A working guide for Urban Food Listing

Food listing for processed packaged and vendor-prepared foods in urban centers for use in 24-hour dietary recall surveys

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Global Alliance for Improved Nutrition

KENYA MEDICAL RESEARCH INSTITUTE
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CENTER FOR DIETARY ASSESSMENT

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Preface

As the importance of national level information on dietary intakes in low- and middle-income countries is increasingly recognized; reliable methods, tools and guides to support the compilation of quality food and nutrient intake data are needed. In general, guidance on how to adequately prepare for a dietary survey prior to embarking on data collection is scarce. However, particular gaps in available methods lie in the identification of the types of foods likely to be reported as consumed in a survey, and what details are needed to adequately identify and link those foods to food composition data. While these are important but more manageable tasks in rural areas, for urban areas, there are particular challenges in the listing of foods and dishes consumed. This is due to the increasing availability and popularity of processed packaged foods, as well as prepared foods purchased in ready-to-eat form from a variety of food vendors.

This guide for conducting an urban food listing activity was developed jointly by the Global Alliance for Improved Nutrition (GAIN), *Intake* (Center for Dietary Assessment at FHI Solutions), and the Centre for Public Health Research at the Kenya Medical Research Institute (KEMRI-CPHR). It is based on: (i) the experiences of GAIN and other researchers in food and recipe listing activities in preparation for dietary surveys in rural or urban areas; (ii) the experience of *Intake* in developing guidance, and providing direct technical support, for large-scale dietary intake surveys in low- and middle-income countries; and (iii) our initial experience in developing and field testing a protocol in Nairobi, Kenya, as part of the preparatory activities for a future national Kenyan dietary survey to be headed by KEMRI. The series of tasks and data collection tools comprising the urban food listing activity, that are presented here have been refined based on our lessons learned from this experience and are considered to represent a starting point for further improvement.

A series of diverse but complementary tasks were used in the field-tested protocol. These included:

i. a desk review of existing data to inform on the types of processed packaged and vendor-prepared foods available for consumption or known to be consumed in the survey population;
ii. a process to develop a listing of food types likely to be reported as consumed in a future survey;
iii. Facilitated Group Discussions (FGDs) with members of the survey target group(s) to acquire more details and the likelihood of consumption scores for processed packaged and vendor-prepared foods consumed, and their variations;
iv. a review of existing food composition and standard recipe data that may be used to calculate energy and nutrient intakes from these foods; and
v. a market survey to collect additional details on the types or variations of commonly consumed processed packaged and vendor-prepared foods to better identify them.

These tasks culminated in a final list of processed foods likely to be reported as consumed in a future dietary survey in Kenya, together with a source of available food composition or standard recipe information (i.e., data on the standard ingredients and amounts for prepared foods purchased from vendors), or a flag for future collection of primary or secondary data to fill gaps.

Adequate preparation for a dietary survey is critical to support the collection of good quality data. Details that are required for all food types reported to be consumed in a survey by several respondents should be incorporated in the methods and training for data collection, and for the conversion of amounts consumed to gram-weight equivalents and their energy and nutrient contents. The more foods appearing in a survey that were not considered in the data collection tools, methods and procedures for the survey, or the training of survey staff, then the more ad hoc decisions that will need to be made during survey data collection, all lead to a lack of standardization of details collected across teams of enumerators. This results in a greater likelihood that dietary intake records are incomplete because appropriate food composition data cannot be identified. However, this preparatory work needs to be balanced with the availability of time and resources for the survey as a whole and ensure that it does not produce an excess of irrelevant information. One of the guiding principles for this work is to limit the final listing of foods to those likely to be reported as consumed by a non-negligible number of respondents (e.g., subjectively ≥5% of the survey respondents), and omit those unlikely to be reported or only reported by a small number of respondents.

We hope that this guide will be useful for survey planners and managers to begin implementing urban food listing activities. We also hope that their additional experience in adapting and further field testing these methods, or testing alternative methods and tools, will allow for advancement of these methods and ultimately the improvement of large-scale 24-hour dietary recall surveys.[1]

1 Comments and feedback on the use of this guide may be sent to: feedback@intake.org

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1. Introduction

1.1 Background and justification for the development of an urban food listing activity guide

National governments use dietary intake data for several purposes. These include to quantify current intakes of energy, macronutrients, micronutrients and assess the adequacy of intakes; quantify the contribution of specific foods or food groups to energy and nutrient intakes; develop consumer guidance and dietary or food policy recommendations for improved dietary intakes; and assess trends in food and nutrient intakes, including in response to policy changes (e.g., mass fortification of staple foods) or dietary recommendations. The most common method used to assess dietary intakes in populations is the 24-hour dietary recall (24-HR) method (Coates et al., 2012).

While conducting quality, large-scale dietary surveys is challenging in any setting, in low- and middle-income countries experiencing nutrition transitions, there are additional challenges to accurately estimating usual food and nutrient intakes. Due to rapidly changing food supplies in these settings, consumers are obtaining increasing proportions of their diets from processed foods, which include industrially or locally processed packaged foods, and ready-to-eat foods prepared outside the home (e.g., restaurants, cafeterias, street food vendors). In a multi-country study in South and East Africa, processed foods represented 70% of food budgets, ranging from 66% among the poor to 86% among the wealthy (Tschirley et al., 2015). In addition, in most low- and middle-income countries, available food composition tables[2] are limited in scope and do not provide a complete listing of processed packaged and vendor-prepared foods that are likely to be encountered during large-scale dietary intake surveys.

Many countries have also begun implementing national fortification programs of staple foods (e.g., flour and fats/oils). However, since not all brands and sources of these foods are fortified according to standards, brand level information is required to assess the impact of these programs on nutrient intake adequacy. There are also potentially many products appearing on store shelves, including imported products, that are voluntarily fortified, and these should be distinguished from non-fortified versions of the same food type to assess their contribution to nutrient intakes. There is also growing interest in assessing the links between consumption of highly processed foods and occurrence of chronic diseases (Slimani et al., 2009).

For these reasons, countries aiming to implement dietary intake surveys need listings of processed packaged and vendor-prepared foods (in addition to unprocessed foods, ingredients, and home-prepared recipes that are typically the focus of dietary surveys) that are likely to be encountered in the survey. These listings are necessary to compile in advance of the survey so that: (i) relevant details for enumerators to collect for each food item reported are established; (ii) appropriate portion size estimation methods can be determined, particularly for packaged food items sold in single serving packs such as snack foods, and street or restaurant foods; and (iii) the number and types of processed foods for which food composition data are needed can be determined.

We conducted both a review of the published literature and a consultation with ten researchers from nine countries that have carried out national or sub-national 24-HR dietary surveys inclusive of urban centers. This review revealed that methods for listing processed packaged or prepared foods prior to a survey were often informal in nature and were not well documented. Some studies that were well described collected comprehensive data on available processed packaged food products, but these were targeted only to specific food categories (e.g., infant and young child foods, fats and oils). Comprehensive listings of all processed packaged foods available from all categories would not

2 Food composition tables provide data on the energy and nutrient content of foods so that the amount of energy and nutrients derived from each food consumed, and the total diet, can be calculated to assess nutritional adequacy. These data are applied to both individual food items reported to be consumed, as well as each ingredient when intakes are derived using recipe data, which are either collected from individual survey respondents or as standard recipes for a particular composite dish, such as may be recommended for common vendor-prepared foods.

be feasible for the purpose of conducting national dietary surveys, as many foods on the market are consumed infrequently or by a relatively small number of individuals and hence may not appear, or rarely appear, in the 24-HR interviews in the sample selected.

Therefore, simple, well-described food listing methods and data collection tools are needed that identify and focus on processed packaged and vendor-prepared foods commonly consumed by the target population. For the purposes of this guide, definitions of these commercially processed food types are defined in Box 1. The specific tasks suggested here were informed through the literature review and consultation with researchers noted above, as well as the authors' own experience in conducting 24-HR surveys. They were field-tested in Nairobi, Kenya[3] and subsequently revised following a feasibility assessment.

The guidance presented here is a result of our experience in implementing these methods in Nairobi and the lessons learned. It has not been validated in any way with regards to the capacity to identify the majority of processed packaged and vendor-prepared foods that are actually consumed, and would be reported in a dietary intake survey by a non-negligible number of people. More work will be required in the future to further develop, test and adapt the resulting defined tasks for different contexts and, ideally, to validate these methods. However, this guide should serve as a useful starting point for continued work in conducting food listing for commercially processed packaged and vendor-prepared foods in urban settings.

Box 1: Definitions of processed packaged and vendor-prepared foods as used in this guide

'Packaged foods' include most multi-ingredient foods or beverages that are commercially processed and sold in any type of packaging (e.g., bags, cartons, cans, bottles, tetra packs). This includes both industrially packed, labeled and branded foods, as well as locally-packaged foods without brands or labels.

'Processed foods' are broadly defined as foods subjected to any method of cooking, preservation (e.g., drying, freezing, fermenting, pickling), physical processing such as milling, pounding, removal of inedible or other outer portions, or addition of other food ingredients or substances including nutrients (i.e., fortification).

'Minimally processed foods' are defined as single, natural food items that have been modified by a processing method that does not include the addition of any other ingredient or substance. Examples include frozen, blanched vegetables, milled unfortified flour, pasteurized milk1,

'Processed packaged foods', for the purpose of this guide, includes only those commercially packaged foods that have been processed with multiple ingredients, including sugar, oil or salt (e.g., milled flour blends, fortified flour, roasted/salted groundnuts, canned mixed vegetables, sweetened fruit drinks, biscuits, ice cream). This category excludes packaged single foods that are unprocessed or minimally processed (e.g., raw dried beans, dry-roasted, unsalted groundnuts, unfortified single refined flour, pasteurized whole cow's milk, raw chicken breast, peeled/sliced fresh or frozen fruits).

'Vendor-prepared foods' are defined as any multi-ingredient food or beverage prepared outside the home by food vendors of all types and sold for consumption in ready-to-eat form. This includes all such foods regardless of where they are eaten (e.g., taken home). This does not include foods prepared and eaten at a friend's or family member's home, or other social gathering where food is prepared by hand and shared (not sold). It also does not include raw, unprocessed ready-to-eat foods sold by vendors outside the home, such as raw, whole fruit.

1 This definition differs slightly from those used by the NOVA classification system for processed foods as in that system, minimally processed foods include single ingredient foods that are fortified with nutrients, whereas here they are excluded (Monteiro et al., 2016). Fortification is an important modification to capture during a food listing exercise and market survey.

3 GAIN, *Intake* – Center for Dietary Assessment and KEMRI. Final Report: Development and testing of a feasible food listing tool for processed foods for use in urban areas. Geneva: GAIN, 2019.

1.2 Goal and objectives of the Urban Food Listing Guide

The goal of this guide is to describe and provide an initial set of tasks to aid others in performing food, recipe and ingredient listing exercises for urban areas in low- and middle-income countries with a focus on how to:

- Prepare an initial comprehensive listing of all processed packaged food categories and sub-categories, as well as food vendor types and prepared food menu items;
- Identify the processed packaged and vendor-prepared foods, and their nutritionally relevant variations (including fortified versions), that are more commonly consumed among the target population(s);
- Prepare lists of foods for which food composition data or standard recipe data[4] will need to be compiled, and which details for processed packaged and vendor-prepared foods should be obtained during 24-HR interviews;
- Identify existing sources of appropriate food composition data or standard recipe data to adequately represent the more commonly consumed processed packaged and vendor-prepared food items; and
- Identify foods in the marketplace to confirm their contents (i.e., ingredients, nutrient content) for those without clear sources of food composition or standard recipe data available, and determine how to group nutritionally similar foods, identify close substitutes, or obtain primary data for food composition or standard recipes.

While the main purpose of developing the urban food listing activity is to support large-scale, 24-HR dietary intake surveys, the guidance may also be used to support the development of food frequency questionnaires that use closed lists of relevant foods consumed by the study population.

It is important to note that all foods, including non-processed, minimally processed and home-prepared dishes should be covered in a broader food listing process. The tasks defined here are specific for processed packaged and vendor-prepared foods.

Finally, it is critical to keep in mind that the guidance outlined here is intended to aid the identification of the processed packaged and vendor-prepared foods that are 'more commonly consumed' in the targeted sub-population groups, and hence are 'more likely to be reported as consumed by a non-negligible number of individuals in a large-scale dietary survey'. It is not intended to capture information on all foods available in the marketplace, or all that could possibly show up in a large-scale dietary survey as reported by one or a few individuals. The latter could be an overwhelming task that is likely to result in redundant information and an ineffective use of limited resources.

Without detailed pre-existing survey data, it is difficult to quantify the likelihood of any particular food item being reported and hence a more qualitative likelihood of consumption scoring approach is recommended for this purpose. There is no specific cut-off provided for what constitutes 'more commonly consumed foods' or those 'likely to be consumed by a non-negligible number of individuals'. Rather, the intention is, with time and resources available, to maximize the number of processed packaged and vendor-prepared foods that are reported as consumed in a survey that are included in the dietary intake survey data collection tools, and to minimize the number of such foods reported as consumed in a survey that have not been considered in the survey data collection tools.

4 Standard recipe data refers to the usual ingredients and amounts of those ingredients, including processing methods, that comprise a particular prepared dish. This information allows the calculation of the energy and nutrient content of the dish when the ingredients are linked to appropriate food composition data. Standard recipe data are recommended to be used in large-scale 24-hour recall surveys to convert intake amounts of vendor-prepared foods to the intake of their individual ingredients.

As noted above, the urban food listing activity presented in this guide has not been validated in this regard. Finding this balance point may be a challenge but will be influenced by the available time and resources both for the urban food listing activity itself, and the subsequent activities of compiling appropriate food composition data or standard recipe data. As a result, users will need to use their judgment on how extensively they apply the tasks described here.

1.3 Organization of the Guide

In the following sections, we provide a brief description of the guidance for each step in the urban food listing process. These steps are summarized in Figure 1 below.

Firstly, two main tasks are suggested to create relevant food categories for processed packaged and food vendor categories, together with specific food types that are believed to be commonly consumed in the survey population.

These initial lists are used to develop a detailed question guide for Facilitated Group Discussions (FGDs; see Task 3 for definition of FGDs)[5] among selected individuals who are members of the survey target population(s), during which the specific foods are scored according to the likelihood of being consumed on any given day. Foods that are more commonly consumed are short-listed, and then either food composition data (processed packaged foods/standard recipe ingredients) or standard recipe data (vendor-prepared foods) are identified to represent those foods using existing data sources.

For foods whose existing data are not identified or additional details of its content is needed, collection of data on ingredient and nutrient content (as available) from selected food markets or food vendors is undertaken.

If appropriate food composition or standard recipe data are still not identified for these foods, they are flagged for future potential compilation of such data using either primary (i.e., direct chemical analysis) or secondary methods (i.e., other sources of existing data or estimates). Unless they are almost certain to appear, the latter may be planned for in timelines and budgets to be conducted after the large-scale dietary survey data collection is completed, and only followed up if those particular food items are reported in the survey.

Finally, outputs to be used in designing a future 24-HR survey can be developed. These outputs include the summary of details (i.e., 'prompts') that are necessary for enumerators to obtain during a 24-hour recall interview to accurately identify processed packaged foods and link them to appropriate food composition data, and to accurately match vendor-prepared foods to appropriate standard recipe data, as carried out during the data entry/processing phase of a large-scale dietary intake survey. Appropriate portion size estimation methods for each food can also be determined and listed for this purpose.

Several annexes are included that provide a more detailed description of some tasks, and examples of data collection tools developed during the field study in Nairobi and revised based on lessons learned.

5 FGDs are defined as 'group interviews' or 'group conversations' led by a facilitator using a question guide (i.e., a predefined set of questions) that engage a group of respondents in a guided discussion on a specified topic. In the context of preparing for a dietary intake survey, FGDs are carried out with respondents that are knowledgeable about food preparation and food consumption in the target population in order to obtain information about specified types of foods and mixed dishes that are commonly consumed by the target population (in this case, processed packaged and vendor-prepared foods) (adapted from: Moursi et al., 2020).

Figure 1. Summary of tasks in the urban food listing activity for processed packaged and vendor-prepared foods.

Task 1: Use of existing data on processed packaged and vendor-prepared food consumption
- Identification of commonly consumed processed packaged and vendor-prepared foods.

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Task 2: Categorization and listing of processed packaged and vendor-prepared foods by expert consultation (or other approaches)
- Draft categorization and listing by technical team.
- Categorization and listing by Expert Consultation for use in Facilitated Group Discussions (FGDs).

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Task 3: FGDs: identifying commonly consumed processed packaged and vendor-prepared foods
- Obtain likelihood of consumption scores for specific processed packaged and vendor-prepared foods.
- Identify a short list of the more commonly consumed packaged processed and vendor-prepared foods based on likelihood scores from the FGDs.

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Task 4: Identification of existing food composition or standard recipe data for short-listed foods
- Review existing reliable food composition databases and locally available standard recipe data to identify appropriate matches.
- Flag foods whose appropriate matches are not identified and where additional information on ingredients or nutrient content are required from food markets and food vendors to clarify the contents during a market survey.

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Task 5: Market Survey - Collecting additional details on processed packaged and vendor-prepared food variations, ingredients and nutrient content
- Verify contents of processed packaged foods and ingredients in vendor-prepared foods, as needed; includes addition of nutrients for voluntarily fortified processed foods.
- Define and list processed packaged and vendor-prepared foods for which food composition or standard recipe data were not initially identified but would need to be compiled.

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Task 6: Develop output materials for use in a 24-HR survey
- Include all short-listed processed packaged and vendor-prepared foods in methods and enumerator training materials for 24-HR survey:
  - 'Prompt list': Itemize the details required from respondents in a future 24-HR survey to correctly identify a specific food type and link it to appropriate food composition or standard recipe data.
  - Select appropriate portion size estimation methods for each processed food type.

2. Task 1:

Use of existing data on processed packaged and vendor-prepared food consumption

2.1 Introduction and purpose

The first step in the urban food listing process is to identify available datasets to quantify the frequency of consumption of specific processed packaged and vendor-prepared foods among relevant target populations. The main purpose of this task is to identify processed packaged and vendor-prepared foods previously reported, as consumed by at least some individuals among the sub-populations targeted in the future dietary intake survey. This information can be used in preparing initial lists of processed food categories and specific processed food types that are more commonly consumed, and when more specific information is needed (e.g., common variations of the food type, whether fortified versions exist in the marketplace, etc.).

Depending on a country's level of previous experience with dietary intake or food consumption surveys that include processed foods of different types, such data may be very limited. For example, existing data may include relatively sparse details on processed foods, leaving out details that could be used to match those items to more appropriate food composition data (i.e., processed packaged foods) or standard recipes (vendor-prepared foods). Some data sets may not have included urban sub-populations where the likelihood of consumption of a wide range of processed packaged or vendor-prepared foods is high, or they may not be sufficiently recent to reflect current trends in consumption of these food types. In addition, the datasets that contain disaggregated information on individual foods reported to be consumed may not be easily obtainable for secondary analysis. The suite of tasks in this guide are primarily designed to assist those with little to no relevant available data.

Nonetheless, this guide may also be useful for those with some relevant data available, but where gaps in information need to be filled in. For example, if the processed packaged foods commonly consumed in the target population are known, then additional market level information is needed to improve the nutritionally relevant details, and improve matching with appropriate food composition data and the guidance provided on conducting a market survey will be useful (Task 5). Likewise, previous data have provided lots of details on processed packaged foods consumed, but insufficient details on vendor-prepared foods, in which case the guidance for these types of foods will be useful.

2.2 Methods

2.2.1 Data sources and their selection

The types of data sources that may be useful include food intake data from previous, relatively recent, large- or small-scale dietary intake or household food consumption surveys conducted among individuals or households of the targeted subpopulations, particularly those that included urban populations. Potential data sources may be identified through professional contacts, government or literature searches. However, this analysis requires the primary dataset or microdata that list each food item consumed, as reported in the interview, for each individual on a separate line of data.

While individual-level dietary intake data (e.g., 24-HR or weighed records) are more likely to contain sufficient details about processed foods consumed, household-level food intake data could be useful if it contains sufficient details. Criteria to assess the usefulness of existing datasets are summarized in Box 2.

Datasets with smaller sample sizes (e.g., <100), or where the sample was not broadly representative of the target groups(s) of the future large-scale dietary survey, are not likely to yield a large amount of useful information and the user may continue to the tasks in the guide that follow.

Each dataset is likely to have been configured differently with regards to how data were collected and captured, which variables were used to identify specific food items or mixed dishes, variable names and labels, as well as the software programs used. It may be necessary to discuss the survey data with researchers familiar with how the dietary intake data was processed. In particular, it would be helpful to determine how food items were linked to food composition data and how mixed dish items were linked to food composition databases, and the circumstances under which standard recipe data were applied vs. non-standard recipe data (i.e., recipe information derived from the respondent about how a mixed dish was prepared in the household) and how recipe data were coded and linked to the mixed dish reported.

Some existing dietary surveys may not have all the details required, such as to distinguish processed packaged from home-processed foods or vendor-prepared from home-prepared foods. However, a review of existing dietary surveys should provide a first look at the likely consumption of such products and help to inform the next activities in the urban food listing process.

Box 2: Suggested criteria for selecting datasets for secondary analysis of intake of processed packaged and vendor-prepared foods

- The data are relatively recent (e.g., last five years), as available food products can change rapidly in urban areas;
- Sufficient details are available about the sample and sampling methods used in order to know how representative it was of the population studied;
- The dataset includes individuals, whom at least, broadly represent the target sub-population(s) for the future dietary intake survey. For the purpose of assisting the initial listing of packaged processed and vendor-prepared foods likely to be consumed in a future dietary survey, data that is available from subpopulation groups that are different from the ones of interest may also be used if it's likely they will consume similar types of foods. For example, processed foods consumed by adult men or adolescent girls are likely also to be consumed by adult women. Likewise, processed foods consumed in one urban center may be similar to those consumed in another urban center in the same country;
- At least a subset of the survey data was derived from urban populations, and thus capture the types and range of processed foods consumed in those settings;
- The primary or micro dataset, which provides separate data lines for each food item consumed by each individual respondent, is available for secondary data analysis;
    - Such primary datasets should contain a list of individual food items and mixed dish items (by name/main ingredients);
    - These data will ideally contain sufficient details about the individual food items and prepared dishes consumed to clearly identify those that are processed packaged or vendor-prepared foods. These details would distinguish:
        - packaged foods from non-packaged foods (e.g., by inclusion of a brand name or an additional variable in the dataset); and
        - vendor-prepared foods from the same or similar foods prepared in the home (e.g., a separate variable that identifies the source of food as from inside or linking to recipes that represent either vendor-prepared or home-prepared foods);
    - However, many datasets are not likely to clearly distinguish between these for all foods reported. For example, a sandwich could be as likely to be made at home or purchased from a vendor. In such cases, knowledge of the data collection procedures may be helpful as, for example, all home prepared items may have household level recipes associated with them, whereas all vendor-prepared items may have only standard recipes associated with them. Otherwise, users may need to categorize foods to those most likely to be home-prepared or vendor-prepared based on the knowledge of food habits of the population;
- Sufficient details about the methods used for dietary data collection are available to understand variables relevant for the analysis, particularly those noted in the point above;
- The survey has a sufficient sample size among the relevant subpopulation groups (e.g., n>100) to ensure that a wide range of processed foods would be captured, if consumed. Larger samples would be most useful (e.g., n>500), such as from previous national or sub-national surveys or surveys covering a large urban center. Surveys with smaller sample sizes may inform only on the very most common processed foods consumed but not on the less frequently consumed but potentially important processed foods.

Data analysis:

2.2.2 Main outcome of analysis

For this simple analysis, the main outcome desired is **the percentage of individuals consuming each processed packaged or vendor-prepared food item**. This will simply inform on the likelihood of these foods being reported in a future dietary survey and can be included in the activities in the guide that follow.

2.2.3 Variables required

To conduct this analysis, we are primarily interested in all variables that contain information on:

- a variable with a unique identifier (i.e., personal identification code only) for each respondent;
- variables that identify the demographic or sub-population that each respondent represents;
- the food or recipe (mixed dish) code;
- food/mixed dish name;
- variables with additional descriptive information on the food or dish. For individual foods, this might be details on the cooking state, physical state or form, or other nutritionally relevant characteristics and for mixed dishes this may include details on the ingredients or preparation method;
- any variable that distinguishes individual food items from mixed dishes that require recipes;
- variables indicating the food group assignment may also be retained; and
- variables determining survey weights, if used in the original survey and suited to apply here.

Information on the amount of food or dish consumed, or energy and nutrient content of foods is **not** required for this analysis. Also, if multiple days of intake data were obtained for the same respondents, only one day of data needs to be retained for this analysis.

2.2.4 Data processing procedure

A general data processing approach is described below. It should be modified to suit the specific context and data sets included.

1. The first step in preparing the dataset for analysis is to summarize all unique individual food items or mixed dishes so that they appear only once for each individual. It is possible that some items are listed as consumed on more than one occasion on the same day for the same respondent, and replications must be removed. This can be done using an 'aggregate' function whereby any replication per individual is merged. The aggregation should make use of the variable(s) with the food or recipe code and use the respondents unique identified code as a 'break' variable (i.e., for which data remains disaggregated).
2. The second step will summarize the frequency of each unique food or recipe reported. This step should also use an aggregation procedure whereby the frequency or number of cases aggregated for each unique food or mixed dish/recipe is retained as a separate variable (e.g., 'Freq'). This will be the basis for calculating frequencies or percentages for relevant foods and mixed dishes in Step 4.
3. In the third step, the list of unique food items or mixed dishes is reviewed to identify which ones represent, or are likely to represent, processed packaged food items or vendor-prepared foods. This requires the addition of at least one new variable, such as 'processed food type'.
   - For foods that are listed as individual food items, labels and codes can be added next to each food item that represents a processed packaged food (e.g., 'Procpac') (refer to definition in Box 1). Where it is likely, but not certain, that foods items reported are processed packaged foods, users should include separate labels/codes for those items to indicate that uncertainty (e.g., Procpac_likely). It is also optional to include additional labels/codes to categorize all individual food items with regards to their processing state (e.g., if the analysis will also be used to inform on unprocessed or minimally processed foods for the purpose of preparing for a large-scale 24 hour recall survey, categories for these can be established as well).
   - For foods that are listed as mixed dishes, labels and codes can be added under the Procpac variable to indicate the ones that are vendor-prepared foods (e.g., 'Venprep') (refer to definition in Box 1). Users may also wish to include separate labels/codes for mixed dish items that are deemed likely to be vendor-prepared but for which it is uncertain (e.g., 'Venprep_likely'). It is also optional to include additional labels/codes to categorize all mixed dishes with regard to their source (e.g., if the analysis will also be used to inform on common household recipes in preparation for a large-scale dietary survey, a separate category can be established). Labels/codes to indicate unprocessed (e.g., 'unproc') or minimally processed ('minproc') foods, or home-prepared dishes ('homeprep'), may be helpful.
4. The fourth step is then to calculate the percentage of respondents that reported to consume the foods or mixed dishes. The database can be sorted according to the 'processed food type' variable categories derived in Step 3, as well as by frequency that was derived in Step 2 (i.e., 'Freq') from largest to smallest. A new variable can be added to calculate the percentage of respondents reporting to have consumed the food or mixed dish (e.g., 'Percent'). This is simply done by dividing the frequency ('Freq') of the food item or mixed dish by the total number of respondents from which the data were derived and multiplied by 100. Any sample weighting should be applied at this stage.
5. Finally, the foods or mixed dishes that appear for at least 5% of respondents can be flagged and included in the initial list of processed packaged and vendor-prepared foods.

An example of a processed dataset with labels for individual foods or dishes reported in the original survey primary dataset (microdata) is illustrated in Table 1.

Table 1: Example of the partial output from a secondary data analysis of dietary intake data to identify the percentage of respondents in a target group who reportedly consumed a food item or mixed dish type, categorized by the processing/package state or source of preparation.

Food code[1]	Recipe code[2]	Food name	Food description[3]	Freq[4]	Processed food type[5]	Percent (over n=597)[6]
1234	-	Rice pilau	White rice, sweet pepper, onion, oil, spices	187	Homeprep[7]	31
2345	-	Potato	Irish, boiled	153	Minproc	26
2346	-	Chips	Irish potato, oil-fried	43	Venprep_likely[8]	7
3011	-	Apple	Fresh, raw	17	Unproc	3
-	9965	Salad, mixed, with dressing	Lettuce leaf, tomato, cucumber, red onion, vinaigrette	7	Venprep_likely[8]	1
6321	-	Cheese, slice	Gouda type	11	Procpac[9]	2
-	-[2]	Chicken stew	Chicken, tomato, onion, carrot	1	Homeprep	-
-	9943	Samosa	Beef filling	38	Venprep_likely[8]	6
-	9917	Sandwich	White bread sliced, ham, cheese, lettuce	23	Venprep_likely[8]	4
8012	-	Fruit drink	Orange flavor, sweetened	28	Procpac[9]	5
8001	-	Tea	Black, brewed	257	Minproc	43
9156	-	Biscuit	Sweet, chocolate, cream-filled	9	Procpac[9]	2

[1] Food codes were assigned in the original dataset to individual food items, which are linked directly to values in a food composition database.

[2] Recipe codes were assigned in the original dataset to mixed dishes to which standard recipes were applied. For dishes prepared at home and for which recipes were collected from the respondent, no unique code is assigned (they are linked to recipe data based on respondent personal identification number no longer included in this summarized (aggregated) dataset.

[3] For individual food items, additional descriptive details were given in the original dataset to accurately identify the food and link it to food composition database; for mixed dishes, the main ingredients are listed.

[4] 'Freq' denotes the number of respondents that reported consuming the food item or mixed dish listed and was calculated as part of the secondary data analysis; for recipes collected from the respondent for home-prepared foods, the frequency will always be 1 as the recipe is unique to that household.

[5] Category labels were assigned as part of the secondary data analysis to indicate the type of food with regard to processing, packaging and source of preparation (mixed dishes).

[6] The percentage of respondents of a particular target group (e.g., women of reproductive age) that reported to consume the food item or mixed dish. This is calculated as part of the secondary data analysis by dividing the frequency (Freq) by the number of respondents in the target group (i.e., n=597).

[7] Rice pilau is a dish commonly prepared at home and a standard recipe was available; therefore, this dish was labeled as being homemade.

[8] Although it is possible to prepare these foods at home; knowledge of the population indicates that they are more commonly purchased from formal and informal food vendors.

[9] These are food items that are not processed at home but are typically purchased in packaged form.

2.3 Outcomes

Once this information is compiled, the research team reviews it to:

- Estimate the total number of processed food items and vendor-prepared food items by type; and
- Identify foods that likely represent processed packaged and vendor-prepared foods, and for which of these more detailed information would be useful to collect in future surveys. These foods should be included among those in the subsequent food listing activities.

It is important to note that the list of processed packaged and vendor-prepared foods from previous surveys may not be a good representation of the ones likely to be found in a future large-scale survey inclusive of urban areas. Trends towards the consumption of such foods may have increased since that survey, and smaller surveys may pick up only a limited number of the range of processed foods currently consumed. In addition, it's possible that if the survey was not adequately prepared for, some generalizations about the foods reported with regard to food composition or recipes may have been made and further detail in future surveys may be needed.

3. Task 2:

Categorization and listing of processed packaged and vendor-prepared foods: expert consultation and other approaches

3.1 Introduction and purpose

The main purpose of this task is to produce locally relevant listings of *processed packaged foods* and *vendor-prepared foods* that are commonly consumed by the target group(s) of the future dietary survey. For processed packaged foods, it is important to first establish locally relevant food groups, food categories and subcategories, in which to organize the specific processed food items. The use of categories and sub-categories are important to organize the information in logical blocks and also helps to ensure, through association, that processed packaged foods of all types have been considered in the listing process. For vendor-prepared foods, it is helpful to categorize foods according to food vendor types, as the vendors and the types of foods they sell vary quite widely, and review of the wide range of vendor types will ensure a broad consideration of such foods likely to be reported in a survey.

These categorizations and listings will be used to guide and inform the subsequent food listing tasks.

3.2 Methods

There are several possible approaches to producing a comprehensive listing of commonly consumed processed packaged and vendor-prepared foods, and a categorization scheme. Selecting the most appropriate approach depends on the availability of existing data and the detail it provides, the expertise available within the technical team, the expertise of other relevant experts who are available for consultation, and ready access to other sources of relevant information. One approach that was field-tested in Nairobi and described here is the use of an expert consultation workshop. This approach was selected as it is an efficient way of summarizing a large amount of reliable information in a short time. However, alternative or supplementary sources of information were noted during the expert consultation process and these possibilities are listed here as well; other survey teams engaging in this type of work may be able to field test and report on the usefulness of these approaches in the future.

The recommended approaches for the preparation and implementation of an expert consultation process are summarized below, and a more detailed step-by-step example for conducting the consultation workshop is given in Annex 1. Later in this section, we will list some of the potential alternate or supplementary approaches to this categorization and listing task that were not directly field tested.

3.2.1 Initial listing for processed packaged and vendor-prepared foods

Processed packaged foods: To ensure that all relevant processed packaged foods likely to be reported in a dietary survey have been considered, it is necessary to establish the main processed packaged food groups, categories and sub-categories, and the specific food types and nutritionally-relevant variations that are available in the marketplace and may be commonly consumed by the target groups of interest. These categorizations and listings are defined as follows:

- The food groups broadly follow traditional groupings used in dietary assessment (e.g., grains and cereals);
- Food categories subdivide each group into food product types (e.g., baked products, breakfast cereals, cereal flours and pasta);
- The sub-categories reflect more closely related products with regard to contents and processing methods (e.g., 'baked products' sub-categories may include leavened breads, flatbreads, cakes and muffins, biscuits and cookies, baked pastries, etc.);
- The specific food types listed under each sub-category then represent distinct *forms* of foods within each sub-category, which affect the way it is prepared, portioned and consumed (e.g., food types under the 'leavened breads' sub-category may include loaf bread, bread rolls, bagels and bread crumbs); and
- Nutritionally relevant variations mainly refer to differences in ingredient composition of a food type that affects its taste, color or appearance and significantly changes its content of energy or key nutrients[6]. Relevant characteristics may include differences in the flour type used, filling or topping type, supplemental ingredients that change flavor or nutritional content including sweeteners or cooking oil/fat. As a rule of thumb, variations that result from minor ingredients typically added in small quantities (i.e., less than 15 g or tablespoon per serving) do not need to be distinguished unless they are considered to be nutritionally significant (e.g., high amount of energy or relevant nutrients per 100 g or per serving)[7].

  Food types of different flavors, particularly if flavorings are artificial or a result of small amounts of natural flavorings or supplementary ingredients, generally do not need to be distinguished. For example, 'loaf bread' is listed as a food type, while the nutritionally relevant variations may include white (refined) wheat bread, whole wheat bread and multigrain bread. However, it would not be nutritionally relevant to distinguish white wheat bread rolls with or without sesame seed topping, as the amount of sesame seeds in a typical serving of bread would be less than 15 g. Nutritionally relevant variations for yogurt as a food type may include plain/unsweetened and flavored/sweetened (as the sugar content can be quite high), while it is not nutritionally relevant to distinguish between sweetened yogurts of different flavors. It is important to avoid listing all possible variations of products available as the nutritional differences may be minimal and food composition data to distinguish all variations is typically not available. Greater disaggregation of food details will yield more information but will unnecessarily increase the number of foods that are considered throughout the listing process.

An example of the categorization for processed packaged foods derived from Nairobi is highlighted in Annex 2 (nutritionally relevant variations are not provided).

6 Key nutrients are those that fall within the objectives of a future dietary assessment survey and might include a range of vitamins and minerals as well as fat, sugar and sodium.

7 These criteria have been extended from analyses conducted in the development of dietary diversity scores, whereby the inclusion of foods consumed in portions of <15 g diminishes the association between dietary diversity and micronutrient intake adequacy (FAO and FHI360, 2016). It is also common practice to omit condiments or other flavorings from recipe data as the effect on their nutrition content per serving is minimal.

If locally relevant processed food categories and sub-categories are not available, it is recommended to use an existing, internationally-derived set, such as that developed by INFORMAS (Dunford et al., 2012; Neal et al., 2013) as a starting point; it can then be adapted according to local relevance, as was conducted in Nairobi. As more countries engage in this type of work, categorization schemes developed by others could potentially be used by those with similar food supplies as a more relevant starting point.

Vendor-prepared foods: To organize vendor-prepared foods, it is recommended to firstly categorize different types of commonly accessed food vendors as they sell different types of prepared foods. They are also accessed by different sub-population groups, such as their geographic location in the urban center, their socioeconomic status, and whether and where they work outside the home. For example, the main categories of food vendors defined for Nairobi included full-service restaurants, fast food restaurants and informal or other food vendors.

Sub-categorization is helpful to further define common food vendors and consider the wide range of menu items that may be commonly consumed by the target group(s). For example, full-service restaurants may include those serving local cuisine, regional or international cuisine, and cafeterias in department stores or institutions. In contrast, local/informal food vendor sub-categories were defined based on the physical structure from which they operate, such as semi-permanent kiosks (some structure remains in a fixed site but most equipment and food moved every day), open-air vendors (no structure remains in a fixed site) and street vendors (roving vendors selling on foot or from mobile units). In the case of fast-food restaurants, the sub-categories divided local non-chain, local chain and international chain restaurants, with the latter further subdivided by the specific chain.

Definitions for the food vendor categories and subcategories are included in Annex 1, and examples of the categories, sub-categories and specific vendor types derived for Nairobi can be found in Annex 3.

Step 1. Preparing a draft listing: Prior to holding an expert consultation workshop, a technical team should create draft categorizations and listings for processed packaged foods and food vendor types. This will serve as a template and starting point that will be modified and completed during the consultation workshop or any other approach used to complete the listing. Ideally, technical team members will have previous experience in dietary assessment or similar knowledge of food details and, most importantly, will be engaged throughout the entire urban food listing process, as well as in executing the future dietary survey.

A minimum of two days should be required by the technical team to review the processed packaged food groups, categories and sub-categories, consider the specific food types and variations that would fall under them, and create definitions of these. A minimum of one day should be required to draft a listing of the locally relevant food vendor categories, and sub-categories and create definitions for these. More time may be needed if a relevant categorization/sub-categorization template is not available, if relatively little information on urban diets is available from existing data sources, and if the technical team has relatively limited experience with urban diets or dietary assessment in general.

For the purpose of the expert consultation, these draft listings could either include specific food/menu types and nutritionally relevant variations or these categories could be left blank. Leaving them blank would prevent the expert consultation members from being unduly influenced by a closed list, but the workshop would require more time to complete. In either case, it is still useful for the technical team to draft specific processed packaged food types, vendor types and common menu item types with nutritionally relevant variations prior to the consultation, as familiarity with the details will be helpful to guide the consultation process.

Any processed packaged or vendor-prepared foods that were identified in the analysis of pre-existing data should be considered for inclusion in the draft listing, particularly those that were consumed by at least 5% of the sub-population groups of interest.

At this stage, it should be considered whether all food categories or sub-categories need to be addressed in detail in the expert consultation workshop and subsequent activities[8]. For example, condiments are a food group with a potentially large and diverse number of products. However, these types of processed packaged foods are often consumed only in small quantities and are commonly omitted from recipe data for purposes of dietary assessment (see footnote in reference to nutritionally relevant variations above). As such, in countries where the use of condiments is minimal, these could potentially be omitted from the urban food listing activity after careful review. Exceptions would be for condiments that are known to be fortified with micronutrients (e.g., bouillon cubes) or a small number of more popular condiment types. At this stage, it is recommended that the technical team reviews a list of commonly consumed condiments to determine if certain, limited categories, sub-categories or types should be retained. By contrast, in countries where many condiments are more commonly used, the condiment group should be retained.

Also, if time and resources for the urban food listing activity are limited, the technical team may only choose to focus efforts on selected food categories or sub-categories that are likely to be more commonly consumed, that are more nutritionally relevant, and/or where existing information is most limited.

Step 2. Verification of products in markets: The draft categorization and listing process is likely to raise many questions for the technical team regarding details of the processed food products available or common menu items among some types of food vendors. It may therefore be useful to visit markets and vendors to clarify any doubts, particularly with regard to product category definitions (e.g., supermarket managers are very knowledgeable about food categories), common nutritionally relevant variations, product contents and whether some products are voluntarily fortified or not. Many questions are likely to arise during the expert consultation so the more information and clarity that can be provided to fill knowledge gaps, the more efficiently the workshop will flow.

Step 3. Expert consultation workshop: The main goals of this workshop are to expand, clarify and prioritize the draft categorization and listings of common packaged processed foods, food vendor types and menu items by making use of professional expertise in these areas. It should be noted that this is not meant to be a complete listing of all processed and prepared foods available in the marketplace, but rather focused on those that are considered to be more commonly consumed by the target population.

To organize a workshop, the technical team will need to identify and engage appropriate participants that have professional knowledge of one or more processed food or food vendor categories. These may include academics with dietary survey experience and other relevant expertise, industry experts such as grocery store managers/buyers, restaurant managers, food vendor owners and government staff that may deal with food regulations. The team will need to prepare a clear set of instructions and training materials for the expert members to understand what they are being asked to do. Also, a set of definitions is needed for terms such as processed packaged foods and vendor-prepared foods including any inclusion/exclusion criteria, how food groups, categories, sub-categories, specific food types and nutritionally relevant characteristics are defined, how food vendor categories and sub-categories are defined, and the likelihood of consumption categories that are to be used.

The workshop format can vary but in order to cover a potentially large number of foods, we recommend inviting approximately 15-20 experts who can be divided into four working groups of three to four people each and be assigned food categories to review based on their expertise. If very targeted expertise is sought, then a larger number of experts and workshop days may be needed to cover all foods, although at greater expense. For example, a different set of experts may be invited to address vendor-prepared foods, such as those who work in the industry (e.g., restaurant association representatives).

8 Alternatively, this could be left for discussion and consensus by the expert consultation group.

A minimum of two full days may be enough to cover the processed packaged foods, and a minimum of one full day is required for the vendor-prepared foods[9]. At least some different experts should be called upon for each section, based on their expertise.

At the beginning of the workshop, the listing team should introduce the goals, objectives and specific tasks for the workshop and the listing process in general (Annex 1). A training session should be provided whereby all methods are described step-by-step, including review and refinement of all definitions and data capture templates, and ideally at least one example category/sub-category for processed packaged foods and vendor-prepared categories/foods is worked through in plenary before breaking out into smaller working groups. The workshop format should be clearly described, and the expected outcomes clearly stated.

The process to be used to arrive at group consensus should also be discussed. It may also be helpful to expand upon the goals and describe how this task is connected with a future large-scale 24-HR survey. Specifically, those individuals sampled in a survey are asked to state and describe the foods they consumed in the previous 24-hour period, and in order to adequately quantify the foods consumed and the energy and nutrients they contribute to the diet, we must be able to accurately identify the foods or dishes reported, what they contain, and estimate what their energy and nutrient contributions are.

The technical team members should be available to guide and assist groups in their tasks throughout the workshop as many questions are likely to arise and decisions will need to be made. Specifically, experts are asked to:

Processed packaged foods

- Review the food categories assigned, and adapt if necessary, by adding, deleting or revising categories and sub-categories in the draft listing.
- Identify the more common processed food product types within each sub-category likely to be consumed by the target group. Also indicate which nutritionally relevant variations of those products are commonly consumed.
- Select a category for the likelihood of each specific food type listed to be consumed by the target population on any given day. This may use a simple ranking system (i.e., 1 for a low likelihood to 4 or 5 for a high likelihood) with definitions given for the categories. Alternatively, this may use a more quantitative system that considers if a dietary survey were done today, how many respondents of the target population out of ten would likely report having consumed that food item, with responses being from 0 to 10[10]. If more than one target group is being considered, then likelihood categories should be assigned separately for each.
- Indicate whether specific processed foods/brands may be fortified with nutrients or not.

Vendor-prepared foods

- Review the food vendor sub-categories assigned, and adapt if necessary, to add, delete or revise sub-categories in the draft listing.
- Identify specific restaurant types within a sub-category, where relevant. For example, for chain restaurants, specific common chains can be named (e.g., McDonalds, Burger King), or for full-service restaurants, specific types based on the cuisine served may be listed (e.g., Chinese or Italian restaurants).

9 In our experience in Nairobi, we identified few individuals that had direct and broad professional knowledge of commonly consumed vendor-prepared foods and ultimately, the technical team completed most of the listing of menu items and nutritionally relevant variations. The experts consulted were, however, very helpful in refining the food vendor categories, sub-categories and specific vendor types. Users may choose to limit the consultation workshop tasks to the latter.

10 This option is described in further detail as part of Task 3 on FGD.

- Select a likelihood of consumption category for each specific food type listed by food vendor type to be consumed by the target population on any given day. This should use the same ranking system as defined for packaged foods (see above).
- List the menu items for each vendor type that are commonly purchased and consumed by the target group, and common nutritionally relevant variations of those items.

Data collection formats with example output are given in Annex 4 for processed packaged foods and in Annex 5 for vendor-prepared foods.

3.2.2 Potential alternate or supplementary information sources for categorization and listing

Holding a workshop with technical experts can be an efficient way of compiling a large amount of information in a short time. However, it does require planning, coordination and resources to complete, as well as a significant time commitment by the experts. Although at present we do not have direct experience using alternative or supplementary methods, a few other approaches to assist with the food listing may be considered. These include:

- Targeted interviews with experts to obtain food listing information for food categories they are familiar with. It may be possible to share materials with selected experts and gather information needed by having direct discussions with them. For example, retail managers should be able to speak very well about categorization and the types of products that are fastest moving. This approach could be used to support the draft food list prepared by the technical team in advance of an expert consultation workshop or possibly as an alternative to using a workshop format. The disadvantage of the latter may be that group consensus is not obtained where differences in opinions between experts occurs.
- Making use of existing databases on processed packaged foods. For example, the regulatory bodies that oversee commercial food registration may maintain useful databases of processed food categories and specific products that can inform the listing. If publicly available, this information may be helpful in developing a more comprehensive draft list but will unlikely provide any information on how commonly consumed each of the foods listed are.
- Although the data were not used for this purpose in the study in Nairobi, a post-hoc review of food registry information from the National Food Standards Database and food retailer associations was useful in listing the foods, verifying food categories and variations of the most commonly consumed foods by the population, and as such, review of food registry information can be included as a prior task before conducting an expert consultation.
- Making use of any other information that may be available or willing to be shared by the private sector on the processed packaged foods that are sold more frequently. For example, major retail grocery stores may be willing to provide some information on top-selling food types if the purpose and confidentiality of data are agreed to. Some private sources of relevant food marketing data may be available for selected countries (e.g., Euromonitor), although the breadth of food products covered and the cost of these data would need to be assessed.

If countries in the same region and with similar processed food supplies have already conducted an urban food listing exercise, these may be useful starting points. Experience would be needed to determine what processes can be used to efficiently adapt pre-existing lists to a local context.

3.3 Outcomes

The main outputs of this task are comprehensive lists of:

- Commonly consumed processed packaged foods, listed by food group, food and sub-category, and specific food types and likelihood of consumption rankings, with any common, nutritionally relevant variations for each (see example in Annex 4).
- Locally relevant food vendor categories, sub-categories and specific types that are commonly frequented by the target group(s), with likelihood of consumption rankings and the menu items and nutritionally relevant variations from those vendors that are commonly purchased and consumed by the target group(s) (see example in Annex 5).

These categorizations and listings are adapted and used in the next data collection approach outlined in this guide - the FGDs.

Regardless of the approach used, the listing should be carefully reviewed by the technical team. Some adjustments may need to be made to ensure the categories are clearly understood and that there are no major gaps in food or vendor types listed (for example if there was a gap in expertise in a particular category among participating experts), and some details may need to be confirmed from direct review of food products in the market. The team should also ensure that the categorization for foods is clear and represents not only a technical perspective, but a consumer perspective based on how foods are used in a household. For example, butter may be managed as a dairy product at retail level, but in the household, it may not be viewed as dairy but as a condiment such as a spread or ingredient used in baking.

The likelihood of consumption rankings for processed packaged food items and food vendor types should also be reviewed. For those that are ranked with a very low likelihood, they may be removed from the listing process at this stage. The listing team may choose to use discretion of which likelihood of consumption categories to include or exclude in the FGDs as this may be influenced by time and resources available for the remaining listing activities.

4. Task 3:

Facilitated Group Discussions - identifying commonly consumed processed packaged and vendor-prepared foods

4.1 Introduction and purpose

Facilitated Group Discussions (FGDs) can be used as an opportunity to source useful information about processed packaged and vendor-prepared foods commonly consumed by the target population group(s). This recommended task makes use of the preformed list of relevant food or vendor categories, sub-categories and specific food items (derived from the approaches described above), with open group discussion combined with probing to identify commonly consumed foods and their nutritionally relevant variations. It uses a scoring method to determine the relative likelihood of those foods being reported as consumed during a large-scale dietary intake survey, as derived through a group consensus process during the FGD sessions.

4.2 Methods

4.2.1 Sampling and recruitment

Sampling: Sampling, sample size and recruitment methods should be adapted to the particular study location and the sub-population group(s) to be targeted. If multiple target groups are of interest (e.g., adult women and adolescent boys and girls), either representatives from each of these groups, or a single person in the household who can speak adequately to their consumption habits, should be sampled. This data collection task should not aim to include a statistically representative sample of the target population - it is only intended to improve preparations and the quality of data collection in a future dietary assessment survey. Nonetheless, the sample should broadly represent the target sub-population groups and the variation likely to be encountered in consumption of processed packaged and vendor-prepared foods. This should take into consideration locally relevant variables that are likely to influence consumption patterns, such as socio-economic status, livelihoods, and/or geographical location. We recommend sampling eight to ten participants from the same defined demographic/geographic groups for an FGD session and replicating data collection across all defined groups. This will permit a balance of variation and/or corroboration of results obtained.

Samples may be drawn from a single major urban center that would likely be inclusive of all such foods available and consumed in smaller urban centers, or from more than one urban center if a significant degree of variation is likely to be encountered.

Recruitment: Recruitment can be challenging in urban centers, where people are busy and often work outside the home. Adaptive methods should be employed to help ensure the success of recruitment. For example, in Nairobi, community access started with visits to the administrative offices for selected Wards to seek permission. The study team was linked to the leadership of the selected estates (e.g., estate Chairs or chiefs) who in turn, recommended/guides to assist in the recruitment. In some cases, information was disseminated to the communities via social media (e.g., WhatsApp groups) or other community networks such as women's groups. In each ward, one suitable venue to hold the FGDs was identified (described below) with the assistance of Ward and/or Estate-level leaders.

The total number of participants to recruit will depend on the number of demographic/geographic groups defined, the number of FGD sessions required to cover all pre-listed processed packaged foods and vendor-prepared foods (see below), aiming to complete data collection with eight to ten participants per session. Recruitment in urban areas, particularly among middle and high socioeconomic groups, is challenging and may require special tactics. Some suggested strategies to improve recruitment and avoid selection bias are summarized in Box 3.

Box 3. Possible strategies for improving participant recruitment from urban centers

- Pre-determine through key informants whether day, evening or weekend FGDs would allow more participants to attend;
- Allow plenty of advance notice to reach potential participants through social media platforms or other trusted village/neighbourhood-level organizations;
- Leave letters at selected households to introduce the FGD activity ahead of recruitment;
- If a telephone number can be obtained for a selected household, try doing recruitment by telephone;
- If necessary and if resources allow, try adapting the FGD format to individual-level interviews to provide maximum flexibility in catering to the participant's availability; and
- As attrition may be high, plan to recruit back-up participants, if needed.

4.2.2 Preparations

To prepare for the FGDs, the team will make use of the categorization and listing of packaged foods, food vendors and vendor-prepared menu items as derived from the preceding tasks. These lists are reformatted into data sheets that are used both as a semi-structured discussion guide and a data recording format (paper or electronic form). Examples of these three formats are highlighted in Annexes 6, 7 and 8.

We recommend that each FGD session is conducted by a trained facilitator, a trained recorder and is overseen by a team supervisor/coordinator. Facilitators should be experienced in conducting group interviews (e.g., focus group discussions, or other facilitated group discussions) and they, and the recorders, must be well-versed with the foods and their details prior to commencing the FGDs. Training and piloting should require four to five days, depending on the number of food types to be covered. An example of a training schedule is illustrated in Annex 9. It is recommended that two pilot sessions are carried out to help FGD teams refine their language and approach to defining the foods and what respondents are being asked to do, guiding respondents to appropriate responses, including reaching group consensus, and maintaining an engaging and well-paced discussion. One pilot may be insufficient to refine language (e.g., procedures, definitions, prompts), flow of the process, and the guiding of group consensus, particularly if language translation from the training materials are needed.

Processed food categories and food vendor types can be divided into sub-sections as it may not be possible for a team to collect data for all of these in a single FGD session. Sessions should aim to be limited to one-and-a-half to two hours in duration to avoid participant fatigue. As such, multiple FGD sessions may need to be conducted for each defined demographic/geographic group selected for sampling.

Defining likelihood of consumption scores: One of the core pieces of information used to identify processed packaged and vendor-prepared foods that are likely to be reported as consumed in a dietary survey is the likelihood of consumption score. For the FGDs, this score is derived by asking participants to provide a consensus estimate on the number of 'peers' out of ten that would likely have consumed a particular food, or frequented a particular food vendor type, if asked on any given day. Peers are defined as others in the community they know which are of the same demographic group they are being asked to respond for (i.e., either themselves (e.g., adult women) or others (e.g., their children two to five years of age). The score would be recorded as zero to ten, out of ten. The number out of ten would approximate the percentage of individuals in their demographic likely to consume that food in 10% intervals. Even if the response was one out of ten, 10% of survey respondents consuming a food could make it rather common and important to consider in data collection methods.

If it is believed that some study populations could not provide an accurate answer to this question format, it is recommended to use the simple ranking categories described for the expert consultation workshop above. The likelihood score chosen should be decided prior to training.

Photo album of processed packaged food examples: Since many of the processed packaged foods may not be familiar to all FGD participants, or they may not be known by the same name, it is recommended to compile photographic images for each food sub-category and specific food type. These can easily be obtained from the internet and organized in a printed photo album to support the FGD process. The photographs are useful to clearly define the food categories and subcategories being covered, and to clarify the types of foods within a food subcategory especially when prompting for specific food types that were not mentioned freely by participants. These photos are particularly helpful where multiple dialects of the same language are used. Example entries from a food photo album are given in Annex 10.

4.2.3 FGD format and data collection process

FGD format: As the lists of foods for both processed packaged and vendor-prepared foods may be long, it is important to divide these across multiple FGD groups recruited from the same population. The number of sessions required to collect all data should be guided by limiting the sessions to no more than one-and-a-half to two hours. For example, half of the packaged foods may be covered in one FGD session and half of the prepared foods may be covered in one FGD sessions, therefore requiring four FGDs to complete collection of all data in a sample stratum.

Venues to conduct the FGDs should be carefully selected, and meet the following suggested criteria: (i) Sufficient tables and chairs are available; (ii) Have some privacy, away from main roads, noise and other forms of disturbance to facilitate communication (and clear audio recordings, if used); (iii) Have accessible toilet facilities; (iv) Meeting rooms are well-lit and well-ventilated; and (iv) The venues are conveniently located for most participants.

FGD data collection process: Facilitators will open the session with introductions and provide a description of the key points with regard to process and participation, as summarized in Box 4. After being given an opportunity to ask questions, the facilitator will begin the discussion process, starting with the first category of processed packaged foods or vendor types to be covered in that session. The key steps for the FGDs are noted briefly here, and a detailed description is included in Annex 11.

Box 4. Key points to note during the introduction of an FGD session on process and participation

- The purpose of the meeting and its objectives;
- The expected duration of the session (e.g., one-and-a-half hours);
- All terms used in the session are defined, including precisely what processed packaged and vendor-prepared foods refer to, the food or vendor categories, subcategories, specific food types, nutritionally relevant variations, etc;
- Participants will be asked to respond to questions about foods based on their own experience and their knowledge of others in the community they know of the same target/demographic group (i.e., their 'peers');
- Participants are asked to limit their responses to food consumption habits from the last year;
- Responses from all participants are encouraged, but only the group consensus response will be recorded. The facilitator will help guide participants to reach consensus through discussion; and
- Ground rules for discussions are reviewed and may include:
  - Only one person speaks at a time
  - Respect for each other's opinions
  - Mobile phones are to be put on silent mode or vibration and in-case of emergency, participants are asked to leave the meeting room to respond
  - Participants are encouraged to ask for clarification from the facilitator in case they did not understand something.

Processed packaged foods - after defining the first category and sub-category of foods to be covered with the aid of food photos as general examples, the facilitator will ask participants to begin noting the specific food types that are commonly consumed by them and their peers. The recorder notes the ones on the list that are mentioned. Once the list is exhausted, the facilitator will then review the pre-listed foods that were not mentioned to verify if these are not commonly consumed or if they were just missed.

After completing the listing for the first category, the facilitator returns to each specific food type mentioned, and participants are asked to derive a consensus estimate of the number of their peers out of ten that would likely have consumed that food item if a dietary survey was conducted yesterday. Only the score arrived at by consensus is recorded. For the same specific food type, the facilitator then mentions the pre-listed nutritionally relevant variations and the respondents are asked for a consensus response on which variations, if any, are commonly consumed, and in turn, are marked by the recorder[11]. Then, only if noted for that food type, participants are asked to list the most popular brand names purchased. This is limited to those foods that are likely to be fortified as noted during the expert consultation. After completing this process for the first food category, the facilitator moves on to the next assigned category.

Vendor-prepared foods - the facilitator first reviews the vendor categories and subcategories. For relevant subcategories, the facilitator will probe for specific vendor types, such as types of full-service restaurants and fast-food restaurants in the Continental and Intercontinental categories (to define specific types of cuisines and fast-food menus). Then, for each of listed food vendor subcategories and the specific food vendor types mentioned, participants are asked to provide a consensus score for the number of their peers out of ten who are likely to report having consumed food items from each vendor type mentioned, as if a survey were conducted yesterday. The score arrived at by consensus is recorded. At the same time, they are asked to mention specific vendors (names, locations). This is used to help verify that they have correctly understood the vendor categories and sub-categories. The list of specific vendors noted can also be used in a market survey (Task 5) to obtain additional information on commonly consumed food items (e.g., recipe or usual portion sizes).

Once completing the food vendor data collection, the facilitator moves on to the data collection process for each vendor category/subcategory. Participants are asked to begin listing the food items commonly consumed by them and their peers from that vendor type. The recorder notes the ones mentioned that are prelisted and adds any other foods mentioned that were not pre-listed in blank rows at the end of the list. Once the discussion is exhausted, the facilitator asks about any pre-listed foods that were not mentioned to verify if they are not commonly consumed or if they were just missed. For each food item listed, the facilitator then asks participants to note any common variations of that dish derived from the vendor type. Finally, participants are asked whether this food item is also commonly made at home and, if so, if it is generally prepared in a similar way or different way to the way it is typically prepared by the food vendor. This will help to later determine whether separate standard recipes might be needed for that dish for home preparations and food vendor preparations.

Once completing the listing for one vendor type, the facilitator moves on to the next type or category assigned for that session.

11 During the field-testing in Nairobi, we asked the respondents to openly list nutritionally relevant variations for each food type. However, this open-ended approach resulted in the listing of many product variations that we do not consider to be nutritionally relevant (e.g., different flavors or minor differences). As this is a more technical distinction, we advise that the pre-listed nutritionally relevant variations are read, and respondents reach consensus only on those.

4.2.4 FGD data capture and management

Appropriate data capture screens and output formats will need to be developed to manage the FGD data and output files[12]. If data were captured electronically during the FGD sessions, this would be developed during the preparations phase. If recording was done on paper, only data that have been recorded on the data collection sheets are entered, ideally either the same day or the next day after data collection. It is recommended that the recorders be responsible for data capture and the facilitator review the information to ensure it reflects the discussions accurately. If audio recordings are used, these should be listened to systematically during data capture, or data review, to ensure all relevant details have been captured and information is accurate. Audio recordings should not be transcribed.

The outputs can be exported to spreadsheets for review and use in identifying appropriate food composition and standard recipe data (Task 4) and preparing for the market survey (Task 5). Examples of the outputs are highlighted in Annex 12.

4.3 Outcomes

4.3.1 Processed packaged foods

The main outcomes to identify commonly consumed processed packaged foods that should be considered in data collection tools for a future dietary intake survey and further review in a market survey, are:

- The median likelihood scores, calculated across FGDs from all defined demographic/geographic groups: After reviewing the medians for all foods, an arbitrary threshold can be set above which foods would be considered as likely to be consumed. In the study in Nairobi, Kenya, the threshold chosen was ≥three out of ten. The basis for choosing a cutoff may be a practical one, including the number of foods for which market survey data or identification of (existing) food composition table data could reasonably be collected/managed with the time and resources available. In addition to using an overall median, foods with high ratings in any one demographic group could be considered for inclusion, resources permitting.
- The common nutritionally relevant variations mentioned for each specific food type across the FGDs: The number of FGDs in which a variation is mentioned can be summed up and recorded as a new variable. An arbitrary threshold can be selected, above which the variations are considered to be 'common' and reviewed for inclusion in a standard recipe database.
- A clear listing of all processed packaged food items and their variations: The responses from the FGDs on the common product variations need to be converted into distinct product types. For example, yoghurt variations might be listed as whole or fat-reduced, plain or sweetened, flavored or with added fruit. The specific products to be listed separately may then include yoghurt, whole, plain, unsweetened; yoghurt, fat-reduced, plain and unsweetened; yogurt, whole, sweetened, flavored; yogurt, fat-reduced, sweetened, flavored; yoghurt, whole, sweetened, fruit-filled. If the actual combinations available for sale are not clear, they may be included in a market survey to clarify this.

12 Sample software is not available at this time. Adequate software that considers the format of the input data and desired output will improve the efficiency of data management and would ideally be developed to support this activity.

4.3.2 Vendor-prepared foods

The main outcomes to identify commonly consumed vendor-prepared foods that should be considered in data collection tools and compilation of standard recipes for a future dietary intake survey are:

- The median likelihood score calculated across all FGDs for the number of individuals likely to frequent different vendor types. In the study in Nairobi, Kenya, an arbitrary cut-off of ≥two out of ten was applied. This can be modified for practical reasons, based on the total number of different vendors and foods that would be considered common, and for which resources would be available to consider compilation or collection of standard recipe data for use in a future dietary intake survey.
- The number of FGDs in which a prepared food or variation was noted: For each vendor type above the threshold, the menu items are listed and their variations are reviewed. Each distinct variation can be listed on a separate line of data (if not already formatted that way). The number of times a food item and any variation were mentioned can be summed up and recorded as a new variable.
- A clear listing of the common prepared food items and variations, by vendor type: The responses from the FGDs on prepared food variations need to be converted from 'characteristics' to clearly noted specific food types. For example, rice dish variations might include vegetables, chicken, egg fried, etc. An entry for each type should be articulated and listed as separate prepared food items: Rice dish, with vegetables; rice dish with chicken; rice dish with chicken and vegetables; rice dish, egg fried rice, etc.

5. Task 4:

Identification of existing food composition or standard recipe data

5.1 Introduction and purpose

Once all specific types and variations of processed packaged and vendor-prepared foods above the established thresholds for commonly consumed foods are identified, the next step is to begin to determine for which foods either food composition data (food items) or standard recipe data (mixed dishes) are available in existing sources. In addition, requirements for food composition data for ingredients of the selected multi-ingredient vendor-prepared foods can be listed once the standard recipe data for those are identified.

This task is focused only on foods that are considered to be among those more commonly consumed, as defined using thresholds established in the outputs of Task 3.

The purposes of this step are to:

i. identify those commonly consumed foods whose food composition and/or standard recipe is already known and no further information is required, and to note the information source for later compilation; and

ii. identify commonly consumed foods for which more information is needed to define the food composition or recipe data that are required. The latter foods may either require additional information derived from a market survey, or standard recipe data collection. The latter should also include foods that are likely to be fortified, as noted in the expert consultation process.

It is important to emphasize that the food composition and standard recipe data do not need to be compiled into local databases at this stage; the detailed methods to do so are beyond the scope of this guide. At this stage, the availability and sources of these data should be clearly noted. This will allow for better planning and budgeting for future survey preparation activities. This applies to compiling databases with the existing data identified, modifying existing data for local relevance, and to note and prioritize the future compilation of information where existing food composition and standard recipe data have not been identified for foods that are likely to be reported in a future dietary intake survey.

Conducting a market survey is described in the section that follows, while the collection of standard recipe data are beyond the scope of this guide. Prepared foods for which standard recipe data would be useful can be listed and prioritized for consideration for future data collection.

Ideally, the technical team will include at least one person who is trained in the use and compilation of food composition and standard recipe data, and would be responsible for managing these aspects in a future dietary survey.

5.2 Methods

5.2.1 Identifying existing, suitable food composition data

Foods for which food composition data need to be identified will include all or nearly all processed packaged foods, and vendor-prepared foods that do not require recipes, such as many baked products (e.g., bread, buns, cakes) or other common food items (e.g., oil-fried chips, milk tea, etc.), as well as ingredients in standard recipes for multi-ingredient vendor-prepared foods.

Many existing food composition databases do not have extensive listings for foods and are particularly deficient in processed packaged foods. However, some of the more extensive food composition databases from industrialized countries have data available for a relatively large selection of processed foods and at present, these represent the most reliable source of data for these foods. Examples that were consulted for the study in Nairobi, Kenya were The Kenya Food Composition Tables 2018 (FAO/Government of Kenya, 2018)[13]; the United States Department of Agriculture (USDA) National Nutrient Database (Standard Release, 2018)[14] and the more recent and extensive Food Data Central[15]; the United Kingdom's McCance and Widdowson's composition of foods integrated dataset[16]; the Australian food Composition Database[17]; and France's ANSES/Ciqual Food Composition Table[18]. These sources are all freely available and accessible online. An inventory of available food composition tables is compiled by the International Network of Food Data Systems (INFOODS)[19].

The process is simply to review descriptions of the commonly consumed foods short-listed from the FGDs and identify the closest matches available. This process should always start with locally compiled food composition data sources (if assumed to be reliable), and then move to others if entries for required foods are lacking. In most cases, the matching is only done using the descriptive names provided. Some knowledge of foods and food names used in other countries is needed to correctly decipher food names. For example, 'biscuits' often refers to thin, dry (unleavened) and sweetened baked wheat flour-based items, whereas in the US, biscuits commonly refer to fresh baked, leavened wheat flour-based items. Another caution in adopting data from other sources is with regard to added fortificants. For some foods, added fortificants are indicated in the food name, but for universally fortified food items this may not be clear, and policies will need to be known. Working to adapt existing food composition data is beyond the scope of this guide, but these points are important to be aware of when reviewing possible matching sources.

It is important to recognize that not all food product variations will have suitable matches available. In most cases, a more basic item or other closest match may be used to represent a range of variations. For example, packaged doughnuts may have variations that include sugar coating, chocolate icing, other flavored icings, sprinkles or jam/jelly-based toppings. However, existing food composition data are only available for plain or sugar-coated doughnuts (combined), or chocolate-coated doughnuts. Knowledge of the level of detail available in food composition data will become important when compiling food composition data for use in a survey and when compiling prompt lists which indicate to enumerators what level of detail should be collected for foods during a 24-HR interview.

13 FAO/Government of Kenya. 2018. Kenya Food Composition Tables. Nairobi, 254 pp. Available for download in PDF format from: http://www.fao.org/3/I8897EN/i8897en.pdf

14 Available for download from: https://fdc.nal.usda.gov/download-datasets.html.

15 Available online or for download from: https://fdc.nal.usda.gov/

16 Available for download from: https://www.gov.uk/government/publications/composition-of-foods-integrated-dataset-cofid

17 Available online or for download from: http://www.foodstandards.gov.au/science/monitoringnutrients/afcd/pages/default.aspx

18 Available online or for download from: https://ciqual.anses.fr/

19 http://www.fao.org/infoods/infoods/tables-and-databases/europe/en/

If there is confidence in identifying clear matches for processed packaged food products, then the source and source food code and food name/description can be noted for future compilation. However, there may be some foods where additional information or verification is required from actual products available in the marketplace. This may occur if:

- The actual combination of variations available in the market is not clear. For example, loaf bread may have variations that include white/refined or whole wheat flour and sweetened with dried fruits added. Review of products in the market would clarify whether available loaf bread that is sweetened with dried fruits added is generally only made with white/refined wheat flour and not whole wheat flour. In this case, food composition data would not be required for the latter combination;
- Foods were flagged as likely to be fortified and brand information would be necessary to ensure distinct versions of the food type are available in a food composition table;
- Brand name distinction is likely to be useful for any other reason, such as if certain brands of products are known to be nutritionally distinct and survey respondents are more likely to be able to recall brand names rather than specific content or ingredients needed to distinguish them; and
- The nature of the products and their variations is generally not clear; in which case a review of ingredients and nutrition label information would help to define the product more clearly.

In these cases, these food types and each variation in question should be marked for inclusion in a market survey (Task 5).

5.2.2 Identifying existing, suitable standard recipe data for vendor-prepared mixed dishes

For the most part, vendor-prepared mixed dishes will be considered here, although in some cases, processed packaged foods that are in ready-to-eat or ready-to-warm form may also be considered if food composition data are not available and disaggregation of ingredients is preferred. The sources of existing standard recipe data for prepared mixed dishes that are locally relevant may be limited. In some countries, documents with standard recipes have been compiled, or researchers who have conducted previous dietary survey work may have some data available. To be useful, these data should be derived using adequate methods and samples, and contain: A listing of each ingredient and its state; the amount of ingredient added; preparation methods; and the total cooked amount (from which proportions of ingredients per 100 g or milliliters cooked weight or volume can be calculated). These should be reviewed for each prepared food variation listed.

If standard recipe data are available for a basic form of the food item but not for a variation, a prioritization process may be implemented. For example, if variations are relatively minor and not likely to have a large impact on overall estimates of nutrient intake, then the standard recipe for the basic version may be applied to variations without further data collection. Likewise, if the variation is considered to be less frequently consumed, the basic recipe may be an adequate substitute. However, more nutritionally significant variations for more commonly consumed prepared food variations may be prioritized for standard recipe data collection in the future.

Each food should be coded with any decisions, and any identified standard recipe data should have the source listed, and the associated code and name from the source so recipe data can be easily identified at a later date.

5.3 Outcomes

The main outcomes from this intermediary process are:

For processed packaged foods and vendor-prepared foods, a clear listing of commonly consumed specific food types and product variants for which:

- Existing matching or closely matching food composition data are available. The source, and the food code and name used by the source should be recorded once identified;
- more clarity on food product composition and combinations of characteristics available on the market are needed from a market survey to better define what food composition data would be most appropriate; and
- adequately matching food composition or standard recipe data has not been identified. These should be prioritized for collection of primary data on food or ingredient (recipe) composition. This may be done through direct chemical analysis of samples of these foods or a process to reconstruct the ingredients or component parts of the food to define it as a recipe. In the case of vendor-prepared mixed dishes, this would more commonly be acquired through a standard recipe data collection process. Describing the latter data collection processes is beyond the scope of this guide.

The most appropriate outcome for each specific food type and variation listed should be captured alongside the output databases derived from the FGDs using additional columns/variables, and be used to guide the next steps. Example outputs from this step are combined with the FGD outputs given in Annex 12.

6. Task 5:

Market survey - collecting additional details on packaged and prepared food variations, ingredients and nutrient content

6.1 Introduction and purpose

A market survey is conducted to identify and describe selected, commonly consumed, processed packaged and vendor-prepared foods, with a focus on those for which more information on the content and available variations of the specific food type are needed to properly define them. This information will be used to determine whether existing matching or close-matching food composition or standard recipe data can be identified or whether best possible substitutes would suffice (e.g., for relatively less common or nutritionally less important foods) or whether they should be prioritized for future primary collection of food composition data either in the form of chemical analysis of samples, or collection or estimation of recipe data from ingredients or component parts.

For processed packaged foods, the market survey may include the collection of product/brand name and manufacturer data, ingredients list and nutrition label information (i.e., serving size and nutrient content). For vendor-prepared foods, the market survey may collect information on common ingredients or preparation methods sufficient to provide a clear definition of those foods.

6.2 Methods

6.2.1 Sampling methods

Once the foods for which market survey data should be obtained are listed, sampling procedures for retail outlets or food vendors to identify those products need to be defined. Suggested sampling procedures are outlined below.

Food retail outlets for processed packaged foods

The first step in defining sampling methods is to define the different categories of retail outlets where packaged foods are commonly purchased by the target and demographic/geographic groups of interest. For example, the types of retail outlets frequented may be quite different between low and high SES groups or from one geographical location in an urban center to another. Retail outlets are often quite varied and range from large supermarket/department stores to small, mobile or informal vendors and street side kiosks.

Sampling of retail outlet should not be done in a statistically representative way. A purposive sampling approach is sufficient to identify the existing range of the selected, specific food types and their nutritionally relevant variations available for sale to better define their contents. For convenience, the sample of food retail outlets may be drawn from within the same locations that were selected for the FGDs. The sampling process begins in the largest retail outlets (i.e., supermarkets), and proceeds to the smaller ones. Once data for a packaged food product are obtained from one outlet, it is not necessary to collect data for the same product (brand) again if it appears in a smaller outlet type. An example of different retail outlet categories, definitions, and sampling procedures derived for Nairobi, Kenya are summarized in Table 2.

The number of retail outlets to sample for each category may not need to be large. In Nairobi, we sampled three different supermarket chains. Although somewhat subjective, additional useful information would not have been obtained by including more. Then, in the minimarts, it was clear that few products appeared that had not already been captured in the supermarkets, as generally a subset of the brands/variations encountered in supermarkets, often in smaller package sizes, were found. The time spent by the technical team in each of the six minimarts was limited. If time and resources for this task are limiting, the inclusion of minimarts could be eliminated. Street vendors were not included in the sampling as it was considered highly unlikely that different food products would be sold by street vendors than are sold in larger retail outlets and would unlikely yield any new information not encountered in the larger vendor types. It was also found that virtually all food products identified in the survey were found in the large supermarkets and minimarts, and small shops/kiosks need only be included if they are believed to sell unique products not found in larger retail outlets.

Food vendors and vendor-prepared foods

The selection of food vendors to sample may be drawn from the list of specific vendors mentioned and recorded during the FGDs. If product definition is the only intention, the number of samples to collect information for may vary depending on how diverse recipes and product contents are. For relatively standard prepared food items, a sample of four to six may be adequate to characterize the prepared food item, while for more foods that have a greater diversity, six to ten or more may be more helpful. If the same prepared food types were noted as being consumed from different vendor types, ensure that each vendor type is represented in the sampling protocol.

If actual recipe data (ingredients, ingredient amounts, preparation methods and total yield amounts) are being collected (not covered by this guide), a different sampling process may be required. At this stage, a general characterization of prepared foods is sought, which may be helpful to inform the design and sampling needs of any future standard recipe data collection.

6.2.3 Preparation and training

One or more individuals should be trained in the sampling methods and appropriate sensitization of retail outlet managers prior to the enumerator visits. Appropriate sensitization, such as making personal visits to explain the purpose and nature of the work; providing local permission letters for the study; and requesting preferred times (e.g., off-peak or after hours). Also, approaches for data collection to minimize disruption to business (e.g., working in the aisles or taking product samples to a back room) are important to ensure store managers and staff are informed and comfortable with in-store data collection by enumerators.

Two or more teams of two enumerators each should be trained in the sampling and data collection methods, depending on the number of foods to cover. The training focused on the sampling methods to apply, reviewing what information to collect, how to use the data collection forms, how to take quality photographs, the derivation and use of codes to properly identify foods in the photos, managing photo files, and how to record and enter the data. A pilot study with selected products in a supermarket should be conducted. For the vendor-prepared foods, enumerators practice interviewing chefs at local vendors to obtain ingredient information for recipes.

The final lists of processed packaged and vendor-prepared foods included in the survey should be formatted and printed, and food categories divided amongst the teams.

Table 2: Example sampling for retail food outlets by category in a market survey of processed packaged foods

Retail outlet type	Outlet description	Sample number	Sample selection process
Supermarket	Major supermarkets located in main shopping centers or malls.	Two to four	Supermarkets within each major sampling area used in the FGDs are purposively chosen. The sample may consider both national/regional supermarkets and international chain markets, to ensure the greatest diversity of products and brands are encountered.
Minimarts	Smaller retail supermarkets serving immediate neighborhoods where shoppers 'pick-and-pay' (i.e., shop on your own and pay at a checkout counter).	Six (or one for each intermediate sampling area in the FGDs)	A listing of all minimarts in each intermediate sampling area can be compiled through review with local informants and visits. From this list, one may be randomly sampled.
Local retail shops or kiosks[a]	Small shops serving particular neighborhoods, where items are purchased over the counter, including make-shift kiosks.	12 (two for each intermediate sampling area in the FGDs)	Prelisted estates/ neighborhoods can be randomly sampled from each intermediate sampling area used in the FGDs. A central starting point is selected (i.e., a local landmark) and a method to randomly select a sampling direction and sampling interval for shops/kiosks encountered can be used.

[a] *Inclusion of these smaller shops/kiosks are optional depending on the expected likelihood of encountering products different from those found in the large retail outlets.*

6.2.4 Data collection

Processed packaged foods

To appropriately characterize foods, key information to collect includes package information on:

- Brand and product name;
- Manufacturer name, location;
- Any additional information that indicates the product variation;
- Ingredients list; and
- Nutrition label information, including energy and nutrient content and the associated serving size (i.e., denominator for that content).

This information could be collected directly using paper forms or computer-assisted data entry with one enumerator reading out loud and the other typing it in. However, if data for a large number of products is required, it is recommended to capture this information photographically using a simple device (e.g., smart phone) and transcribing it to electronic format later. After completing data collection in one retail outlet, the log sheets with basic information on the products identified should be carried to all subsequent outlets. If the same products are found, no additional information need be collected. Only new products of the same type will be added to the list.

To manage the data adequately, coding systems will need to be developed to distinguish: (i) food categories and subcategories; (ii) specific food type; (iii) each distinct product (brand/variation, etc.). If photographs are used, a label can be produced and included in all photos for the same item so that all information for each product reviewed is accurately identified.

Suggested steps in data collection and use of photographs are given in Annex 13. Data collection/entry formats are given in Annex 14.

Vendor-prepared foods

To adequately characterize vendor-prepared foods and prepare for possible standard recipe data collection in the future, ingredient and relevant information can be collected. Enumerators will carry lists of the specific food types and variations for which data are to be collected, indicating the vendor type(s) from which data should be collected for each food type, and an estimate of, or a minimum number of samples to collect from each (example format given in Annex 14). In brief, enumerators can interview chefs or managers about all the ingredients and preparation methods for the selected dishes. The information is recorded on data sheets and, if a sample of the food item is available, a photograph can be taken. Additional details on this method are included in Annex 13.

6.2.5 Data capture and data processing

Data capture screens for the various survey components must be produced using appropriate software (adequate software is not available at this time). Any data from handwritten data sheets (packaged food log sheets or ingredient information) can be captured directly, and data extracted from photos of packaged food product labels are captured by having one person reading the information out loud and another person typing it into the data capture screen. All data can be exported to spreadsheet format for further processing, formatting and review.

For nutrition label information, energy and nutrient data can be recalculated as needed to be expressed as content per 100 g or 100 ml so that direct comparisons can be made across all products.

6.2.6 Data review and use

Processed packaged foods

The review and use of market survey data for processed packaged foods can be somewhat involved. Ultimately, the expectation is that this further clarifying information can be used to:

- Produce a clearer list of the combinations of common variations that occur in single products, allowing for identification of the closest match from existing food composition data;
- Identify specific brands or product types that are fortified, with which nutrients, and at what level;
- Identify the composition of foods for which brand-name distinction would be helpful for reasons other than fortification; and
- Provide a better description of processed packaged foods with regards to their nature and composition to enable the selection of closest-match entries from existing food composition data.

Depending on the reasons for collecting product label information (as listed above), different emphasis may be put on different types of information. In general, as in most cases, the aim is to identify suitable existing food composition data (or clearly describe for which common food products food composition data would be compiled from primary or secondary sources in the future) all data available should be considered holistically. Some examples are given in Table 3.

Table 3: Guide for the compilation and use of food label information derived from a market survey of processed packaged foods

To identify combinations of common variations that are available:	Emphasis will be placed on the product names/descriptions and list of ingredients to define the key characteristics of the product for which food composition data may ideally represent.
To identify brands or product types that are or are not fortified:	Emphasis will be placed on the list of ingredients (as fortificants should be included), nutrient content information to indicate amounts of additional + natural source nutrient, any other label information indicating that specific nutrients have been added to the product, and the brand names.
To identify brands that should be distinguished based on having very particular content:	Emphasis will be placed on the list of ingredients and brand names.
To better describe the nature and content of foods that are not well known:	Emphasis will be placed on the list of ingredients, product names/description, and energy/nutrient content.

Once the processed packaged food products are clear with regard to content and variations, proceed to review and identify the closest match from existing food composition databases using the process and precautions described above in Task 4. Keep in mind, once again, that food composition data may not be available for all variations identified in which case the closest matches are identified. It is recommended to document the information reviewed and summarized from the market data, including the options for food composition data identified (see Annex 15 for example documentation). This information will be useful during the future process of compiling food composition data databases for these foods. In cases where existing food composition data includes fortificants but the local products do not (and data for non-fortified versions are not available), this should be noted for imputation during the database compilation stage.

If foods do not have any suitable close match available, and the likelihood of appearing in diets is very high, these should be flagged for future primary data collection (i.e., collection of samples and direct analysis of energy and nutrient content), or secondary data collection (i.e., an estimation of the ingredient amounts and calculation of energy and nutrient content based on ingredient amounts and processing methods as undertaken for recipes).

Vendor-prepared foods

As the main purpose for collecting additional information on vendor-prepared foods at this stage is to clarify its nature and typical ingredients, the review and summary of data collected in the market survey is relatively straight forward. The list of ingredients can be compared across all samples for each food type. This can be summarized by listing all ingredients from all samples and provide a count for the number of times each ingredient occurred. This will help distinguish the critical or common ingredients, and the ingredients that may be considered optional.

Another approach is to identify the key nutritionally relevant variations in foods of the same or similar type for construction of modified sets of standard recipes, based on those components. For example, where hamburgers are commonly consumed vendor-prepared foods but for which many variations exist, this stage could be used to determine the main types of hamburgers consumed, such as the number and type of patties (e.g., ground beef, ground chicken, fish, or vegetable/legume-based); bread type (e.g., white or whole wheat bun,); and additional significant ingredients (e.g., vegetables such as lettuce, tomato, pickles). A similar approach may be taken for other common items with many variations such as sandwiches or pizzas. Further experience will be needed to describe how these items and adequately representative standard recipe data can be constructed.

This summary may help to more accurately identify existing standard recipe data or will more likely help to inform any future standard recipe data collection. The degree of variation in ingredients across samples will also help to inform the number of samples that should be collected to define an adequate average standard recipe (i.e., if greater variation exists, then recipe data from a larger number of samples may be required).

6.3 Outcomes

The primary outcomes of the market survey are:

Processed packaged foods:

- A database of available processed packaged food products where additional information was required, including all identifier information, unique product or ‘photo’ codes, ingredients and nutrition label information.
- A file of product label photos for archival purposes or later reference.
- A clear list of additional processed packaged foods items and variations with closest-match food composition data from existing sources. For foods where no adequate close match is identified, an indication that these foods should be considered in the future for primary (i.e., direct analysis) or secondary (i.e., derived from secondary sources or estimated) food composition data compilation. For these foods, users could choose to leave the final compilation of food composition data until after a future survey reveals whether they are reported as consumed or not.

Vendor-prepared foods:

- A database containing identifier information for each sample was used to collect a list of ingredients, and any relevant preparation information.
- A file of food photos for future reference.
- A clear list of adequately described prepared mixed dish food items, including the frequency of ingredients listed, for which standard recipe data should be compiled in the future.

7. Task 6:

Developing output materials for use in a 24-HR survey

Three main outputs are derived from the urban food listing activities that are used to directly support a large-scale 24-HR survey. These are: (i) Food composition table entries; (ii) standard recipe list; (iii) an enumerator prompt list for use during interviews.

7.1 Food composition table entries

A list of entries for processed packaged or vendor-prepared foods for inclusion in an expanded food composition database for use in the survey is generated. This list or database should include a clearly defined name for the food item which reflects any key variations that are to be represented by the food composition data selection, the specific source of those data, and its unique code and name used in the source. This list would then be provided to the person designated to manage the food composition data for the future dietary intake survey for compilation of the data, and any adjustments or imputations that might be needed, in the future.

7.2 Standard recipe list

A list of vendor-prepared mixed dishes whose standard recipes are available or desired in future data collection should be compiled. For dishes whose existing standard recipe data has been identified, these should be listed with appropriate descriptive names, the source from which data was identified, and the source name and code for the dish. This list would be provided to a person in charge of compiling recipe databases for use in processing food intake data from a dietary survey.

This should include an auxiliary list of vendor-prepared mixed dishes whose existing standard recipe data was not identified but would be desired to collect. Ideally, these would be prioritized for primary data collection based on the relative likelihood of them occurring in a survey. This auxiliary list will be helpful to those involved in planning and budgeting for the survey, particularly during the preparation phases. Detailed information on how to collect standard recipe data are available elsewhere.

7.3 Prompt list for probing relevant food details

A prompt list to be used by enumerators to elicit details on food items or vendor-prepared mixed dishes consumed is generated from this information. This is to enable the linking of foods reported as consumed to the closest matching food composition or recipe data available. The prompt will clearly define to enumerators which details are required during an interview about different foods reported to be consumed. These details are listed in tables and carried by enumerators as a reference.

There are different approaches to collecting details on foods that have different implications. One approach is to focus primarily on food details where food composition data exists. For example, if there is no food composition data available that distinguishes between loaf bread that has sesame seeds on top or not, enumerators are not asked to determine whether the bread consumed by a respondent had sesame seeds on it. Others may prefer to collect all possible details about the food item, regardless of whether food composition data are available to distinguish them or not, and the closest matching data can be identified at the time of data entry. The guidance presented here refers to the first approach, which limits the details collected in an interview.

An example for a prompt list format is given in Table 4. The prompts outline a list of questions or details identified for that particular food type. They are derived from a combined consideration of the details on food product types and common variations short-listed from the FGDs, and variations that are available in existing food composition (or likely to be compiled in the future). Suggested prompts will be used by those involved in developing survey methods and training materials for enumerators, and ultimately will be combined with prompts for non-processed/non-packaged or home-prepared food items.

Table 4: Example excerpt from a prompt list for processed packaged and vendor-prepared foods or dishes

Food Group 07. Meats, Poultry and Eggs	
FOOD ITEMS	
Fresh meats	
Beef	Boiled or roasted?
Chicken	Boiled, fried or roasted?
Sausage or smokies	Beef or chicken or pork?
Processed meats	
Cured meats	Type: Ham (pork or chicken?), polony, salami or other?

Food Group 07. Meats, Poultry and Eggs	
Eggs	
Eggs, chicken	Boiled or fried?
Meat substitutes	
Soy	Type: Sossi Soya Chunks or another brand?
DISHES*	
Meat and poultry dishes*	
Beef stew	Beef stewed w/vegetables?
Chicken salad	Chicken w/vegetables (any type) - no probes
Meatballs	Plain or with sauce? Sauce type: Tomato or gravy?
Meat, dry fried	Meat type: Beef or pork or chicken? Plain or with vegetables?
Pies/pasties	Filling type: Beef or chicken or pork?
Egg dishes	
Omelet	Contains: vegetables or not? Contains: cheese or not? Contains: meat or not?

8. Limitations and recommendations for next steps

There are several limitations to the guidance provided here, and subsequent recommendations for next steps in the refinement of tasks presented here for the urban food listing activity.

- Limited experience: This guide is based on limited experience in conducting food listing activities for urban centers. The tasks were adapted and expanded from some experience derived from food listing activities in rural areas (data collected by GAIN). Based on key informant interviews prior to developing the initial protocol for field testing and feasibility assessment in Nairobi, Kenya; very limited formal experience has been documented for this type of data collection. The information in this guide was derived from the protocols tested in Nairobi and recommendations for modifications derived from the lessons learned from that work.

  There is an implicit need for further experience in applying these tasks in other locations, and for testing alternative methods. Efforts to simplify or streamline the data collection and processing methods would be helpful. This guide should therefore be viewed as a starting point for urban food listing activities.

- Data capture formats: One important technical limitation in terms of providing tools for future application of these tasks is the lack of well-designed data capture formats in data management software. Ideally, these would be developed using common or freely available software platforms (e.g., CSPro) in a way that others could adapt them to their specific needs.

- Adapting urban food listing data for other locations: As the tasks used here are still relatively intensive and resources for preparing for and conducting dietary intake surveys are often limited, it would be useful to determine if and how urban food listing data derived from one country could be adapted for use in another country with access to similar processed foods. Experience with the development and field testing of the process of adaptation to different contexts would be useful. Ideally, the outputs produced from urban food listing activities in different locations would be made available for others to model or adapt.

- There is further need to define methods for collecting and summarizing standard recipe data for vendor-prepared foods, including how to sample and work with vendors to obtain recipe information, and how to generalize across different recipes and portion sizes for similar food items.

9. References

Coates J, Colaiezzi B, Fiedler JL, Wirth J, Lividini K, Rogers B. A program needs-driven approach to selecting dietary assessment methods for decision-making in food fortification programs. Food Nutr Bull 33 (Suppl 3): S146-S156; 2012.

Dunford E, Webster J, Blanco Metzler A, Czernichow S, Ni Mhurchu C, Wolmarans P, Snowdon W, et al. International collaborative project to compare and monitor the nutritional composition of processed foods. Eur J Cardiovascular Prevention & Rehabilitation 19: 1326-1332; 2012.

FAO and FHI 360. Minimum Dietary Diversity for Women: A Guide for Measurement. Rome: FAO; 2016.

FAO/Government of Kenya. Kenyan Food Recipes. A recipe book of common mixed dishes with nutrient value. Nairobi: FAO; 2018a. Accessed at: http://www.fao.org/3/I8897EN/I8897en.pdf

FAO/Government of Kenya. 2018. Kenya Food Composition Tables. Nairobi: FAO; 2018b. http://www.fao.org/3/I9120EN/i9120en.pdf

Monteiro CA, Cannon G, Levy R, Moubarac J-C, Jaime P, Martins AP, Canella D, Louzada M, Parra D, Ricardo C, Calixto G, Machado P, Martins C, Martinez E, Baraldi L, Garzillo J, Sattamini I. Nova. The star shines bright. [Food classification. Public Health] World Nutrition 7: 28-38; 2016.

Moursi M, Vossenaar M, Arimond M, Hotz C, and Deitchler M.. *Facilitated Group Discussions for Dietary Pre-Survey Work in Low- and Middle-Income Countries: Guidance for the Design, Implementation, and Use of the Data Collected.* Washington, DC: *Intake* - Center for Dietary Assessment/FHI Solutions; 2020.

Neal B, Sacks G, Swinburn B, Vandevijvere S, Dunford E, Snowdon W, Webster J, et al. Monitoring the levels of important nutrients in the food supply. Obesity Reviews 14(Suppl 1): 49-58; 2013.

Slimani N, Deharveng G, Soutgate DAT, et al. Contribution of highly industrially processed foods to the nutrient intakes and patterns of middle-aged populations in the European Prospective Investigation into Cancer and Nutrition study. Eur J Clin Nutr 63: S206-S225; 2009.

Tschirley D, Reardon T, Dolislager M, Snyder J. The rise of a middle class in East and Southern Africa: Implications for food system transformation. Journal of International Development; 27: 6328-646; 2015.

Annex 1.

Example of a step-by-step process for conducting an expert consultation workshop for food listing of processed packaged and vendor-prepared foods

1. Processed packaged foods

For each processed packaged food category, Expert Consultation workshop groups are asked to work through the categories assigned to them following the steps outlined below. It is emphasized that we are not looking for a complete listing of all processed packaged foods available in the market. Instead, we are focusing more on the processed packaged foods that are more commonly consumed and of nutritional importance in the population at large, particularly in urban areas. Provide the following information in the electronic version of the spreadsheet provided, assigning one group member as the recorder.

Step 1. Review each processed food category and sub-category listed, and add, subtract or revise categories/sub-categories, as relevant to this population.

- Starting with the first food group assigned to your group, review each processed food category and sub-category listed. Make sure there is a clear understanding of the types of food products that are being referred to by the category and sub-category names.
- If any of these are not at all relevant to the local context, they may be deleted. If relevant categories are missing, they may be added and defined.
- If others could be clarified by revising the names so they reflect the local context and the way people understand and refer to these foods, these can be revised accordingly.
- When reviewing these lists, consider food sub-categories that might be common among different socioeconomic status (SES) groups (some might be consumed more commonly by low SES groups and some by high SES groups) and among different major ethnic groups.
- For each processed food category, complete the following steps before moving on to the next category. Once completing all the food categories in a food group, you may move on to start the next food category assigned.

Step 2. Provide a qualitative, expert assessment on the relative likelihood of each specific food type being consumed by the target group (e.g., adult women aged 18-49 years).

- The relative frequency of consuming foods in each processed food sub-category will be assessed by selecting one of the categories in the following table. The group will need to arrive at a consensus on the most appropriate ranking category. Put the consensus category in the column ‘Likelihood of consumption’.

Categorization for the likelihood of consumption of foods

Code	Category	Description
1	Very common	Many people eat these very often or almost daily
2	Common	Regularly consumed by many people (e.g., once weekly)
3	Less common	These are consumed but less commonly. Some groups might consume these foods but not others.
4	Not common or rare	Sometimes consumed by some groups but very isolated or very occasional

Step 3. For each specific food type noted, identify the nutritionally relevant characteristics that should be distinguished, and list the most common ones likely to be consumed.

Use the definition of 'nutritionally relevant variations' provided (above). Think about characteristics that would be important to distinguish in a dietary survey and for which food composition data could be reasonably available or determined (from any source). List these in the column for '*Nutritionally relevant characteristics*'.

Examples of processed food variations to consider:

- Full fat or fat-reduced
- Sodium-reduced (if sodium is to be included in the future dietary assessment survey)
- Sugar added, no sugar or artificial sweeteners added (i.e., 'lite', or 'diet' products)
- Plain or enhanced with nutritionally significant ingredients (i.e., artificial flavors or flavorings likely to be derived from small quantities of natural ingredients, seasonings, etc, do not need to be considered)
- Oil-fried or cooked without oil (baked, boiled, roasted)
- Type of filling or main ingredient (e.g., vegetable, beef, chicken, legume, cheese, egg, fruit)
- Type of sauce (e.g., cream, broth, tomato, beef gravy)
- Leavened or flat bread type (white vs. whole wheat vs. multigrain)
- Plain or covered with chocolate, icing or other spread (if likely to be >15 g per serving).

All possible variants of a processed packaged food type could not feasibly be accounted for in a dietary survey or in a food composition table. In particular, differences in components such as different types of artificial or natural flavor, spices added, and inclusion/exclusion of other relatively minor or low energy/nutrient density ingredients would unlikely be distinguished by food composition data, and hence do not need to be specified here. To help identify the most common variations likely to be consumed, please list these in the additional column for '*Nutritionally relevant variations*'.

Step 4. Identify any foods that may be fortified

While mass-fortified foods will be easily identified, there may be several or many voluntarily fortified foods available in the marketplace. Some examples include nutrient fortified biscuits, milk powder, malted beverage powders and bouillon cubes. If these are commonly consumed foods, it may be important to distinguish brands in a future dietary survey to ensure these are linked to appropriate food composition data.

If fortified versions of commonly consumed products are known, please indicate 'yes' in the column for '*Fortified versions available?*'.

2. Vendor-prepared foods

For prepared, ready-to-eat foods purchased outside the home, these will be reviewed according to the food vendor type, of which three main categories are defined: 'Full-service restaurants', 'Fast food restaurants' and 'Local informal or other food vendors'. Within each of these three main categories, several sub-categories have also been defined:

Full-service restaurants and cafeterias: All sit-down eating facilities that are generally housed in permanent facilities with full kitchens and table service. The sub-categories defined for use in Kenya were local full-service restaurants (serving traditional or local food menu items), African continental full-service restaurants, Inter-continental full-service restaurants, cafeterias (workplace or institutional), and kiosks (vibanda) that are permanent or semi-permanent local restaurants serving meals at limited times with sit-down service available.

Fast food restaurants: Restaurants specializing in fast food menu items. They typically have full kitchen facilities and are housed in permanent structures in stand-alone buildings or in other buildings and shopping mall food courts. They generally do not have table service and serve foods and beverages from a limited set of rapidly prepared meals. The sub-categories included foreign global chains, regional (African) chains, local (Kenyan) fast food chains and independent fast food restaurants.

Other/Informal food vendors: This is a broad category of food vendors and generally includes smaller vendors selling local traditional ready-to-eat street foods or fast foods. These vendors include small kiosks (vibandas, low-end type), market or street-side stalls/stands, and mobile street vendors, such as those selling from trolleys, carts, car boots and individual street hawkers. Non-mobile vendors in this category typically use semi-permanent structures or facilities, do not have full kitchen facilities, and often remove their goods after closing service. This category also includes deli counters, such as those in supermarkets or other independent shops selling prepared foods over the counter.

The Expert Consultation workshop groups are asked to work through each Food Vendor Category assigned to them, following the steps outlined below. It is emphasized that we are not looking for a complete listing of all restaurants and possible menu items available from these vendors. This exercise focuses more on those items that are more commonly consumed by the target population (e.g., adult women 18-49 years of age), and are of nutritional importance in the population at large. Provide the following information in the electronic version of the spreadsheet provided, assigning one group member as the recorder.

Step 1. Within each food vendor type category, identify the most common types visited by the target group.

Once again, depending on the target group, it may be important to consider consumers from a range of different SES backgrounds, major ethnic groups and geographic areas. Consider different types of food services that may be used during weekdays, evenings or weekends, and take into account where people go to work, what they do in the evening, where they go at the weekends, etc. The table below is a guide to consider each food vendor type. Use the columns for 'Subcategory' and 'Specific type' to make any necessary additions or modifications.

For the Continental and Intercontinental full-service restaurants, indicate the type of cuisine (and any specific popular restaurants of this type). For any chain restaurants, provide names of the most common ones likely frequented by the target group, whether full service or fast food type (e.g., Nando's, KFC, Burger King). For independent (non-chain) fast food restaurants, consider different types based on the type of food they sell (e.g., burgers, chicken, sandwiches). For the local/informal food vendors, define different types as relevant based on what they sell, how they sell it, what type of facilities are used (e.g., mobile, semi-permanent kiosks), etc. Develop relevant categories for these to the extent that the food they offer is distinct from other vendor types. Also consider delicatessen ('deli') counters, such as those in supermarkets or other locations.

Step 2. Select a category for the likelihood of being frequented.

Within each category or subcategory assigned, rank each restaurant type listed according to the likelihood of being frequented by the target group. The ranking is for target group members that consume food from those vendor types regardless of who purchased it or where it was consumed. Once again, consider the eating habits of food vendors frequented by target individuals of different SES backgrounds, major ethnic groups, and geographic location. Use the ranking categories given below. Record the code in the column, '*Likelihood ranking*'.

Overall categorization for the likelihood of vendor being frequented

Code	Category	Description
1	Very common	Many target group individuals frequent these vendors; very commonly frequented by several groups (e.g., a few or several times per week)
2	Common	Vendors are regularly frequented by the target group individuals (e.g., once weekly)
3	Less common	These are frequented by target group individuals but not others or frequented occasionally by some.
4	Not common or rare	Sometimes frequented by some target group individuals but very isolated or very occasionally.

Step 3. List the most common menu items purchased from different food vendors.

Use separate worksheets for each vendor category. For each food vendor type (subcategory or specific type listed), particularly those categorized as 1, 2, or 3 for likelihood of being frequented, provide a list of the types of food or menu items that are most commonly purchased and consumed by adult women. Indicate individual food items, regardless of whether they are served in combination on a menu. For example, if 'roast chicken, with pilau and kale' is a popular menu item, list each item ('roast chicken', 'pilau', 'kale') separately. Use the column, '*which menu items are commonly consumed?*'

Step 4. For the common prepared food items listed, list the most common variations.

For each of the food or menu items listed in Step 3, list any common and nutritionally relevant variations that should be distinguished and that would allow better estimation of the food and nutrient intake of consumers. Some examples of nutritionally relevant characteristics to consider are listed below. List these variations in the column, '*Most common menu variations*'.

- Type of fillings or main ingredients in mixed dishes, such as sandwiches, burgers, noodle dishes, pasta dishes (e.g., vegetable, beef, chicken, pork, cheese, egg)
- Type of toppings (meat, vegetable, cheese)
- Additional ingredients for special versions of a dish (e.g., plain, with meat or vegetables or cheese added)
- Number of layers, or patties (e.g., double burger, club/three-layer sandwich)
- Bread or wrapper type (white, whole wheat, multigrain)
- Sauces added (e.g., gravy, chili, curry)

Annex 2.

Example of processed food groups, categories, sub-categories and specific food types, as derived from a processed packaged food listing task in Nairobi, Kenya

Food Group	Food Category	Food sub-category	Specific food types
CEREAL FOOD PRODUCTS	Baked products	Bread, leavened	Bagels, bun scones, loaf bread, breadcrumbs
		Flat bread, unleavened, packed	Flat baked breads (Naan, roti, pita bread), pizza base
		Biscuits and cookies	Biscuits, cookies, wafer cookies, crackers
		Cakes and muffins, packed	Cakes, muffins, Queen cakes, cupcakes, scones
		Fried dough products, packed	Doughnuts, soft and hard mandazi, mahamri
		Baked pastry products, packed	Croissants, pasties, pies, tarts
		Processed corn products	Taco shells, tortilla wraps
		Packed Frozen/chilled 'ready-to-cook' pastry products	Packed, 'raw' (ready-to-cook) chapatti, stuffed rolls (e.g., spring rolls), samosas
	Breakfast cereals	Breakfast cereals	Bran, cornflakes, muesli, oats, puffed cereals, quinoa, rice puffs, Weetabix
	Cereal flours	Cereal flours	Composite flours, maize flour, millet flour, sorghum flour, wheat flour
	Pasta	Dry pasta	Macaroni, noodles, spaghetti

Food Group	Food Category	Food sub-category	Specific food types
ROOTS, TUBERS AND PLANTAIN PRODUCTS	Roots, tubers and plantain products	Root/tuber flour	Composite, cassava, sweet potato, plantain
		Frozen roots and tuber products	Potato chips (French fries)
BEVERAGES	Alcoholic beverages	Industrial alcohols	Spirit, beers, wines, liqueurs
		Local alcoholic brews	Distilled, non-distilled
	Non-alcoholic beverages	Carbonated soft drinks	Sodas, energy drinks, sport drinks, water (sparkling)
		Fruit juices	Light juices, high pulp juices, spicy blends, juice blends
		Vegetable juices	Clear vegetable juice, high pulp
		Cordials	Liquid concentrates, ready-to-drink, powder concentrate, edible ices
		Dry beverage powders	Herbal tea, instant beverage mixes (e.g., malt)
FRUITS AND VEGETABLE PRODUCTS (EXCLUDING FRUIT/VEG JUICES)	Fruit products	Canned/packed fruits and fruit products	Canned fruits in brine, sugar syrup, other medium, dried fruits, pure fruit jellies, fruit purees
	Vegetable products	Canned vegetables and mushrooms	Canned mushrooms, tomatoes, sweet corn, leafy vegetables, mixed vegetables
		Dried vegetables and mushrooms	Dried mushrooms, dried leafy vegetables
		Frozen vegetables	Frozen, half-cooked vegetables
		Pickled vegetables	All types
LEGUMES, NUTS AND SEED PRODUCTS	Legume products	Canned legume products	Canned beans, baked beans, garden peas
		Legume flours	Chickpea, lentil or soybean flours

Food Group	Food Category	Food sub-category	Specific food types
LEGUMES, NUTS AND SEED PRODUCTS	Nut and seed products	Cooked, whole nuts, packed	Peanuts, cashews, macadamias, mixed nuts
		Whole seeds, packed	Sesame seeds, sunflower, pumpkin, amaranth
		Pounded/powdered nuts/seeds	Powdered nuts, seeds, other plant seed powders
		Nut pastes and butter	Peanut butter/paste, sesame paste, other seed paste/butter
		Composite nut and seed products/snacks	Sesame balls/bars, sesame and peanut balls/bars, seed and nut mixes
COOKING OILS AND FATS	Animal fat products	Animal fats	Lard, ghee, butter
	Vegetable fat products	Plant/vegetable fats and oils	Vegetable fats, unspecified/regular plant/vegetable oils, sunflower, coconut, corn, olive
MILK, DAIRY AND EGG PRODUCTS	Milk products	Fresh milk	Short-life, pasteurized, long life/UHT, sour/cultured milk
		Canned milk	Condensed milk, evaporated milk
		Powdered milk	Powdered milk
	Dairy products	Cheese	Soft cheese, firm cheese
		Cream	Light/table creams, heavy/thick creams
		Dairy desserts	Powdered mixes, puddings
		Ice cream	Hard ice cream, soft ice cream
		Yoghurt products	Yoghurt drinks, regular yoghurt, yoghurt with fruits, frozen yoghurt, lactose-free yoghurt, non-dairy yoghurt

Food Group	Food Category	Food sub-category	Specific food types
MILK, DAIRY AND EGG PRODUCTS	Dairy alternatives	Milk alternatives/ mimics	Cereal based, nut-based, pulse-based
	Egg products	Powdered egg products	Powdered egg
MEAT AND POULTRY PRODUCTS	Meat and poultry products	Fresh sausages	Beef, pork or chicken sausages
		Burger/sandwich patties	Beef, pork or chicken patties
		Processed fresh meats	Bacon
		Cured meats (cold cuts)	Ham, polony, salami, plain dry meat
		Cured meats (ground/ canned)	Canned corned beef, Nyamabite
	Meat alternatives	Meat alternatives (mimics)	Insects, soy meat (tofu)
FISH AND SEAFOOD PRODUCTS	Fish and seafood products	Canned fish and seafood	Sardines, mackerel
		Frozen fish products	Fresh water fish, seafood
		Fresh/frozen ground fish products	Fish fingers, fish patties
CONVENIENCE FOODS		Canned liquid soups and ready to eat meals	Canned soups, pasta in sauce
		Frozen/chilled pre-cooked foods	Githeri (maize/beans mix)
		Dry uncooked meals and soups	Dry/powdered soups, instant noodles, instant pasta, savory rice premix
		Formulated meal replacements	Bars/biscuits e.g., granola bars, canned/bottled drinks/shakes, powdered nutritional premix

Food Group	Food Category	Food sub-category	Specific food types
SNACK FOODS	Corn snacks	Processed corn products	Popcorn, corn pops, crackers
	Root/tuber, plantain snacks	Crisps and chips of roots, tubers and plantain	Potato, cassava, sweet potato, plantain crisps, pretzels
SUGAR, HONEY, CONFECTION-ARY	Sugars	Sugars	Refined, brown, powdered
	Confectionary	Chocolate bars, chips and sweets	Regular, white or dark chocolate bars, chocolate chips, cocoa powder, chocolate sweets
		Sweets/candies	Hard or soft candies, chewing gum, flavored gelatin, jellies/gummies, marshmallows
	Honeys/ syrups	Honey and syrups	Honey, maple and other syrups

Food Group	Food Category	Food sub-category	Specific food types
CONDIMENTS	Liquid condiments, sauces	Table sauces	Tomato sauce/puree, chili sauce, tomato ketchup
		Cooking sauces	Steak, HP and Worcestershire sauces, soy sauce, fish/oyster/other Asian high salt sauces, pastes
		Creamers	Dairy creams, vegetable creams
		Dressings and toppings	Vinaigrette or cream dressings, sauces, syrups
		Vinegar	Vinegar
	Dry condiments, seasonings	Seasoning powders	Single spices, mixed dry spices/ seasoning powders, bouillon cubes/ granules
	Gums/resins	Gums and Resins	Gums, resins
	Spreads	Fruit Spreads	Fruit jam, marmalades, margarine
		Fat Spread	Margarine
		Sweet spreads	Sweet spreads (Nutella)
		Other spreads	Relishes, chutneys and pickles, vegetable spreads, pâté, yeast-extract spreads, chilled/ambient dips and salsas

Annex 3.

Example of food vendor categories, sub-categories and specific vendor types, as derived from a vendor-prepared foods listing task in Nairobi, Kenya

Category	Sub-category	Specific type
FULL-SERVICE RESTAURANTS/ CAFETERIAS	Local (Kenyan) full-service restaurants	Restaurant
		Cafeteria
		Food kiosks (semi-permanent or permanent structures where seating is provided)
	Continental (African) restaurants	Ethiopian
		Somalian
	Intercontinental restaurants	Italian
		Mexican
		Chinese
		Indian
FAST FOOD RESTAURANTS	Fast food restaurants	Local (Kenyan) chains
		Independent (non-chain) - Fish and chips
		Independent (non-chain) - Burgers
		Independent (non-chain) - Other
		Continental (African) chains
		Intercontinental chains
INFORMAL/OTHER FOOD VENDORS	Informal and other food vendors	*Vibandas (temporary stalls)*
		Open air (semi-permanent stalls)
		Street vendors (mobile)
		Delis (Supermarkets)

Annex 4.

Data collection format and example output from an Expert Consultation listing task for processed packaged foods

Processed food sub-category	Specific food types	Likelihood of consumption 1=Very common; 2=Common; 3=Sometimes/ not so common; 4=rare	Nutritionally relevant variations	Fortified versions available? Yes / No
FOOD GROUP: CEREAL FOOD PRODUCTS				
Category: Baked products				
BREAD, LEAVENED	Bagels	4	Whole/brown, White, Gluten-free, Sweetened	No
	Breadcrumbs	3	None	No
	Buns/Scones	1	Whole/brown, White, Gluten-free, Sweetened	No
	Loaf bread	1	Whole/brown, White, Gluten-free, Sweetened, Topping type	No
FLAT BREAD, UNLEAVENED, PACKED	Flat baked breads (naan, roti, pitta, etc.)	3	Whole/brown, White, Gluten-free, Sweetened	No
	Pizza base	2	None	No

Processed food sub-category	Specific food types	Likelihood of consumption 1=Very common; 2=Common; 3=Sometimes/ not so common; 4=rare	Nutritionally relevant variations	Fortified versions available? Yes / No
BISCUITS, COOKIES AND CRACKERS	Biscuits	1	Brown, White, Salted	No
	Cookies	1	Brown, White, Salted	No
	Crackers	2	Cereal type (wheat, rice, corn), Salted/ Unsalted	No
	Wafers	4	Filling type	No
CAKES AND MUFFINS, PACKED	Cakes	1	Whole, Refined wheat, Tuber flour (sweet potato, cassava), Fruit based (banana, carrot), Sugar-free, Gluten-free, Egg-free	No
	Muffins/Queen cake/Cupcakes	1	Whole, Refined wheat, Tuber flour (sweet potato, cassava), Fruit based (banana, carrot), Sugar-free, Gluten-free, Egg-free	No
	Scones	2	Whole/brown, White, with dried Fruits/nuts	No
FRIED WHEAT DOUGH PRODUCTS	Packed Doughnuts	1	Type of filling (whipped cream, chocolate, jelly, cinnamon), Topping type (nuts, powdered sugar, chocolate, cream, sprinkles)	No
	Packed Hard Mandazi	1	None	No
	Packed Mahamri	1	None	No
	Packed Soft Mandazi	1	None	No
BAKED PASTRY PRODUCTS	Packed Croissants	2	Plain, Filling type (meat, chicken), Topping type (chocolate, etc.)	No
	Packed Pasties	2	Filling type (meat, chicken, vegetable, cheese)	No
	Packed Pies	2	Filling type (meat, chicken)	No
	Packed Tarts	3	Filling type (fruit, etc.), Topping type (chocolate, cream)	No

Processed food sub-category	Specific food types	Likelihood of consumption 1=Very common; 2=Common; 3=Sometimes/ not so common; 4=rare	Nutritionally relevant variations	Fortified versions available? Yes / No
PROCESSED CORN PRODUCTS	Taco shells	3	-	No
	Tamales	4	None	No
	Tortillas (corn wraps)	3	None	No
FROZEN/ CHILLED 'READY TO COOK' PASTRY PRODUCTS	Packed 'raw' (ready-to-cook) Chapati	1	Whole wheat, Refined	No
	Packed 'raw' (ready-to-cook) stuffed rolls e.g. spring rolls	3	Filling type (meat, cream, fruit jelly, cheese)	No
	Packed 'raw' (ready-to-cook) Samosas	2	Filling type (meat, chicken, vegetable, legume)	No

Annex 5.

Data collection format and example output from an Expert Consultation listing task for vendor types and vendor-prepared foods

Vendor type sub-category	Specific vendor type	Likelihood of frequenting 1=Very common; 2=Common; 3=Sometimes/not so common; 4=rare	Common menu items Identify the MAJOR menu items/ types of dishes or preparations adult women would consume from these vendor types	Nutritionally Relevant Variations List any variations in the preparation of these dishes that are nutritionally relevant
Local (Kenyan) restaurants	Kiosk – full-service type	1	Ugali	Maize: ▪ Grade 1 ▪ Grade 2 ▪ Grade 3 ▪ Millet ▪ Sorghum ▪ Mixed flours
			Rice	▪ White ▪ Brown (unrefined) +Veg
			Pilau	▪ White ▪ Brown +Veg +Meat
			Chapati	▪ White ▪ Brown (unrefined) +Veg (pumpkin, carrots, coriander, onions)
			Githeri	▪ Plain ▪ Special: +Meat +Veg
			Beef	Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed

Vendor type sub-category	Specific vendor type	Likelihood of frequenting	Common menu items	Nutritionally Relevant Variations
		1=Very common; 2=Common; 3=Sometimes/not so common; 4=rare	Identify the MAJOR menu items/ types of dishes or preparations adult women would consume from these vendor types	List any variations in the preparation of these dishes that are nutritionally relevant
Local (Kenyan) restaurants	Kiosk – full-service type	1	Chicken	▪ Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed
			Fish	▪ Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed
			Traditional green leafy vegetables	Type of leaf: ▪ Single ▪ Mixed
			Kale (Sukuma wiki)	
			Spinach	▪ Regular ▪ Creamed
			Cabbage	Plain +carrots
			Peas and carrots (mixed veg)	
			French beans	Plain +Carrots
			Mandazi	Standard +eggs +milk
			Samosa	Filling: ▪ Beef ▪ Vegetable ▪ Green gram

Annex 6.

Example data collection format for processed packaged foods for Facilitated Group Discussions (FGDs)

Processed food sub-category	Specific food types	Number out of 10 likely to consume	Probes for nutritionally relevant chararacter-istics	Common variations mentioned	Brand name distinction required?	Most common brands - EC
	Insert rows for any additional food types under sub-category	0 to 10	Circle any mentioned		Y = Yes, N= No	
Canned vegetables and mushrooms	Canned mushrooms		Type of mushroom		no	
	Canned tomatoes, whole/ chunks/ crushed		Whole, chunks or crushed		no	
	Canned sweetcorn				no	
	Canned leafy vegetables		Single or mixed leaves, type of leaf		no	
	Canned carrots					
	Canned french beans/ green beans					
	Canned mixed vegetables					

Processed food sub-category	Specific food types *Insert rows for any additional food types under sub-category*	Number out of 10 likely to consume 0 to 10	Probes for nutritionally relevant chararacter-istics Circle any mentioned	Common variations mentioned	Brand name distinction required? Y = Yes, N= No	Most common brands - EC
Dried vegetables and mushrooms	Dried packed mushrooms					
	Dried leafy green vegetables		Single or mixed leaves; sun or articial heat dried; Whole or pounded		no	
Frozen vegetables	Frozen vegetables		Type of vegetable		no	
Pickled vegetables	Pickled vegetables		Type of vegetable; medium of packing (oil/ vinegar)		no	

Annex 7.

Example data collection format for food vendors by type for Facilitated Group Discussions (FGDs)

VENDOR OUTLET TYPES CATEGORIES / Sub-categories	SPECIFIC VENDORS COMMONLY VISITED List any specific vendors mentioned by FGD participants as commonly visited by women in local area	Number out of 10 likely to consume 0 to 10
KENYA (LOCAL) FULL-SERVICE RESTAURANTS		
Restaurants (formal restaurants)		
Food kiosks (vibanda) - example Njuguna's		
Cafeterias (institutional, limited meal times)		
Continental restaurants		
Ethiopian		
Others…..		
Intercontinental restaurants		
Chinese		
Indian		
Italian		
Mexican		
Others…		

VENDOR OUTLET TYPES CATEGORIES / Sub-categories	SPECIFIC VENDORS COMMONLY VISITED List any specific vendors mentioned by FGD participants as commonly visited by women in local area	Number out of 10 likely to consume 0 to 10
FAST FOOD RESTAURANTS		
Kenya local chains		
Examples: Kenchic, ArtCaffe, Big Square		
Independent (non-chain)		
Examples: Burgers (Mama Chips); Fish & Chips (Sonford); Chicken (Teriyaki)		
Continental Africa chains		
Examples: Galitos, Steers, CJs, Java House, Spur Steak		
International chains		
Subway		
KFC		
Dominos		
Burger King		
Pizza Hut		
LOCAL INFORMAL FOOD VENDORS		
Small kiosks (vibandas) semi-permanent		
Open air		
Street vendors (roadside, mobile van, hawkers)		
Delis (supermarkets)		

Annex 8.

Example data collection format for vendor-prepared food and menu items, by vendor type for Facilitated Group Discussions (FGDs)

Menu items/types of dishes COMMONLY purchased/consumed from vendor type *1. Circle all items independently identified by FGD participants* *2. Probe about those not circled and others that may not be on the list* *3. Record any additional ones mentioned in the same column*	Is this menu item commonly consumed by women in focal area? 1 = Yes 2 = No	Most common menu variations *1. Probe for most common variations in* *2. Circle all items on the list independently identified by FGD participants* *3. Record in pencil any additional ones mentioned in the same column*	Is this menu item typically also made at home by you or your peers? 1 = Yes 2 = No	Is this dish prepared similarly or differently from the way it is made at home? 1 = Similarly 2 = Differently
KENYA (LOCAL) FULL-SERVICE RESTAURANTS				
RESTAURANTS				
Ugali		Maize: ▪ Grade 1 ▪ Grade 2 ▪ Grade 3 ▪ Millet ▪ Sorghum ▪ Mixed flours		
Rice		▪ White ▪ Brown (unrefined) +Veg		
Pilau		▪ White ▪ Brown +Veg +Meat		

Menu items/types of dishes COMMONLY purchased/consumed from vendor type *1. Circle all items independently identified by FGD participants* *2. Probe about those not circled and others that may not be on the list*	**Is this menu item commonly consumed by women in focal area?**	**Most common menu variations** *1. Probe for most common variations in* *2. Circle all items on the list independently identified by FGD participants*	**Is this menu item typically also made at home by you or your peers?**	**Is this dish prepared similarly or differently from the way it is made at home?**
3. Record any additional ones mentioned in the same column	1 = Yes 2 = No	*3. Record in pencil any additional ones mentioned in the same column*	1 = Yes 2 = No	1 = Similarly 2 = Differently
Chapati		▪ White ▪ Brown (unrefined) +Veg (pumpkin, carrots, coriander, onions)		
Beef		▪ Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed		
Chicken		▪ Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed		
Fish		▪ Roasted ▪ Grilled ▪ Fried ▪ Boiled ▪ Stewed		
Traditional leafy vegetables		Type of leaf: ▪ Single ▪ Mixed		
Spinach		▪ Regular ▪ Creamed		

Menu items/types of dishes COMMONLY purchased/consumed from vendor type *1. Circle all items independently identified by FGD participants* *2. Probe about those not circled and others that may not be on the list*	**Is this menu item commonly consumed by women in focal area?**	**Most common menu variations** *1. Probe for most common variations in* *2. Circle all items on the list independently identified by FGD participants*	**Is this menu item typically also made at home by you or your peers?**	**Is this dish prepared similarly or differently from the way it is made at home?**
3. Record any additional ones mentioned in the same column	1 = Yes 2 = No	*3. Record in pencil any additional ones mentioned in the same column*	1 = Yes 2 = No	1 = Similarly 2 = Differently
Cabbage		Plain +carrots		
French beans		Plain +Carrots		
Samosa		Filling: ▪ Beef ▪ Vegetable ▪ Green gram		
Tea		Black +Milk +Sugar		
Coffee		Black +Milk +Sugar		
Fruit juice		Type of fruit ▪ Single ▪ Mixed		

Annex 9.

Example training schedule for FGDs

Day 1: Overview of urban food listing and FGDs

- Background, goals and objectives of the FGDs
- Team composition, roles, data collection schedule
- Processed packaged foods:
  - Review of processed packaged food categories, sub-categories, specific food types and nutritionally relevant variations: Definitions
  - FGD process and data collection formats for processed packaged foods
- Vendor-prepared foods:
  - Review of food vendor categories, types, specific menu types and nutrition-relevant variations: definitions
  - FGD process and data collection formats for vendors and vendor-prepared foods

Day 2: FGD process: Refinement of prompts/language and role play

- Organizing and introducing the FGD sessions: Review of ground rules for FGD sessions
- Facilitation skills, guiding group consensus, and coordination between facilitators and recorders
- Group practice/discussion of prompts and use of language, and use of food photos (role play)
- Practice in pairs: Introduction, prompts, facilitation and data recording, language translation (as needed)
- Plenary discussion: Clarifications and issues arising, suggested modifications

Day 3: Pilot 1

- Pilot FGDs for processed packaged and vendor-prepared foods (separate groups)
- Review issues arising, clarify and revise as needed

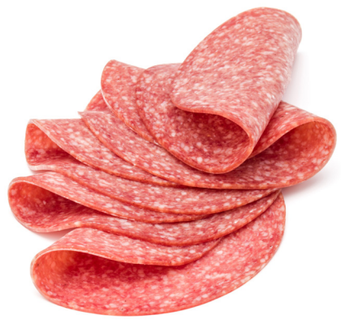
Day 4: Pilot 2

- Repeat pilot FGDs for processed packaged and vendor-prepared foods (separate groups)
- Review issues arising, clarify
- Finalize procedures, data collection formats

Annex 10.

Example food photos of processed packaged foods used in the FGDs

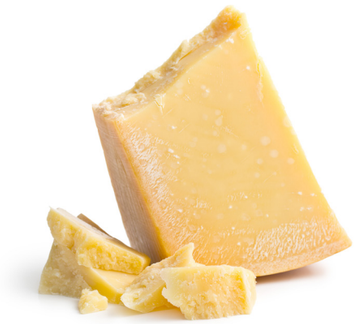
Cured Meats



Salami

Polony

Dairy products - Hard/Firm Cheese



Parmesan cheese

Halloumi cheese

Annex 11.

Example steps of FGD data collection for processed packaged and vendor-prepared foods

Processed Packaged Foods (See Annex 6 for example data collection form)

Step 1. The facilitator outlines the food groups and food categories to be covered in the FGD session.

- This is done by starting with one food group, explaining what it is (e.g., dairy products) and then describing the different categories within it.
- Food photos are shown to clarify which types of foods pertain to those categories.
- Facilitators ensure that the participants understand the groups/categories clearly before moving on.

Step 2. The data collection process starts with discussions on the first food group, category and subcategory of processed packaged foods to be covered. Participants are asked to freely list any food types that they or their peers consume in the mentioned subcategory. Any foods mentioned that are valid for that subcategory but missing on the list, are added to the list using blank rows. Participants are instructed to refer to consumption practices over the last six months, as habits can change over time.

During this process, it should be repeatedly emphasized that only packaged foods are being discussed, particularly where in some cases the same food types can be obtained unpackaged (in bulk) or as prepared foods (e.g., obtained ready-to-eat from a supermarket *deli* or other food vendor). Also, participants are oriented to think about consumption of items outside the home, particularly those that might be distinct from what is consumed in the household (e.g., at meetings, workplaces, other gatherings). Facilitators also need to ensure that all participants have a chance to speak, and if some appear to be quiet, they should be prompted and encouraged to contribute.

Step 3. For each food type noted as being consumed, participants are asked to report on the likelihood of that food item being consumed in the community (as described in detail above). The discussion process is as follows:

- Participants were asked: "If I visited ten of your peers in households in your community right now, how many would have consumed this food type?" Facilitators discuss this question with the group to ensure that it is well understood, emphasizing that it is about their community only and that it is asking about what other individuals of the same demographic (e.g., adult women) are likely to consume, not others (e.g., men, children, adolescents) in the same household.
- To arrive at consensus, participants are asked to provide their own estimates and to discuss within the group what is the most accurate average for the community, understanding that it might range widely depending on their personal exposure compared to what others across the community consume. They are asked to think broadly as some communities have a range of ethnic or religious groups and lifestyles represented. Participants are given the opportunity to provide a rational for their response. Voting can also be used as a tool to arrive at consensus.
- Once consensus is arrived at, the recorder notes the number out of ten agreed upon.

Step 4. For each specific food type listed:

- Participants are asked to indicate any pre-listed variations of that food type that are most commonly consumed.
- If any of the prelisted variations are mentioned, the recorder circles those, and any new ones mentioned can be recorded in the empty space. However, these would have to be later reviewed to determine if they are nutritionally relevant or not. If participants mention any specific brands of the products commonly consumed, these can be recorded as well.

Step 5. For the specified food types that are likely to be fortified, brand names are specifically probed for. All brands mentioned as common can be recorded, or this can be restricted to the top three to five brands.

After completing this process for one food category, continue on to the next category, until completing all food categories and subcategories.

Vendor-prepared foods (See Annexes 7 and 8 for example data collection forms)

Step 1. The FGD process for vendor-prepared foods commences with a review of the food vendor categories and vendor types (Annex 7). Once the different vendor categories and types are defined, discussed, and understood, the facilitator begins data collection with the first vendor category and works through the list.

- For the Regional and Intercontinental full-service and fast food restaurants, participants are asked to list any specific types of restaurants (i.e., cuisines or countries represented) that are commonly frequented. These are then listed as specific vendor types.
- For each specific vendor type, participants are asked to name specific vendors that they are familiar with. This can help ensure that they are all referring to the same type of vendor and to start remembering the kinds of foods commonly purchased and consumed from them.
- The names of all vendors mentioned by the participants are recorded.

Step 2. Participants are then asked to estimate the number of their peers out of ten that are likely to consume foods from each vendor type on any given day:

- Participants are asked: "If I visited ten of your peers in households in your community, how many would report having consumed food from (this vendor type) yesterday?" Facilitators discuss this question with the group to ensure that it is well understood, emphasizing that it is about their community and peers only (e.g., adult women), not others in the same household (e.g., men, children, adolescents) or peers from different communities.
- Facilitators should emphasize that the participants think about the likelihood of consuming foods from these vendors over the last six months, as food consumption practices can change over time.
- The process to arrive at consensus is the same as described for the processed packaged foods above.
- Once consensus is arrived at, the number out of ten agreed by the participants is recorded.

Step 3. After establishing the likelihood of consuming vendor-prepared foods from the different food vendors, the facilitator then starts to go through each food vendor category and type, one by one, to ascertain the common food items purchased and consumed by the target group in the communities, working from the prepared foods lists by vendor type (Annex 8).

- Starting with the first food vendor type, participants are asked to recall and freely list the common types of food or menu items that are consumed by them and their peers. They should be repeatedly reminded that they are answering not only for themselves but for their peers in the same community. It is not important who purchases the food, or where the food is finally consumed, but rather that the food was obtained from the vendor type and consumed by the participant or their peers. Any foods mentioned that are prelisted are circled, and any ones that are mentioned which are not prelisted are recorded in empty rows at the bottom.
- After the participants exhaust their initial discussions, the facilitators then probe for any foods on the list that were not mentioned to determine if they are commonly consumed but not recalled by the participants.

Step 4. For each food noted as being consumed, the facilitator then probes for the most common variations of that food.

- For the common food items listed, participants are asked to mention the most nutritionally relevant variations. The facilitator can provide examples, where needed, so that the types of variations of interest are well understood.
- As variations are mentioned, the note taker either circles variations that are already on the list or records new ones that were not already listed.

Step 5. After listing variations for a food item, the facilitator ascertains whether the item is also commonly made at home.

- The facilitator asks participants to indicate if the food item is also commonly made at home, considering their practices and their peers.
- After arriving at consensus, the recorder notes the response as either 'Y' (yes) or 'N' (no).
- For food items marked 'yes', the facilitator then probes to determine if the food item is prepared, in general, in a similar way or a different way from how it is prepared by the food vendor. For this, it is explained that there may be very distinct recipes or methods of preparation used by food vendors that are commonly employed in households, and this is what is being captured. A general consensus is derived for the group.
- Based on consensus, the recorder notes the response as either 'S' (similarly) or 'D' (differently).

Once this process is completed for one food vendor type, it is repeated until all assigned vendor categories are completed.

Annex 12.

Example output formats for processed packaged and vendor-prepared food data following the FGDs and review of available food composition and standard recipe data

12a. Example output format for processed packaged foods following FGDs and review of food composition and standard recipe data.

Food Type	Likelihood of consumption score1	Nutritionally relevant variations	Number of FGD sessions variation mentioned	Food Composition Data identified			Verify availability of fortified brands?	Include in market survey?
	Out of 10		Out of 6 sessions				Yes/No	Yes/No
FOOD GROUP: CEREAL AND GRAIN FOOD PRODUCTS								
Food Category: Baked Cereal Products								
Food Sub-category: Bread, leavened				**Source**	**Source code**	**Source food name**		
Bread, loaf	10.0	-	-					
		Bread, loaf, whole wheat	4	Kenya	01007	Bread, white	**Yes**	No
		Bread, loaf, white (refined wheat)	5	Kenya	01005	Bread, brown (whole wheat)	No	No
		Bread, loaf, multigrain	6	USDA-FDC	51601020	Bread, multigrain	No	No
		Bread, loaf, white, sweetened, plain	5	Kenya	01006	Bread, sweet	No	No
		Bread, loaf, white, w/dried fruit (raisins)	2	USDA-FDC	51300210	Bread, raisin, unenriched	No	No

Food Type	Likelihood of consumption score1	Nutritionally relevant variations	Number of FGD sessions variation mentioned	Food Composition Data identified			Verify availability of fortified brands?	Include in market survey?
	Out of 10		Out of 6 sessions				Yes/No	Yes/No
Doughnuts	8.3		5					
		Doughnut, plain or sugared	4					
		Doughnut, w/toppings (chocolate, jam, icing, sprinkles, etc.)	5	USDA-FDC	377646	Doughnut, pink icing and sprinkles	No	No
				USDA-FDC	592503	Doughnut, chocolate iced	No	No
Pizza base	**1.5**	Pizza base, white (refined) flour	-	N/A[2]	-	-	-	No
Food Sub-category: Cereal flours								
Cereal flours, composites	6.2	Maize-based composite flour	4	-			**Yes**	**Yes**
		Millet-based composite flour	6	-			**Yes**	**Yes**
		Sorghum-based composite flour	6	-			**Yes**	**Yes**
		Cereal flour with cassava, amaranth, fish powder, beans, groundnuts, soya	6	-			**Yes**	**Yes**

Food Type	Likelihood of consumption score1	Nutritionally relevant variations	Number of FGD sessions variation mentioned	Food Composition Data identified			Verify availability of fortified brands?	Include in market survey?
	Out of 10		Out of 6 sessions				Yes/No	Yes/No
Food Category: Breakfast cereals								
Food Sub-category: Breakfast cereals				**Source**	**Source code**	**Source food name**		
Cornflakes	4.3	-	-					
		Cornflakes, plain	3	France FCT	32005	Cornflakes, plain fortified with vitamins and chemical elements	**Yes**	**Yes**
		Cornflakes, sugar-coated	2	France FCT	32107	Cornflakes, sugar iced (not fortified with vitamins and chemical elements)	**Yes**	**Yes**
		Cornflakes, with fruit (dried)	1	France FCT	32107	Cornflakes, sugar iced (not fortified with vitamins and chemical elements)	**Yes**	**Yes**

Food Type	Likelihood of consumption score[1]	Nutritionally relevant variations	Number of FGD sessions variation mentioned	Food Composition Data identified			Verify availability of fortified brands?	Include in market survey?
	Out of 10		Out of 6 sessions				Yes/No	Yes/No
FOOD GROUP: MILK, DAIRY AND EGG PRODUCTS								
Food Category: Dairy products								
Food Sub-category: Ice cream				**Source**	**Source code**	**Source food name**		
Ice cream, hard	7.0	-	-					
		Ice cream, hard, plain or flavored	5	USDA-FDC	168810	Ice cream, strawberry		No
		Ice cream, hard, with nut filling	3					Yes
		Ice cream, hard, with real fruit filling	2	USDA-FDC	13120400	Ice cream bar or stick with fruit		Yes

[1]*Represents the mean score from six FGD sessions.*

[2] *As the likelihood of consumption score was <3.0, this food item was excluded from further steps in the urban food listing activity.*

12b. Example output format for food vendor categories and types with scores for the likelihood of being frequented by the target group, as derived from the FGDs.

VENDOR OUTLETS CATEGORIES / Sub-categories / Types	**Likelihood Score** Number out of 10 likely to frequent food vendor type[1]
FULL-SERVICE RESTAURANTS	
Local (Kenyan) restaurants	
Food kiosks (vibanda) - example Njuguna's	**6.0**
Restaurants (formal table service restaurants)	**5.8**
Cafeterias (institutional, limited mealtimes)	**4.3**
Continental restaurants	
Ethiopian	2.8
Others	2.2
Intercontinental restaurants	
Indian	1.2
Chinese	1.0
Italian	0.8
Mexican	0.0
FAST FOOD RESTAURANTS	
Independent (Non-chain)	
Examples: Burgers (Mama Chips); Fish & Chips (Sonford)	**5.5**
Continental Africa chains	
Examples: Galitos, Steers, CJs, Java House, Spur Steak	**5.0**

VENDOR OUTLETS CATEGORIES / Sub-categories / Types	**Likelihood Score** Number out of 10 likely to frequent food vendor type[1]
Kenya local chains	
Examples: Kenchic, ArtCaffe, Big Square	**4.5**
International chains	
KFC	**4.3**
Burger King	**3.0**
Pizza Hut	2.2
Subway	1.8
Dominos	0.8
LOCAL INFORMAL FOOD VENDORS	
Small kiosks (vibandas) semi-permanent	**6.7**
Open air	**5.6**
Street vendors (roadside, mobile van, hawkers)	**4.7**
Delis (Supermarkets)	**4.2**

[1] *Mean likelihood score calculated from six FGD sessions; menu items from food vendor types with a score <3.0 were not considered further in the urban food listing activity.*

12c. Example output format for vendor-prepared foods for local (Kenyan) full-service restaurants, following the FGDs and review of available food composition and standard recipe data (excerpted and adapted from original report).

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		OR Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
Vendor category: FULL-SERVICE RESTAURANTS									
Vendor sub-category: Local (Kenyan) full-service restaurants									
Ugali (maize porridge)	6	6	Maize grade 1 flour	6	Yes	15009	-		No
			Millet flour	5	Yes	15100	-		No
			Maize, millet and sorghum flour	1	Yes	15007	-		No
			Plantain (fresh), maize flour	1	Yes	15065	-		No
			Cassava flour	1	Yes	15011	-		No
Rice dish	6	6	Rice, white (plain)	6	Yes	15074	-		No
			Rice w/ vegetables	5	No	-	-		Yes
			Rice, brown	2	Yes	Modify 15074	-		No
			Rice, w/ beans	1	Yes	15038	-		No

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
			Egg rice	1	-	-	-		No
			Coconut rice	1	-	-	-		No
			Chicken rice	1	-	-	-		No
Rice pilau dish	6	6	Plain, white	6	Yes	Modify 15036	-		No
			Pilau, w/ beef	6	Yes	15036	-		No
			Pilau, w/ vegetables	6	No	-	-		Yes
			Pilau, w/ chicken	1	-	-	-		No
			Pilau, w/ mutton	1	-	-	-		No
Chapati	6	6	Chapati, white flour	6	Yes	15019	-		No
			Chapati, whole wheat (brown)	6	Yes	15020	-		No
			Chapati, w/ vegetables	6	No	-	-		**Yes**

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
Beef	6	6	Beef, stir fried	5	Yes	15098	-		No
			Beef, dry fried/ roasted/ grilled	5	No		Yes	07039	No
			Beef, boiled	5	-		Yes	07038	No
			Beef, stewed	5	Yes	15087	-		No
Fish	6	6	Fish, fried	6	Yes	15096			No
			Fish (Nile perch), stewed	6	Yes	15107			No
			Fish, boiled/ steamed	1	-		-		No
			Fish, battered	1	-		-		No
			Fish, curry	1	-		-		No
			Fish, breaded, fried	1	-				No
Kale dish	6	6	Kale, steamed	2	-		Yes	04075	No

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
			Kale, fried	7	Yes	15031	-		No
Cabbage dish	6	6	Cabbage, plain, stir-fried	4	-	15032	Yes		No
			Cabbage, w/carrots	6	No		-		Yes
Mandazi (maize dough fritters)	6	6	Mandazi, standard	4	Yes	15125	-		No
			Mandazi, w/eggs	1	Yes	Modify 15124	-		No
			Mandazi, w/milk	3	Yes	Modify 15124	-		No
Samosa	6	6	Samosa, beef filling	6	Yes	15025	-		No
			Samosa, vegetable filling	5	Yes	15026	-		No
			Samosa, chicken filling	2	No	-	-		Yes
			Samosa, green gram filling	5	No	-	-		**Yes**

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
			Samosa, potato filling	3	No	-	-		**Yes**
Fruit juice (fresh)	6	6	Fruit juice, single fruit	6	-	Yes (some)		Orange K 05022; Passion fruit K 05026; Tangerine K 05035; Apple US-FDC 64104010; Carrot US-FDC 73105010; Papaya US-FDC 64120010; Pineapple US-FDC 64124020; Watermel-on US-FDC 64133100	No
			Fruit juice, mixed fruit	6	-	Yes		Fruit Juice Blend 100%, US-FDC 64100110	No
Fruit salad			Fruit salad, mixed fruit	5	No	-	-		**Yes**

Vendor-prepared menu item	Number of FGD sessions food type is mentioned	Number of FGD sessions stated that vendor recipe is similar to homemade	Nutritionally relevant variations	Number of FGD sessions variation is mentioned[1]	OR Standard recipe available?		OR Food composition data available?		Include in Market Survey?[1]
	Out of 6 sessions	Out of 6 sessions		Out of 6 sessions	(Yes/ No)	If yes, give source / code[2]	(Yes/ No)	If yes, give source / code[3]	(Yes/ No)
Vegetable salad	6	6	Vegetable salad, single veg	6	No	-	No	-	Yes
			Vegetable salad, mixed veg	6	No	-	-		**Yes**
			Kachumbiri salad	6	No	-	-		**Yes**
Other items (not pre-listed)									
Bean Stew			Bean stew	1	Yes	15045	-		No
Chips	3	3	Chips, plain	1	-	15110	Yes		No
			Chips, masala spiced	1	-	-	-		No

[1] *Foods were excluded from the market survey if they have (i) standard recipe or food composition data available, or (ii) were mentioned in only 1 of 6 FGD sessions.*

[2] *The only source of standard recipe data consulted were those published for Kenya (FAO/ Government of Kenya, 2018a).*

[3] *Sources: K, Kenya food composition tables (FAO/Government of Kenya, 2018b); US-FDC, US Food Data Central (accessed at: https://fdc.nal.usda.gov/index.html).*

Annex 13.

Example details for data collection in a market survey of processed packaged and vendor-prepared foods

Processed packaged foods

At the retail outlet location, enumerators will identify food product categories and specific types on the store shelves that are listed for market data collection. Enumerators should have a listing of the specific food types and relevant variations. The products on shelf are first visually reviewed to identify which specific items and variations are to be included, beginning at the top-left corner and moving to the right and down.

Where multiple package sizes of products are available, data are only collected from the largest one to maximize photo quality. Each product identified for inclusion is logged on to a data sheet. An example data sheet is given in Annex 14. Codes for the different food categories, subcategories and food types are recorded, and a sequential 'photo code' (or unique identifier for each distinct brand/variation) is assigned. The code is recorded on the log sheet and written on a small 'sticky' label. The manufacturer, brand or product name is recorded, and it is noted if the package represents an individual serving size. If so, the net weight or net volume is also recorded. Vendor outlet (or assigned code) where data for that product are collected is also recorded.

Photos can be taken using smart phones. The photo code label is placed on the product so that it appears in the field of view. As many photos as were needed were taken to ensure all information was captured: (i) manufacturers name and location; (ii) Brand and/or product name; (iii) Product description or variation; (iv) List of ingredients; (v) Nutrition label information, including manufacturer's suggested serving size and energy and nutrient content information; (vi) Any other relevant information with regard to the content of the product (fortificants added, etc.). More than one photo is typically required to capture all details in a way that they are readable but each one should ensure the photo code label for that product is visible in the frame. To improve readability, avoid glare on the package by keeping it out of direct light and holding it in a vertical position (e.g., hold products under the shelf and in vertical position rather than horizontal in the middle of the aisle).

This process is repeated for each product on the shelf that represents the specific food type and its variations required in the survey. Once this is completed for all food categories in the first supermarket, the enumerators move to the second supermarket before any smaller retail outlets are sampled. Using the data sheets compiled in the first supermarket, if the exact same product in another outlet type is found, no product information is captured.

Vendor-prepared foods

Enumerators will use the list of foods related to which data are to be collected, and the number of samples of each food type to collect from different vendor types, as their guide to data collection. An example of the list of prepared food types, food vendor types and the number of samples to collect from each type is highlighted in Annex 14. The total number of food vendors to be visited depends on which vendors sell the listed food items. Data collection and sampling of restaurants from the lists derived from the FGDs continues until at least the minimum numbers of samples are found.

Following previous sensitization by the sampling team, enumerators locate the sampled vendor, introduce themselves and ask to speak to a chef or person who could inform them of the ingredients in specific dishes. Location and vendor information are recorded. The informant is interviewed, and each ingredient is listed on a separate line. An example of a data collection format is given is given in Annex 14. Any relevant preparation notes shared are also recorded. A unique 'photo code' is assigned to the item (e.g., derived from concatenation of codes for: food code + team number + vendor type + vendor sequence number) and used to link the data collected to the photo. The photo code is written on a 'sticky' label, placed on or near the dish, and captured in the photo frame. A photo is taken of the prepared food item only if a sample is available at the time of data collection.

Since the willingness of food vendors to shared detailed information on their recipes may vary, a code to indicate completeness and reliability of the data obtained was included. The options were: (1) Full ingredient list obtained from vendor; (2) Major ingredients only obtained from vendor; (3) Partial ingredients obtained from menu only (no interview); (4) Ingredients estimated from observation of the dish only; (5) No reliable information obtained.

Annex 14.

Example data formats for prepared packaged and vendor-prepared foods for use in a market survey

14a. Example log sheet to identify unique brands/product variations for processed packaged foods identified in a market survey.

Food Group Level	Category code	Name/ Description
Main category		
Sub-category		
Specific type		

Products variations to identify	
1	
2	
3	
4	
5	

Product market data collected

Product brand/ name		Product/ brand variations Record ALL nutritionally relevant variations Record each variation on a separate line	PHOTO LABEL NUMBER	Insert Check mark (✓) if brand or variation is found at outlet. Insert a					
				Super markets		Minimarts		Shops/ kiosks	
				Area 1	Area 2	Area 1	Area 2	Area 1	Area 2
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

14b. Example data capture sheet for processed packaged food label information from a market survey.

Category code	Food Group level	Name/Description
	Main category	
	Sub-category	
	Specific type	
	Product/ Brand name variation	
	Photo label number	
	Product source (circle one):	IMPORTED KENYAN
	Manufacturer's name, location:	_____

NUTRIENT LABEL INFORMATION

Nutrition content denominator (Grams) _____ Grams/Mls (circle one)

Macronutri-ents	Value	Minerals	Value	Vitamin A	Value	B/C vitamins	Value
Dry matter		Calcium, g		Vit A, mcg, RAE		Thiamin, mg	
Energy, KJ		Iron, mg		Vitamin A, mcg, RE		Riboflavin, mg	
Energy, KCAL		Magnesium, mg		Vit A, IU		Niacin, mg	
Protein, g		Phospho-rous, mg		Retinol, mcg		Folate, mcg, DFE	
Lipid, g		Potassium, mg		Beta, carot, mcg		Food, folate, mcg	
Carbohy-drates, g		Sodium, mg				Vit, B12, mcg	
Fibre, g		Zinc, mg				Vit C, mg	
Ash, g		Selenium, mg					

INGREDIENT INFORMATION			
1		6	
2		7	
3		8	
4		9	
5		10	

14c. Example list of vendor-prepared foods to collect in a market survey, by food vendor type and minimum sample number.

Food Type	Food Type Code	Variation	Food Code	Full-Service Restaurant			Fast Food Chain Restau-rants		Local/ informal vendors		Notes for data collection
				Local	Kiosks	Continental	Independent	Continental	Independent	Deli	
				Number of samples to collect							
Cereals fried	10	Samosa, Green gram filling	1002	1	1		1		2	1	
Flatbread	11	Chapati w/ vegetables	1103	2	2					2	
Flatbread	11	Chapati w/ lemon	1104	2	2					2	
Rice	12	Vegetable rice	1201	2	2					2	
Rice	12	Egg rice	1202	6							
Rice	12	Chicken/Chi-nese rice	1204	4						2	
Maize/ Beans	13	Githeri, mixed w/vegetables	1301	2	2				2		
Potato	14	Chips, masala/ spiced	1403							2	Understand ingredients and how they are made
Potato	14	Cheesy fries	1404								Understand ingredients and how they are made
Meat	15	Chicken salad	1501	4							
Meat	15	Beef w/vegeta-bles	1506						4		
Fish & Seafood	16	Seafood stewed	1605					4			Explorato-ry-types of seafood dishes available
Sandwich	18	Sandwich, pitta w/vegetables	1810					2		2	Define varia-tions and size of bread
Sandwich	18	Sandwich, wrap, turkey	1811					2		2	Define varia-tions and size of bread
Veg Salad	19	Mixed salad (lettuce)	1901	2	1		2		1		Define range of ingredients and common standards

14d. Example data collection format for collection of ingredient and preparation information from food vendors

Market Survey: PREPARED FOODS INGREDIENT DATA COLLECTION

Team number:	2	Food item type:	Rice
Team names:	Jeri and Roger	Food item variation:	Vegetable rice
Food vendor type:	Full-service Kenyan restaurant	Food code:	1201
Vendor type code:	10	**Photo code:	1201-10-2-8
Vendor name:	Silver Springs		
*Seq # for vendor type:	8		

*Multiple vendors of each type will be visited by your team. Number each one sequentially, by type, in the order visited.

**Photo code = Food Code + Vendor type code + Teamn no. + Vendor Seq. no. (eg, 4444-10-2-6)

Ingredient number	List of ingredients	Source of ingredient data	Source code
1	Rice, white, boiled	Full ingredient list obtained from vendor	(1)
2	Carrots, diced		
3	Peas, green, canned	Major ingredients only obtained from vendor	2
4	Onion, diced		
5	Potatoes, Irish, diced	Partial ingredients from menu only	3
6	French beans, chopped		
7	Vegetable oil	Ingredients estimated from observation only	4
8			
9		No reliable information obtained	5
10			
11		Circle source of information code	
12			
13			
14			

Notes on Preparation Method: Fried all the vegetables first; used preboiled rice and mixed with cooked veg.
Reheated with vegetable oil in a pan.

Annex 15.

Example of narrative summary data derived from a market survey for processed packaged foods, and output documentation for a future 24-HR survey

Example 1. Bouillon/stock cubes and powders

This food type had 18 different products from eight different brands. The latter included four imported brands: Kent Boringer, Maggi Star, Vegeta and Kallo, and four locally manufactured brands: Knorr, Royco, Maggi Star and Jumbo. The major variations across products are the flavorings, which mostly included chicken, beef and vegetable, with specialty products that were gluten/lactose/yeast free, organic or reduced sodium. All the products listed largely included forms of salt, starch, sugar and fat (vegetable or animal) as the main ingredients, with yeast or protein extracts, and different herbs, spices or other flavorings as minor ingredients. Energy, protein, fat, carbohydrates and sometimes sodium, and a few other nutrients were reported.

Nutrient ranges (for those reported on labels):

Energy: Ranged from 146-300 kcal/100 g. A few presented as outliers (3 or 7 kcal per 100ml) but this is assumed to represent the content after dilution.

Protein: Ranged from 0.1 to 20g/100g (0.1, <1, <6, 8.6, 20)

Fat: Ranged from 5.1 to 20g/100g (5.1, 5.4, 9.4, 10, 10.3, 18, 20)

Sodium: Ranged from 1180 to <64000mg/100g (1180, 18400, 22725, 23437, <59000, <64000)

*A review of the ingredients and nutrient content information indicates that one popular brand (Royco) adds iron fortificant in the form of *iron pyrophosphate* to its 'chicken cubes' and 'beef flavor' products. It would be desirable to distinguish this brand in a dietary survey if possible. The iron content was given as 107mg/100g product (dry weight).

Reviewing the available FCT data: USDA has entries with complete values for beef and chicken cubes, UK has entries for beef, chicken and vegetables, but has incomplete values for energy and many vitamins. France FCT on the other hand, has complete entries for beef and beef & vegetables while (chicken is incomplete and does not have vegetables). Australia has complete values for a single type (not specific for beef, chicken or vegetable). All values are within the ranges of those derived from the packages for energy, protein, fat and sodium. No table had complete values for any type of vegetable bouillon cubes.

Recommendation for FCT data:

1. Use the Australian FCT values: F008933 31303 Stock, dry powder or cube
2. Impute a separate entry for Royco cubes, which copies the above values but replaces the iron value with 107mg/100g as derived from the product labels.

Prompt list for 24-HR survey: Where bouillon cubes/powder is listed as an ingredient, determine the brand used. Royco brand should be coded separately from all others to distinguish those fortified with iron/not fortified.

Example 2. Loaf bread

As FCT entries were identified for white and whole meal bread, the variations of interest in the market survey were restricted to variations such as sugar-free, sweetened or those with fruits added.

This food type had eight different products from three different local (Kenyan) manufacturers (Enns Valley Bakery, Naivas and Carrefour supermarkets house products). The major variations across products identified were those made with multigrain, roots/tuber flours or sweetened breads made with banana or carrot, and those with fruits/nuts/seeds added. No products had any nutrition label information, therefore appropriate food composition data can be identified based on the description and general contents only.

* In accordance with local policy, it assumed that all wheat flour products are made with fortified wheat flour.

Reviewing the available FCT data: Kenya FCT: Use entries for brown, white and sweet bread (plain). USDA has entries for potato bread, as well as pumpkin (carrot) and fruit (banana) breads and various multigrain breads with fruit or not, white bread with fruit. Both UK and Australia have seeded breads. Australia also has white bread with added fruit, or white bread with added grains/seeds.

Recommendation for FCT:

For breads, the main characteristics to distinguish are whether they are white vs whole wheat/brown, or multigrain, whether they are sweetened (plain), with added fruit, with added seeds, made with fruit (banana) or vegetable (carrot), plain (or flavored).

1. Bread, white: Kenya, 01007 Bread, white
2. Bread, whole wheat: Kenya, 01005 Bread, brown
3. Bread, multigrain: USDA FNDDS, 51601020 Bread, multigrain
4. Bread, white + seeds: Australia, F001513 Bread from white flour, extra grains and seeds
5. Bread, white + fruits (raisins): USDA, 18414 Bread, raisin, unenriched
6. Bread, whole wheat, + fruit (raisins): USDA FNDDS, Bread, whole wheat, with raisins 51300210
7. Bread, multigrain + fruit (raisins): USDA FNDDS, 51601210 Bread, multigrain, w/raisins
8. Bread, white/plain, sweet: Kenya, 01006 Bread, sweet
9. Bread, carrot, sweet: USDA FNDDS, 52405010 Bread, fruit (includes banana, lemon, or date)
10. Bread, banana, sweet: USDA FNDDS, 52404060 Bread, pumpkin (includes carrot, w/raisins or nuts)

Prompt list for 24-HR survey: White, whole wheat/brown or multigrain; sweetened; plain or with added raisins/nuts/seeds; or made with vegetable (carrot) or fruit (banana).

Contact
Global Alliance for Improved Nutrition (GAIN)
Rue de Varembé 7
1202 Geneva, Switzerland

T: +41 22 749 18 50
E: info@gainhealth.org

www.gainhealth.org

gain
Global Alliance for
Improved Nutrition