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INDICATOR

SDG Indicator 2.1.2 – Using the Food Insecurity Experience Scale (FIES)

## Lesson 1: Introduction to the Food Insecurity Experience Scale

Text-only version

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Food and Agriculture  
Organization of the  
United Nations



working for Zero Hunger

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## Introduction to the Food Insecurity Experience Scale

This lesson introduces how the FIES fits into the SDG monitoring framework.

It explains what it means to measure food security in a population, and what experience-based food security scales are.

It then introduces the FIES survey module, explores what it can and cannot measure, and considers different objectives for measuring food security.

## Learning objectives

At the end of this lesson, you will be able to:

- understand how the Food Insecurity Experience Scale (FIES) fits into the Sustainable Development Goal (SDG) monitoring process;
- define experience-based food security scales and the benefits of using them;
- become familiar with the eight FIES questions;
- describe what the FIES measures, and what it does not measure;
- explain why countries should adopt the FIES to monitor food security.

## Goal 2 and its targets

**Goal 2** aims to End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Goal 2 is broken down into **eight different targets**. This course is concerned with...

<b>Target 2.1</b>	By 2030, <b>end hunger</b> and <b>ensure access by all people</b> , in particular the poor and people in vulnerable situations, including infants, <b>to safe, nutritious and sufficient food</b> all year round.
<b>Target 2.2</b>	By 2030, <b>end all forms of malnutrition</b> , including achieving, by 2025, the internationally agreed targets on <b>stunting and wasting</b> in children under 5 years of age, and <b>address the nutritional needs</b> of adolescent girls, pregnant and lactating women and older persons.
<b>Target 2.3</b>	By 2030, <b>double the agricultural productivity and incomes of small-scale food producers</b> , in particular women, indigenous peoples, family

	farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
<b>Target 2.4</b>	By 2030, ensure <b>sustainable food production systems</b> and implement <b>resilient agricultural practices</b> that increase productivity and production, that help maintain ecosystems, that strengthen <b>capacity for adaptation to climate change</b> , extreme weather, drought, flooding and other disasters and that progressively <b>improve land and soil quality</b> .
<b>Target 2.5</b>	By 2020, maintain the <b>genetic diversity of seeds</b> , cultivated <b>plants</b> and farmed and domesticated <b>animals</b> and their related wild species, including through soundly managed and diversified <b>seed and plant banks</b> at the national, regional and international levels, and <b>promote access</b> to and fair and <b>equitable sharing of benefits</b> arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.
<b>Target 2.a</b>	<b>Increase investment</b> , including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to <b>enhance agricultural productive capacity</b> in developing countries, in particular least developed countries.
<b>Target 2.b</b>	Correct and <b>prevent trade restrictions and distortions</b> in world agricultural markets, including through the parallel elimination of all forms of <b>agricultural export subsidies</b> and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round.
<b>Target 2.c</b>	Adopt measures to <b>ensure the proper functioning of food commodity markets</b> and their derivatives and facilitate timely access to <b>market information</b> , including on food reserves, in order to help limit extreme food price volatility.

## Two complementary indicators for Target 2.1

Two indicators of food access are used to monitor Target 2.1. These indicators provide complementary information on food access, based on different methods and sources of data.

### Indicator 2.1.1 Prevalence of undernourishment (PoU)

The PoU is an **estimate of the proportion** of the population **facing serious food deprivation**, meaning that they consume an insufficient amount of **food energy** (calories). It is derived from official national level information on:

- ✓ food supply and food consumption data;
- ✓ energy needs (based on population characteristics such as the age/ sex structure and levels of physical activity).

The PoU:

- ✓ provides useful **information about general trends over time**. FAO has published global and regional estimates since 1974, and estimates for countries since 1999;
- ✓ is an **indirect measure of access to food** derived from national level data;
- ✓ may not reflect the current situation, when **data** are **not recent**;
- ✓ cannot, at present, provide information at subnational level for most countries, regarding which population groups are most affected by food insecurity.

### Indicator 2.1.2 Prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)

The FIES provides **estimates of the proportion** of the population facing difficulties in obtaining food of **sufficient quality and quantity**, based on direct interviews with survey respondents who reply to questions about their own experiences, or on behalf of their households as a whole.


Prevalence rates can be computed for **food insecurity at moderate and severe levels**, in a way that makes them comparable across countries. The prevalence of **severe food insecurity** measured with the FIES and the PoU in the population would be **expected to be very similar**, since both are indicators of serious food deprivation. The FIES:


- ✓ yields **reliable estimates of food insecurity**, even in wealthier countries where rates of food insecurity may be very low;
- ✓ can be used to identify **vulnerable population groups** most affected by food insecurity (when applied in large-scale surveys designed to be representative of subnational population groups);
- ✓ provides **actionable information** that policy-makers can use to guide policy interventions.


The FIES is aligned with **two key principles** of the Sustainable Development Agenda:

- **Universality** because it can measure food insecurity in wealthy as well as poor countries.
- **Leave no one behind** because the information it produces can be disaggregated (e.g. by urban/rural and geographic region and by gender if measured on individuals) to identify vulnerable populations.

Let's meet some **members of a national team** who will join you during this course, as they too work in implementing and reporting on SDG 2.1.2.

 *"My name is **Grace**, and I am a National Statistics Officer. I am responsible for the careful planning and implementation of data collection using the FIES survey module, so that the resulting data are reliable and of high quality. Then I must ensure that my team properly analyses the data, and finally I must manage the process of reporting the findings."*

*"My name is **Denis**, and I work as a statistician on Grace's team. My role is to properly analyse the data collected to compile the SDG 2.1.2 Indicator based on the FIES. Following this analysis, we should have food insecurity prevalence estimates that are comparable with those of other countries."* 

 *"My name is **Mokoena**, and I am a director in the National Bureau of Statistics. I am responsible for ensuring that our country reports on a number of the SDG indicators, including for Target 2.1, which is about ending hunger and ensuring access to food by all people. In addition, I must ensure that our colleagues in the relevant Government ministries are aware of the statistics we produce, and understand how they should **use the figures** to help **guide** their **decision-making**. Our country is determined to eradicate hunger, and as we know that food insecurity is a problem in some parts of our population, the FIES will help to ensure our interventions are better targeted and have more impact."*

## What is food security?

SDG 2 calls on countries to **achieve food security**. The concept of food security **defined at the 1996 World Food Summit**, and updated in 2012, is as follows:

Food security exists when **all people**, at **all times**, have physical, social and economic **access** to sufficient safe and **nutritious food** that meets their dietary **needs** and food **preferences** for an active and **healthy life**.

### Dimensions of food security

The FIES alone cannot measure this broad concept of food security; **many measures** used together **are needed** for that. Food security is recognized as having **four main dimensions**: availability, access, utilization, and stability.

**Availability** Food availability is related to food production, international and national commerce and distribution within the country.

**Access** The expression "food security" was coined in the 1970s and referred mostly to the adequacy of **country level food supplies**.

In the 1980s, it was recognized that hunger could occur in a population even when country level food supplies were adequate. As a result, the focus shifted to looking at the food security problem from the perspective of **people's access to food**.

FIES is a measure of limited access to food, meaning constraints on the ability to obtain food of sufficient quality and quantity, due to a lack of money or other resources.

Food access is the **ability** of individual **people and households to obtain food** in a socially acceptable manner (e.g. purchasing, gathering, own production, barter or through food transfers).

While poverty is a major contributor to food insecurity, it alone does not determine food security status. Not all people in higher income groups are food secure, and not all people in lower income groups are food insecure.

**Utilization** Food utilization refers to the **biological utilization** of the food consumed, which is influenced by health status, water and sanitation conditions, and microbiological and chemical safety of the food.

This dimension also includes nutritional knowledge, food habits, child feeding practices, and the social role of food in the family and community.

<b>Stability</b>	Stability refers to the temporal element of the other three dimensions. Problems with food availability, access and utilization can be chronic, seasonal or transitory, with different implications for public policy, as well as for the strategies adopted by the population.
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The FIES measures **access to food** at household or individual level.

### *Do these situations describe poor access to food due to lack of money or other resources?*

1. *Delivery of food to the local town is temporarily halted due to flooding. There is little in the market for sale, so John and his family depend on their own production, which has not been affected by the flooding.*

This situation is **not an example** of limited access, as although food is temporarily not available in the village due to flooding of the roads, John's household continues to have enough through their own food production.

2. *After the birth of her daughter, since no affordable child care is available, Alicia has had to leave her job. Alicia and her husband have less income and now often have to make choices between paying the water and electricity bills and purchasing fresh fruit and vegetables and milk products for the family.*

This situation is an example of poor access, as Alicia and her husband have limited economic resources and are forced to prioritize how they spend their income and reduce the quality of their diet.

3. *Teresa fasts for one day a week because she believes it's good for her health.*

The final situation is not an example of poor access, as Teresa's reason for not eating is not lack of money or other resources.

## The origins of the Food Insecurity Experience Scale

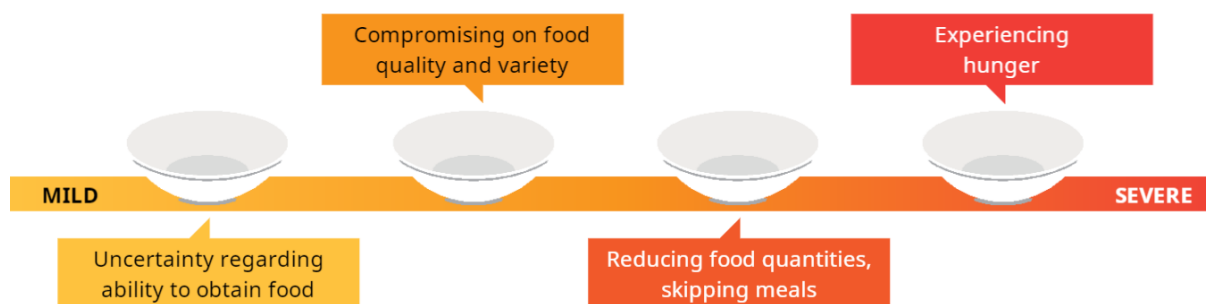
In the late 1980s, researchers at Cornell University sought a new approach to measuring hunger, which would be appropriate for use in a wealthy country such as the USA, where rates of child stunting and wasting are very low, and many food insecure people are overweight. Aiming to develop a new measure, they interviewed women who said they had experienced hunger. Based on



these conversations, the researchers identified various dimensions and components of the **experience of hunger**.

## Measuring food insecurity from the perspective of people's experiences

The Cornell researchers identified a **sequence of experiences** that characterized hunger and food insecurity, as described by the women – a sequence that reveals increasing **severity of food insecurity**. Years later, a review of **studies in many countries** around the world concluded that these dimensions of the experience of hunger appear to be **common across cultures**.



The **consequences of food insecurity** become more severe as the situation worsens, **negatively affecting** physical, mental and social **well-being**.

The Cornell measure, together with the FIES and similar experience-based food security scales, are all composed of a **series of questions** that refer directly to **people's ability to access food**. The series of **questions is part of a scale** that covers a range of experiences of food insecurity at **increasing levels of severity**.

## A timeline of experience-based food security measurement

Experience-based food security scales have been in **use for two decades**.

- ➡ The research at Cornell University paved the way for the development of other experience-based food security measures.
- ➡ The first of these was the **United States Household Food Security Survey Module (USHFSSM)**, which has been used by the U.S. Government since 1995 to monitor food security and guide policy.
- ➡ By 2004, various countries in the Americas had adopted their own version of an experience-based food security scale, including Brazil and Canada. Subsequently, an important regional initiative led to

the development of the **Latin American and Caribbean Food Security Scale**, adopted by Guatemala, Mexico and a growing number of countries in the region.

➡ At around the same time, USAID launched the Household Food Insecurity Access Scale (HFIAS), which was used internationally within its projects, and was picked up by many countries. The FIES builds directly on all these experience-based food security scales. The **real innovation** is the FIES analytic methodology, which produces **results that are comparable across countries**.

The various applications of experience-based food security scales around the world have repeatedly demonstrated their validity and reliability. This **led to the creation of the Food Insecurity Experience Scale – FIES**.

## Voices of the Hungry project

In 2013 FAO launched the **Voices of the Hungry (VoH) project** to bring this accumulated experience with food security scales to global scale. This project developed the **Food Insecurity Experience Scale (FIES)**, with the aim of providing a global tool to facilitate valid and reliable **monitoring of progress** towards **eradicating hunger** and ensuring **universal access to food**.

As the architect of the FIES methodology, **FAO is committed** to helping all member countries **develop the capacity to use the FIES** for monitoring food security.



*This video explains the story as an animation (8 mins 40 sec)*

<https://www.youtube.com/watch?v=cVnbjabLs80>

## The FIES survey module

The FIES survey module is composed of **eight questions** with simple **dichotomous responses** ("yes" or "no") which are posed to a respondent during a survey.

Respondents are asked whether at any time during a certain reference period they have had **any of the experiences** described in the questions, due to lack of money or other resources to obtain food. These experiences range from **worrying** about their ability to get enough food to whether they have been forced to **compromise** the **quality or quantity** of the food they ate.

It is important to note that each question focuses on **lack of money or resources** to obtain food, and not on other reasons such as religion or health factors, which might lead to someone reducing the quantity or quality of the food that he or she eats, or to altering their diet.



Details of exactly how the FIES survey module should be administered will be covered in detail in Lesson 2 'Including the FIES in a survey' of this course.

## The eight FIES questions

During the last **12 months**, was there a time when...

- You were **worried** you would not have enough food to eat because of a lack of money or other resources? You were unable to eat **healthy and nutritious food** because of a lack of money or other resources?
- You ate only a **few kinds of foods** because of a lack of money or other resources?
- You had to **skip a meal** because there was not enough money or other resources to get food?
- You **ate less** than you thought you should because of a lack of money or other resources?
- Your household **ran out of food** because of a lack of money or other resources?
- You were **hungry** but did not eat because there was not enough money or other resources for food?
- You went **without eating for a whole day** because of a lack of money or other resources?



## What the FIES can be used for

The FIES can be used to measure food security for the following objectives:

- To **assess** the population's **prevalence of food insecurity** (for both SDG monitoring and national use)

The primary result to emerge from FIES is the prevalence of food insecurity in a population. By "prevalence", we mean the **percentage** of people in the total population who are **affected by food insecurity at different levels** of severity. It is possible to use the same set of questions across cultures to estimate food insecurity at different levels of severity, and to compare the results in a way that is meaningful and statistically valid.

- To **identify vulnerable** populations most affected by food insecurity

The FIES can be used to identify **subpopulations** vulnerable to food insecurity, to understand **who they are and where they live**. The full potential of the FIES to generate actionable information for policy is realized when the tool is applied in **large national population surveys** that allow more detailed analyses of the food insecurity situation in relation to income, gender, age, race, ethnicity, migratory status, disability, geographic location, or other policy relevant characteristics.

- To **guide** and **monitor** the effects of national food security **policies and programmes**

Use of the FIES to monitor changes in the **prevalence** of food insecurity **over time**, and to **identify trends**, is a powerful way of assessing the effects of national policies and development programmes aimed at reducing food insecurity nationally and among vulnerable populations. The FIES may also be used with the objective of project evaluation, but this aspect is not covered in the current e-learning course.

- To **identify risk factors and consequences** of food insecurity

Other purposes of the FIES include research and surveillance to identify determinants and consequences of food insecurity on health and well-being. This involves exploring food insecurity in relation to other variables. These may be measured on the same individual (or household) in the same survey, or analysed using ecological studies. By **studying associations** between food insecurity and characteristics or conditions such as livelihood strategies, access to public services, basic sanitation, food habits, health and nutritional status, we will have a **better understanding** of the complex phenomenon of food insecurity.

The **focus** of this course is **objective 1**.

## What the FIES cannot be used for

It is important to recognize that the FIES is **part of a suite of indicators** recommended by FAO, and that there are aspects of food security that it cannot measure:

### ➡ Diet and malnutrition

Experiencing food insecurity is **not synonymous** with being **malnourished**. The FIES and other experience-based food security scales are **not designed to assess** actual food consumption in terms of **dietary energy or quality**, or to **detect malnutrition** or nutritional deficiencies. However, **food insecurity prevalence estimates** can help to identify areas where malnutrition may potentially occur, thereby informing effective preventative measures.

When used in surveys that collect information on other indicators, they provide a valuable tool to increase **knowledge regarding relationships** between **food insecurity** (inability to access adequate food), and its potential **nutritional consequences**. These include nutritional deficiencies, overweight, non-communicable diseases and poor psychosocial consequences.

### ➡ Food insecurity among children

The FIES does not measure food insecurity among children. The questions that comprise the FIES survey module are **directed at adults**, who respond about their own experiences or on behalf of their household as a whole. While food insecurity among children cannot be directly measured using the FIES survey module, it is possible to estimate the percentage of children living in food insecure households. To do so, it is necessary to have data on the number of children in each household surveyed.

[The Measurement of Food Insecurity among Children: Review of literature and concept note](#)

<https://www.unicef-irc.org/publications/pdf/Food%20security.pdf>

## Benefits of using the FIES to measure food insecurity


Compared with other indicators used to measure food insecurity, the FIES provides the following **benefits**:


- **Direct** - The FIES asks respondents directly about their experiences in the face of constrained access to food. In this way, the FIES "listens" to the people affected by food insecurity.
- **Easy** - Simple and quick to administer in a survey. It takes no more than 5 minutes and does not require technical expertise.
- **Low cost** - Can be included in almost any existing survey, at very little additional cost.

- **Statistically sound** - FIES and similar scales have been shown to be valid in different settings, and by using the FIES methodology, food insecurity prevalence rates can be compared across countries and populations.
- **Distinguishes between severity levels** - Capable of reflecting the depth of food insecurity.
- **Results can be disaggregated** - Observes differences in food insecurity by population characteristics, e.g. gender, age, occupation, etc., and among subpopulations that differ by location, ethnicity, language etc.

## A commitment to adopting the FIES

After studying the FIES, Mokoena and Grace meet again to make a decision about whether they will adopt the FIES in their country.

 *'After studying the FIES we feel it is definitely feasible to adopt it to fulfil our monitoring requirements on SDG Indicator 2.1.2 and for our national policy work. The FIES module is short and simple, and we should be able to include it in one of our ongoing nationally representative surveys. The data will be analysed carefully to produce valid and reliable estimates of food insecurity in our country on a regular basis.'* - Grace

 *'That is excellent news! Please proceed to collect the data and construct the Indicator for the first round of reporting. I look forward to seeing your report on the results of this task and to working with our Government and stakeholders on actions to address the problem of food insecurity in our country.'* - Mokoena

## Summary

This lesson has provided information on:

- The FIES within the context of the SDG monitoring framework, as part of Goal 2 (End hunger) and alongside the other Target 2.1 indicator, the Prevalence of Undernourishment;
- The concepts of food security and the fact that FIES is a measure of the access to food dimension;
- The common experiences of hunger across cultures around the world, and the development of experience-based scales as a means of assessing the severity level of an individual's food insecurity; The eight questions of the FIES survey module;
- What the FIES can and cannot be used for, focusing on its main use: assessing the prevalence of food insecurity at different levels of severity in the population;

- The benefits of using the FIES as a measure of food insecurity, compared with other similar indicators, such as its ease, low cost, statistical validity and ability to distinguish between different severity levels.

Lessons 2 “**Including the FIES in a survey**” will provide step-by-step guidance to country officials, as well as institutions and researchers that support the government policy process, to help them implement the FIES in surveys and to accurately analyse, interpret and communicate the results.

## Additional reading

Coates, J., Frongillo, E.A., Rogers, B.L., Webb, P., Wilde, P.E. and Houser, R. (2006). *Commonalities in the experience of household food insecurity across cultures: what are measures missing?* Journal of Nutrition, vol. 136 no. 5: 1438S-1448S.

Radimer, K.L., Olson, C.M. and Campbell, C.C. (1990). *Development of Indicators to assess hunger.* Journal of Nutrition, vol. 120 no. 11 suppl. 1544-1548.

Radimer, K.L., Olson, C.M., Greene, J.C., Campbell, C.C. and Habicht, J.P. (1992). *Understanding hunger and developing indicators to assess it in women and children.* Journal of Nutrition Education, vol. 24, issue 1, suppl. 1, pp. 36-45.

Leroy, J.L., Ruel, M., Frongillo, E.A., Harris, J. and Ballard, T.J. (2015). *Measuring the food access dimension of food security: A critical review and mapping of Indicators.* Food and Nutrition Bulletin, vol. 36(2), pp. 167-195. Accessed 14 September 2017.

Cafiero, C., Melgar-Quinonez, H.R., Ballard, T.J., and Kepple, A.W. (2014). *Validity and reliability of food security measures.* Ann. N.Y. Acad. Sci. 1331, pp. 230-248. Accessed 14 September 2017.

Ballard, T.J., Kepple, A.W. and Cafiero, C. (2013). *The food insecurity experience scale. Development of a global standard for monitoring hunger worldwide.* Technical Paper FAO, Rome, Italy. Accessed 14 September 2017.