>

## References

- De Weerd, J., Beegle, K., Friedman, J., & Gibson, J. (2014). *The Challenge of Measuring Hunger*. Washington, D.C.: World Bank Group. Retrieved from <http://documents.worldbank.org/curated/en/2014/01/18741920/challenge-measuring-hunger>
- Deaton, A., & Zaidi, S. (2002). *Guidelines for Constructing Consumption Aggregates For Welfare Analysis*. Washington D.C.: World Bank.
- FAO. (2008). *Deriving Food Security Information from National Household Budget Surveys. Experiences, Achievements, Challenges*. Rome: FAO. Retrieved from <ftp://ftp.fao.org/docrep/fao/011/i0430e/i0430e.pdf>
- Smith, L., & Subandoro, A. (2007). *Measuring Food Security Using Household Expenditure Surveys*. Washington, DC: IFPRI. Retrieved from <http://www.ifpri.org/sites/default/files/publications/sp3.pdf>
- Smith, L., & Wiesmann, D. (2007). *Is Food Insecurity More Severe in South Asia or Sub-Saharan Africa? A Comparative Analysis Using Household Expenditure Survey Data*. Washington, D.C.: IFPRI. Retrieved from <http://www.ifpri.org/sites/default/files/pubs/pubs/dp/ifpridp00712.pdf>
- Smith, L., Alderman, H., & Aduayom, D. (2006). *Food Insecurity in Sub-Saharan Africa. New Estimates from Household Expenditure Surveys*. Washington, D.C.: IFPRI. Retrieved from <http://www.ifpri.org/sites/default/files/publications/rr146.pdf>

# *VAM GUIDANCE PAPER*



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