



Dietary energy supply

Overview

The [dietary energy supply](#) ^[1] (kcal/capita/day) is an indicator calculated at the national level that serves as an estimate of the amount of calories from foods available for human consumption. This indicator does not yield any information on the affordability, access, or consumption of dietary energy by different population groups within a given country, which means that sufficient national supply does not ensure sufficient dietary energy consumption by nutritionally vulnerable groups. Nevertheless, it can be useful for determining whether a country's food supply contains enough dietary energy to meet aggregate population needs, and whether measures need to be taken to improve the amount of dietary energy available for the population.

This indicator can be accessed through FAO's [FAOSTAT](#) ^[2] website. FAOSTAT contains national-level [Food Balance Sheet](#) ^[3] (FBS) data. Additional indicators in the Data4Diets platform related to quantity of the food supply that also use FBS data include [depth of food deficit](#) ^[4] and [national dietary energy available from non-staples](#) ^[5], among others. Alternatively, if users are interested in calculating a similar measure but with household-level data, they should refer to the [household dietary energy consumption](#) ^[6] indicator which relies on [Household Consumption and Expenditure Survey](#) ^[7] (HCES) data.

Method of Construction

This indicator can be accessed on the [FAOSTAT website](#) ^[2] by selecting FBS under the Data tab. Users can view and download this indicator for a given country and year (or span of years) by selecting "Food supply (kcal/capita/day)" under the *Elements* section and selecting "Grand Total + (Total)" under the *Items Aggregated* section.

FAO calculates the national estimate of total food availability using data from a number of sources, including government agencies, marketing authorities, and industrial/manufacturing surveys, among others ([FAO, 2001](#) ^[8]). This national estimate is calculated as the sum of the elements of quantities of food from supply (production, import, and stock variation) minus the elements of quantities of food from utilization (export, manufacturing, feed, seed, waste, and other uses) for each commodity expressed in raw equivalent. Using food composition tables, FAOSTAT sums the dietary energy content of the edible portion of each type of food available for human consumption. This value is then divided by the population size and by 365 days to calculate the per capita daily dietary energy available for human consumption. This calculated value (kcal/capita/day) is available from FAOSTAT for the total food supply, as well as for individual food items and food groups.

Uses

When data from individual dietary surveys or household surveys are unavailable, this indicator serves as a proxy for dietary energy consumption at the population level ([FAO, 2017](#) [9]). Because it is available annually for nearly all countries, it is a useful indicator for cross-country comparisons of energy consumption, as well as for analysis of trends over time within a country. When the dietary energy supply is disaggregated by food groups it provides a quick snapshot of the quality of the diet in a country through the share of dietary energy supply from each food group in total dietary energy supply.

This indicator also serves as the basis for other indicators of food security and nutrition, such as the Average Dietary Energy Supply Adequacy (ADESA) indicator ([Lele et al., 2016](#) [10]), the [Prevalence of Undernourishment](#) [11], and the [depth of food deficit](#) [4] indicator.

Strengths and Weaknesses

One benefit of this indicator is that it is available for more than 170 countries dating back to 1961. The data are regularly updated by FAO using a common methodology. The country-level data are provided by national governments and are centrally located on the [FAOSTAT](#) [2] website. Furthermore, this indicator is simple to interpret and lacks sampling and reporting biases associated with dietary recall data ([Lele et al., 2016](#) [10]).

A weakness of this indicator is that it does not reflect actual energy consumption but rather energy availability. In addition, since the indicator is a national-level estimate, it cannot be disaggregated by age or sex, or by any geographic scale smaller than the national level, nor can it detect disparities in dietary energy availability (or consumption) across population groups or seasons, as is possible with individual- or household-level dietary data. This indicator is limited to the foods that appear in the [FBS](#) [3] and therefore does not capture all possible sources of dietary energy (e.g. insects or wild foods).

Although the [FBS](#) [3] accounts for food wasted along the food chain, it does not account for losses incurred at the retail distribution level, plate waste, or other non-food uses at the household or individual level ([Lele et al., 2016](#) [10]), and stock variations are not accurately captured.

Data Source

The main source of data for this indicator is the FAO [FBS](#) [3] data on the [FAOSTAT](#) [2] website, which disaggregates elements of utilization and supply, and estimates total food available for human consumption. FAO pairs this information with food composition data to produce information on the national supply of energy and macronutrients (per capita/day). In addition, [Household Consumption and Expenditure Surveys](#) [7] (HCES) could be used to calculate a similar indicator, such as [household average dietary energy consumption](#) [6]. Alternatively, [24-hour Dietary Recall](#) [12] or [Weighed Food Records](#) [13] could be used to calculate [total individual energy intake](#) [14].

Links to guidelines

- [FAO, \(2001\). "Food Balance Sheets: A Handbook"](#) [8]

Links to illustrative analyses

- [Del Gobbo et al., \(2015\). "Assessing global dietary habits: A comparison of national estimates from FAO and the Global Dietary Database."](#) [15]
- [FAO, \(2017\). "The State of Food Security and Nutrition in the World."](#) [16]

Expert review conducted by:

- Dr. Gero Carletto, Lead Economist and Manager of the Living Standards Measurement Study (LSMS) at the World Bank
- Ana Molledo, Consultant on Food Security and Consumption Statistics, Food and Agriculture Organization
- Nathalie Troubat, Consultant on Food Security and Consumption Statistics, Food and Agriculture Organization

Food Security Dimensions

- [Quantity](#) [18]

Data Collection Levels

- [National](#) [19]

Data Sources and Methods

- [Food Balance Sheets \(FBS\)](#)

Requires Food Composition Database

- [No](#) [20]

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