

SURVEY PLANNING TOOL

**Dietary Survey Protocol Template:
An Outline to Assist with the
Development of a Protocol for a
Quantitative 24-Hour Dietary Recall
Survey in a Low- or Middle-Income
Country**

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About *Intake*

Intake is a Center for Dietary Assessment that aims to strengthen policies and programs to improve nutritional status by increasing the availability, quality, comparability, and use of reliable dietary data in low- and middle-income countries (LMICs). We hope that the availability of valid, concise, effective diet-related metrics, along with *Intake* technical assistance for the planning, design, collection, analysis, and use of dietary data, can play an important role in helping actors in LMICs to develop evidence-based nutrition and agriculture policies and programs to ensure high-quality diets for all.

User Feedback

At *Intake*, we aim to make our technical assistance tools, templates, and guidance materials as useful as possible. We therefore welcome input and feedback from users of our technical assistance documents, so that we can continue to improve the materials and the technical assistance we provide. If you have suggestions or feedback related to this document that you would like to share with *Intake*, please contact us via email at feedback@intake.org.

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About this Document

Objective

The objective of this document is to assist survey planners with the development of a survey protocol for a quantitative 24-hour dietary recall survey in a low- or middle-income country. The document provides a template that outlines the structure and content that is generally included in a protocol for a quantitative 24-hour dietary recall survey. The template has been designed to be especially relevant for large-scale dietary surveys but can be adapted for smaller-scale surveys.

A survey protocol ensures that the survey design and survey implementation plans are well documented, which is essential for conducting a high-quality survey with meaningful outputs, and necessary for obtaining ethical approval from the relevant local institutional review boards (IRBs) for implementation of the survey.

A robust, well-detailed survey protocol can also be a useful tool to facilitate communication with government officials and other survey stakeholders and can be used for fundraising and to encourage broader stakeholder engagement.

Guidance for How to Use this Document

As the design for every quantitative 24-hour dietary recall survey is different, this survey protocol template is not meant to be prescriptive. Because each survey is unique, this protocol template has been designed to allow the user to adapt the template according to specific survey needs. The sections included in this protocol template correspond to the standard sections that are typically included in a survey protocol document, but variations in content and order are possible. Survey planners can reorder sections in the survey template to best accommodate survey needs.

This protocol template assumes the collection of supplementary information to complement dietary data. These data are needed to determine energy and/or nutrient requirements (e.g., age, sex, body weight, physical activity level, breastfeeding status for young children, pregnancy status and trimester, lactation status and stage in months, and menstrual status for adolescent girls and women of reproductive age) or for descriptive purposes (e.g., socio-demographic characteristics, education level, occupation). The protocol template also assumes that anthropometry data (not just body weight) will also be collected. Although dietary surveys are sometimes conducted jointly with the collection of micronutrient biomarker data, this is not reflected in the survey protocol template; however, it should be added when relevant.

Local ethics committees and IRBs may have a specific protocol structure that should be followed and may require additional content not included in this protocol template. Survey planners are advised to consult with their local ethics committees and relevant IRBs for guidance on the specific content and order of sections required in the survey protocol to be submitted for review.

In cases where the local ethics committees or IRBs do not require all content areas included in this survey protocol template in the protocol submitted for review, we nevertheless advise including the content areas specified in this protocol template in the survey protocol. The detailed documentation of the survey design and plan for implementation is likely to facilitate appropriate survey planning and budgeting, and therefore to ultimately benefit the quality of the data collected.

Survey Title

The survey protocol should include a cover page that includes the survey title and the following information:

Ethics committee to which the protocol will be submitted:	Include full name and contact information
Funders/sponsors:	Include full names
Principal investigator:	Include title, full name, affiliation, and contact information
Co-investigators:	Include titles, full names, affiliations, and contact information
Collaborating institutions:	Include full names and locations

Table of Contents

The survey protocol should include a table of contents listing the headings and subheadings used in the document, along with the corresponding page numbers. This provides readers with an overview of the document and guides the reader toward the sections of interest. The table of contents listed here corresponds to the sections and corresponding page numbers for this survey protocol outline.

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Acronyms and Abbreviations

All acronyms used in the protocol should be listed in alphabetical order and defined. All abbreviations used should also be defined when first used in the protocol. The acronyms and abbreviations listed below are those that are used in this survey protocol outline.

BMI	body mass index
EFSA	European Food Safety Authority
FAO	Food and Agriculture Organization of the United Nations
FCDB	food composition database
FCT	food composition table
FRIL	food, recipe, and ingredient listing
GIS	geographic information system
GPAQ	Global Physical Activity Questionnaire
INDDEX	International Dietary Data Expansion (Project)
IPAQ	International Physical Activity Questionnaire
IRB	institutional review board
LMICs	low- and middle-income countries
MUAC	mid-upper arm circumference
NCI	National Cancer Institute
PSEM	portion size estimation method
SOP	standard operating procedure
WHO	World Health Organization
WRA	women of reproductive age

Executive Summary

The purpose of the **Executive Summary** is to provide a 4–6 page summary of the protocol. The information provided should match what is written in the body of the protocol, but provide only high-level, summary information.

The following information should be included:

- Brief background and justification for the survey
- Overall survey objective and specific survey objectives
- Survey design
- Survey setting and geographic representability
- Target population and demographic groups of focus
- Sampling methodology and sample size
- Survey procedures
- Timing for data collection
- Dissemination and use of survey findings

Lay Summary

The purpose of the **Lay Summary** is to provide a 1–2 page summary of the protocol for readers with minimal technical knowledge. The content should be similar to the **Executive Summary** but can provide less descriptive detail and should avoid using technical terms. This section is typically optional.

1 Background and Justification

The purpose of the **Background and Justification** section is to provide a high-level overview of the nutrition situation in the country and to clearly outline the rationale for the survey.

1.1 Background

The background section should describe what is known about malnutrition and dietary patterns in the country and what gaps in knowledge need to be addressed (at the national or regional level, or for specific vulnerable groups). The section should also describe relevant policies and programs in the country.

In the context of a dietary survey in a low- or middle-income country, relevant factors related to malnutrition may include:

Malnutrition/double burden of malnutrition

- Undernutrition (low length/height-for-age, weight-for-age, weight-for-length/height, body mass index [BMI], BMI-for-age, head circumference-for-age, mid-upper arm circumference (MUAC)-for-age, etc.)
- Micronutrient deficiencies, including anemia, iron, vitamin A, folate, vitamin B12, zinc, and iodine
- Overweight and obesity

Consequences of malnutrition

- Child survival and long-term well-being
- Human capital, economic productivity, and national development
- Non-communicable diseases

Relevant factors related to dietary intake may include:

- Poor infant and young child feeding practices
- Low dietary diversity
- Nutrition transition and increased intake of highly processed foods rich in fat, sugar, and salt
- Poor adherence to global and national dietary guidance
- Low intake of nutrient-dense foods
- Low intake of fruits and vegetables

1.2 Justification

Outlining the rationale for the survey can be achieved by describing how existing data gaps present an obstacle for moving forward with certain nutrition-related initiatives in the country (e.g., food fortification policies, evidence-based program design, development of food-based dietary guidelines). The potential use of the survey findings can also be mentioned in this section, along with the survey stakeholders (e.g., ministries, communities, organizations, donors) who are expected to make use of the survey findings. Any specific demands for carrying out the survey (e.g., if the survey is commissioned by the national government or other stakeholders) can also be useful to highlight here, along with any perceived benefit of the survey for national capacity building.

2 Survey Objectives

The purpose of the **Survey Objectives** section is to define and describe the overall and specific survey objectives. The survey objectives should reflect existing data gaps, how the data will be used, and any expressed needs or interests by stakeholders that the survey will aim to meet.

2.1 Overall Survey Objective

The overall survey objective should be stated in a way that identifies the broader public health gap to be addressed by the survey. When describing the overall survey objective, the following information should be provided:

- The demographic groups of interest for the survey (e.g., sex, age ranges, and physiologic status for women of reproductive age (WRA) [e.g., pregnant, lactating, non-pregnant and non-lactating])
- The geographic level at which data will be reported (e.g., national/regional, urban/rural)
- What season(s) will be represented in the survey to best respond to the stated overall survey objective

An example of an overall survey objective is:

To assess and describe the usual intake distribution of energy, micronutrients, food groups, and foods among children 24–59 months and WRA 15–49 years (including pregnant and lactating women) at the national level, and by region in the country, during the post-harvest season (April–June), to identify gaps in micronutrient intakes in the diet. The survey results on micronutrient gaps in dietary intake and usual intakes of foods will guide future efforts related to food fortification in the country, to help address inadequate intakes of select micronutrients. The information generated from the survey will provide a foundation for the formulation of evidence-informed policies and programs for the country, with region-specific adaptations, as appropriate. The information will also provide a baseline from which to monitor changes over time.

2.2 Specific Survey Objectives

The specific survey objectives are the research questions that the survey will attempt to answer. Each specific survey objective should be measurable, feasible, and relevant to the overall survey objective, and should be stated with as much detail as possible.

Some examples of specific survey objectives include¹:

Assessing food and nutrient intake: To assess and describe usual intakes of energy, macronutrients (fat,² protein, carbohydrate), micronutrients (vitamins and minerals³), foods, and food groups (including intakes of fortified or fortifiable foods) among all survey demographic groups

Assessing prevalence of adequacy: To characterize gaps between usual intakes and adequate intakes relative to international⁴ or national nutrient intake recommendations among all survey demographic groups

Assessing adherence to guidance: To characterize gaps between usual intakes/diet patterns and national dietary guidance among relevant survey demographic groups

Providing baseline, assessing trends: To describe and monitor changes over time in all of the above (intakes, adequacy, adherence to guidance), including after national policy and programmatic interventions

Informing policies/programs: To inform the development of new policies and programs to improve nutrient intakes, dietary patterns, and/or nutritional status

Developing consumer guidance: To inform the development of evidence-based, food-based dietary guidelines for relevant survey demographic groups.

¹ These examples are adapted from the more generic list of survey objectives that are typical of dietary surveys and described in Deitchler M, Arimond A, Carriquiry A, Hotz C, Toozé JA. *Planning and Design Considerations for Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at [Intake.org](https://intake.org).

² For example, total fat, saturated fatty acids, total monounsaturated fatty acids, total polyunsaturated fatty acids, and cholesterol.

³ For example, vitamins A, B1, B2, B12, C, and D; folic acid; iodine; calcium; iron; and zinc.

⁴ Examples include requirements set by the World Health Organization/Food and Agriculture Organization of the United Nations (WHO/FAO 2004), European Food Safety Authority (EFSA 2017), and the Institute of Medicine (National Academies of Sciences et al. 2019).

3 Survey Methodology

The purpose of the **Survey Methodology** section is to describe the overall survey design, the survey setting and geographic representability of the data to be collected, the target population for the survey and the demographic groups of focus, and the sampling and selection procedures for data collection.

3.1 Survey Design

The design of the survey should provide data to respond to the specific objectives defined for the survey (described in **Section 2.2**). The design of a large-scale dietary survey in a low- or middle-income country can typically be described as a cross-sectional, population-based survey that uses a complex, multi-stage probability sampling design.

3.2 Survey Setting and Geographic Representability

In this section of the protocol, the geographic scope of the survey and the administrative area(s) that will be used as the basis for the sampling design should be clearly stated. Any geographic stratification that will be used in the design of the survey should also be described. This section typically also includes a brief overview of contextual factors related to the survey, such as agro-ecology, seasonality, ethnocultural factors, and urbanicity. It can be useful to include maps in this section.

3.3 Target Population and Demographic Groups of Focus

In this section of the protocol, the overall target population for the survey and the specific demographic groups of focus for data collection should be listed. The demographic groups of focus should be defined to be mutually exclusive (e.g., the age ranges to define the demographic groups of focus should not overlap). As best as possible, the age ranges defined for the demographic groups should align with age ranges of nutrient requirements used to assess nutrient adequacy.⁵ Common demographic groups to consider for inclusion in a dietary survey include:

- Infants and young children aged 6–23 months, typically breastfeeding
- Young children aged 24–59 months
- School-age children aged 6–9 years
- Adolescent girls, and possibly boys aged 10–18 years (or disaggregated 10–13 and 14–18 years)
- WRA aged 19–49 years (consider if pregnant women and lactating women will/will not be represented)
- Men aged 19–49 years
- Older women and men aged 65 years and above

It may not be possible for large-scale surveys with a focus on multiple demographic groups to adequately sample narrow age range demographic groups. When it is not feasible to sample sufficient respondents in the narrow age ranges, different age groups can be combined in the dietary analysis (e.g., children 4–6 years and children 7–9 years).

⁵ Nutrient requirements are typically defined by age group, and for some age groups, also by sex and physiologic status, for example:

- Infants, 0–6m, 7–12m; Children 1–3y, 4–6y, 7–9y; Adolescents, 10–18y; Women, 19–50y, 51–65y; Men, 19–65y; Adults, 65+y (WHO/FAO 2004)
- 7–11m, 1–3y, 4–6y, 7–10y, 11–14y, 15–17y, 18–24y, ≥25y (EFSA 2017).
- Infants, 0–6m, 6–12m; Children, 1–3y, 4–8y; Males, 9–13y, 14–18y, 19–30y, 31–50y, 51–70y, >70y; Females, 9–13y, 14–18y, 19–30y, 31–50y, 51–70y, >70y; Pregnant, 14–18y, 19–30y, 31–50y; Lactating, 14–18y, 19–30y, 31–50y (National Academies of Sciences et al. 2019).

A survey can be designed to sample WRA regardless of physiologic status (i.e., pregnant or lactating) or to sample pregnant, lactating, and non-pregnant and non-lactating women separately if a sufficiently large sample size for each sub-group can be ensured and if there is interest in presenting outcomes separately by women's physiologic status.

This section should state whether there are demographic groups for which a higher precision of results is necessary or for which lower precision of results is acceptable. Similarly, if the data for different demographic groups will not all be presented at the same levels of geographic disaggregation (e.g., regional vs. national level), this should be stated. Any demographic group or sub-population that will be over-sampled (e.g., minority ethnic groups or other vulnerable sub-groups) should also be mentioned.

3.4 Inclusion and Exclusion Criteria

In this section of the protocol, the inclusion (eligibility) and exclusion criteria for participation in the survey should be specified. The inclusion and exclusion criteria should be defined based on the stated objectives of the survey, with attention to protecting the safety of survey respondents. Inclusion criteria typically include age, sex, and other relevant demographic characteristics. Exclusion criteria for population-based surveys are typically limited to an unwillingness to participate or a lack of a signed consent form. However, if there are feasibility, logistic, or other reasons for which the entire eligible population in the targeted survey area will not be included in the sampling frame, the characteristics of those populations (e.g., populations residing in refugee camps, pastoralist populations) should also be listed here as exclusion criteria.

3.5 Sampling Methodology

The purpose of this section of the protocol is to provide a detailed description of the sampling methodology for the survey. The section should include a description of how the sample will be selected at all stages of the sample design (e.g., region, cluster, household/individual), including any stratification that will be used in the design. The section should also list the desired levels of geographic disaggregation for reporting the survey data (e.g., national-, regional-, or state-level estimates or estimates representative of some other strata [e.g., urban/rural]).

This section should also describe the method to be used for identifying the random sub-sample from which to collect a repeat 24-hour dietary recall. Collecting a second 24-hour dietary recall for at least a random sub-sample of respondents per demographic group is standard best practice for a dietary survey and is a necessary prerequisite to model the usual intake distribution of nutrients, energy, food groups, and food.⁶

It is generally recommended that a separate sampling plan also be developed to document the sampling procedures to be used for the survey in greater detail.

3.6 Sample Size

In this section of the protocol, the sample size for the survey should be stated and the rationale for the sample size explained. The assumptions used in the sample size calculation and the basis for those assumptions should be given. The sample size calculation for population-based surveys should typically account for a design effect and a factor for non-response. The mathematical formula and/or references used for sample size calculation should also be provided.⁷

⁶ For more information on the need for repeat dietary recalls to be collected, and considerations with respect to the sample size of repeat recalls to collect, refer to Tooze, JA. 2020. *Estimating Usual Intakes from Dietary Surveys: Methodologic Challenges, Analysis Approaches, and Recommendations for Low- and Middle-Income Countries*. Washington, DC: Intake – Center for Dietary Assessment/FHI Solutions. Available at [Intake.org](https://intake.org).

⁷ For guidance on the calculation of sample sizes for dietary surveys, refer to Carriquiry A. 2020. "Simulation exercise to estimate the precision with which dietary statistics can be estimated for a range of sample sizes. Appendix 2A and 2B" in Deitchler M, Arimond A, Carriquiry A, Hotz C, Tooze JA. *Planning and Design Considerations for Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: Intake – Center for Dietary Assessment/FHI Solutions. Available at [Intake.org](https://intake.org).

The section should state if the defined sample size is based on logistical/budgetary considerations or if it is calculated to provide an estimate of a specific outcome measure with a given level of precision (often it is a combination of both). If the sample size has been calculated to power a comparison or statistical test of interest, this should also be stated. When the defined sample size varies by demographic group, this should be stated and the reasons explained.

Also, the sample size for the collection of repeat recalls per demographic group and by geographic area should be stated and the justification for that sample size given.

Inclusion of a summary table to show the sample size per demographic group, and by the geographic level of interest for disaggregation of the data, can be useful to include in this section. Inclusion of a follow-on table to provide these same details for the sample of repeat 24-hour dietary recalls to be collected is also recommended.

Table 1. Sample Size per Demographic Group, by Geographic Level of Disaggregation

Table 2. Sample Size of Repeat 24-Hour Dietary Recalls per Demographic Group, by Geographic Level of Disaggregation

3.7 Survey Weights

The purpose of this section is to provide a detailed description of how survey weights will be calculated. Survey weights are applied to data to account for the probability of selection of the sample at each stage in the sampling process. The weights applied at analysis can also be calculated to account for non-response by demographic group and to account for any differences between the composition of survey respondents and the demographics of the population that the survey data are intended to represent (i.e., post-stratification weighting). Details about how the weights will be calculated should be given, as should whether or not the weights will account for non-response by demographic group. This section should also state clearly whether or not post-stratification weighting will be applied in the final survey weights applied at analysis.

4 Survey Modules

The purpose of the **Survey Modules** section is to describe the questionnaires to be used in the survey. All corresponding data collection forms should be provided in an annex to the survey protocol. For each questionnaire, the key domains (topics) of information that will be collected should be indicated.

This section of the protocol should specify how data will be collected in the field, i.e., using either pencil and paper or a technology-assisted platform.

4.1 24-Hour Dietary Recall Module

In this section of the protocol, the 24-hour dietary recall questionnaire to be used for data collection should be described in detail, along with the pre-survey activities that will be carried out to inform the development of the 24-hour dietary recall questionnaire.

Pre-survey work⁸ in the context of a dietary survey typically entails compiling a food, recipe, and ingredient listing (FRIL); collecting standard recipe data; assigning portion size estimation methods (PSEMs); compiling a PSEM conversion factor database; developing a probe list for enumerators to use during data collection; and compiling a food composition database (FCDB) for the survey. This section should provide details on how dietary databases will be compiled (e.g., how recipes will be calculated, how conversion factors will be applied, and which Food Composition Tables (FCTs) will be used in compiling the FCDB for the survey). The fieldwork required for these pre-survey activities should be fully detailed in this section of the protocol unless ethical approval has been sought for these activities through a separate process, in which case the activities can instead be summarized.

In the context of dietary surveys in LMICs, the four-stage multiple-pass method, as detailed in Gibson and Ferguson (2008) and summarized below, is typically used to collect 24-hour dietary recall data.

- First pass: Prompt for the recall of all foods and beverages consumed during the preceding 24-hour period
- Second pass: Obtain details of all foods, beverages, and recipe ingredients
- Third pass: Estimate portion sizes and non-standard recipes (including ingredient amounts)
- Fourth pass: Review the recall information and, if applicable, compare reported food intake to picture chart provided during respondent pre-training

Any context- or demographic-specific considerations for use of the 24-hour dietary recall questionnaire should be mentioned in this section, along with any strategies that will be used to overcome these challenges. Survey tools and aids designed to guide the enumerator during data collection should also be described. These include PSEM lists to help the enumerator to correctly identify the PSEMs assigned to each food item reported as consumed, probe lists to provide enumerators with guidance on the specific probes that should be asked to collect the level of detail needed for each food item reported as consumed, and standard recipe lists to identify mixed dishes for which a standard recipe has been developed.

4.2 Supplementary Information Module

In this section of the protocol, the questionnaire that will be used to collect supplementary information to complement the dietary data should be described. Some supplementary information is essential to determine energy and/or nutrient requirements (see bullets with an asterisk below), whereas other supplementary

⁸ For an overview of these pre-survey activities and how they are generally carried out, refer to Vossenaar M, Arimond M, Deitchler M, Lubowa A, Hotz C, Moursi M. 2020. *An Overview of the Main Pre-Survey Tasks Required for Large-Scale Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at [Intake.org](https://intake.org).

information is optional and typically collected for descriptive purposes and bivariate descriptive analysis with dietary data.

Supplementary information that should typically be collected in a dietary survey using a questionnaire (i.e., self-reported data) includes:

- Socio-demographic characteristics (typically collected at the household level)
- Education level and occupation (for relevant age-appropriate demographic groups)
- Sex for all demographic groups*
- Age, in months for infants and young children aged <60 months and in years for all other demographic groups; age can be computed from the date of birth (ideally collected from a health card) and the date of data collection*
- Body weight* (refer also to **Section 4.3**)
- Breastfeeding status for children aged <60 months*
- Pregnancy status and trimester for adolescent girls and WRA (pregnancy status can be derived from the self-reported date of last menstruation, pregnancy stage in week or months, or expected delivery date; note that there may be potential sensitivities about collecting menstruation and pregnancy status for adolescent girls)*
- Lactation status and stage for adolescent girls and WRA (stage of lactation is derived from the age in months of the youngest child who breastfed the previous day and/or night)*
- Menstrual status for adolescent girls*
- Physical activity level for all respondents age 6 years or older*⁹

4.3 Anthropometry Module

In this section of the protocol, the questionnaire and procedures that will be used to collect anthropometric measurements should be described. Measurements may include body weight, length/height, waist circumference, head circumference, and MUAC. Note that recumbent length should be measured for children <24 months and height should be measured for all individuals ≥24 months.

Detail should be provided to indicate if children will be measured nude or with light clothing and any protocol that will be followed for requesting respondents to remove heavy clothing, headpieces, and/or shoes. The information that will be recorded by enumerators for any objects not removed following the protocol for anthropometric measurements (e.g., if head coverings will not be removed for religious reasons) should also be noted.

⁹ Classifying respondents into a (i) sedentary or light activity lifestyle, (ii) active or moderately active lifestyle, or (iii) vigorous or vigorously active lifestyle physical activity level is needed to calculate energy requirements. Physical activity levels can be assessed using such tools as the International Physical Activity Questionnaire (IPAQ) (Craig et al., 2003) or the Global Physical Activity Questionnaire (GPAQ) (WHO, 2020), but these need to be adapted to the local context and validated.

5 Operationalization of Survey Modules, Tools, and Procedures

The purpose of the **Operationalization of Survey Modules, Tools, and Procedures** section is to provide an overview of the tasks needed to operationalize the survey modules, tools, and procedures for use in the specific context of the survey.

5.1 Standard Operating Procedures

In this section of the protocol, standard operating procedures (SOPs) to be developed for the survey should be described briefly. Included among the common SOPs developed for a dietary survey are:

- Listing procedures for sampling
- Testing of digital dietary scales for accuracy and precision¹⁰
- Testing of anthropometry equipment
- Monitoring of playdough density (this is relevant only when playdough is used as a PSEM to estimate amounts of food items reported during the 24-hour dietary recall)¹¹
- Collection of 24-hour dietary recall data
- Collection of anthropometric data
- Data collection quality checks

5.2 Translation of Data Collection Forms, Tools, and Procedures

This section of the protocol should describe the main languages spoken in the survey area and specify which specific data collection forms, tools, and procedures will be translated, and into which languages. The data collection forms, tools, and procedures identified for translation may include the following:

- Scripts to introduce the survey, to explain the survey objectives and what will be requested of the respondent for their participation, and to obtain informed consent
- Consent and assent forms
- Questionnaires (for all survey modules)
- Names of foods and descriptors when the local names are distinct
- PSEM lists used by enumerators during dietary data collection to identify the PSEMs assigned to each food item reported as consumed
- Probe lists used by enumerators during dietary data collection to identify the probes that should be asked to collect the level of detail needed for each food item reported as consumed
- Standard recipe lists used by enumerators during dietary data collection to identify mixed dishes for which a standard recipe has been developed
- Survey manual for enumerators

¹⁰ Dietary scales are needed to collect standard recipe information in advance of the survey and, depending on the selection of PSEMs for use in a survey, to weigh portion sizes estimated using a proxy material or food replica during the 24-hour dietary recall. For guidance on procedures for testing dietary scales, refer to Vossenaar M, Deitchler M, Hotz C, Lubowa A, Ferguson E. 2020. *Routines and Procedures to Test the Accuracy and Precision of Digital Dietary Scales Used in Quantitative 24-Hour Dietary Recall Surveys*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at [Intake.org](https://intake.org).

¹¹ Playdough needs to maintain a stable density throughout data collection for the PSEM conversion factors compiled to correctly translate the amount reported as consumed into a gram unit measurement.

It can be helpful in this section to also describe the translation process that will be used (e.g., two independent translators who cross-check and discuss inconsistencies, or back-translation).

For any data collection form, tool, or procedure that will not be translated in a language spoken in the survey area, the protocol should describe how standardization of data collection procedures among field staff will be ensured in the absence of advance work to standardize translated survey materials.

Most local ethics committees and institutional review boards (IRBs) require translated versions of the survey scripts, informed consent and assent forms, and all questionnaires to be used to collect data for all survey modules to be included as an annex to the survey protocol.

5.3 Pre-Testing of Survey Modules, Tools, and Procedures

The purpose of this section is to describe the process that will be used to pre-test the survey modules, tools, and procedures, including any data-capture software. A description of how pre-testing will be used to identify and address any unexpected methodological or feasibility issues to improve data collection should also be included.

All relevant field pre-testing should be described here, including details on the population to be recruited for pre-testing (e.g., a convenience sample in an area that will not be sampled for the survey, with the pre-test carried out among the same demographic groups as will be the focus for data collection in the survey), the staff responsible for pre-testing (e.g., field coordinators and/or field supervisors), and the different modules of the survey that will be pre-tested, along with details about any specific areas of focus for the pre-testing and the length of the pre-testing. For example, for the dietary survey module, the approximate number of dietary recalls to be completed by each staff member (e.g., minimum of 6–10 recalls) and/or the duration (i.e., number of days) of the planned pre-testing of the dietary survey tools and procedures should be mentioned.

6 Survey Procedures

The purpose of the **Survey Procedures** section is to describe field procedures to be used for the collection of 24-hour dietary recall data and all other survey modules. This includes field activities carried out in advance of data collection. It can be helpful to include a visual representation (e.g., a flowchart) of the various survey modules and how they relate to one another, in terms of timing of administration, and survey team responsible.

Figure 1. Flowchart Illustrating the Timing and Flow of Different Survey Modules

6.1 Social Mobilization and Sensitization of Communities

In this section of the protocol, the strategies that will be used for social mobilization and sensitization should be described. Some level of community sensitization should be planned before data collection, no matter the scale of the survey, to ensure that appropriate authorities in the survey area are aware of the data collection activity and that the appropriate permissions are obtained. This is not only an important measure of survey professionalism but can also be an important security measure to help protect survey staff who will be visiting communities.

6.2 Obtaining Informed Consent

This section of the protocol should describe when informed consent (as described in **Section 14.2**) will be collected from respondents (e.g., during the respondent pre-training [as described in **Section 6.3**] or by the enumerator on the day of data collection). Any special considerations for obtaining informed consent, such as those below, should also be described, if relevant:

- Procedures for obtaining informed consent among low literacy respondents (e.g., use of a witness)
- Parental/guardian consent for minors
- Assent from minors aged 5 years and above

The informed consent and assent forms to be used for the survey should be included in an annex to the survey protocol.

6.3 Pre-Training of Respondents

If the survey will include a pre-training of respondents for the 24-hour dietary recall interview,¹² the organization and scope of the pre-training should be described, including when the pre-training will occur relative to data collection; the topics to be covered; who will participate; how the pre-training sessions will be organized in terms of group numbers, location (e.g., will the pre-training sessions be carried out separately in each cluster selected for sampling), and respondent group (e.g., will the pre-training sessions be organized by demographic group of focus for the survey); and the type of setting where the pre-training will occur. This section should also mention if a pictorial chart and/or plates/bowls will be distributed to respondents during the pre-training.

¹² Pre-training of respondents at least 2 days before the 24-hour dietary recall can be used to prepare respondents for the day of recall (which is especially relevant in context of shared plate eating), for sensitization, for the informed consent process, and to schedule interview dates with respondents. For more details about pre-training of respondents in the context of a dietary survey refer to Deitchler M, Arimond M, Carriquiry A, Hotz C, Toozé JA. 2020. *Planning and Design Considerations for Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: Intake – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

6.4 Data Collection for All Survey Modules

The purpose of this section is to describe data collection procedures for all survey modules in detail. Information to report in this section includes the order in which each survey module will be administered, the timing for administering each data collection module (if not all survey modules will be administered during the same interview visit), and the survey staff responsible for administering each survey module (if different teams are responsible for collecting data for different survey modules). An estimate of the duration of each interview or of each interview visit, if different survey modules will be collected at different interview visits (e.g., 60–90 minutes to conduct an interview), is also useful to include here.

This section should also specify to whom each data collection module is administered, for example, if parents/guardians will be interviewed for infants and young children, if parents/guardians will be allowed to assist during the interview of older children and adolescents, and if the person responsible for purchasing and preparing meals will be asked or allowed to provide input into the data collection for the 24-hour dietary recall module.

This section should also describe the same details as above for the collection of a repeat 24-hour dietary recall among a random sub-sample of respondents 3–10 days after the collection of the first 24-hour dietary recall.

7 Field Staff Requirements, Survey Team Configuration, and Field Staff Training

The purpose of the **Field Staff Requirements, Survey Team Configuration, and Field Staff Training** section is to describe the field staff requirements for all modules of the survey, to describe the structure and staffing of survey teams, and to provide an overview of the specific training to be provided to field staff.

7.1 Field Staff Requirements

In this section of the protocol, field staff positions for both the pre-survey and the survey work are described. Job descriptions and recommended qualifications for the required field staff (e.g., level of formal education and previous experience) should be outlined. Field staff typically required for large-scale dietary surveys include regional coordinators, field supervisors, listing staff to enumerate all households and/or potential respondents eligible for sampling within a cluster, community mobilizers, respondent dietary pre-trainers (when relevant), and dietary enumerators. If anthropometric data will be collected, field staff should also include anthropometrists. Additional staff members may be needed if other modules (e.g., micronutrient biomarker data) are included in the survey.

7.2 Survey Team Configuration

The purpose of this section is to describe how survey teams will be structured, both in terms of field staff positions and staff numbers. The ratio of supervisors to enumerators should be clearly stated for each survey module (e.g., one dietary field supervisor per four dietary enumerators). A survey team organogram with the number of coordinators and field staff required for data collection of each survey module can be helpful to illustrate the staffing structure for survey teams. For example, a survey may include a total of eight coordinators (one for each region) to oversee field staff for all survey modules; and each dietary field team may include one dietary field supervisor, one community mobilizer, one respondent pre-trainer, and four dietary enumerators, whereas each anthropometry field team may include one anthropometry field supervisor and four anthropometrists; and there may be a total of five dietary field teams and three anthropometry field teams per region.

This section should also include an estimate of the duration of data collection (with a more detailed description in **Section 9.1**), along with a description of the assumptions used for estimating this duration (e.g., each dietary enumerator completes three dietary recalls per day of data collection).

7.3 Field Staff Training

The purpose of this section is to describe field staff training in detail, specifying the training that will be provided for field staff with responsibilities related to each survey module. This section should include a detailed schedule of all training activities, the duration of the training provided for each survey module (e.g., a 15-day training for the 24-hour dietary recall module of the survey), descriptions of who will be conducting the training, and the number of trainees per group. If field supervisors are trained in advance of the enumerators and will have a role in either leading/organizing or supporting the training of enumerators, this should be specified. The training provided for all survey modules should include ample time for role-playing and field practice, both of which should be among the details specified in this section of the protocol.

8 Pilot Survey

The purpose of the **Pilot Survey** section is to describe how all survey modules, tools, and procedures will be piloted in advance of beginning data collection for the main survey. The pilot survey should be a “dress rehearsal” of all survey modules carried out as they would be for the main survey; this includes, for example, practicing all listing/sampling procedures and the integration of all survey modules as they would occur when carrying out the survey, including pre-survey respondent training, collection of data for all survey modules, and selection of the sample for carrying out a repeat 24-hour dietary recall among a randomly selected sub-sample of respondents per demographic group of focus for the survey.

This section should describe the number of pilot surveys that will be performed and their timing, the target population for piloting (e.g., in an area that will not be sampled for the survey, with data collected from the same demographic groups as will be the focus for the main survey), the languages in which the modules, tools, and procedures will be piloted, the expected duration of each pilot (e.g., 4 days), and the number of interviews to be completed with respondents by each enumerator (e.g., minimum of four interviews per dietary enumerator for the first pilot, and a minimum of six interviews per dietary enumerator for the second pilot).

Details of how the survey piloting will be used to make final refinements to the survey modules, tools, and procedures, including planned meetings for obtaining feedback from field teams (e.g., debriefing days with all survey staff) should be specified. It can also be useful to describe any procedures that will be used to assess the skills of enumerators or other field staff during the piloting to evaluate if any field staff do not meet the necessary quality standards for collecting and recording data for the main survey and who should potentially be moved into another survey position or released from any survey-related position.

9 Fieldwork Implementation

The purpose of the **Fieldwork Implementation** section is to describe the implementation of fieldwork during the data collection phase of the survey.

9.1 Timing for Data Collection

This section of the protocol provides an estimate of the expected duration of the data collection phase of the survey (i.e., an estimate of the total number of days/months expected for data collection). This section should also indicate the season(s) selected for data collection and the months when data collection will occur. It can be useful to include a map to show which months correspond to the selected season(s) for the survey, per geographic area to be targeted for the survey. This section should also highlight any possible issues that the planned timing of the survey might have for data collection, e.g., potential heavy rains or other inclement weather, impassable roads, extended holidays, periods of religious observation, or fasts.

Planning of staff schedules for data collection should also be described in the protocol to the extent possible. For a dietary survey, in particular, it is essential to indicate how extended holidays and periods of religious observations or fasts will be accounted for in the planning for data collection. Normally, data collection for dietary surveys should not take place during extended holidays and extended fasting periods, as this would likely result in a substantive change in how the “usual” diet is represented by the data collected. However, more short-term or routine variability in diets, due to a short holiday, celebration, festivity, or weekend, can be included in data collected for the survey, as these occasions are more regular, and thus the diet practices reflected on these occasions are part of the “usual” diet that should be reflected by the data collected.

For this same reason, dietary data should be planned to take place over 7 days a week, to ensure that the data collected reflect variation in normal diet practices that occur across days of the week. At the same time, data collection schedules should be planned to allow survey staff intermittent days of rest.

9.2 Equipment List

This section of the protocol should include a list of required equipment for the survey and the number of each piece of equipment needed for each survey module. This equipment list should include the technical specifications of the equipment when relevant (e.g., the number of digital dietary scales to be procured should be listed, along with the digital dietary scale brand and model). Any anthropometric equipment to be used, including model and manufacturer, should also be specified, along with the unit and precision of each measurement that will be reported (e.g., length to the nearest ± 0.1 cm).

10 Data Management

The purpose of the **Data Management** section is to briefly describe how the data will be handled from the point of data collection through to data analysis. It is generally recommended that a separate data management plan also be developed to document data management procedures and protocols in more detail.

10.1 Sampling Data Management

In this section of the protocol, the procedures and forms that will be used for managing data related to the execution of the sampling plan, including the procedures and forms to use for documenting the probabilities of selection at each stage of the sampling design, should be specified clearly, to ensure that the necessary data will be available, collected, and retained for the necessary calculation of base sample weights at the time of data analysis. The forms and procedures to collect any additional data related to a selected respondent's participation or non-participation in the survey, such as reasons for non-response, can also be described here.

10.2 Data Entry

This section of the protocol should specify data entry procedures. When using a technology-assisted platform (e.g., INDDX24), a description of how data will be uploaded to the server should be provided, along with the planned frequency of uploading. When using pencil and paper for data collection, all data entry software packages (e.g., CSDietary) should be specified, and quality assurance measures for data entry (e.g., double entry, audit trails, verification checks) should be described.

10.3 Data Protection and Storage

This section should describe how the confidentiality of the data (both on paper and once entered electronically) will be secured, how the dataset will be maintained, where data (and paper questionnaires, when relevant) will be stored, who will have access to the data (both the data linked with personal identifiers and the data with personal identifiers removed), and the security measures that will be in place to ensure the privacy and protection of the data.

11 Data Analyses

The purpose of the **Data Analyses** section is to provide an overview of the data analysis plan in sufficient detail to ensure that the specific survey objectives (described in **Section 2.2**) can be achieved. It is generally recommended that a more detailed data analysis plan also be developed separately, as part of survey planning activities, to document the desired outputs from analysis and to ensure that the survey and sampling design for the data to be collected will meet those needs.

11.1 Data Processing

In this section of the protocol, any steps required to process data for any survey module before conducting data analysis should be described.

For 24-hour dietary recall data, data processing entails converting amounts of foods and mixed dishes reported as consumed using pre-determined PSEMs into grams of edible food consumed and linking these data to the FCDB for the survey. The outputs from data processing include estimates of daily intake of food, food groups, energy, macronutrients, and micronutrients by respondents. Any software packages that will be used to assist with data processing should be specified (e.g., CSDietary, INDDX24).

For anthropometry data, data processing might entail computing z-scores for length/height-for-age, weight-for-age, weight-for-length/height, BMI-for-age, head circumference-for-age, and MUAC-for-age using the World Health Organization (WHO) Growth Standards (WHO 2006). The software packages that will be used for processing the anthropometric data should be specified (e.g., WHO Anthro software, WHO 2019).

11.2 Data Cleaning

In this section of the protocol, general cleaning procedures that will be applied to the data for the different survey modules should be described. For dietary data, initial data cleaning may involve reviewing implausible portion sizes or energy contribution from a single food or mixed dish. Additional data cleaning may involve exploring outlying energy intakes and possible exclusion of respondents' dietary data when daily energy intakes are deemed implausible. For anthropometric data, data cleaning may involve the exclusion of z-scores for children who fall outside biologically plausible ranges.¹³

11.3 Statistical Analyses and Survey Outcomes

The protocol should include a detailed description of key statistical procedures that will be used to carry out data analyses for each specific survey objective (described in **Section 2.2**) and the expected outcome. The analysis methodology to be used should be consistent with the survey methodology (described in **Section 3**). The protocol should indicate how the survey design features (e.g., stratification, clustering, survey weights) will be accounted for in the analyses.

The software package(s) (e.g., Stata, SPSS, or SAS¹⁴) that will be used for the statistical analyses to be carried out for each survey module should also be specified.

¹³ For example, the WHO child growth software flags the following z-score values as extreme (i.e., biologically implausible): Weight-for-age z-score <-6 or >6; Length/height-for-age z-score <-6 or >6; Weight-for-length/height z-score <-5 or >5; BMI-for-age z-score <-5 or >5; Head circumference-for-age z-score <-5 or >5; Arm circumference-for-age z-score <-5 or >5; Triceps skinfold-for-age z-score <-5 or >5; Subscapular skinfold-for-age z-score <-5 or >5. See: https://www.who.int/childgrowth/software/readme_sas.pdf?ua=1, accessed 11 August 2020.

¹⁴ For statistical analysis of dietary data, *Intake* recommends using the National Cancer Institute (NCI) method for data analysis. *Intake* is currently developing SAS-based programs to facilitate the use of the NCI method for statistical analysis of dietary data. The programs and user guide will be made publicly available at Intake.org once finalized. The programs depend on the use of SAS software (running in the background), but do not require the user to have proficiency with SAS programming.

The protocol should also typically include an overview of expected survey outcomes of interest by demographic group of focus for the survey, with the planned level of disaggregation for the results (e.g., national-, provincial-, regional, and/or state-level estimates or estimates for other geographic strata [e.g., urban/peri-urban/rural]).

For a dietary survey module, examples of relevant analysis outcomes (or indicators) may include:

- Mean/median usual intake of energy, macronutrients, and micronutrients
- Quantiles of usual intake of energy, macronutrients, and micronutrients
- Prevalence of micronutrient inadequacy
- Mean usual intake of food/food group consumption
- Quantiles of usual food/food group consumption

When the prevalence of micronutrient inadequacy is of interest, the protocol should specify which nutrient requirements will be used for the analysis (e.g., National Academies of Sciences et al. 2019, European Food Safety Authority [EFSA] 2017, WHO/Food and Agriculture Organization of the United Nations [FAO] 2004) and any assumptions or algorithms that will be used for bioavailability of micronutrients (e.g., iron and zinc).

Depending on the survey objectives, the protocol should also describe how data from other survey modules (e.g., supplementary information, anthropometric data, micronutrient biomarker data) will be analyzed.

A detailed description of the planned analyses should be provided, including any statistical tests to be carried out, the direction of the test for any statistical hypotheses to be tested, and the significance level that will be used for any statistical test to be carried out. If feasible, dummy tables should be included to indicate the general structure for reporting survey results and to guide data analyses once data for the survey are collected.

Table 3. Main Survey Outcomes by Demographic Group and Geographic Level of Disaggregation

12 Dissemination and Use of Survey Findings

The purpose of the **Dissemination and Use of Survey Findings** section is to describe how results from the survey will be disseminated and how they will be used. Survey results are typically first disseminated in the form of a technical survey report. The protocol should specify the plans to communicate the survey results to various stakeholders and to those communities from which data were collected. Any local meetings planned to disseminate results and any other form of dissemination that might be used for sharing survey results, such as scientific conferences and written materials (e.g., survey briefs, reports, or papers for publication in peer-reviewed journals) should be described. If results will be used for a specific program and/or policy purpose (e.g., to inform fortification policy, for development of food-based dietary guidelines), these plans should also be described.

13 Data Ownership

The purpose of the **Data Ownership** section of the protocol is to document any agreements that have been made related to data ownership and data sharing. If there are plans for any data collected for the survey to be made publicly available, this should also be noted in this section. When there are plans for survey data to be made publicly available, the informed consent forms and assent forms for the survey must include specific language to acknowledge these plans. Potential survey respondents must be informed during the consent/assent process that the data collected from the survey may be made available in an anonymized form, for uses beyond those described for the specific survey (see **Section 14.2**).

14 Ethical Considerations

The purpose of the **Ethical Considerations** section is to clearly describe how issues of respondent confidentiality and any risks and benefits of participating in the survey will be managed. The section must also describe the procedure that will be used to obtain informed consent from respondents for participation in the survey. Local IRBs may require a specific format for the content of this section and may have a template with specific headings that should be followed.

14.1 Ethical Approval

This section of the protocol should state the name(s) of the IRB(s) that will review the protocol and should generally address how the confidentiality of respondents will be assured and the possible risks and benefits to individuals who participate in the survey.

Confidentiality

It is essential to indicate how privacy will be maintained during all phases of survey work for which ethical approval is being sought. The description of procedures for protecting respondent confidentiality should include procedures for data security and for removing personal identifying information from datasets. The use of geographic information system (GIS) technology and cloud-based data platforms introduce new issues related to confidentiality, and any such applications that are planned should be fully described.

Risks

All possible risks to respondents resulting from a breach of privacy and confidentiality, and how the procedures will minimize these risks, should be described. If the survey includes vulnerable populations (i.e., individuals vulnerable to coercion or undue influence), the survey should describe any additional measures that will be taken to protect their rights and safety.

Benefits

The potential benefits to the survey respondents or the community should be stated; if there are no direct benefits, this should also be stated. The protocol should indicate whether or not there will be any compensation to the survey respondents. If there is compensation, the amount in local currency or the type of gift that will be given, along with the monetary value of the gift and the rationale for the amount to be given, should be specified.

14.2 Respondent Informed Consent/Assent

All respondents (or legal guardians of minors) are required to provide informed consent to participate in a survey. In addition, minors from age 5 years and above are typically required to provide assent. This section of the protocol should describe how all survey respondents (or legal guardians of minors) will receive an oral and written explanation of the survey procedures to ensure that they obtain a clear understanding of the purpose of the research and how they were selected, that their participation is voluntary and that they have the right to refuse or withdraw participation at any time, and that their confidentiality is guaranteed; what type of incentive they will receive (if any); how the data will be used; and how the results will be shared. If there are intentions to make the data for any survey module publicly available, the language in the informed consent/assent form should make this clear to the respondent in a way that she or he can understand.

As described in **Section 6.2**, any special considerations should also be described. The Informed Consent and Assent Forms to be used for the survey should be included in an annex to the survey protocol.

15 Survey Coordination and Management

The **Survey Coordination and Management** section outlines the organizational structure that will be used to coordinate and manage the planning and implementation of the survey. Individuals or groups with key roles in the survey should be described (i.e., the protocol should provide names, titles, and affiliations). Typically, the following individuals and groups should be among those listed:

- Principal investigator(s) and co-investigator(s)
- A survey coordinator who has overall responsibility to ensure that survey procedures are followed in accordance with the protocol
- A technical steering committee, established to guide the oversight and execution of the survey (individual members should be listed)
- Collaborating institutions (if relevant)
- Technical assistance entities (if relevant)

16 References

The purpose of the **References** section is to provide a list of all literature cited in the survey protocol. This may include manuscripts published in peer-reviewed journals, reports, and other documents.¹⁵ The documents listed below are those that have been cited or referred to in this survey protocol template.

Carriquiry A. 2020. "Simulation exercise to estimate the precision with which dietary statistics can be estimated for a range of sample sizes. Appendix 2A and 2B" in Deitchler M, Arimond A, Carriquiry A, Hotz C, Tooze JA. *Planning and Design Considerations for Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

Craig CL, Marshall AL, Sjöström M, Bauman AE, Booth ML, Ainsworth BE, Pratt M, Ekelund U, Yngve A, Sallis JF, Oja P. International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc.* 2003; 35(8): 1381–1395. doi:10.1249/01.MSS.0000078924.61453.FB.

Deitchler M, Arimond M, Carriquiry A, Hotz C, Tooze JA. 2020. *Planning and Design Considerations for Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

EFSA. 2017. *Dietary Reference Values for Nutrients Summary Report*. EFSA supporting publication 2017: 14(12): e15121. doi:10.2903/sp.efsa.2017.e15121.

Intake – Center for Dietary Assessment. 2019. *Intake Budget Template: A Workbook to Assist with Budgeting the Costs for a Quantitative 24-Hour Recall Dietary Survey*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI 360. Available at: [Intake.org](https://intake.org).

Intake – Center for Dietary Assessment. 2019. *Intake GANTT Template: A Document to Assist with the Planning of Activities and Timelines for a Quantitative 24-Hour Recall Dietary Survey*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI 360. Available at: [Intake.org](https://intake.org).

National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Food and Nutrition Board; Committee to Review the Dietary Reference Intakes for Sodium and Potassium; Oriá M, Harrison M, Stallings VA (eds.). *Dietary Reference Intakes for Sodium and Potassium*. Washington, DC: National Academies Press (US); 2019 Mar 5. Appendix J, *Dietary Reference Intakes Summary Tables*. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK545442/>.

Tooze JA. 2020. *Estimating Usual Intakes from Dietary Surveys: Methodologic Challenges, Analysis Approaches, and Recommendations for Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

Vossenaar M, Arimond M, Deitchler M, Lubowa A, Hotz C, Moursi M. 2020. *An Overview of the Main Pre-Survey Tasks Required for Large-Scale Quantitative 24-Hour Recall Dietary Surveys in Low- and Middle-Income Countries*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

Vossenaar M, Deitchler M, Hotz C, Lubowa A, Ferguson E. 2020. *Routines and Procedures to Test the Accuracy and Precision of Digital Dietary Scales Used in Quantitative 24-Hour Dietary Recall Surveys*. Washington, DC: *Intake* – Center for Dietary Assessment/FHI Solutions. Available at: [Intake.org](https://intake.org).

¹⁵ *Intake* has developed an online resource library to provide easy access to grey literature and links to peer-reviewed journal articles that may be relevant to the planning and design of a dietary survey and to the processing, analysis, and use of dietary data. The library is available at intake.org/resources.

WHO/FAO. 2004. *Vitamin and Mineral Requirements in Human Nutrition*, 2nd ed. WHO. Available at: <https://apps.who.int/iris/handle/10665/42716>.

WHO Multicentre Growth Reference Study Group. 2006. *WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development*. Geneva: World Health Organization.

WHO. 2019. *WHO Anthro Survey Analyser Quick Guide*. Available at: <https://www.who.int/childgrowth/software/en/>.

WHO. n.d. *WHO Child Growth Standards SAS igrowup Package*. Available at: https://www.who.int/childgrowth/software/readme_sas.pdf.

WHO. 2020. *Global Physical Activity Surveillance*. Available at: <https://www.who.int/ncds/surveillance/steps/GPAQ/en/>.

17 Annexes

The **Annexes** section provides supplementary material relevant to the review of the protocol for ethical approval. Depending on the intended purpose of the protocol, it may also be useful to include a timeline and a detailed budget for the survey as annexes to the survey protocol.

17.1 Survey Questionnaires

A copy of the survey questionnaire for all survey modules and any other data collection forms that will be used in the survey should be included as an annex to the survey protocol. When electronic data collection is planned, a paper version of all survey questionnaires must be prepared for inclusion in the protocol. Translations of the survey questionnaires and any other forms that will be used in data collection should also be included in this annex.

The following questionnaires and data collection forms should typically be among those included in the annex of the survey protocol:

- Household census form
- 24-hour dietary recall questionnaire, possibly including survey scripts and survey aids and tools, such as standard recipe lists, PSEMs, and probe lists
- Supplementary data collection questionnaire (e.g., age, sex, body weight, physical activity level, breastfeeding status for children aged <60 months, pregnancy status and trimester, lactation status and stage in months and menstrual status for adolescent girls and WRA, socio-demographic characteristics, education level, occupation)
- Anthropometric data collection forms

17.2 Informed Consent and Assent Forms

A copy of all informed consent and assent forms that will be used in the survey should also be included as an annex to the survey protocol. These should include forms for all demographic groups according to guidelines from the specific ethics committee to which the protocol will be submitted. All informed consent and assent forms should be translated into all languages in which the forms will be used and included in this annex. Local IRBs may require a specific format for these forms and may have a template available for download from the website.

17.3 Survey Timeline

The purpose of this section is to provide an overview or a visual representation of the survey timeline, including key milestones, such as dates for securing funding, ethical approval, completion of pre-survey work, field staff training, piloting, data collection, and primary analysis. Survey timelines are generally organized by months and can indicate the specific month and year of the planned activity, or instead show the progression of activities and the number of months each milestone is estimated to require.¹⁶

17.4 Survey Budget

Many ethics committees and IRBs require a budget for the survey to be submitted for the activities reflected in the survey protocol. Guidelines about the format of the budget required for submission may be provided by the ethics committee or IRB. When preparing a budget for a dietary survey, because there are so many phases of work

¹⁶ *Intake* has developed a GANTT template that can be used and adapted, as needed, by survey planners to outline an estimated timeline for carrying out survey activities. Refer to: *Intake – Center for Dietary Assessment. 2019. Intake GANTT Template: A Document to Assist with the Planning of Activities and Timelines for a Quantitative 24-Hour Recall Dietary Survey.* Washington, DC: *Intake - Center for Dietary Assessment/FHI 360.* Available at [Intake.org](https://www.intake.org).

required, it can be useful to develop “sub-budgets” for each distinct phase of work or each specific activity to be undertaken, and to then combine these budgets in an overall grand budget for the survey.¹⁷

¹⁷ *Intake* has developed a budget template that can be used and adapted, as needed, for estimating the costs associated with carrying out a quantitative 24-hour recall dietary survey. Refer to: *Intake* – Center for Dietary Assessment. 2019. *Intake Budget Template: A Workbook to Assist with Budgeting the Costs for a Quantitative 24-Hour Recall Dietary Survey*. Washington, DC: *Intake* - Center for Dietary Assessment/FHI 360. Available at [Intake.org](https://www.intake.org).



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