

Processing food consumption data from HCES - Guidelines for countries collecting data in line with the United Nations Statistical Commission-endorsed guidelines on food data collection in HCES”

Background document on the review process, comments received and responses

A first version of the guidelines was discussed at a workshop held in Rome in October 2022 with members of the task team and countries of the Common Market for Eastern and Southern Africa. Following the workshop, a new version of the guidelines was drafted and circulated for comments to the Committee of Experts in July 2023. A revised version of the guidelines, including comments received from Committee experts, was then circulated to statistical offices in 206 low- to high-income countries and territories. National statistical offices were requested to provide their comments and fill in an online questionnaire, with a view to collecting additional input on the information collected in the survey and on the potential usefulness of the guidelines.

Of the 70 national statistical offices that filled out the questionnaire, 24 sent in comments to the secretariat of the Committee of Experts. Of those that responded, 16 acknowledged having taken note of the Guidelines but provided no substantive comments. The comments received during the global consultation were incorporated into the document when relevant. A summary of the responses received during the consultation and the way comments on the guidelines were addressed in the final document is provided as a background document to the present report. The Committee of Experts seeks the Commission’s endorsement of the guidelines and invites States Members of the United Nations to encourage their implementation in order to improve the quality and comparability of statistics produced using food consumption data from household consumption and expenditure surveys.

Table 1 below summarizes the list of countries that commented on the guidelines.

Table 1. Countries’ response to the consultation

	Countries	Comments
1	Austria	Acknowledge – No comment
2	Azerbaijan	Acknowledge – No comment
3	Belarus	Comments received
4	Canada	Comments received
5	Cape Verde	Acknowledge - No comment
6	Dominican Republic	Acknowledge - No comment
7	Egypt, Arab rep.	Acknowledge - No comment
8	Germany	Acknowledge - No comment
9	India	Acknowledge - No comment
10	Italy	Acknowledge - No comment
11	Japan	Acknowledge - No comment
12	Panama	Comments received
13	Philippines	Comments received
14	Qatar	Comments received
15	Romania	Comments received

16	Singapore	Acknowledge - No comment
17	Spain	Comments received
18	Tuvalu	Comment received
19	Uganda	Acknowledge - No comment
20	United States	Acknowledge - No comment
21	Venezuela	Acknowledge - No comment
22	Vietnam	Comment received
23	West Bank and Gaza	Acknowledge - No comment
24	Zimbabwe	Acknowledge - No comment

Country comments and responses

Belarus

In response to the opportunity to review and comment on the draft "Guidelines on Processing Food Consumption Data from Household Consumption and Expenditure Surveys", the National Statistical Committee of the Republic of Belarus (Belstat) informs as follows. In its letter No. 13-27/4 dated 15.01.2018 to the FAO Statistics Division on the draft "Guidelines on Food Data Collection from Household Consumption and Expenditure Surveys for Low- and Middle-Income Countries", Belstat detailed the national experience in collecting data on food consumption in households in the Republic of Belarus.

1. We have data on the quantity and value of food purchased, the amount of food consumed at home by source of receipt, the number of meals eaten, and the amount spent on food away from home. The total measures for this block of questions are expenditures on food (consisting of expenditures on food purchased and expenditures on food away from home) and average per capita food consumption in the household.

Authors acknowledge that such a design does not comply with the 2018 WB/FAO guidelines on food data collection and is not relevant for food security analysis. The main challenge seems to be that foods consumed from own production or from other sources than purchased are not collected. However, recommendations related to data cleaning and outlier detection described in the guidelines on food data processing can still be applied and the multivariate approach may prove to be a useful tool to check the consistency between quantities and values of food purchased.

2. We adhere to the previously expressed position about the increase of risks of respondents' refusal to participate in household expenditure surveys when including in the survey programme the collection of detailed data (indicating the name of meals and their quantity) on food eaten away from home.

The 2018 WB/FAO guidelines do not recommend collecting detailed information (quantities and values) on foods consumed away from home as it is acknowledged that this is very challenging to collect in a nationally representative survey. Rather, the 2018 guidelines recommend collecting the amount spent on food/meals consumed away from home through an individual module organized around meal event. The risk of representing a burden to the respondent is there but so far this design has demonstrated to perform well in most countries where it has been adopted.

3. Having reviewed the draft Guidelines, Belstat notes its importance and usefulness for statistical organizations. The Guidelines will allow for the improvement and harmonization of country

approaches to monitoring and processing of food consumption data obtained from household sample surveys.

This is well noted.

4. However, we consider it necessary for FAO experts to develop approaches to estimating food consumption away from home (in grammes) based only on data on monetary expenditures for food away from home and to supplement the Guidelines with relevant recommendations.

This is not possible in the context of an HCES as it would require having precise and detailed information on all the foods consumed away from home. At best we can estimate the amount of calories consumed away from home using the cost of one calorie consumed in the house. An approach to estimate calories from food way from home is included in the Guidelines.

Canada

The Survey of Household Spending (SHS) run by Statistics Canada does not collect information on quantities purchased. It only collects total spending on different food categories. Also, it does not ask for split between what was spent and what was actually consumed by households. This major difference in scope between SHS and HCES makes many parts of the guidelines not applicable for SHS.

This is well noted.

Some comments:

1. Collecting the quantity is very burdensome especially for the person who has to fill out the information for all household members. Wondering how the survey managers will monitor the data quality.

Authors acknowledge that this is a challenge. The guidelines recommend performing various checks throughout the process to identify and correct systematic or random errors. In this context the use of unit values and robust outlier detection methods have demonstrated to be valid tools. The number of errors and outliers identified should be documented and a large number will indeed indicate lower data quality.

2. What is the clear definition of food prepared outside the home? Is it purchased outside the home?

Foods prepared outside the home refer to the foods prepared with ingredients that were not reported in the in-house food consumption module of the household consuming these foods. These foods can be purchased outside the house or received for free. A note clarifying this has now been added in box 3 of the guidelines.

3. Because the HCES is asking about household consumption, what about when guests and non-household members are eating within the household members? How to separate their consumption if it is out of scope?

If information on the number of visitors is collected in the survey, then this information needs to be considered when estimating per capita consumption. The issue of partakers is addressed in section 3.2 of step 3 of the guidelines. It is important to consider visitors to adjust quantities or expenditures reported to obtain the usual I per capita consumption of the household.

4. Outliers versus Errors: as mentioned in the report sometime big values appear but are not outliers. At the same time, it is recommended to see how to reduce their impact on the final estimate as these values are not the most common. One way is to adjust to the number of persons as mentioned in the report if this information is available or to build an influential value

detection method to reduce the impact of these ‘non-common’ values on the final estimate. Such procedure is being used for SHS.

The identification and correction of systematic or random errors is lengthily discussed in the guidelines (section 2 of part 1, in steps 2, 4, and 7 of the process). We take note of the approach used by STATCAN based on the influential value detection method.

Panama

I. Comentario sobre los aspectos sustantivos del documento:

1. Establecer en las directrices el período de referencia de la encuesta.
 Sí es de uso universal la semana (7 días), detallarlo en el documento guía para los países que realizamos este tipo de encuesta.
 Ejemplo: la semana pasada usted consumió...?
2. Especificar cuantos días posteriores al período de referencia se le puede asignar a la recuperación de los datos o crear un intervalo de tiempo. Ejemplo: de 1 a 3 días adicionales al período de referencia de la encuesta o en su defecto, si el mismo queda a criterio o consideración de los países.
 El personal que levanta la encuesta se ve inmerso en: visitas posteriores a las viviendas o a las fuentes de gastos (comercios o tiendas), para captar la información faltante del período (los gastos de algún miembro del hogar o las fuentes de ingresos, posibles pesos de algunos productos que no han sido completados por el hogar).
 También se presentan dificultades de acceso en las barriadas o edificios residenciales que mantienen garitas de seguridad o donde el acceso es restringido o limitado para los encuestadores y/o supervisores de la Encuesta de Ingresos y Gastos de los Hogares en Panamá. Cabe señalar, que si queremos unificar criterios a nivel internacional y que sea de uso para los países, sería viable considerarlo y que se coloque en las nuevas directrices del CSU 2018.
Comments 1,2 and 3 tend to refer to survey design and are more relevant to the 2018 WB/FAO guidelines on food data collection (these guidelines can be downloaded at: <https://www.worldbank.org/en/programs/lsm/publication/Food-data-collection-in-household-consumption-and-expenditure-surveys-guidelines-for-low-and-middle-income-countries>) than to these current guidelines on food data processing
3. Sobre los pasos del procesamiento de alimentos:
 Pasó 8 (calcular dietético energía) y paso 9 (estimar restante dietético energía “kcal”), sería oportuno que se coloquen ejemplos específicos de como calcular los mismos, por ejemplo: leche, frijoles, carnes.
Authors take note of the request to see more examples on how steps 8 and 9 are applied. Unfortunately, the guidelines were drafted in a format suitable for UNSC and not as a didactical tool. We are planning to develop training material out of the guidelines with more examples to show how it works.

Philippines

1. On the quantity collected in the Family Income and Expenditure Survey

To simplify food data collection, the use of different units of measurement (grams, kilograms, piece, liters, milliliters, etc.) when reporting the quantities of each food item is being utilized in the survey. However, this way of collecting quantities makes data cleaning more complicated as the conversion of food items takes time. Other items are also difficult to convert into a standard unit of measurement.

Authors recognize the challenge in converting quantities into grams and that's why it is recommended to conduct frequent market survey collecting weight in grams per one unit (information on how to conduct such a survey can be found in "The Use of Non-Standard Units for the Collection of Food Quantity: A Guidebook for Improving the Measurement of Food Consumption and Agricultural Production in Living Standards Surveys", available at: <https://documents1.worldbank.org/curated/en/981711587040434398/pdf/The-Use-of-Non-Standard-Units-for-the-Collection-of-Food-Quantity-A-Guidebook-for-Improving-the-Measurement-of-Food-Consumption-and-Agricultural-Production-in-Living-Standards-Surveys.pdf>) and work up front in the analysis of all combinations product/unit of measurement the most reported to ensure weight in grams for these combinations will be available when the data will be prepared for analysis. See section 1.4 of step 1 of the guidelines.

For some food items such as those prepared and consumed away from home, information on the quantities is not being collected in the survey. Imputation using monetary values is not also being done during the processing of data, thus, there is no available data on the quantity of food away from home.

It is almost impossible to estimate quantities of food consumed away from home when details on the food consumed is not collected. However, it is possible to estimate the amount of calories consumed away from home using the cost of one calorie in the house. This approach allows at least to account for food consumption away from home rather than discarding it.

2. On the estimation of human energy requirements

Nutrient analysis is not part of the data cleaning process. However, the inputs for the estimation of human energy requirements such as quantities and monetary value of food items are available in the FIES data.

Not sure the authors understand this statement. To estimate human energy requirement, we need information on the age and sex structure of the population of the country, the height of the individuals and the level of physical activity. We do not need information on the quantities and monetary values of the food consumed. This information is rather used to estimate the average dietary energy consumption that can be further used to estimate the prevalence of undernourishment (SDG 2.1.1) together with the energy requirements.

3. On the collection of food consumed away from home

Individual consumption for food away from home is not available in the FIES questionnaire. The respondent in the household during the survey is asked to provide the number of family members who are regularly eating outside the home, and to report the monetary value corresponding to the meals purchased and the value of free meals for all members in that household.

Authors are taking note of the module used by the Philippines to collect food away from home and recommend that the module refers to the same recall period than the in-house consumption to be able to reconcile and aggregate in-house food consumption with food away from home consumption.

Qatar

The guidelines on processing the food consumption data from Household consumption and expenditure surveys provide a comprehensive action plan on the subject. It provides a detailed step by step way forward to a harmonized and internationally comparable processed food consumption data. It is assumed that these guidelines relate to the surveys that collect data on quantities and market values of the consumed food rather than the acquired food.

Qatar, like many other countries conduct Household Income & Expenditure Survey. The collected data refers to the “Quantities and Values of the acquired food” from each household, rather than the consumption. It is therefore suggested to address these scenarios in a separate section of these guidelines. However, the basic data cleaning/editing can be done using these guidelines.

The guidelines were designed for countries adopting the 2018 WB/FAO guidelines on food data collection endorsed by the UN-Statistic Commission and do not address acquisition surveys.

But the steps described in the guidelines on food data processing can apply to any type of surveys. However additional noise might be observed in acquisition survey and further techniques may be adopted to reduce the noise around the estimates.

Romania

1. We appreciate advancing to our attention the guidelines “Processing food data from Household Consumption and Expenditure Surveys (HCES) – Guidelines for countries collecting data in line with the 2018 UNSC endorsed guidelines on food data collection in HCES”.

We inform you that, as a member state of the EU, the program of selective statistical surveys in households, of the National Institute of Statistics (NIS) in Romania, is organized in accordance with the provisions of the dedicated regulation (Regulation (EU) 2019 /1700 of the European Parliament and of the Council of 10 October 2019 establishing a common framework for European statistics on persons and households, based on individual level data collected from samples).

2. We also mention that, in order to meet the national needs for statistical data in the field of household income, expenditure and consumption, the NIS conducts the quarterly selective statistical survey named Household Budget Survey. All the development stages of household surveys comply with the Eurostat requirements imposed by the regulations in force ([Commission implementing regulation 2019/2181](#) on technical characteristics as regards items common to several datasets, [Commission delegated regulation 2023/126](#) on specifying the number and the title of the variables for the consumption domain, [Commission implementing regulation 2022/2094](#) on the technical items of data sets, establishing the technical formats for transmission of information and specifying the detailed arrangements and content of the quality reports on the organisation of a sample survey in the consumption domain).
3. In conclusion, the Household Budget Survey within the NIS comply with the calendar required by Eurostat, through all the Regulations entered into force; no additional guidelines are needed to carry out this statistical survey.

Please find below the links to the database on NIS website and the one from Eurostat for HBS.

- TEMPO database: <http://statistici.insse.ro:8077/tempo-online/#/pages/tables/insse-table>

- Eurostat database: <https://ec.europa.eu/eurostat/web/household-budget-surveys>
Authors acknowledge response from Romania and take note that the work of the NIS complies with EUROSTAT regulations regarding HBS and there is therefore no need for additional guidelines on food data processing.

Spain

After a very quick reading of the document due to available resources (we would have appreciated a summary of the most important issues) we have just sent the requested questionnaire.

In question 13 we have answered "Don't know" although the answer is "No", in order to answer the question about non-relevance (perhaps the flow of the questionnaire is not correct).

We would like to clarify the reasons why the information submitted is not relevant:

1. Assumption that the quantity consumed during the collaboration period should be collected and not the quantity purchased is very complicated in a household survey and also leaves out the objectives of the household budget surveys.

2. The objective of measuring kilocalories and micronutrients could be incorporated into the survey sporadically by means of a module in a given year but not every year. Household Budget Surveys entail a high workload for respondents and order additional jobs could have an impact on the main objectives of these surveys.

Authors take note that quantities are not collected in the HBS, and the guidelines are therefore not relevant.

Finally, and in relation with this point:

Food prepared at home but consumed outside the home (such as packed lunches) and food prepared outside the home but consumed at home (take away) are not included in the definition of "Food Away From Home" (FAFH). Both are considered as in-house food consumption. All the ingredients needed to prepare the packed lunches should be reported in the in-house food consumption module (WE AGREE) as well as the takeaway foods consumed inside the house with all household members (WE DO NOT AGREE).

Takeaway expenditures are collected in HBS in group 11 of the COICOP and not in group 01 (food purchased to consume at home or to prepare in it even if consumed outside)

Well noted. It's just a question of how we define food consumed away from home and how it is captured in HCES. Following 2018 WB/FAO guidelines on food data collection in low- and middle-income countries, it is recommended to have a separate module to collect information on meals prepared and consumed away from home. Prepared meals purchased outside and consumed in the house are reported in the in-house module on food consumption. This is to avoid double counting (cases where prepared foods consumed in the house would be reported both in the AFH and in-house module).

Tuvalu

I trust the guidelines outlined in the document are supported by research and experience. I have not read the guidelines in detail, so some of my comments below may have already been addressed in the document.

1. An issue that was raised by Ms Grace Alapati, our Government Statistician, is the issue of leftover food. For instance, a household may report consuming 5 kg of rice in the past 7 days but 25% were discarded or given to livestock. This is common in Tuvalu but was not included in the Long Form Census 2022.

This is a very valid comment and if this is a common practice then this can result in a systematic overreporting of the consumption of this specific food. This systematic error needs to be corrected during data processing after consultation with experts from the country. If the percentage of waste is known, it can then be applied to the quantities reported. However, enumerators should be trained to ask respondent to report the actual amount consumed by the household during the recall period and not the amount purchased.

The case of food given to pets is raised in step 10 of the process.

2. The following comments are based on observations and experiences during the LFC 2022 and may only be relevant to Tuvalu.
 - Proper training on the guidelines should be conducted so the coordinator understands what is to be collected from the survey and how the data will be used before the main training for interviewers.
 - The questionnaire should be pretested to ensure that the questionnaire captures accurate information during the fieldwork.
 - Monitoring tools should be developed to help HQ staff detect errors.
 - The guidelines on data collection should be relayed to the interviewers as best as possible so the main training should be properly planned and executed.

Authors fully agree on the four points discussed above. All the work done upfront in preparing the survey and training enumerators will undoubtedly impact on the quality of the data collected. Authors take note of the suggestion to provide enumerators with a training on the main steps of the process. A note was added to the executive summary.

Vietnam

Regarding to the new guidelines on “Processing food data from Household Consumption and Expenditure Surveys (HCES)”, the General Statistics Office of Vietnam (GSO) would like to have some comments as follows:

1. In the guidelines, each item of food consumption of households is collected by volume and monetary value, in which the unit of volume is grams. However, the units of some foods are difficult to convert into grams. For example: In Viet Nam Household Living Standard Survey (VHLSS), egg is calculated by piece; Alcohol, beer, fish sauce by liters, etc. or some foods are collected by group of foods, they are only collected monetary value of food consumption. It is recommended that the guidelines should provide conversion factor to convert units of food quantities into grams.

Conversion factors are specific to each country, and it belongs to the country to collect the information needed to convert into grams the quantities collected in non-standard unit of measurement. into grams. Guidelines on how to collect such weights can be found in “The Use of Non-Standard Units for the Collection of Food Quantity: A Guidebook for Improving the Measurement of Food Consumption and Agricultural Production in Living Standards Surveys”, available at: <https://documents1.worldbank.org/curated/en/981711587040434398/pdf/The->

Use-of-Non-Standard-Units-for-the-Collection-of-Food-Quantity-A-Guidebook-for-Improving-the-Measurement-of-Food-Consumption-and-Agricultural-Production-in-Living-Standards-Surveys.pdf). Authors also recommend working up front in the analysis of all combinations of product/unit of measurement the most reported to ensure weight in grams for these combinations will be available when the data is prepared for analysis. See section 1.4 of step 1 of the guidelines.

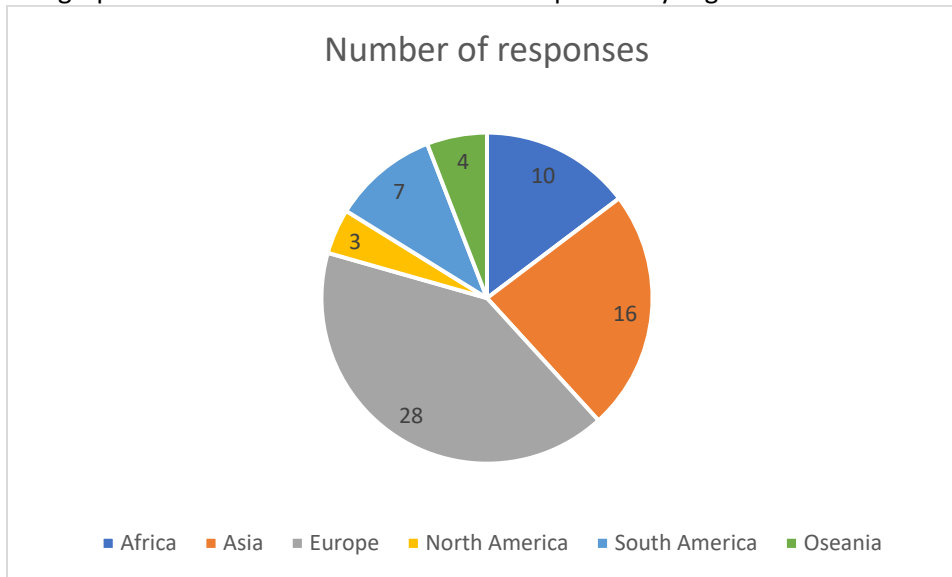
2. The guidelines is a technical document that provides instructions on processing food consumption/expenditure data. Therefore, it is needed to provide more examples; the examples in the guidelines need to be more detailed, easy to understand and easy to apply in many countries.

Authors acknowledge the need for training material and more didactical tools. However, the main purpose of these guidelines is to provide a set of recommendations and offer a process to follow when preparing the data for analysis. As a next step to the guidelines, it is hoped to develop some training material to be used by countries.

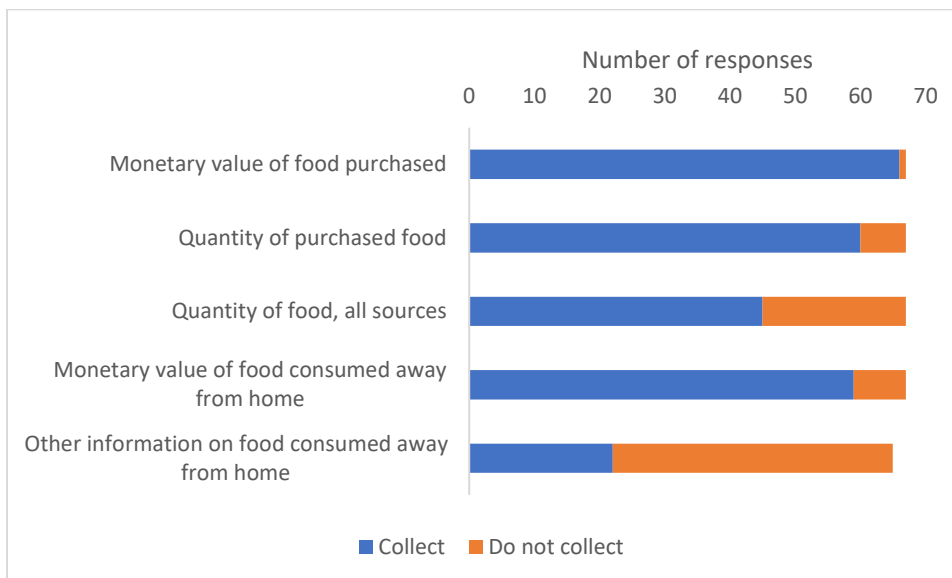
Results from survey

Of the 70 NSOs that filled in the questionnaire – 68 agreed to store the information. The results below are based on information from these 68 NSOs.

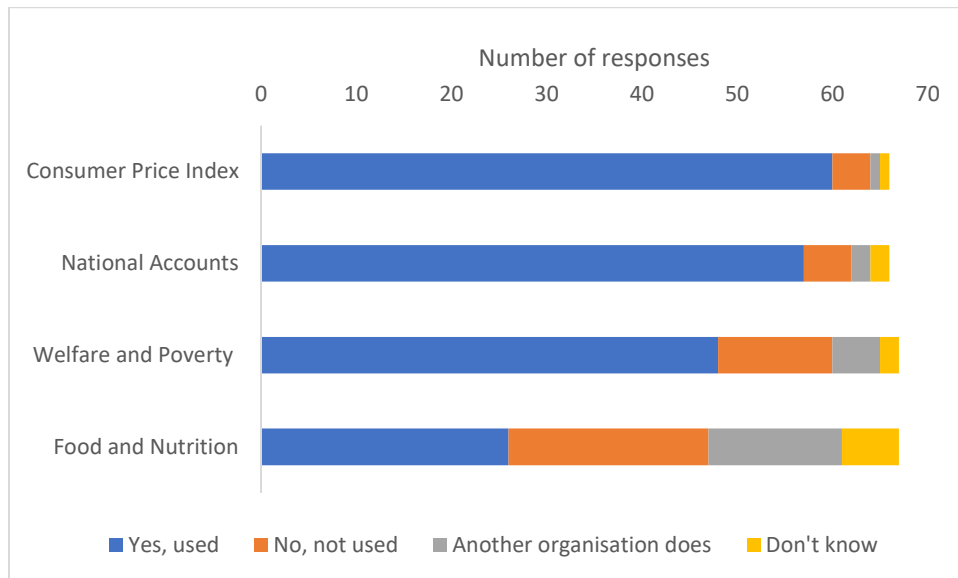
The graph below shows the distribution of responses by region.



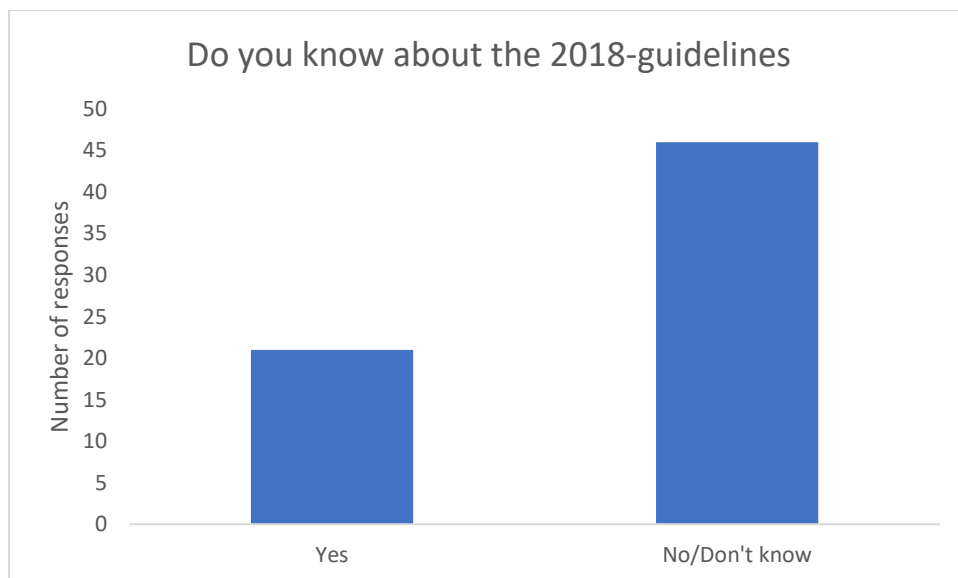
All NSOs are conducting national household surveys that collect detailed information on household's consumption of food items. Almost all these surveys include monetary value of foods purchased in the house or away from home. The majority do also collect information on quantities of food consumed from cash purchases and non-market sources (such as own production and gift etc.). The food data collected possess therefore the potential for different uses and analysis.



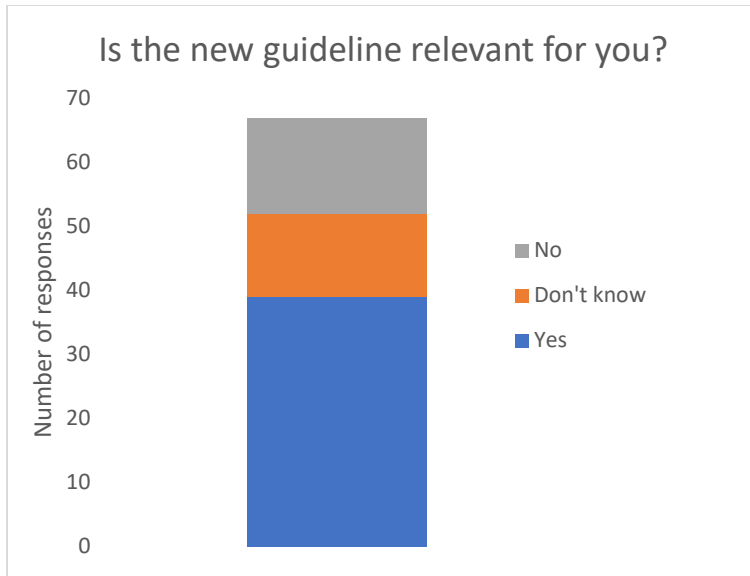
Most NSOs report that they use the data for Consumer Price Index and National Accounts. Most surveys are also used for welfare and poverty analysis. It is also common to use the data for food security or nutrition analysis, but less than half of the NSOs report doing this in-house.



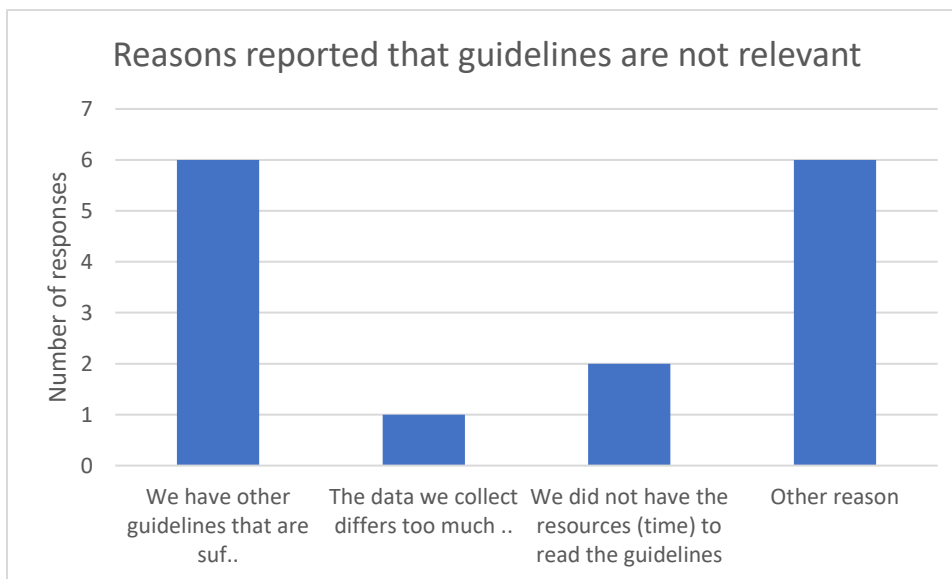
Two NSOs out of three are not aware of the guidelines on “Food data collection in Household Consumption and Expenditure Surveys” - endorsed by UNSC in 2018. These guidelines provide recommendations on how to collect food data in household consumption and expenditure surveys relevant and reliable enough to conduct poverty and food consumption analysis.



Around three in five NSOs think that the current guidelines are relevant for processing their data. One in five said it is not relevant and the remaining NSOs reply that they don't know.



The reason why they do not know may be because they filled in the questionnaire prior to revising the guideline. The majority of those NSOs responding to the questions on why the guidelines may not be relevant said that they have other guidelines that are sufficient (6) or other reasons (6).



27 NSOs answered that they would like the guidelines translated into another language, such as Spanish (7), Arabic (4), Russian (3) and Portuguese (3).

A word cloud of various languages. The largest word is 'SPANISH' in dark grey. Other prominent words include 'ARABIC' in light blue, 'RUSSIAN' in orange, and 'PORTUGUESE' in dark grey. Smaller words include 'UKRAINIAN', 'GREEK', 'ROMANIAN', 'TONGAN', 'AZERBAIJANI', 'FRENCH', 'CHINESE', 'VIETNAMESE', 'BENGALI', and 'MYANMAR'.

SPANISH
UKRAINIAN GREEK ROMANIAN TONGAN ARABIC BENGALI MYANMAR
AZERBAIJANI FRENCH RUSSIAN CHINESE PORTUGUESE
VIETNAMESE