



# DIETARY DIVERSITY SURVEY TOOLS AND MATERIALS

**Operationalizing dietary diversity assessment in the context of monitoring and evaluation of the Mali PASA 5 food security projects**

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## LIST OF ACRONYMS

AEDES	Agence Européenne pour le Développement et la Santé
AVSF	Agronomes et Vétérinaires Sans Frontière
ACF-E	Action Contre la Faim - Espagne
CONFED	Cellule d'appui à l'Ordonnateur National du Fonds Européen de Développement
CPS	Cellule de Planification et Statistique
CSA	Commissariat à la Sécurité Alimentaire
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization of the United Nations
OXFAM	Oxford Committee For Famine Relief
PASA	Programme d'Appui à la Sécurité Alimentaire
SAP	Système d'Alerte Précoce
WHO	World Health Organization

## 1. Introduction

Conventional quantitative dietary assessment surveys are costly in time and money, and cumbersome to conduct and analyze. Simple indicators of food consumption that can be measured quickly and easily are thus needed to assess household access to food or individual diet. The dietary diversity measurement tool was developed to meet this objective.

Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods; at individual level, it is a proxy of nutrient adequacy of the diet.

The dietary diversity measurement tool represents a low-cost, rapid and easily administered assessment tool (FAO, 2011). It can be useful in baseline and impact assessments in the framework of nutrition and food security programmes, national surveys, surveillance systems, monitoring and evaluation (M&E) of programmes and policies, emergency or routine food security analyses, etc. (FAO, 2011).

FAO has published operational guidelines for measuring dietary diversity in a standardized way (FAO, 2011). The purpose of this document, which is based on the FAO guidelines, is to present an example of the operationalization process of the measurement of dietary diversity in a specific context. The dietary diversity tool presented here was included in a joint monitoring and evaluation system of food security projects in Mali, in three separate areas of the country. Besides the adaptation of the dietary diversity questionnaire, many other survey tools and training materials were developed within this framework. This document brings together all tools and materials used to conduct dietary diversity surveys. The objective, description, development/adaptation, instructions and advantages/limitations of each tool are also described. Finally, technical guidance is provided.

These survey tools and materials were used in several dietary diversity surveys of the joint M&E system of the PASA Mali 5 and gradually improved through feedback from field experiences. They result from a collaborative, tested and improved process. They are thus relevant materials for dietary diversity survey preparation, training and implementation.

The dietary diversity questionnaire and all survey tools and materials were developed in a specific context. **The questionnaires, tools and materials presented in this document should not be used as is in another context. They can easily be adapted to a new context.**

### ***Important note on dietary diversity indicator:***

In July 2014, on the basis of a new international validation study, the dietary diversity indicator for women has been slightly modified.

Consequently, the dietary diversity questionnaire for women has also changed slightly.

All documents presented herein were developed prior to these changes and therefore do not take them into account. However, future dietary diversity surveys will need to take these changes into account.

Detailed information will soon be available on FAO and/or FANTA websites.

## 2. Context

Following the 2005 food crisis, the European Commission launched several food security support programmes in Mali (PASA) implemented by NGOs specializing in this field. These actors then expanded their scope of intervention to nutritional issues, taking them into account in the conception of the project based on an analysis of the determinants of nutritional insecurity.

PASA Mali 5-funded projects are integrated into a joint monitoring and evaluation system supported by government institutions (CONFED, CPS, SAP, CSA) and the Delegation of the European Union in Mali. This M&E system aims to assess the nutritional impact of food security and nutrition projects of 3 contracting NGOs (ACF-E, AVSF, OXFAM-GB) implementing their projects in different areas of Mali.

The overall objective of this system is to assess the food security status and the quality of the diet of the population living in areas covered by interventions of the PASA Mali 5 based on quantitative surveys conducted at the beginning and at the end of the programme. To meet this objective, common M&E indicators were identified and survey methodologies were harmonized.

Common indicators that had been identified to monitor progress in the quality of the diet were dietary diversity scores of mothers of children under 5, of children aged 6-23 months and of children aged 24-59 months.

To collect these mandatory common indicators, survey tools and materials had to be developed and adapted to the various areas of interventions and survey methodology had to be harmonized. This was the background for developing the dietary diversity survey tools and materials that are presented in this document.

Survey tools and materials include dietary diversity questionnaires (integrated into the PASA Mali 5 questionnaire of common indicators), recipe sheets, a glossary of food items, a calendar of local events, guidelines for interviewers and supervisors and a data analysis protocol.

Development and adaptation of all these tools and materials were performed in close collaboration with the NGOs and their survey teams.

### **3. Objectives of the dietary diversity surveys in the framework of the PASA Mali 5 joint monitoring and evaluation (M&E) system**

Dietary diversity surveys conducted in the framework of the joint M&E system were aimed at assessing the quality of the diet of mothers of children under 5 years of age and of young children at the beginning and at the end of the intervention as well as assessing changes in the quality of diets.

To achieve these objectives, a) a situational survey on common indicators (including dietary diversity) was planned at the start of the intervention, including two seasonal rounds, one during the lean season (food shortage season) and another during the post harvest season; b) an assessment of changes in common indicators in each area of intervention was to be conducted at the end of the project.

Mandatory common indicators included in the M&E system are<sup>1</sup>:

- Dietary diversity score of mothers of children under 5
- Dietary diversity score of children aged 6-23 months
- Dietary diversity score of children aged 24-59 months

Household socio-demographic, economic and livelihoods information were also recorded to define a typology of households to be targeted as beneficiaries of interventions. Each NGO could also choose additional specific indicators that could be useful to refine the assessment of changes in the common indicators.

### **4. Definition and measure of dietary diversity**

#### **○ What is dietary diversity?**

Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods and is also a proxy of nutrient adequacy of the diet of individuals (FAO, 2011).

Dietary diversity is defined as the number of different food groups consumed by an individual or a household over a given period of time.

Dietary diversity – i.e. consumption of a wide variety of foods across nutritionally distinct food groups – is an essential strategy to meet recommended intakes of micronutrients through food-based approaches.

<sup>1</sup> A household food security indicator (food consumption score) is also included among the common mandatory indicators but is not addressed in this document related to dietary diversity only.

### ○ ***How to measure dietary diversity?***

FAO's dietary diversity tool uses an open recall method to gather information on all foods and drinks consumed by the individual (survey at individual level) or household (survey at household level) over the previous 24 hours. The foods and drinks consumed are then recorded into one of the 16 standardized food groups. Probing is used to capture consumption of any food groups not mentioned in the open recall.

FAO guidelines provide a standard dietary diversity questionnaire and describe how to adapt it to the local context (FAO, 2011). This adaptation of the questionnaire must be completed prior to any survey. The standard FAO questionnaire or those adapted for other surveys cannot be used as is.

Data collected through the dietary diversity questionnaire are used to calculate the dietary diversity score, which is a simple count of food groups that a household or an individual has consumed over the past 24 hours.

The household dietary diversity score has been shown to be a valid proxy indicator of the economic ability of a household to access a variety of foods (dietary energy availability of the household) (Hoddinot and Yohannes, 2002; Hatloy et al., 2000). At individual level, the dietary diversity score has been shown to be a valid proxy indicator of macronutrient and micronutrient adequacy of the diet for non breastfed children (Hatloy et al., 1998, Ruel et al., 2004, Steyn et al., 2006; Kennedy et al., 2007), adolescents and adults (Mirmiran et al., 2004; Foote et al., 2004, Arimond et al., 2010). The score has also been shown to be a valid proxy indicator of adequacy of the micronutrient density of complementary foods for infants and young children (FANTA, 2006).

The type and number of food groups included in the calculation of dietary diversity scores depends on the level of measurement (household or individual) and survey purposes. There is no international consensus on the number of food groups to be included in the calculation of the score, except for the calculation of the score of children aged 6-23 months (WHO, 2010).

## **5. Overall methodology of the survey**

### **5.1. Methodological overview of the survey**

Surveys implemented within the joint M&E system were cross-sectional surveys in the areas of interventions, conducted at the beginning and at the end of the intervention and including one round during the post-harvest season and a second round during the lean season. These two rounds allow assessing the effects of the intervention on the quality of the diet, taking into account seasonal variations.

The surveyed population included households with at least one child under 5 residing in the intervention areas. A two-stage cluster sampling method was used.

Data were collected through the questionnaire of common indicators which includes the dietary diversity questionnaires adapted to each area of intervention. In addition to this questionnaire, many other survey tools and materials were provided to the survey teams to ensure proper data collection<sup>2</sup>.

### **5.2. Methodology of dietary diversity data collection**

To meet the objectives of the M&E system, dietary diversity data were collected at individual level, for mothers of children under 5, for children aged 6-23 months and for those aged 24-59 months.

The approach for collecting information on dietary diversity was based on FAO guidelines (FAO, 2011). This approach was a qualitative open recall of all the foods and drinks consumed by the mother or the child in the 24 hours preceding the interview. "Open recall" meant that the respondent described by herself what she had consumed (or what her child had consumed) over the previous 24 hours. Therefore, the interviewer asked the respondent about all the foods and drinks (meals and snacks) she had consumed the previous day, during the day and night, proceeding in chronological order. All these food items were recorded in the spaces provided at the top of the questionnaire (open recall form), by dish and by meal or period of the day.

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<sup>2</sup> Detailed terms of reference (ToR) of these surveys are available in appendix 1 of the document « Outils et supports d'enquête de diversité alimentaire – Annexes » on CONFED website (in French only)

When mixed dishes were mentioned, the interviewer asked the respondent for information on all food items that went into the dish and recorded this information in the spaces at the top of the questionnaire; then he checked that the main ingredient of the dish was recorded and asked if some other food items had been added to the dish. The interviewer also probed for food items that might be added to the drinks (sugar in tea for example) or to the preparation (sugar in porridge, oil in fried foods, etc.).

When the respondent finished mentioning all the foods she had consumed, the interviewer probed for meals and snacks not mentioned, and for drinks.

When the respondent recall was completed, the interviewer underlined each recorded food item in the list of foods on the next page of the questionnaire.

If at least one food item of a group was underlined, the corresponding food group was considered as consumed and the interviewer wrote « 1 » (yes) in the box in the right-hand column of the corresponding food group. If no food item of a group was underlined, the interviewer probed the respondent for these foods that she did not spontaneously mention by reading out the list of food items of this group. When it was certain that no food in that group had been eaten, the interviewer wrote "0" (no) in the box in the right-hand column of the corresponding food group. In the boxes, only "0" (no consumption of foods of this group) or "1" (consumption of at least one food of this group) should appear.

Data collected in this way were used to calculate dietary diversity scores, which were a simple count of the different food groups consumed. In the framework of these surveys and based on FAO guidelines, 9 food groups were included in the calculation of the dietary diversity scores of mothers and of children aged 24-59 months (FAO, 2011). For children aged 6-23 months, 7 food groups were included in the calculation of the dietary diversity score, based on WHO recommendations for the children of this age group (WHO, 2008; WHO, 2011). To calculate these scores, some food groups of the questionnaire (including 16 food groups) were aggregated into a single food group.

## **6. Dietary diversity survey tools developed within the PASA Mali 5 joint M&E system**

### **6.1. Overview of dietary diversity survey tools developed**

In the framework of the M&E system of the PASA Mali 5, the following tools were developed to collect dietary diversity:

- Dietary diversity questionnaires<sup>3</sup>
- A glossary of food items
- Recipe sheets
- A calendar of local events

The dietary diversity questionnaire had to be adapted and translated into local languages. As this translation posed many problems in the different survey areas, a glossary French-local language of all the food items included in the questionnaire was developed for each survey area.

Recipe sheets show the main dishes consumed in a survey area and detail their composition.

The local calendar of events is a customized calendar based on the dates of significant events in a specific geographic area, which was used for estimating children's birthdate (at least month and year) when no written record was available. It was adapted to each survey area.

All these dietary diversity survey tools have been developed and adapted in close collaboration with NGOs, field teams, interviewers and key informants. They have been tested in pilot surveys, used in several field surveys and refined through feedback from field experiences.

<sup>3</sup> As this document is intended to provide an example of the operationalization process of dietary diversity in a specific context, only the dietary diversity questionnaires are presented and discussed here. The whole survey questionnaire of common indicators is available in appendix 2 of the document « Outils et supports d'enquête de diversité alimentaire – Annexes », on the CONFED website (in French only)

## 6.2. Dietary diversity questionnaire

### 6.2.1. Purpose of the dietary diversity questionnaire

As recommended, these dietary diversity questionnaires were not used as standalone tools; they were integrated into a broader survey questionnaire (questionnaire of common indicators of the PASA Mali 5) which included households' characteristics, etc. in order to have a more comprehensive picture of the quality of the diet (Kennedy et al., 2010).

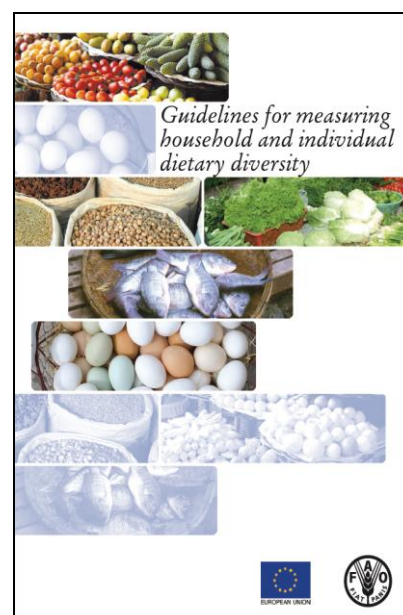
The dietary diversity questionnaires were preceded by a short section on socio-demographic characteristics of mothers and of children.

### 6.2.2. Description of the **standard** dietary diversity questionnaire

FAO guidelines provide a standard dietary diversity questionnaire that can be used at household or individual level.

This questionnaire includes three parts:

- 1) the question introducing the open recall of the respondent's food consumption on the previous day
- 2) a space to record all the foods and drinks mentioned during the open recall
- 3) the list of 16 standard food groups (FAO, 2011).



This standard questionnaire is presented in document 1 below.

## DIETARY DIVERSITY QUESTIONNAIRE

Please describe the foods (meals and snacks) that you ate or drank yesterday during the day and night, whether at home or outside the home. Start with the first food or drink of the morning.

Write down all foods and drinks mentioned. When composite dishes are mentioned, ask for the list of ingredients.

*When the respondent has finished, probe for meals and snacks not mentioned.*

Breakfast	Snack	Lunch	Snack	Dinner	Snack

[Households: include foods eaten by *any member of the household*, and *exclude* foods purchased *and* eaten outside the home]

When the respondent recall is complete, fill in the food groups based on the information recorded above. For any food groups not mentioned, ask the respondent if a food item from this group was consumed.

Question number	Food group	Examples	YES=1 NO=0
1	CEREALS	corn/maize, rice, wheat, sorghum, millet or any other grains or foods made from these (e.g. bread, noodles, porridge or other grain products) + <i>insert local foods e.g. ugali, nshima, porridge or paste</i>	
2	WHITE ROOTS AND TUBERS	white potatoes, white yam, white cassava, or other foods made from roots	
3	VITAMIN A RICH VEGETABLES AND TUBERS	pumpkin, carrot, squash, or sweet potato that are orange inside + <i>other locally available vitamin A rich vegetables (e.g. red sweet pepper)</i>	
4	DARK GREEN LEAFY VEGETABLES	dark green leafy vegetables, including wild forms + <i>locally available vitamin A rich leaves such as amaranth, cassava leaves, kale, spinach</i>	
5	OTHER VEGETABLES	other vegetables (e.g. tomato, onion, eggplant) + <i>other locally available vegetables</i>	
6	VITAMIN A RICH FRUITS	ripe mango, cantaloupe, apricot (fresh or dried), ripe papaya, dried peach, and 100% fruit juice made from these + <i>other locally available vitamin A rich fruits</i>	
7	OTHER FRUITS	other fruits, including wild fruits and 100% fruit juice made from these	
8	ORGAN MEAT	liver, kidney, heart or other organ meats or blood-based foods	
9	FLESH MEATS	beef, pork, lamb, goat, rabbit, game, chicken, duck, other birds, insects	
10	EGGS	eggs from chicken, duck, guinea fowl or any other egg	
11	FISH AND SEAFOOD	fresh or dried fish or shellfish	
12	LEGUMES, NUTS AND SEEDS	dried beans, dried peas, lentils, nuts, seeds or foods made from these (eg. hummus, peanut butter)	
13	MILK AND MILK PRODUCTS	milk, cheese, yogurt or other milk products	
14	OILS AND FATS	oil, fats or butter added to food or used for cooking	
15	SWEETS	sugar, honey, sweetened soda or sweetened juice drinks, sugary foods such as chocolates, candies, cookies and cakes	
16	SPICES, CONDIMENTS, BEVERAGES	spices (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages	
Household level only	Did you or anyone in your household eat anything (meal or snack) OUTSIDE the home yesterday?		
Individual level	Did you eat anything (meal or snack) OUTSIDE the home yesterday?		

Prior to beginning data collection, survey team members had to adapt the standard dietary diversity questionnaire to the local context and make a series of decisions. The standard version of the questionnaire is not intended to be translated literally and used directly.

Adaptation steps of the questionnaire include:

- formulation of the question to the respondent about her food consumption on the previous day
- adaptation of the list of foods included in each food group to reflect locally available foods
- appropriate translation into local languages

What people eat varies depending on where they live, their income level, their customs, etc. This is why food lists of the dietary diversity questionnaire have to be adapted prior to beginning data collection to include food items that are locally available and consumed. These food lists have to be reviewed carefully in order to a) identify food items that are locally available, b) classify food items into the appropriate food group. Food items that are not available nor consumed in the survey area have to be removed from the food lists.

It is therefore necessary to adapt the list of foods of the 16 standard food groups (column « example » of the dietary diversity questionnaire) to the local context. Numbers and names of the food groups (columns 1 and 2 of the questionnaire) should not be modified.

The dietary diversity questionnaire has to be translated into local languages and the survey team have to agree on a common definition of terms used to describe key concepts (FAO, 2011).

### *6.2.3. Dietary diversity questionnaire: adaptation and translation process*

To adapt the dietary diversity questionnaires, the 6 following steps were undertaken:

1. First review of key concepts with the survey team
2. First adaptation of food lists with the survey team
3. Review of food lists with key informants and focus-groups in the community
4. Translation of the dietary diversity questionnaires
5. Pre-testing the dietary diversity questionnaires in households
6. Pilot survey

#### *Step 1 : First review of key concepts with the survey team*

The dietary diversity questionnaire starts by asking the respondent to describe what she ate and drank yesterday (meals and snacks), either during the day or night, at home or outside, starting with the first food or drink consumed in the morning. Survey teams discussed the definition of key terms (meals, snacks, home, etc.) and agreed on the most appropriate local terms to best define these concepts and to ensure that each term of the question reflected a consistent and understandable meaning for both interviewers and respondents.

The question about food consumption was then translated into local dialects, with particular attention to the mention of all key terms of this question: ate and drank / meals and snacks / day or night / at home or outside the home, etc. Back-translation was useful to check the correctness of the question.

#### *Step 2 : First adaptation of food lists with the survey team*

Based on the standard version of the dietary diversity questionnaire, survey teams adapted the food lists of each food group to include locally available and consumed food items and to exclude non relevant ones.

Discussions on livelihoods, food consumption patterns in the area, common dishes, ways to prepare mixed dishes, components of dishes, young child feeding practices, wild foods, seasonality, availability of foods during the survey period, availability of red palm oil, etc. helped to identify many foods available in the area during the survey period and were useful to draw up recipe sheets.

Common names under which a food item is known in the area were used. As the names of foods (and drinks) may vary by geographical area, even within the same language, caution is needed when translating names of food items. If a food item has different names, these different names need to be included in the questionnaire. Moreover, the same local name could have different meanings – sometimes foods with the same name in two different areas have nothing to do with each other and could in fact belong to different food groups (WHO, 2011).

### Box 1 : Use of local names for foods (FAO, 2011, reproduced from WHO 2010)

Use local names for food items and foods commonly consumed in the area

Examples of local names for cereals and products made from cereals:

- Corn/maize (*ugali*, *nsima/ushima*, *posho*, *mealies*, *tortilla* when made from maize)
- Teff (*injera*)
- Wheat (*chapatti*, *roti*, *tortilla*, noodles, pasta, *seitan*)

Local names for staple foods can refer to foods with different main ingredients (e.g. tortillas can be made from maize or wheat flour, and noodles can be made from wheat or rice flour) and yet belong to the same food group. In other cases, the item can belong to a different group, depending on the ingredient.

**Example 1:** *Nsima* (stiff porridge) can be made from maize (cereal group) or from cassava (roots/tubers group). In this case, the cereal group can include « *nsima* made from maize » and « *nsima* made from cassava ».

**Example 2:** Clear/glass/cellophane noodles can be made from mung bean, rice or potato tuber starch. “Noodles made from mung bean” would be included in the food group of legumes/nuts and seeds; “rice noodles” would be included in the cereal group and “noodles made from potato starch” would be included in the food group of white roots and tubers.

In Mali, *tô* is a very common dish in the various surveyed areas. *Tô* could be made from cereals (millet, sorghum, maize) or from white-fleshed sweet potatoes or from orange-fleshed sweet potatoes. In the first case, *tô* was included in the cereal group; in the second case, it was included in the food group of white roots and tubers; in the third case, it was included in the food group of vitamin A rich vegetables and tubers.

FAO guidelines to measure dietary diversity provided advice on how to classify foods into the appropriate food groups (appendix 2, FAO, 2011). Food composition tables were also used for classifying adequately some foods. It is particularly important to classify properly fruit, vegetables and tubers that are potentially rich in vitamin A. For some wild fruit and vegetables especially, micronutrient content was unavailable or was unreliable. In this case, these foods were classified in the food groups of “other fruits” and “other vegetables”.

#### Step 3 : Review of food lists and translations with key informants and focus groups in the community

The adaptation of the dietary diversity questionnaire was followed by a series of meetings with key informants and communities in survey areas. Key informants included heads of health and agricultural technical services, women's groups, etc. Focus-groups in communities brought together separately men village counsellors and women or mothers.

These meetings and focus-groups were useful to collect additional information on food consumption patterns, ingredients used in local dishes, young child feeding practices, foods locally available during the survey period, and to refine the choice of local terms used for key concepts (food, meal, snack, etc.). All this information was used to review food lists included in the questionnaire and to decide on the most appropriate local terms for key concepts. This information was also very useful to draw up recipe sheets.

#### Step 4 : Translation of the dietary diversity questionnaire

After discussing key terms in the formulation of the question to the respondent on her food consumption on the previous day, the translation of this question into local languages was refined.

Translating food lists into local languages posed significant problems due to many dialects spoken in an area, unreliable phonetic translations, etc. To overcome these difficulties, it was decided to develop a glossary French/local languages of the food lists.

The translation of food items required time and collaborative participation of the whole survey team and key persons. It is important to ensure that the translation of each food item is understandable to both interviewers and respondents and that it corresponds exactly to the food item in question.

#### Step 5 : Pre-test of the questionnaire among households

Household interviews were carried out in the intervention areas so as to finalize the food lists and to strengthen interviewer training on data collection. During this pre-test, interviewers (in twos) administered the dietary diversity questionnaire in several households.

After each adaptation step, the dietary diversity questionnaires were reviewed and refined and they were finalized before conducting a pilot survey.

All these adaptation steps were tightly coupled with interviewer training on the dietary diversity tool.

#### Step 6 : Pilot survey

Once the dietary diversity questionnaires had been finalized, a pilot survey was conducted under conditions that were strictly identical to those planned for the field survey.

All these steps of adaptation were undertaken in each area of intervention (3 separate areas) so as to develop dietary diversity questionnaires adapted to each of these areas.

The food lists of the questionnaire were reviewed before conducting each survey round (lean/post-harvest seasons) to take into account seasonal variability of foods. These reviews were carried out through focus-groups and household interviews in the area of intervention.

#### 6.2.4. Technical decisions made before data collection

Prior to beginning data collection, there were a few technical issues the team had to discuss. These included minimum quantities, food items that could be classified into more than one food group, mixed dishes and consumption of red palm oil (FAO, 2011).

#### Minimum quantities :

The issue of minimum quantities refers to whether or not to include foods consumed in very small quantities. This issue only relates to dietary diversity estimated at individual level. At household level, any quantity of food, even very small, is counted (because it reflects some ability to acquire food items).

At individual level, studies have shown that dietary diversity scores were more strongly correlated with micronutrient adequacy of the diet when excluding food groups that are consumed in quantities equal to or less than 15 g (approximately equivalent to 1 tablespoon of food) (Arimond et al., 2010). This approach can be difficult to operationalize because several food items of a single food group can be eaten and because it is difficult to estimate, at individual level, the quantity of foods consumed from a mixed dish.

In the framework of the surveys of PASA Mali 5, the following decisions were made regarding minimum quantities: for each food item included in a dish or preparation eaten by the respondent, the interviewer asked how much of that food had been used in the recipe.

- If the quantity used in the recipe was **more** than one tablespoon, the food item was considered as an **ingredient**. The term “ingredient” was written down next to the food item recorded in the open recall and the food item was classified in the corresponding food group.
- If the quantity used in the recipe was **equal to or less** than one tablespoon, the food item was considered as a **condiment**. The term “condiment” was written down next to the food item recorded in the open recall and the food item was classified in the food group of condiments.
- If the dish/preparation was made at household level, the minimum quantity applied to the preparation for the household. If the dish/preparation was made at individual level, the minimum quantity applied to the preparation for the individual.

Food items that were consumed by themselves and food items that were “picked”<sup>4</sup> from a dish were always considered as ingredients and classified into the corresponding food group.

This approach was questionable, especially since it was obvious that the quantity of foods used in a recipe depends on the number of people taking part in the meal. However, it was very difficult, from a practical point of view, to estimate the quantity that was consumed by the individual when the dish was made for the household, especially for foods added in rather small amounts in the recipe.

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<sup>4</sup> In a dish, some food items are mixed with others and cannot be picked out; other food items such as a piece of meat or a sweet potato for example can be taken from the dish (“picked” from the dish) and eaten as is.

Another approach could have been chosen, but it is important to ensure homogeneity so as to ensure comparability across surveys. At country-level, the same method should be used for all dietary diversity surveys.

There was no need to specify the quantity of a food item (ingredient/condiment) where:

- the notion of ingredient was obvious (staple cereal of a dish for example)
- the notion of condiment was obvious (salt, garlic, potash for example).

#### *Individual food items that can be classified into more than one food group*

Some food items can be classified in two different food groups depending on the quantity consumed. For example, fish powder could be used in small quantities in some recipes and in larger quantities in other recipes. In the first case, fish powder should be classified in the food group of “condiments” while in the second case, it should be classified in the food group of “fish”.

The methodology agreed on in these surveys facilitated the classification of this kind of food because the notion of ingredient/condiment of each food item recorded in the open recall was specified. For example, baobab leaves used in large amounts to prepare baobab leaf sauce were ingredients and were classified in the food group of “green leafy vegetables”; baobab leaf powder used as a condiment was classified in the food group of condiments. This way of classifying was based on the household’s own recipe.

A food item could also belong to different food groups according to the main ingredient it was made from (see box 1). It was thus necessary to specify the main ingredient of some food items.

Finally, a food item could belong to different food groups according to the part that was consumed. This was the case for vegetables, pulses, or roots/tubers where leaves or fleshy parts (the vegetable in itself) could be consumed. For example, onion leaves or onion bulb could be consumed. Onion leaves were classified in the food group “green leafy vegetables” while onion bulb was classified in the food group “other vegetables”.

In the framework of the surveys of the PASA Mali 5, each food item recorded in the open recall was described according to 3 criteria required to classify it in the adequate food group:

- Part (leaves, bulb, seeds, etc.)
- State (fresh, dried, powder, paste, juice)
- Quantity used in the recipe (ingredient/condiment)

The issue of classification of food items has also arisen regarding some drinks. Drinks made primarily from fresh fruit were classified in the groups « other fruits » or « vitamin A rich fruits » according to their vitamin A content<sup>5</sup>. Drinks made from fruit or leaves but containing a large amount of sugar (for example *bissap* or sweetened tamarind fruit or leaf juice) were classified in the group « sweets ». Finally, drinks made primarily from water (e.g. herbal tea) and that were not sweetened (for example unsweetened ginger juice or millet bran fermented water) were classified in the food group « spices/condiments/beverages ».

#### *Mixed dishes and food preparations*

When a mixed dish was consumed, the survey team had to agree on a methodology to disaggregate it in order to record all of its individual components in their respective food groups.

As a rule, some basic foods are listed only under their main ingredient. For example, bread is classified in the group of cereals even if some other components are added in small amounts during the preparation.

As part of our surveys, all mixed dishes and food preparations were disaggregated into food items (ingredients and condiments). The name of a dish was recorded in the open recall, by specifying the form (porridge, *tô*, etc.) and main component. If the dish was made of several parts (staple dish and side dish) each part was indicated in the name of the dish (ex: millet *tô* with baobab leaf sauce). All the food items included in a dish and consumed by the person had to be indicated, by disaggregating them separately for the staple dish and side dish. For each food item included in the dish, the three criteria (part, state and quantity) had to be specified (see interviewer manual for further details).

Particular attention was given to certain ingredients that might not be spontaneously recalled, such as added fats or oils, or secondary ingredients such as small amounts of vegetables, sugar or milk. To avoid this kind of omission, the survey team identified mixed dishes commonly consumed in the intervention area and listed all ingredients and condiments of the dish; this information was used to develop recipe sheets, which were another survey tool. The team also probed for ingredients not spontaneously mentioned in a mixed dish.

<sup>5</sup> **For liquids (e.g. juices):** liquids providing 60 µg ER or 30 µg EAR per 100 g are considered to be sources of vitamin A (CODEX definition).

For the particular case of fried foods (fritter for example), food was disaggregated in order not to forget oil used during the preparation.

#### *Red palm oil*

In the local context, red palm oil was available. Due to the very high carotenoid content of red palm oil (precursor form of vitamin A), FAO guidelines recommend adding a food group of « red palm products » to the questionnaire in areas where these foods are available (FAO, 2011). Therefore, the dietary diversity questionnaire used in the PASA Mali 5 included 17 food groups (instead of 16 food groups in the standard questionnaire).

#### *Atypical consumption*

Dietary diversity surveys implemented within the M&E system of the PASA Mali 5 were conducted outside of festive periods and Ramadan, periods during which it is likely that food consumption does not reflect a typical diet (FAO, 2011). Moreover, individuals who were ill and/or who participated in a celebration or market were screened out. If the illness, celebration or market had lasted only the day before the survey, the respondent was asked to recall food consumption of the previous day. If the illness, celebration or market lasted for several days before the interview, food consumption was not collected.

☒ All these methodological decisions were the same in all survey areas.

### 6.2.5. Presentation of the adapted dietary diversity questionnaire

The dietary diversity questionnaire for mothers and children aged 24-59 months was developed from the FAO standard questionnaire, which is relevant to these population groups. For children aged 6-23 months, WHO recommends using a specific questionnaire (WHO, 2008; WHO, 2010). The choice was made to develop a single dietary diversity questionnaire for both mothers/children aged 24-59 months and for children aged 6-23 months in order not to multiply survey tools making work in the field more difficult. The FAO questionnaire, although more detailed, is compatible with the WHO questionnaire. The dietary diversity score of the children 6-23 months was calculated according to WHO recommendations.

Therefore the questionnaire for children aged 6-23 months presented here met the specifications of these surveys. For surveys where children of this age group (6-23 months) are the main target, it is recommended to rely on the WHO questionnaire.

The dietary diversity questionnaire was preceded by a short section on socio-demographic characteristics of the mothers and the children that allowed disaggregating dietary diversity scores by some of these characteristics. These socio-demographic indicators were also discussed with the survey teams.

Food lists included in all the dietary diversity questionnaires (for mothers and children of different age groups) were identical, with the exception of certain foods that were specific to children and not included in the questionnaire for the mother (e.g. fortified flour<sup>6</sup>, milk-based infant formula). The dietary diversity questionnaires for children aged 6-23 months and for children aged 24-59 months were identical.

The dietary diversity questionnaires presented here (documents 2) are those developed for the lean season survey of AVSF 2013 (survey conducted in June 2013). As the dietary diversity questionnaire for children aged 6-23 months and that for children aged 24-59 months were identical, only the first one is shown here.



These dietary diversity questionnaires provide only **an example** and should not be used as is in another context. They can easily be adapted to a new context by following the successive adaptation steps.

Sections on socio-demographic characteristics of the mothers and children need to be adapted to survey purposes.

<sup>6</sup> Fortified flour is included in both the food groups of cereals and pulses/nuts and seeds due to its composition in survey areas (large proportion of both cereals and pulses).

Document 2a: Dietary diversity questionnaire for **mothers** developed for the lean season survey of AVSF 2013:

SECTION 2 : INDIVIDUAL DIETARY DIVERSITY QUESTIONNAIRE FOR MOTHERS OF CHILDREN UNDER 5	
DAIF1. Cluster number : <input type="text"/>	DAIF2. Household ID number : <input type="text"/>
DAIF3. Mother's first name / last name: <input type="text"/>	DAIF4. Mother's ID number <input type="text"/> → Interviewer: refer to the number assigned in ME20
DAIF5 : Age of mother (years) : <input type="text"/>	
DAIF6: Are you currently breastfeeding? (1=yes, 0=no) <input type="text"/>	
DAIF7: Are you currently pregnant? (1=yes, 0= no) <input type="text"/>	
DAIF8. Ethnic group of the mother: <input type="text"/> 01=Dogon, 02=Peulh, 03=Bambara, 04=Bobo, 05=Mossi, 06=Sonrhäi, 07=Malinké, 08=Sarakole/Soninke/Marka, 09=Tamachek, 10=Sénoufo/Minianka, 12=Dafing, 11=Other, specify _____	
DAIF9. Marital status of the mother : <input type="text"/> 1=married, 2=single, 3=widowed, 4=divorced, 5=other	
DAIF10. Educational level of the mother : <input type="text"/> 1=None 2=Basic 1st cycle 3=Basic 2nd cycle 4=Secondary 5=Higher 6=Coranic 7=Literate	
DAIF11. Three main occupations of the mother in descending order of importance: 01=Farmer 02=Livestock rearing 03=Fishing 04=Forest work (gathering/wood-charcoal/hunting...) 05=Trader 06=Carrier 07=Public employee 08=Private employee 09=Housewife 10=Pupil 11=Retired/Pensioner 12=Artisan, 13=Tour guide, 14=Traditional healer 15=Marabout/feticheur 16= Other independent 17=Tree farming/plantation 18= Horticulture, 19= Petty trader	
DAIF11A <input type="text"/> DAIF11B <input type="text"/> DAIF11C <input type="text"/>	
DAIF12. Did you suffer any illness that prevented you from eating as usual yesterday? (yes=1, no=0) <input type="text"/> <i>If no, go to DAIF13</i>	
DAIF12A. <u>If yes</u> , has this illness that prevented you from eating as usual been lasting for several days? (yes=1, no=0) <input type="text"/>	
DAIF13. Was yesterday a celebration day (baptism, marriage, funeral) or a market day? (yes=1, no=0) <input type="text"/> <i>If no, go to open recall</i>	
DAIF13A. <u>If yes</u> , has this celebration or market been lasting for several days? (yes=1, no=0) <input type="text"/>	

Instructions for the interviewer:

- 1) This dietary diversity questionnaire has to be administered to the mother of a child under 5.
- 2) The recall time period is the day before (day and night), however:
  - If the day before was a celebration day (baptism, marriage, funeral) or a market day when food consumption was unusual, or a day when the mother was ill<sup>7</sup>, then the recall period is the day preceding the celebration/market/illness.
  - If the celebration, market or illness lasted for several days (DAIF12A=1 OR DAIF13A=1), do not ask about the food consumption of the mother: cross out the open recall space and write "9" in each box in the right-hand column of the list of food groups. Then skip to the children of this mother.
- 3) Write down all foods and drinks mentioned by the mother in the spaces below. Detail the composition of mixed dishes (list of ingredients). When the mother has finished mentioning all foods and drinks eaten (meals and snacks), probe for meals and snacks not mentioned. When the recall is complete, underline all foods mentioned in the list of foods on the next page of the questionnaire. For each food group not mentioned, ask if foods of that group were eaten.

Read to the respondent:

**"Please describe all foods (meals and snacks) that you ate or drank yesterday during the day and night, whether at home or outside the home. Start with the first food or drink of the morning."**

**Into Bambara :**

Am bi fe ka dôn, kounau tilé kono, ani sukonon, i ye doumini nounouké ani a yé mi mi miu sokonon ani kénénan. Anba daminé ni douminiu folo ani a ye mi min sôgoma.

**Into Peulh :**

Halanam, nguuré/gnamri ko naminda kègnè na yarinda, ioudè fadjiri waredè m'bôtari yaade hirande ley suuduma et sellafou. Pati yekiita kô gnamindafou feytogutaari wôhin. In poundiran tadjolkodjol

**Into Dogon :**

Ya yedié aame, ya daga dè, kagné togou ou gné maa togou wo non be pôrôlétromin doumounôlé yadô tégébèrèou

<sup>7</sup> answer to DAIF12='YES' AND answer to DAIF12A='NO' and/or answer to DAIF13='YES' AND answer to DAIF13A='NO'

Daraka (breakfast)	Kofana / Dalamagalan / Niéguéla (snack)	Tiléla (lunch)	Kofana/ Dalamagalan/ Niéguéla/ Kodjan (snack)	Sourofana (dinner)	Kofana Dalamagalan Niéguéla (snack)

No.	Food groups	Examples	Consumption no = 0 yes = 1 (not applicable=9)
QDAF1	CEREALS	Sorghum, sorghum "cream", sorghum couscous, sorghum <i>tô</i> ; millet, millet "cream"/ <i>dégué/thiamgui</i> , millet couscous, millet <i>tô</i> (made from flour/broken millet), maize (broken maize or maize flour), toasted sweet maize, maize <i>tô</i> , fonio, fonio <i>tô</i> , rice, noodles (macaronis, etc.), wheat, bread, millet/wheat « <i>paté</i> », <i>farini</i> (made from wheat), millet/rice crepe, maize/millet/rice porridge, millet/maize/rice fritter	<input type="checkbox"/>
QDAF2	WHITE ROOTS AND TUBERS	White-fleshed sweet potato, potato, cassava, taro root, plantain ( <i>aloco</i> ), yam, African fan palm root, water lily root, turnip, <i>tô</i> made from white-fleshed sweet potatoes	<input type="checkbox"/>
QDAF3	VITAMIN A RICH VEGETABLES AND TUBERS	Carrot, red pepper, orange-fleshed sweet potatoes, orange/dark-yellow-fleshed squash ( <i>tô</i> made from orange-fleshed squash), <i>tô</i> made from orange-fleshed sweet potatoes	<input type="checkbox"/>
QDAF4	DARK GREEN LEAFY VEGETABLES	Baobab leaves, roselle leaves ( <i>dah</i> ), dark-green shallot leaves, onion leaves, squash leaves, bean leaves, <i>jaxatou</i> leaves ( <i>goyo</i> ), <i>m'poron</i> , potato leaves, spinach, dark-green lettuce, <i>lélé</i> leaves, <i>fakoye</i> leaves, any dark-green wild leaves	<input type="checkbox"/>
QDAF5	OTHER VEGETABLES	Fresh tomato, fresh or dried okra, eggplant, local eggplant ( <i>jaxatus</i> or <i>goyo</i> ), zucchini, light-coloured fleshed squash, cucumber, cabbage, onion, shallot, green pepper, green beans, beets, <i>kapokié</i> flowers, lettuce (light-green leaves), green peas, <i>dah</i> pulp, <i>gougoun</i> fruit	<input type="checkbox"/>
QDAF6	VITAMIN A RICH FRUITS	Mango, papaya, orange-fleshed melon, fruit of African locust bean ( <i>néré</i> ), powder made from the fruit of African locust bean	<input type="checkbox"/>
QDAF7	OTHER FRUITS	Watermelon, orange, lemon, wild dates ( <i>zéguéné/mono</i> ), dates, jujuba, pineapple, apple, banana, guava, <i>sounsoun</i> , avocados, wild fruits (« <i>raisin</i> »/ <i>bembé</i> , monkey-bread, baobab fruit), shea fruit pulp, liana fruit ( <i>zaban</i> ), African fan palm fruit, <i>dana</i> , <i>oumbouré</i> , <i>tabanoro</i> , <i>tabakoumba</i> , <i>dramo</i> , <i>béré</i> , <i>yiriba-den</i> , cashew nut fruit, doum fruit Fresh fruit juices, plum fruit juice, grape « gel »	<input type="checkbox"/>
QDAF8	ORGAN MEAT	Liver, kidneys, heart, lungs, or any other organ meat (from calf, mutton, goat, camel, poultry), entrails (entrails soup), coagulated blood	<input type="checkbox"/>
QDAF9	FLESH MEATS	Beef, mutton, goat, rabbit, bush meat, chicken, guinea fowl, camel, bird, gazelle, goose, duck, varan, turtle, insects, caterpillars/worms, lizard, wild rats, bush rats, squirrels, partridges, snake, mouse, warthogs, deer	<input type="checkbox"/>
QDAF10	EGGS	Chicken or guinea fowl or varan or duck eggs	<input type="checkbox"/>
QDAF11	FISH AND SEAFOOD	Fresh fish, smoked fish, salted fish, dried fish (except pinch of powder), canned fish (sardines, tuna...), all shellfish and seafood (shrimp, squid, octopus, lobster...), dried or smoked fish powder (in large quantities)	<input type="checkbox"/>
QDAF12	PULSES, NUTS AND SEEDS	Beans (cowpeas), <i>fari</i> , peanut (paste or plain), sesame, bambara groundnut/woandzou, sweet peas, hibiscus/ <i>datou</i> (in large quantities for sauce), African locust bean/ <i>soumbala</i> (in large quantities for sauce), cashew nuts, boscia nuts, wild nuts, chickpea, lentil, water lily seeds, other dried pulses	<input type="checkbox"/>
QDAF13	MILK AND MILK PRODUCTS	Fresh milk, milk powder, condensed milk (sweetened or not), curd, yogurt, cheese	<input type="checkbox"/>
QDAF14	OILS AND FATS	Vegetable oil (peanut, sesame, coconut, wild date oil, etc. – for sauces, seasonings, frying, fritter, crepe...), shea butter/oil, cow butter ( <i>sirimé</i> ), vegetable fats/margarine, mayonnaise, sour cream, fresh cream, lard	<input type="checkbox"/>
QDAF15	RED PALM PRODUCTS	Red palm oil, red palm nuts	<input type="checkbox"/>
QDAF16	SWEETS	Sugar, lump sugar (in tea, coffee, porridge, fritter, crepes...), soft drinks (sweetened soda, hibiscus juice, sweetened ginger juice, tamarind leaf or fruit sweetened juice, monkey bread juice, lemon juice), palm wine ( <i>banji</i> ), honey, jam, candy, biscuits	<input type="checkbox"/>
QDAF17	SPICES, CONDIMENTS  BEVERAGES	<u>Spices, condiments</u> : chili, pepper, vinegar, garlic, mix spices, cinnamon, salt, Maggi cube, white Maggi <sup>8</sup> , laurel, tomato paste, condiment made from roselle/hibiscus (seeds/ <i>datou</i> , leaves or pulp/ <i>dah-sogo</i> ), condiment made from onion or dried/processed onion leaves or from dried shallots, « potash », condiment made from turnip roots, condiment made from soy, <i>nanayé</i> , kola nut, boscia stem juice, « <i>alkafoune</i> » seed powder  <u>Small quantity</u> of fish powder, of okra powder, of dried baobab leaf powder/ <i>nanogonifing</i> , of pepper powder, of <i>lélé</i> leaf powder, of african locust bean powder ( <i>soumbala</i> ), yeast  Tea, "lipton", coffee, <i>chicory</i> , <i>kinkeliba</i> , unsweetened tamarind leaf or fruit juice, unsweetened ginger juice, unsweetened hibiscus ( <i>dah</i> ) pulp juice, unsweetened fermented millet bran water, unsweetened « <i>niaman</i> » leaf juice	<input type="checkbox"/>
QDAF18	Did you eat anything outside the home yesterday? yes=1, no=0		<input type="checkbox"/>

<sup>8</sup> Mono sodium glutamate (MSG)

Document 2b. Dietary diversity questionnaire for children aged 6-23 months developed for the lean season survey of AVSF 2013

SECTION 4 : INDIVIDUAL DIETARY DIVERSITY QUESTIONNAIRE FOR CHILDREN AGED 6-23 MONTHS	
DAE1. Cluster number : <input type="text"/>	DAE2. Household ID number : <input type="text"/>
DAE3. Mother's first name/last name: <input type="text"/>	DAE4. Mother's ID number → Interviewer : refer to number assigned in ME20 <input type="text"/>
DAE5. Child's first name/last name: <input type="text"/>	DAE6. Child's ID number → Interviewer : refer to number assigned in ME20 <input type="text"/>
DAE7. Child's date of birth : <input type="text"/> Day/Month/Year of birth : <input type="text"/> / <input type="text"/> / <input type="text"/> → Ask for <u>exact date of birth</u> , check with the birth certificate, etc. For lack of document, use the calendar of events	
DAE8. Child's age in months : <input type="text"/> → Make sure the child is aged <u>6 to 23 months</u> before administering this questionnaire	
DAE9. Child's sex: Male=1 Female=2 <input type="text"/>	
DAE10. Which person was in charge of the child's meals yesterday? <input type="text"/> 1=the mother, 2=the grandmother, 3=another adult family member, 4=a family member under 15 years, 5=people outside the family (neighbours, friends...) → Interviewer :ask this person (usually the mother) to answer the questionnaire	
DAE11. <u>Yesterday</u> , was the child breastfed during the day or the night? (yes=1, no=0) <input type="text"/> <u>If YES, go to question DAE13</u>	
DAE12. <u>If no</u> , did the child receive breast milk in a different way, for example by spoon, cup or bottle or from another woman, <u>yesterday</u> during the day and the night? (yes=1, no=0) <input type="text"/>	
DAE13. Yesterday, how many times did the child eat solid, semisolid or soft foods during the day and the night? <input type="text"/>	
DAE14. Did the child suffer any illness that prevented him/her from eating as usual yesterday? (yes=1, no=0) <input type="text"/> <u>If no, go to DAE15</u>	
DAE14A. <u>If yes</u> , has this illness been lasting for several days? (yes=1, no=0) <input type="text"/>	
DAE15. Was yesterday a celebration day (baptism, marriage, funeral) or a market day? (yes=1, no=0) <input type="text"/> <u>If no, go to open recall</u>	
DAE15A. <u>If yes</u> , has this celebration or market been lasting for several days? (yes=1, no=0) <input type="text"/>	

#### Instructions for the interviewer:

- 1) The person/s in charge of the child's meals yesterday has to describe all foods and drinks eaten by the child that day.
- 2) The recall time period is the day before (day and night), however:
  - If the day before was a celebration day (baptism, marriage, funeral) or a market day when food consumption was unusual, or a day when the child was ill<sup>9</sup>, then the recall period is the day preceding the celebration/market/illness.
  - If the celebration, market or illness lasted for several days (DAE14A=1 OR DAE15A=1), do not ask about the food consumption of the child: cross out the open recall space and write "9" in each box in the right-hand column of the list of food groups. Then skip to the other children of this mother.
- 3) Write down all foods and drinks that the child ate in the spaces below. Detail the composition of mixed dishes (list of ingredients). When the respondent has finished mentioning all foods and drinks consumed by the child (meals and snacks), probe for meals and snacks not mentioned.
- 4) When the recall is complete, underline all foods mentioned in the list of foods on the next page of the questionnaire. For each food group not mentioned, ask if the child ate a food of that group.

Read to the respondent:

**"Please describe all foods (meals and snacks) that the child ate or drank yesterday during the day and night, whether at home or outside the home. Start with the first food or drink of the morning".**

#### Into Bambara:

Am bi fe ka dôn, kounau tilé kono, ani sukonon, iden yé doumini nounoukè ani a yé mi miu; sokonon ani kènèma. An, ba daminé ni doumini foloyé ani a mi min sôgoma.

#### Into Dogon:

Ya yedié aame, ya daga dè, kagné togou inu wogné maa togou wo non be pôrôlétromin doumounôlé yadô tégébèrèou

#### Into Peulh:

Halanam, nguuré/gnamri ko sukaalel ma nami kègnè na yari, ioudè fadjiri waredè m'bôtari yaade hirande ley suudu et sella. Pati yekiita kômo gnamifou feytogutaari wôhin

<sup>9</sup> answer to DAE14='YES' AND answer to DAE14A='NO' and/or answer to DAE15='YES' AND answer to DAE15A='NO'

**DIETARY DIVERSITY QUESTIONNAIRES – LEAN SEASON SURVEY AVSF 2013 – PASA MALI 5**

Daraka (breakfast)	Kofana / Dalamagalan / Niéguéla (snack)	Tiléla (lunch)	Kofana/ Dalamagalan/ Niéguéla/ Kodjan (snack)	Sourofana (dinner)	Kofana Dalamagalan Niéguéla (snack)
<div>Enquete SDA PASA5 MALI</div>					

No.	Food groups	Examples	Consumption no = 0 yes = 1 (not applicable =9)
QDAE1	CEREALS	Sorghum, sorghum "cream", sorghum couscous, sorghum <i>tô</i> ; millet, millet "cream"/ <i>dégué/thiamguiri</i> , millet couscous, millet <i>tô</i> (made from flour/broken millet), maize (broken maize or maize flour), toasted sweet maize, maize <i>tô</i> , fonio, fonio <i>tô</i> , rice, noodles (macaronis, etc.), wheat, bread, millet/wheat « <i>paté</i> », <i>farini</i> (made from wheat), millet/rice crepe, maize/millet/rice porridge, millet/maize/rice fritter, <i>balonafama/mugu nafama</i> fortified flour ( <i>also contains pulse flour</i> )	<input type="checkbox"/>
QDAE2	WHITE ROOTS AND TUBERS	White-fleshed sweet potato, potato, cassava, taro root, plantain ( <i>aloco</i> ), yam, African fan palm root, water lily root, turnip, <i>tô</i> made from white-fleshed sweet potatoes	<input type="checkbox"/>
QDAE3	VITAMIN A RICH VEGETABLES AND TUBERS	Carrot, red pepper, orange-fleshed sweet potatoes, orange/dark-yellow-fleshed squash ( <i>tô</i> made from orange-fleshed squash), <i>tô</i> made from orange-fleshed sweet potatoes	<input type="checkbox"/>
QDAE4	DARK GREEN LEAFY VEGETABLES	Baobab leaves, roselle leaves ( <i>dah</i> ), dark-green shallot leaves, onion leaves, squash leaves, bean leaves, <i>jaxatou</i> leaves ( <i>goyo</i> ), <i>m'poron</i> , potato leaves, spinach, dark-green lettuce, <i>lélé</i> leaves, <i>fakoye</i> leaves, any dark-green wild leaves	<input type="checkbox"/>
QDAE5	OTHER VEGETABLES	Fresh tomato, fresh or dried okra, eggplant, local eggplant ( <i>jaxatus</i> or <i>goyo</i> ), zucchini, light-coloured fleshed squash, cucumber, cabbage, onion, shallot, green pepper, green beans, beets, <i>kapokié</i> flowers, lettuce (light-green leaves), green peas, <i>dah</i> pulp, <i>gougoune</i> fruit	<input type="checkbox"/>
QDAE6	VITAMIN A RICH FRUITS	Mango, papaya, orange-fleshed melon, fruit of African locust bean ( <i>néré</i> ), powder made from the fruit of African locust bean	<input type="checkbox"/>
QDAE7	OTHER FRUITS	Watermelon, orange, lemon, wild dates ( <i>zéguéné/mono</i> ), dates, jujuba, pineapple, apple, banana, guava, <i>sounsoun</i> , avocados, wild fruits (« <i>raisin</i> »/ <i>bembé</i> , monkey-bread, baobab fruit), shea fruit pulp, liana fruit ( <i>zaban</i> ), African fan palm fruit, <i>dana</i> , <i>oumbouré</i> , <i>tabanoro</i> , <i>tabakoumba</i> , <i>dramo</i> , <i>béré</i> , <i>yiriba-den</i> , cashew nut fruit, doumlier fruit Fresh fruit juices, plum fruit juice, grape "gel"	<input type="checkbox"/>
QDAE8	ORGAN MEAT	Liver, kidneys, heart, lungs, or any other organ meat (from calf, mutton, goat, camel, poultry), entrails (entrails soup), coagulated blood	<input type="checkbox"/>
QDAE9	FLESH MEATS	Beef, mutton, goat, rabbit, bush meat, chicken, guinea fowl, camel, bird, gazelle, goose, duck, varan, turtle, insects, caterpillars/worms, lizard, wild rats, bush rats, squirrels, partridges, snake, mouse, warthogs, deer	<input type="checkbox"/>
QDAE10	EGGS	Chicken or guinea fowl or varan or duck eggs	<input type="checkbox"/>
QDAE11	FISH AND SEAFOOD	Fresh fish, smoked fish, salted fish, dried fish (except pinch of powder), canned fish (sardines, tuna...), all shellfish and seafood (shrimp, squid, octopus, lobster...), dried or smoked fish powder (in large quantities)	<input type="checkbox"/>
QDAE12	PULSES, NUTS AND SEEDS	Beans (cowpeas), <i>fari</i> , peanut (paste or plain), sesame, bambara groundnut/woandzou, sweet peas, hibiscus/ <i>datou</i> (in large quantities for sauce), African locust bean/ <i>soumbala</i> (in large quantities for sauce), cashew nuts, boscia nuts, wild nuts, chickpea, lentil, water lily seeds, other dried pulses, <i>balonafama/mugu nafama</i> fortified flour	<input type="checkbox"/>
QDAE13	MILK (other than breastmilk) AND MILK PRODUCTS	Fresh milk, milk powder, condensed milk (sweetened or not), curd, yogurt, cheese, milk based infant formula	<input type="checkbox"/>
QDAE14	OILS AND FATS	Vegetable oil (peanut, sesame, coconut, wild date oil, etc. – for sauces, seasonings, frying, fritter, crepe...), shea butter/oil, cow butter ( <i>sirimè</i> ), vegetable fats/margarine, mayonnaise, sour cream, fresh cream, lard	<input type="checkbox"/>
QDAE15	RED PALM PRODUCTS	Red palm oil, red palm nuts	<input type="checkbox"/>
QDAE16	SWEETS	Sugar, lump sugar (in tea, coffee, porridge, fritter, crepes...), soft drinks (sweetened soda, hibiscus juice, sweetened ginger juice, tamarind leaf or fruit sweetened juice, monkey bread juice, lemon juice), palm wine ( <i>banji</i> ), honey, jam, candy, biscuits	<input type="checkbox"/>
QDAE17	SPICES, CONDIMENTS  BEVERAGES	<u>Spices, condiments</u> : chili, pepper, vinegar, garlic, mix spices, cinnamon, salt, Maggi cube, white Maggi, laurel, tomato paste, condiment made from roselle/hibiscus (seeds/ <i>datou</i> , leaves or pulp/ <i>dah-sogo</i> ), condiment made from onion or dried/processed onion leaves or from dried shallots, « <i>potash</i> », condiment made from turnip roots, condiment made from soy, <i>nanayé</i> , kola nut, boscia stem juice, « <i>alkafoune</i> » seed powder  <u>Small quantity</u> of fish powder, of okra powder, of dried baobab leaf powder/ <i>nanogonifing</i> , of pepper powder, of <i>lélé</i> leaf powder, of african locust bean powder ( <i>soumbala</i> ), yeast  Tea, "lipton", coffee, <i>chicory</i> , <i>kinkeliba</i> , unsweetened tamarind leaf or fruit juice, unsweetened ginger juice, unsweetened hibiscus ( <i>dah</i> ) pulp juice, unsweetened fermented millet bran water, unsweetened « <i>niaman</i> » leaf juice	<input type="checkbox"/>
QDAE18	Did the child eat anything outside the home yesterday? yes=1, no=0		<input type="checkbox"/>

#### 6.2.6. Instructions for use of the dietary diversity questionnaire

Use of the dietary diversity questionnaire is described in detail in the field interviewer manual (see field interviewer manual and aide-memoire). Only the main aspects are discussed here.

Within a household, all mothers of children under 5 and all children aged 6-23 months and 24-59 months have to be surveyed for dietary diversity. Within a household, the order of questionnaire administration is as follows: a first mother is interviewed for dietary diversity, then her children, followed by a second mother (if applicable) and then her children, etc.

The interviewer starts by interviewing the mother. First, he asks her about some socio-demographic characteristics and occurrence of illness and celebration/market the day before the survey. If these events had happened the day before the survey, the dietary diversity questionnaire focuses on the previous day. If these events had been lasting for several days, dietary diversity was not recorded.

The interviewer then asks the mother about her food consumption the day before the survey, by using the standard sentence translated into local language. The mother should describe her consumption in chronological order, and the interviewer will record what she consumed in the spaces for the open recall provided at the top of the questionnaire. For mixed dishes or food preparations, all food items of the dish have to be recorded, specifying for each food the part, state and quantity (ingredient if more than 1 tablespoon or condiment if less than 1 tablespoon). The interviewer checks that all food items consumed the day before were recorded (foods from mixed dishes, snacks, drinks, etc.).

When the mother has finished mentioning all foods consumed, the interviewer underlines all recorded food items in the list of foods, under the appropriate food group. Then he fills each box in the right-hand column of the list of food groups by coding "1" (YES) if at least one food item of the group was consumed. If no food item of a group was mentioned, the interviewer has to probe the mother for consumption of foods of this group by reading out the list of foods in the group. If the mother recalls having consumed a food listed, the interviewer has to underline this food in the list of foods and write it down in the open recall. If no food of this group was consumed, the interviewer codes "0" (NO) in the box in the right-hand column of the corresponding food group. In the boxes in the right-hand column of the list of food groups, only 0 (if no food of the group was consumed) or 1 (if at least one food of the group was consumed) should be recorded. If the respondent was absent or in case of illness/celebration/market for several days, the open recall is crossed out and "9" (not applicable) is recorded in each box in the right-hand column of the list of food groups.

When the dietary diversity questionnaire of a mother is completed, the interviewer administers the questionnaire for children. The respondent to this questionnaire is the mother of the child (or the person in charge of the child the day before the survey if it was not the mother). The same methodology than that used for the mother is applied to collect dietary diversity of the child.

#### 6.2.7. Advantages and limitations of the dietary diversity questionnaire

Food lists included in the dietary diversity questionnaire covered a large majority of the food items available and consumed in the survey area. However, these lists were not exhaustive and a food mentioned by the respondent might not be listed in the questionnaire. In this case, this food item was added to the corresponding group. In case of doubt on the classification of the "new" food item, the interviewer wrote it down in the margin; the supervisor classified it into the adequate food group, with the assistance of a nutritionist if necessary. New food items found during a survey were inventoried on a separate list to ensure a consistent classification.

Having the most exhaustive possible food lists facilitated the work in the field, avoided misclassification of foods and ensured consistency of the classification. As food lists could be quite long, it is important that interviewers become familiar with the questionnaire before data collection so as to be able to underline the food items easily and rapidly. Within each food group, the most common foods were listed before less common foods.

For dishes made from cereals (e.g. *tô*, porridge, cereal "cream", etc.), the main ingredient was recorded in the open recall (e.g. millet flour for millet porridge). In the list of cereals, there are ingredients (eg millet) as well as food preparations (eg millet porridge). This might be confusing for interviewers. One possible approach to facilitate the interviewer's work could be to mention, in the questionnaire, the food item followed by its usual forms of preparation. For the cereal group, the food list would be: sorghum (cream, couscous, *tô*); millet (cream, couscous, *tô*, porridge, fritter, etc.). Sorghum porridge could be thus underlined as: sorghum (cream, couscous, *tô*, porridge).

During the open recall, it was very important not to prompt the respondent to mention meals, snacks or food items that had in fact not been consumed. The interviewer should be careful about the way of probing.

Finally, dietary diversity data collection may be time consuming and requires detailed information from the respondent. It is thus important to ensure the availability of the respondent and to have a good knowledge of the food lists in order not to take too much time to fill the questionnaire.

### 6.3. Glossary of food items

#### 6.3.1. Purpose

Food groups and food lists of the dietary diversity questionnaire have to be translated into the country's official language and into local dialects. It is recommended not to translate the questionnaire "on the spot" during the interview. Before the survey, the dietary diversity questionnaire has to be translated and printed into each of the local languages (FAO, 2011).

In the framework of the PASA Mali 5 surveys, food lists included in the questionnaire were compiled and reviewed in French (the country's official language) but many difficulties arose for the translation into local languages (many different dialects in the area, problems with phonetic translation, etc.).

To overcome these constraints, a glossary French/local languages of food items was developed, in which food groups and all food items of the dietary diversity questionnaire were translated from French into local languages. During the survey, a French version of the questionnaire was used by the interviewers together with a glossary for the names of foods in local languages.

#### 6.3.2. Description

The glossary includes all foods of the dietary diversity questionnaire, presented by food group. In each food group, the food list follows the same order as that of the questionnaire (most common foods at top of the list).

Each food item is translated into the main dialects of the survey area.

#### 6.3.3. Development and adaptation

The glossary of food items was developed by survey team members after finalizing the dietary diversity questionnaire.

Translation was performed by several people (from NGOs, survey teams, key informants) with a good knowledge of food consumption and of how people talk about food in the area. Professional translators would not automatically have this kind of knowledge. The survey teams were closely involved in this translation.

The glossary of food items was adapted to each survey area.

#### 6.3.4. Presentation

The glossary of food items developed for the lean season survey of AVSF 2013 is presented here<sup>10</sup>. It has been adapted in the course of successive surveys so as to include all the foods added to the food groups of the questionnaire.



This glossary of food items is only an **example** and should not be used as is in another context. All foods included in the food lists of the questionnaire should be translated into local languages/dialects.

<sup>10</sup> Only some food items from the glossary are presented here ; the whole glossary is available in appendix 3 of the document « Outils et supports d'enquête de diversité alimentaire – Annexes », on the CONFED website (in French only)

## Document 3: Glossary French/local languages – lean season survey of AVSF 2013

FRENCH	ENGLISH	BAMBARA	PEULH	DOGON
<b>CEREALES :</b>	<b>CEREALS:</b>	<b>SOUAMAN :</b>	<b>NIAMRI :</b>	<b>DENREN-IN-BE</b>
Sorgho	Sorghum	Kénigué	M'bayéri	Emè
Crème de sorgho	Sorghum "cream"	Kénigué dèguè	Tiôbal m'bayeri	Emèma pirin
Couscous de sorgho	Sorghum couscous	kéniqué bassi	latjiri m'bayéri	Emèm lassirou
...				
<b>TUBERCULES BLANCS, RACINES ET PLANTAIN :</b>	<b>WHITE ROOTS AND TUBERS :</b>	<b>KOUMAFENW :</b>	<b>KOULIDJI KO RÈMÈTÈ LEYLEYDI KO DADIWONIHEIN:</b>	<b>DENREN-IN-DJOU-KOUNON-kô</b>
Patate douce blanche	White-fleshed sweet potatoes	Woso djèman	wossô danèdjô	banakou
Pomme de terre	Potato	komtèri	ponpitèrè	pomouterou
Manioc	Cassava	banakou	banankou	banakou bere
...				
<b>LÉGUMES ET TUBERCULES RICHES EN VITAMINE A:</b>	<b>VITAMIN A RICH VEGETABLES AND TUBERS:</b>	<b>VITAMINE A BÈ NAKÔNÔFENW ANI KOUMAFENMINIW NA :</b>	<b>KOULÈAWÈTÈDÈ KO VITAMINE A WONIHEIN :</b>	<b>SADIGIN-MA-DENREN-IN-WITAMINOU A SAA:</b>
Carotte	Carrot	Carôti	carôti	karoti
Poivron rouge	Red pepper	poivronblé	poiwronbodèdjô	poivronbanou
Patate douce à chair orange	Orange-fleshed sweet potatoes	jéwoson	wossobodèdjô	Banakou banrou ko bèrè banrou kô
...				
<b>LÉGUMES A FEUILLES VERT FONCÉ :</b>	<b>DARK GREEN LEAFY VEGETABLES:</b>	<b>NABOULOU BIN KENE MAW :</b>	<b>HAKOLODJI KETJI :</b>	<b>SONMOYE-MA-TIMEKOURO-WEROUBE</b>
Feuilles de baobab	Baobab leaves	n'siraboulou	hakolodjiôro	Orokourobe,
Feuilles d'oseille	Roselle leaves	da boulou	hakolodjipolè	Donou-koura
Feuilles d'échalote vert foncé	Dark-green shallot leaves	Diababoulou minsèman	hakolodjidiaba pamarô	DogomeGaou ma kourobé
...				
<b>AUTRES LÉGUMES :</b>	<b>OTHER VEGETABLES:</b>	<b>JIRIDENWEREW :</b>	<b>E KOULEDDJI GODI KASSIN :</b>	<b>SADIGUEN-MA-IN-LAGABE :</b>
Tomates fraîches	Fresh tomatoes	Tamatikènè	tamati kètio	Tamatou-oroube
Gombo frais ou sec	Fresh or dried okra	ngankènè walima jalan	gagadjè kètìè na djordè	Gagadjì oroube/Ogoporo-oroube/ma-maï,
Aubergines	Eggplant	toubabougôyô	diagantôtoubakou	Dogokèrouwèbe
...				
<b>FRUITS RICHES EN VITAMINE A :</b>	<b>VITAMIN A RICH FRUITS:</b>	<b>VITAMINEABESOROKOSEBE JIRIDEWMINIW NA :</b>	<b>M'BIBE LAIDE KO WITAMINE A :</b>	<b>TIMEBEMAA-SADIGUEN-MA-KIDJE-WITAMINOUSA :</b>
Mangue	Mango	mangoro	mangôrô	Mankoro
Papaye	Papaya	mayé	papayé	Papayi
Melon à chair orange	Orange-fleshed melon	mélou nèrèmkoulama	melonmoussa	Mèlou saye
...				
<b>AUTRES FRUITS :</b>	<b>OTHER FRUITS:</b>	<b>JIRIDENWEREW :</b>	<b>M'BIBE LAIDE GODE</b>	<b>TIWINE-IN-LAGABE</b>
Pastèque	Watermelon	zèrin	dindin	Melon bèrè banrou
Orange	Orange	lémourouba	lemourouba	Lemourouba
Citron	Lemon	lémouroukoumouni	lémouroukoumouni	citron
...				
<b>ABATS :</b>	<b>ORGAN MEAT:</b>	<b>BAKANWKONOLOFEW :</b>	<b>KO WONI LEYDABA :</b>	<b>AROUSEGUE-MAA-BEREKORO-LEKOUNOUBE</b>
Foie	Liver	Bignè	hègnèrè	Arousèguè kènè
Cœur	Heart	son	berdin	kènèdougo
...				
<b>VIANDE :</b>	<b>FLESH MEATS:</b>	<b>SOKO :</b>	<b>TEOU :</b>	<b>NAWANBE</b>
Bœuf	Beef	Missi	naguè	Na gan
Mouton	Mutton	saka	balou	pedjou
Chèvre	Goat	ba	m'bewa	bèrou
...			bojel	Djoon
<b>ŒUFS :</b>	<b>EGGS:</b>	<b>FANW :</b>	<b>BOTIODE :</b>	<b>TAROUBE</b>
Œufs de poule	Chicken eggs	chè fan	bôtiôdètiôfal	Egnè-taroube
Œufs de pintade	Guinea fowl eggs	kami fan	bôtiôdèdiaoulal	gnam-tarou
...				
<b>POISSONS :</b>	<b>FISH AND SEAFOOD:</b>	<b>JEKEW :</b>	<b>LIDJI :</b>	<b>IIDJOUBE</b>
Poisson frais	Fresh fish	Jèkèkènèw	lidjikètè	Ijou-orou,
Poisson fumé	Smoked fish	jèkèwousouw	lidjiouradi	ijou-simou
Poisson salé, séché	Salted/dried fish	Kôkôjijèkè/jèkèjalan	lidjiyordè	nèmou-kounou idjou-maïye
...				
<b>LÉGUMINEUSES, NOIX ET GRAINES :</b>	<b>PULSES, NUTS AND SEEDS:</b>	<b>SENE FEN WEREW,KOLOMA ANI KISEMA :</b>	<b>KO REMETE, KO M'BIBE :</b>	<b>DEREN-IN-NIMOUBE-TIME-SA</b>
Haricots (niébé)	Beans (cowpeas)	Chô	gnèbè	Nimoube
Fari	Fari	chôfroufrou	fari	Tom nyou
Arachide (pâte ou nature)	Peanut (paste or plain)	tiga (kisèma walima dèguè)	tigadjè(tigadèguè,na kètio)	èrèmournou
...				

FRENCH	ENGLISH	BAMBARA	PEULH	DOGON
LAIT ET PRODUITS LAITIERS :	MILK AND MILK PRODUCTS:	NONO ANI FEN NONOMAW :	KOSSAM KAGNÈ KO KOSSAM WONIHEIN:	ÈMOU, WO-BÈRÈ-GOKOBE
Lait frais	Fresh milk	Nônôkènè	biradan	Emoukoro
Lait en poudre	Milk powder	nônômougou	tiodikassam	Em pinamou
Lait concentré sucré ou non	Condensed milk (sweetened or not)	nônôdôrô (soukaroma ni soukarota)	Kassammodoudô (ko soucoro na sucoro wala)	Botu ma em nii sucro kunu
...				
HUILES ET GRAISSES :	OILS AND FATS:	TOULOU NI KENW :	NEBAN ET BELE :	NOUGOUBE, SIYEBE :
Huile d'arachide	Peanut oil	Tiguètoulou	nebantigadiè	Erè-nougou,
Huile de sésame	Sesame oil	Bènètoulou	nèbanmènèmènè	nam-djou nougou
Huile de coco	Coconut oil	kakotoulou	nebanccoco	koko-nougou
...				
PRODUITS DE PALME ROUGE :	RED PALM PRODUCTS:	TOULOU BLEN :	NEBAN BODEDJO :	NOUGOUBANOU :
Huile de palme rouge,	Red palm oil	tén touloubén,	tén touloubodédjô	Tinwè-nougousabe
Noix de palme rouge	Red palm nuts	tènbélékisé	Bibè ténn toulou	nougoubanou
SUCRÉS ET PRODUITS SUCRÉS :	SWEETS:	SUKARO NI SUKAROMAFENW :	SUCORO KAGNÈ KO SUCORO WONIHEIN :	SIKOROBE-KOTIME-SABE :
Sucre en poudre ou en morceaux (dans le thé, le café, la bouillie beignets, galettes...)	Sugar, lump sugar (in tea, coffee, porridge, fritter, crepes...)	Soukaromoukou walima kisè( té la, café la, sérila froufrou, womi)	tiodin Sucoro na couroudjè (ley té, café, m'boyiri froufrou, womi...)	Sikoro-pinam, gounoum (té-lemaa, kapé-lemaa, ara-lemaa, prouprou, wogni...)
Boissons sucrées	Soft drinks	jimafènw soukaroma	yarètédan mo sucoro	boison-sikorokounoube
...				
ÉPICES, CONDIMENTS ET BOISSONS :	SPICES, CONDIMENTS AND BEVERAGES:	NAFENW NI MINFENW	SOMAYADIE ET KO YARETE	SONMOYIBE, KIDJÈ-NIGA-BENONKOBÈ
Épices, condiments	Spices, condiments	nafènw	Somayadie	Sonmoye-be
Piment	Chili	foroto	danti	kèpèlou
Poivre	Pepper	poivron	poiwire	pouwawirou
...				

### 6.3.5. Instructions for using the glossary

The glossary of food items was intended for interviewers. When the interviewer has finished underlining all foods recorded in the open recall, he writes down « 1 » (yes) in the box in the right-hand column of the corresponding food group if at least one food of the food group is underlined. If no food is underlined in a food group, he has to probe with the respondent that indeed no food of this group has been consumed. It is possible that the respondent omitted to mention some foods when performing the open recall. Since the name of a food group may have little meaning for the respondent, the interviewer should not ask for example “Did you eat foods from the group of vitamin A rich vegetables and tubers?” but rather should read out the list of foods of this group “Did you eat any food such as...”. After probing that none of the foods of the group were consumed, the interviewer can write down “0” (no) in the box in the right-hand column of the corresponding food group.

### 6.3.6. Advantages and limitations of the glossary

The glossary included all foods of the questionnaire, providing a reliable tool for probing and for ensuring consistency of food names. While it is recommended to translate the dietary diversity questionnaire directly into local languages it was not feasible in this context and the glossary was an alternative that ensured that the names of all foods were listed and translated consistently.

## **6.4. Recipe sheets**

### 6.4.1. Purpose

The purpose of the recipe sheets was to provide the interviewer with an inventory of foods commonly used in a mixed dish or in a food preparation. This inventory aimed at avoiding omission of some foods added to a mixed dish and not mentioned spontaneously by the respondent (oils, fats, small quantities of vegetables or meat).

### 6.4.2. Description

The recipe sheets are an inventory of the main mixed dishes and their components in the survey area. In these sheets, the staple dish is described as well as all the food items used to make the dish. For each staple dish, sauces that generally accompany it are also described and disaggregated. The food items of a mixed dish are disaggregated into required ingredients (i.e. main ingredients of the dish), optional ingredients, usual condiments, other condiments which may be added and oils/fats. The interviewer was instructed to use the recipe sheets to probe the respondent for often forgotten food items. Because of variations in the recipes, in a given recipe sheet a food item can be classified as an ingredient or as a condiment depending on the amount used (more or less than a tablespoon). In order to decide whether a food item was used by the respondent as an ingredient or a condiment in a mixed dish, the respondent was asked about the quantity of the food item used in her recipe (more or less than a tablespoon).

### 6.4.3. Development

The recipe sheets were developed in parallel to the adaptation of the dietary diversity questionnaire. Meetings with survey teams, with key informants and focus-groups allowed compiling the main recipes and their ingredients. In the course of the successive survey rounds (lean season/post-harvest season), the recipe sheets were completed by the survey team through meetings in communities, so as to have a comprehensive (although not exhaustive) inventory of the main dishes and their ingredients in the survey area for all seasons. The recipe sheets were adapted to each survey area.

### 6.4.4. Presentation

The recipe sheets presented here are those developed for the lean season survey of AVSF 2013.



These recipe sheets are only an **example** and should not be used as is in another context. They must be adapted to the survey area.

Document 4: Recipe sheets developed for the lean season survey of AVSF 2013

RECIPE SHEETS FOR THE LEAN SEASON SURVEY OF AVSF 2013

For each mixed dish or preparation, describe precisely all food items used in the recipe.

Particular attention should be given to some ingredients that may be omitted in a mixed dish, for example oils or fats or secondary ingredients such as small quantities of meat or vegetables.

**IMPORTANT NOTES:**

For each food item that goes into a mixed dish or preparation, specify if it is an ingredient or a condiment. A food item is an ingredient if the quantity used in the recipe is more than 1 tablespoon, otherwise it is a condiment.

If the mixed dish or preparation is made at household level, the minimum quantity (1 tablespoon) applies to the dish/preparation for the household; if the dish or preparation is made at individual level, the minimum quantity (1 tablespoon) applies to the dish/preparation for the individual.

Ingredients (more than 1 tablespoon in the preparation) have to be classified into the corresponding food group. Condiments (less than 1 tablespoon in the preparation) have to be classified into the food group “condiments”.

Food items “picked” from a mixed dish and consumed by the individual (for example a piece of fish or meat, a piece of squash, etc.) are always considered as an ingredient.

In the table below, shaded parts represent the staple dish and the white parts represent the usual side dishes or sauces.

Type of mixed dish	Required ingredients	Optional ingredients	Condiments		Oils/fats (optional)
			Usual condiments	Other condiments	
<b><u>Millet or sorghum tô</u></b>	Millet or sorghum flour	-	Potash	-	
<b><u>Tô made from fonio and beans</u></b>	Fonio and beans	-	-	-	
<b><u>Dried baobab leaf powder sauce</u></b>	Dried baobab leaf powder	Fresh or dried shallot or onion bulbs (large quantity), dried fish powder (large quantity), <i>soumbala</i> (large quantity)	Salt, chilli, white Maggi, Maggi cube	<i>Datou</i> (small quantity), dried fish powder (small quantity), <i>soumbala</i> (small quantity)	Peanut oil, sheabutter (optional)
<b><u>Fresh baobab leaf sauce</u></b>	Fresh baobab leaves	Fresh or dried shallot or onion bulbs (large quantity), dried fish powder (large quantity), <i>soumbala</i> (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Datou</i> (small quantity), fish powder (small quantity), <i>soumbala</i> (small quantity)	Peanut oil, sheabutter (optional)
<b><u>Okra sauce (dried or fresh)</u></b>	Fresh okra or dried okra powder	Fresh or dried shallot or onion bulbs (large quantity), piece of smoked/fresh/dried fish, fish powder (large quantity), meat (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Datou</i> (small quantity), fish powder (small quantity), <i>soumbala</i> (small quantity)	Peanut oil, sheabutter (optional)
<b><u>Kapok flower sauce</u></b>	Dried <i>kapok</i> flowers	Fresh or dried shallot or onion bulbs (large quantity), piece of smoked/fresh/dried fish or piece of meat, fish powder (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Datou</i> (small quantity), fish powder (small quantity), <i>soumbala</i> (small quantity)	Peanut oil, sheabutter (optional)
<b><u>Red sauce for tô</u></b>	Fresh tomatoes	Meat or piece of smoked fish, fish powder (large quantity), fresh or dried shallot or onion bulbs (large quantity)	Salt, chilli, white Maggi, Maggi cube, tomato paste	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), dried onion bulb powder (small quantity), fish powder (small quantity)	Peanut oil or sheabutter (optional)
<b><u>Porridge made from cereals (millet, sorghum)</u></b>	Millet or sorghum flour	Sugar (large quantity)		Sugar (small quantity)	
<b><u>Fonio</u></b>	Fonio	Dried okra powder (large quantity), dried/fresh baobab leaf powder (large quantity)	-	-	
<b><u>Oily rice dish</u></b>	Rice	Beef or mutton meat, piece of fresh or smoked fish, cabbage (large quantity), fresh or dried shallot leaves (large quantity), onion leaves or bulbs (large quantity), fresh tomatoes or tomato paste (large quantity)	Salt, chilli, white Maggi, Maggi cube		Peanut oil or sheabutter (optional)
<b><u>Bean dish with rice/millet/fonio without sauce</u></b>	Beans/rice/fonio/millet		Salt, chilli		Peanut oil or sheabutter (optional)
<b><u>Bean dish with rice/millet/fonio with sauce</u></b>	Beans/rice/fonio/millet	-	-	-	-
<b><u>Onion sauce</u></b>	Fresh onion or shallot bulbs	Beef or mutton meat, piece of fresh or smoked fish, <i>dah</i> pulp (large quantity), <i>jaxatou</i> (large quantity), cabbage (large quantity), fresh or dried shallot leaves (large quantity)	Salt, chilli, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity)	Peanut oil or sheabutter (optional)
<b><u>Rice accompanied with sauce</u></b>	Rice	-	-	-	
<b><u>Dried baobab leaf sauce (for fonio or rice)</u></b>	Dried baobab leaves	Meat, piece of smoked/fresh/dried fish, <i>soumbala</i> (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), fish powder (small quantity)	Peanut oil or sheabutter (optional)
<b><u>Peanut sauce (for fonio or rice)</u></b>	Peanut paste	Beef or mutton meat, piece of fresh or smoked fish, fresh or dried shallot bulb or leaf powder (large quantity), <i>dah</i> pulp (large quantity), <i>jaxatou</i> (large quantity), cabbage leaves (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), fish powder (small quantity)	Peanut oil or sheabutter (optional)
<b><u>Onion sauce (for fonio or rice)</u></b>	Fresh onion or shallot bulbs	Beef or mutton meat, piece of fresh or smoked fish, <i>dah</i> pulp (large quantity), <i>jaxatou</i> (large quantity), cabbage (large quantity), fresh or dried shallot leaves (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity)	Peanut oil or sheabutter (optional)
<b><u>Fakoye dried leaf powder sauce</u></b>	Dried <i>fakoye</i> leaves	Meat, piece of smoked/fresh/dried fish, <i>soumbala</i> (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), fish powder (small quantity)	Peanut oil or sheabutter (optional)

Type of mixed dish	Required ingredients	Optional ingredients	Condiments		Oils/fats (optional)
			Usual condiments	Other condiments	
<u>Andioudangou or appala</u>	Millet or sorghum flour, fresh or dried roselle or <i>dah</i> leaves	<i>Datou</i> (large quantity)	Salt, chilli, white Maggi, Maggi cube	<i>Datou</i> (small quantity)	-
<u>Tougoudiou</u>	Crushed peanuts, dried <i>dah</i> leaves (large quantity)	-	Salt, chilli, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), fish powder (small quantity)	-
<u>Millet “cream”</u>	Millet flour	Unsweetened tamarind fruit or leaf juice or unsweetened <i>dah</i> pulp juice, « niaman » leaf juice, curd or milk powder, sugar, unsweetened ginger juice (large quantity)	Salt, chilli	Unsweetened fresh ginger root juice, <i>alkafoune</i> seed powder	-
<u>Mixed millet flour paste or wango</u>	Millet flour	Curd, sugar	Salt, chilli	Unsweetened fresh ginger root juice	-
<u>Dah pulp soup or dah sogu</u>	<i>Dah</i> pulp, peanut paste	Dried shallot leaves (large quantity), smoked/fresh/powder fish (large quantity), <i>soumbala</i> (large quantity), <i>datou</i> (large quantity)	Salt, chilli, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity)	-
<u>Broken millet or sorghum dish (Gnègnèkini)</u>	Broken millet or sorghum	-	Potash	-	-
<u>Baobab leaf sauce for Gnègnèkini</u>	Dried or fresh baobab leaves	Fish powder (large quantity)	Salt, chilli, white Maggi, Maggi cube	<i>Soumbala</i> (small quantity), <i>datou</i> (small quantity), fish powder (small quantity)	Peanut oil or sheabutter (optional)
<u>Millet or sorghum couscous</u>	Millet or sorghum flour	-	Dried or fresh baobab leaf powder (large quantity), chilli, salt	-	-
<u>Dah leaf sauce for millet or sorghum couscous</u>	Fresh or dried <i>dah</i> leaves	Crushed peanuts (large quantity), powder fish (large quantity), piece of smoked or dried fish, <i>soumbala</i> (large quantity), <i>datou</i> (large quantity)	Salt, chili, white Maggi, Maggi cube	Fish powder (small quantity), <i>soumbala</i> (small quantity), <i>datou</i> (small quantity)	Peanut or sesame oil (optional)
<u>Boscia nut dish</u>	Boscia nuts	Fresh onion bulbs (large quantity)	Salt, chili, white Maggi, Maggi cube	<i>Datou</i> (small quantity)	-
<u>Gougoune fruit dish</u>	<i>Gougoune</i> fruit	<i>Datou</i> (large quantity)	Maggi cube, salt, chili		

#### 6.4.5. Instructions for using recipe sheets

Recipe sheets are useful to check with the respondent that no food of a mixed dish/preparation was omitted. Once the respondent has described the composition of a mixed dish, the interviewer probes the respondent that no other food was added during the preparation. For example, he asks if some vegetables or meat were added to a dish that usually contains some of these ingredients and if oil was used during the preparation, etc.

#### 6.4.6. Advantages and limitation of the recipe sheets

This tool is useful to probe with the respondent that no food of a dish was omitted during the open recall. These sheets are also useful for supervisors to check the consistency of the open recall, nevertheless keeping in mind that each household has its own way of preparing a dish.

The recipe sheets should not be used to encourage the respondent to mention a food that she has not consumed. This aspect is very important in all food consumption surveys.

**Finally, these recipe sheets were only a survey tool and were not “models” of what was expected in the open recall. The purpose of the survey was to collect consistent information about food consumption of the respondent, not a “model” of consumption unrelated to reality in the field.**

### **6.5. Local calendar of events**

#### 6.5.1. Purpose

In the framework of the PASA Mali 5 surveys, the interviewer had to collect accurate information on children's ages to administer the appropriate dietary diversity questionnaire (questionnaire for children aged 6-23 months or for children aged 24-59 months). The calculation of several indicators also required knowing the child's exact age: for example, dietary diversity scores of children aged 6-23 months and of children aged 24-59 months were calculated differently; moreover, minimum meal frequency and acceptable diet of children aged 6-23 months had to be calculated according to age.

Written records of children's birthdates were not commonly available. To reduce errors in estimating a child's birthdate (at least month and year) when written records were unavailable, a local calendar of events (a customized calendar which provided dates of significant events for a specific geographic area) was developed. Based on this calendar, the interviewer had to ask the mother a series of 'before and after' questions to identify two known events, one which had occurred before and one which had occurred after the child was born.

#### 6.5.2. Description

The local calendar includes events that occurred in the survey area over the five years preceding the month of the survey (children under 5 included in the survey). Each month should have at least one event, such as religious holidays, other significant events or locally specific events. When the precise date of the event was known, it was recorded on the calendar.

The calendar also included a user manual, a calendar of children's age, and a table which specified cut-offs birthdates so as to administer the appropriate dietary diversity questionnaire according to the child's age (especially for children whose age was at the cut-offs of 6, 23 and 59 months). For each survey day, cut-off birthdates of children of each age group were specified. ENA software was used to define cut-off dates accurately; it was updated for each survey round.

#### 6.5.3. Development and adaptation

The calendar of local events was based on FAO guidelines for estimating the month and year of birth of young children (FAO, 2008). It was developed with survey teams and adapted to each survey area and season through meetings with key informants.

#### 6.5.4. Presentation

The calendar of local events presented here is that of the lean season survey of AVSF 2013.



This calendar of events is only an **example** and should not be used as is for another survey.

Document 5: Local calendar of events developed for the lean season survey of AVSF 2013

Year	Season	Religious celebration	Other events	Local events	Muslim month	Month/year	Age (months)
<b>2013</b> Year of the liberation of the northern part of the country	Beginning of the rainy season				6. Radjab-chaaban	June 2013	<b>0</b>
	Time of first rain				5. Radjab	May 2013	<b>01</b>
	Hot period	Easter Monday 01/04/13			4. Djoumada al Sania-	April 2013	<b>02</b>
	Beginning of the hot period	Easter 31/03/13	Martyrs' birthday 26/03/13		3. Djoumada at Oula	March 2013	<b>03</b>
	Cold season			Visit of the French President in Tombouctou and Bamako 02/02/13	2. Rabi at Tani	February 2013	<b>04</b>
	Cold season	Maouloud birth 24/01/13 ; Maouloud baptism 31/01/13	Anniversary of the Malian army 20/01/13	Attack of Konna by jihadists 10/01/13 Liberation of Gao and Tombouctou 27 and 28/01/13	1. Rabi al Awal	January 2013	<b>05</b>
<b>2012</b> Year of instability and institutional and security crisis in Mali	Cold season	Christmas 25/12/12			12. Safar	December 2012	<b>06</b>
	End of harvests				11. Muharam	November 2012	<b>07</b>
	Beginning of harvests	Tabaski 26/10/12		Traditional fight, RUORE (parade Ax Peul)	10. Dhou al'hijja	October 2012	<b>08</b>
	End of heavy rains		52 <sup>e</sup> celebration of independence 22/09/12	01/09/12 conquest of Douentza	9. Dou al Qada	September 2012	<b>09</b>
	Beginning of heavy rains	Ramadan feast 18/08/2012			8. Chawwal	August 2012	<b>10</b>
	Rainy season (sowing)	Beginning of Ramadan 20/07/12			7. Ramadan	July 2012	<b>11</b>
	Beginning of the rainy season			Attack of Madougou market 04/06/12	6. Radjab-chaaban	June 2012	<b>12</b>
	Time of first rain				5. Djoumada al Sania- debut Radjab	May 2012	<b>13</b>
	Beginning of the hot season	Easter 08/04/12		First attack of the Douana market and Koro city 06/04/12	4. Djoumada at Oula	April 2012	<b>14</b>
	End of the cold season		Coup 22/03/12		3. Rabi at Tani	March 2012	<b>15</b>
	Cold season	Maouloud 10/02/12			2. Rabi al Awal	February 2012	<b>16</b>
	Cold season		Rebel attack 17/01/12		1. Safar	January 2012	<b>17</b>
....until June 2008							

<b>USER'S GUIDE: CALENDAR OF EVENTS</b>												
<b>CONTENT OF THE CALENDAR OF EVENTS</b>												
1) The calendar should include all events (seasons, religious or annual celebrations, local events, etc.) that occurred over the 60 months preceding the survey 2) Child's age (in number of months according to the month of birth) should also be included in the calendar												
<b>WHY &amp; WHEN TO USE THE CALENDAR OF EVENTS</b>												
3) The calendar is a tool for interviewers for estimating a child's birthdate and age when no reliable written records of birthdate are available (birth certificate, health card, etc.)												
<b>SURVEY INCLUSION AND EXCLUSION CRITERIA</b>												
4) <u>To be included in the survey</u> : all children between 0 and 59 months / all children born between 09 June 2008 and 16 June 2013												
5) <u>To be excluded from the survey</u> : all children born before 09 June 2008												
<b>HOW TO USE THE CALENDAR OF EVENTS?</b>												
Ask the mother if the child's birthday is recorded on a document (birth certificate, health card, etc.) → if the date of birth is written on a document, check with the mother that the recorded date is correct  → If the date of birth is not recorded on any document, use the calendar of events. To do this, start by asking the mother if she remembers when the child was born to specify the year. After specifying the year of birth, ask a series of before/after questions until having identified one event that occurred before and one event that occurred after the child was born ("sandwich" method). When the month and year of birth have been identified, check this date by using a before/after question that is related to a major event of the year. → If the gap of before/after events cannot be reduced to less than 2 months (for example between May and June without being able to refine more), select a month at random (randomly draw a piece of paper or flip a coin).  The age of the child is narrowed down to the nearest month. If the day of birth is unknown, record 15.  Once the child's birthdate is defined, use the calendar of age to estimate the child's age (in number of months). Check that the child is in the correct age group by using cut-off birthdates provided in the table here below.												

**Calendar of age of children:**

<b>Year</b>	<b>Age in month for children aged 0-60 months</b>											
<b>2013</b>	0	<b>01</b>	02	03	04	05						
	June	May	April	March	Febr.	Jan.						
<b>2012</b>	06	<b>07</b>	08	09	10	11	12	13	14	15	16	17
	Dec.	Nov.	Oct.	Sept.	Aug	July	June	May	April	March	Febr.	Jan.
<b>2011</b>	18	<b>19</b>	20	21	22	23	24	25	26	27	28	29
	Dec.	Nov.	Oct.	Sept.	Aug	July	June	May	April	March	Febr.	Jan.
<b>2010</b>	30	31	32	33	34	35	36	37	38	39	40	41
	Dec.	Nov.	Oct.	Sept.	Aug	July	June	May	April	March	Febr.	Jan.
<b>2009</b>	42	43	44	45	46	47	48	49	50	51	52	53
	Dec.	Nov.	Oct.	Sept.	Aug	July	June	May	April	March	Febr.	Jan.
<b>2008</b>	54	55	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>					
	Dec.	Nov.	Oct.	Sept.	Aug	July	June					

**Cut-offs table for child's birthdate:**

<b>Date of the interview</b>	<b>Birthdates of children under 6 months of age (children aged 0 to 5.99 months)</b>	<b>Birthdates of children aged 6-23 months (children aged 6.0 to 23.99 months)</b>	<b>Birthdates of children aged 24-59 months (children aged 24.0 to 59.99 months)</b>
09 June 2013	From 09 December 2012 to 09 June 2013	From 10 June 2011 to 08 December 2012	From 09 June 2008 to 09 June 2011
10 June 2013	From 10 December 2012 to 10 June 2013	From 11 June 2011 to 09 December 2012	From 10 June 2008 to 10 June 2011
11 June 2013	From 11 December 2012 to 11 June 2013	From 12 June 2011 to 10 December 2012	From 11 June 2008 to 11 June 2011
12 June 2013	From 12 December 2012 to 12 June 2013	From 13 June 2011 to 11 December 2012	From 12 June 2008 to 12 June 2011
13 June 2013	From 13 December 2012 to 13 June 2013	From 14 June 2011 to 12 December 2012	From 13 June 2008 to 13 June 2011
14 June 2013	From 14 December 2012 to 14 June 2013	From 15 June 2011 to 13 December 2012	From 14 June 2008 to 14 June 2011
15 June 2013	From 15 December 2012 to 15 June 2013	From 16 June 2011 to 14 December 2012	From 15 June 2008 to 15 June 2011
16 June 2013	From 16 December 2012 to 16 June 2013	From 17 June 2011 to 15 December 2012	From 16 June 2008 to 16 June 2011

### 6.5.5. Instructions for using the local calendar

Where there is no accurate written record of the child's birthdate, the interviewer determines firstly the year of the child's birth with the mother. After determining the year of birth, the interviewer asks a series of 'before/after' questions aimed at identifying one event which occurred before and one which occurred after the child was born. Once the month and year of birth are defined, the interviewer checks this date using a before/after question related to a major event of the year. If the gap between the two events cannot be reduced to less than 2 months, the interviewer selects one month randomly. Child's age is estimated to 1 month. If the day of birth is unknown, the interviewer records "15".

### 6.5.6. Advantages and limitations of the local calendar

The advantage of the local calendar was to provide an easy and reliable tool to estimate the month and year of birth of a child as well as his age. Once a local detailed calendar had been developed, it could easily be updated for a new survey in the area.

It was not always easy to identify local events in the area and time was required to discuss with local key informants to develop the calendar.

To ensure adequate estimation of month and year of birth, interviewers have to be trained to use this tool.

## **7. Dietary diversity training materials developed within the joint M&E system of the PASA Mali 5**

### **7.1. Overview of survey training materials for interviewers and supervisors**

Within the joint M&E system of the PASA Mali 5, three main surveys training materials were developed:

- 1) A dietary diversity interviewer manual
- 2) An aide memoire for interviewers for collecting dietary diversity
- 3) A dietary diversity questionnaire check-list for supervisors

The dietary diversity interviewer manual was developed in parallel with the development of the dietary diversity questionnaire and was improved through feedback from field experiences.

The aide memoire for interviewers for collecting dietary diversity was a supplement to the interviewer manual. It included, in a more compact format, all essential methodological aspects of collecting dietary diversity in the field and can be used as a training material.

The dietary diversity questionnaire check-list for supervisors included all the main points that had to be checked for ensuring data quality.

☒ All these materials were developed in close collaboration with NGOs' survey teams and interviewers. They were tested during pilot surveys, used in several field surveys and improved through feedback from field experiences.



As all the survey tools, these materials should not be used as is. Each training material has to be adapted to the survey, to the local context and to decisions made in common by the survey team.

### **7.2. Dietary diversity interviewer manual**

#### 7.2.1. Purpose

The dietary diversity survey aims at interviewing mothers about their food consumption (mother level) and about that of their children (child level). Interviewers were trained to collect these data through theoretical and practical training sessions.

The interviewer manual is an essential training tool for the collection of all survey data. Interviewers should be familiar with this manual and understand all its points.

The interviewer manual was also intended to homogenise survey methodology.

### 7.2.2. Description

The interviewer manual provides detailed information on how to collect dietary diversity data of mothers and of children and how to fill the dietary diversity questionnaire. All methodological aspects for collecting data and for filling the questionnaire are addressed in this manual.

### 7.2.3. Development

The interviewer manual was developed before training the interviewers on dietary diversity and was improved during the training, pre-test and pilot stages, in close collaboration with survey teams.

Once the first surveys had been completed, this manual was improved through feedback from the field and after checking some of the completed questionnaires so as to include all methodological decisions that were made and reinforce some aspects that were of concern.

### 7.2.4. Presentation

The dietary diversity interviewer manual was a training material that was common to all the dietary diversity surveys conducted in the various areas of intervention of the PASA Mali 5-funded projects.



This interviewer manual is only an **example** and should not be used as is for another survey.

Document 6: Dietary diversity interviewer manual

**DIETARY DIVERSITY INTERVIEWER MANUAL**

In each cluster, 20 mothers of children under 5 years of age, 10 children aged 6-23 months, 10 children aged 24-59 months are to be surveyed.

In each household, all mothers of children under 5 are interviewed for the dietary diversity questionnaire for mothers (section 2, fill one questionnaire for each mother).

In each household, mothers of all children aged 6-23 months are interviewed for the dietary diversity questionnaire for children aged 6-23 months (section 4, fill one questionnaire for each child of this age group).

In each household, mothers of all children aged 24-59 months are interviewed for the dietary diversity questionnaire for children aged 24-59 months (section 5, fill one questionnaire for each child of this age group).

**General:**

**When a question is not asked because not applicable, cross out (/) the corresponding box (ex: DAE11: if the child was breastfed yesterday, the following question DAE12 is not to be asked; in this case, put '/' in response to DAE12).**

**SECTION 2: DIETARY DIVERSITY QUESTIONNAIRE FOR MOTHERS OF CHILDREN UNDER 5**

This section 2 must be administered to the mother of a child under 5 years of age.

**This questionnaire must be administered to all mothers of children under 5 in the household (one questionnaire for each mother).**

Before starting collecting information on dietary diversity of the mother, make sure you are interviewing a mother who has a child under 5.

DAIF4: mother's number: record the number of the mother to whom you administer this questionnaire

**This number must match the mother's number recorded in the first column of table ME20.**

DAIF10: mother's education level: « literate » is the ability to read and write in least one language.

DAIF11: indicate the 3 main occupations of the mother in **order of importance** (from the most important DAIF11A to the least important DAIF11C if the mother has several occupations).

DAIF12: ask the mother if any illness prevented her from eating as usual yesterday. If no, go to question DAIF13. If yes, go to question DAIF12A.

DAIF12A: if the mother was ill yesterday (DAIF12=YES), ask if that illness that prevented her from eating as usual lasted for several days. If so, the mother should not be interviewed for dietary diversity: cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Then survey the children of this mother.

If the illness that modified food consumption lasted only during the day before the interview, then the recall period is the day preceding the illness.

DAIF13: indicate (yes/no) if yesterday was a celebration or a market day when food consumption was unusual. If no, go to the open recall of the dietary diversity questionnaire. If yes, go to question DAIF13A.

DAIF13A: If yesterday was a celebration or a market day (DAIF13=1), ask if the celebration or market lasted for several days. If so, the mother should not be interviewed for dietary diversity: cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Then administer the questionnaire to the children of this mother.

If the celebration or market lasted only during the day before the survey, then the recall period is the day preceding the celebration/market.

If the mother has been absent for several days/weeks/months, record the cluster number, household ID number, first name/last name of the mother; cross out the open recall and write '9' in each box in the right-hand column of the list of food groups. Specify it in the "observations" section by indicating the mother's number.

Dietary diversity questionnaire:

**1. Open recall :**

Read out to the mother the following sentence as it is written in the questionnaire (translated into local language in the questionnaire):

**« Please describe all foods (meals and snacks) that you ate or drank yesterday during the day and the night, whether at home or outside the home. Start with the first food or drink of the morning».**

The mother must describe all foods (meals and snacks) that **she** consumed and drank yesterday during the day and the night **at home or outside the home**.

Record all foods and drinks mentioned by the mother in the spaces for the open recall at the top of the questionnaire, by food occasion (breakfast, lunch, dinner, snacks).

The mother may mention foods eaten by itself or foods included in a mixed dish or preparation.

**1) Food eaten by itself:**

A food eaten by itself must be described precisely by indicating:

1) PART of the plant → fruit, leaves, bulb, seeds, root, pulp...

2) STATE → fresh, dry, powder, paste, juice

Ex.: fresh OR dried peanuts, fresh OR dried mango OR mango juice, tamarind fruit OR leaf juice, fresh OR powdered milk, piece of orange-fleshed squash, piece of white-fleshed sweet potato, etc.

*Note: the colour must be indicated if a food item may be either white-fleshed or orange-fleshed, ex: orange-fleshed squash, white-fleshed sweet potato.*

For a food eaten by itself, no notion of quantity is required (no need to specify ingredient or condiment). This food will always be considered as an 'ingredient' and classified in the corresponding food group.

\* Particular case of fritter and other fried foods consumed by itself:

For fried fritter, do not forget oil and sugar added during the making of the fritter.

The fritter must be disaggregated as follows:

→ Millet fritter: Millet flour, oil (ingredient), sugar (ingredient)

Oil and sugar are always considered as ingredients in the fritter.

Other examples:

- Bean fritter: bean flour, oil (ingredient), sugar (ingredient)

- Aloco: plantain, peanut oil OR other oil (ingredient)

**2) Food included in a mixed dish or in a preparation**

Start by indicating the full name of the mixed dish by indicating the form (tô, porridge, cream) and the main component (millet, sorghum, rice).

Ex: Sorghum porridge, millet tô, oily rice, millet couscous, etc.

If the dish is made of several parts (staple dish + side dish), write each part of the dish in the full name of the dish.

Ex :

- millet tô with baobab leaf sauce: 2 parts, tô (staple dish) and sauce (side dish)

- rice with peanut paste sauce: 2 parts, rice (staple dish) and sauce (side dish)

Ask the mother to mention all foods included in the dish and that she consumed; if there are several parts in the dish, record the name of each part and the foods included in it.

Ex 1: sorghum porridge: sorghum flour, sugar

Ex 2: millet tô with baobab leaf sauce (2 parts in this dish):

- millet tô: millet flour, potash

- baobab leaf sauce: fresh baobab leaves, *datou* (hibiscus seeds), dried fish powder

If the same dish is consumed several times during the day, indicate each time all the foods included and eaten by the individual (possible differences between different preparations or between foods consumed each time by the person).

**For each food mentioned, the interviewer must ask and record:**

1) PART of the plant: leaves, fruits, seeds, bulb, etc.

→ Ex: baobab leaves, onion bulb, shallot leaves, okra fruit, shea pulp

2) STATE: fresh, dry, powder, paste, juice

→ Ex: fresh baobab leaves, dried onion bulb, dried shallot leaf powder, peanut paste, tamarind fruit juice

3) QUANTITY used in the recipe:

If the quantity used in the recipe is MORE than one tablespoon, the food is an ingredient ; if the quantity used in the recipe is one tablespoon or LESS, the food is a condiment – record 'ingredient' or 'condiment' into brackets after each food item

→ Ex: fresh baobab leaves (ingredient), dried onion bulb (condiment), dried shallot leaf powder (condiment), fresh shallot leaves (ingredient)

When a dish is prepared at the household level, the quantity used for the whole household must be estimated. If more than one tablespoon was added during the making for the household, specify 'ingredient'; if one tablespoon or less was used, specify 'condiment'.

When the mother has finished mentioning all foods of the dish:

- check that the main foods of the dish are written down (ex: baobab leaf sauce must contain baobab leaves, millet tô must contain millet flour).

- check if optional foods (sometimes used in the recipes found in the area) were added to the dish or preparation.

Ex 1: millet porridge: millet flour, sugar

→ Mothers often add : milk, tamarind fruit juice

➤ If the mother did not mention any food added, ask her « did you add any sugar, any milk..?»

➤ If she answers yes, record the added food in the open recall and specify the quantity added (ingredient or condiment)

Ex 2: white rice with tomato sauce: tomato sauce: tomato paste, salt, pepper

- The mother did not mention oil: ask her whether oil was added in the sauce. If yes, record "oil" in the open recall (specify peanut oil, shea butter, red palm oil) and specify the quantity (ingredient or condiment).

### **3) Food « picked » from a mixed dish:**

Some foods may be « picked » from a mixed dish and consumed by the respondent during the meal or outside the meal. A food picked from a dish is considered as a food eaten by itself, so indicate:

- 1) Part of the plant
- 2) State

Ex: piece of smoked fish, piece of meat, piece of white-fleshed squash, orange-fleshed sweet potato.

Since a food picked from a dish is considered as a food eaten by itself, no notion of quantity is required. This food will always be considered as an ingredient and classified in the corresponding food group.

When the mother has finished mentioning all foods and drinks consumed (meals and snacks), ask for snacks not mentioned spontaneously.

Do not forget to ask if some drinks were consumed and if some foods were added to these drinks: sugar, milk + indicate the quantity added.

When the recall is completed, the information has to be transcribed into the list of foods of the questionnaire: underline all food items recorded in the open recall in the list of foods.

### **2. Transcribing from the open recall to the list of foods of the questionnaire :**

Underline one by one all ingredients and condiments recorded in the open recall in the corresponding food group.

- all condiments have to be underlined in the food group « condiments »
- ingredients have to be underlined in the corresponding food group

→ Ex :

OPEN RECALL:

Baobab leaf sauce: fresh baobab leaves (ingredient), datou (condiment), dried onion bulb powder (condiment), fresh shallot leaves (condiment), fresh shallot bulb (ingredient), salt, pepper, shea butter (ingredient)

Underline:

- Fresh baobab leaves in the group of « dark green leafy vegetables » because of large quantity (ingredient)
- Datou, dried onion bulb powder, fresh shallot leaves, salt, pepper are ALL underlined in the group of « condiments » because of small quantities (condiments)
- Fresh shallot bulb in the group of « other vegetables » because of large quantity (ingredient)
- Shea butter in the group of « oils and fats » because of large quantity (ingredient)

Be careful to classify correctly food items such as dark-green leaves in the group of "dark-green leafy vegetables" if the **quantity used in the recipe** is more than about one tablespoon (ingredient) or in the group of "condiments" if the quantity used is one tablespoon or less (for example a pinch of dried baobab leaves). For fish, pinches of dried fish powder have to be classified in the group of "condiments" and large quantities of fish powder (ingredient) or piece of fish have to be classified in the group of "fish".

If foods such as sugar, milk, oil are added in small amounts to the preparation (condiment), these foods have to be written down and underlined in the group "condiments".

If a food mentioned by the respondent is not provided in the list of foods of the questionnaire, write it in the margin and inform the supervisor so that the food will be classified in the appropriate food group.

When all recorded foods are underlined, fill the boxes in the right-hand column of the list of food groups.

### **3. Transcribing from the list of foods to the boxes in the right-hand column of the list of food groups**

In the boxes in the right-hand column of the list of food groups (consumption yes/no), record "1" (YES) if at least one food of a group is underlined. If no food of a group is underlined, probe the mother that no food of this group was consumed by reading out the list of foods included in this group. If the mother remembers having consumed a food of this group, underline this food item in the list AND write it down in the open recall. Do not forget to ask for the quantity (more or less than 1 tablespoon) of food that was consumed before underlining it in order to classify it in the appropriate food group. If no food item of that group had been consumed, record "0" (NO) in the box in the right-hand column of the corresponding food group.

Before continuing the interview, check that all boxes are filled in (0 or 1).

Do not forget to ask if the mother consumed anything outside the home yesterday.

**The dietary diversity questionnaire has to be administered to all mothers of children under 5 in the household (one filled questionnaire by mother).**

## SECTION 4: DIETARY DIVERSITY QUESTIONNAIRE FOR CHILDREN AGED 6 TO 23 MONTHS

This dietary diversity questionnaire is only for children aged from 6 to 23 months.

**All children aged 6-23 months in the household are to be surveyed with this questionnaire (one questionnaire filled for each child).**

**DAE4: Mother's ID number:** record the mother's ID number of the child.

**This number must match the number of the mother recorded in the first column of table ME20.**

**DAE6: Child's ID number:** record the number of the child.

**This number must match the number of the child recorded in the second column of table ME20.**

**DAE7: Child's date of birth**

Record the child's date of birth which is mentioned in table ME20.

Probe the mother for the child's birthdate.

Check that the child is aged **from 6 to 23 months** before administering this questionnaire. Check that the date of birth corresponds to the cut-off points reported in the table included in the calendar of local events.

**DAE10:** specify which person was in charge of the child's meals yesterday; distinguish between an adult family member and a family member under 15.

**Ask this person (usually the mother) to answer the questionnaire.**

If the person in charge of the child's meals yesterday is not present, the dietary diversity questionnaire for the child cannot be administered (cross out the open recall and record '9' in each box in the right-hand column of the list of food groups).

**DAE11:** ask if the child was breastfed **YESTERDAY during the day or the night.**

If the child was breastfed yesterday (DAE11=1), go to question DAE13.

**DAE13:** ask how many times the child ate solid, semisolid or smooth foods yesterday during the day or the night. Any solid, semisolid or smooth food has to be counted, including fruit, peanuts, curd...which may be eaten as a snack. Liquids (tea, coffee, milk) should not be counted.

If the child was ill yesterday, or if yesterday was a celebration or market day, etc. this question is asked regarding the day preceding the illness or the celebration/market day (go back to this question if the child was sick or if it was a celebration day yesterday).

After the open recall is completed, check for the consistency between the number of times the child ate solid, semisolid or smooth foods and what is reported in the open recall.

**DAE14:** ask if any illness prevented the child from eating as usual yesterday. If no, go to question DAE15. If yes, go to question DAE14A.

**DAE14A:** if the child was ill yesterday (DAE14=YES), ask if this illness that prevented the child from eating as usual lasted for several days. If so, this child should not be interviewed for dietary diversity: cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Then skip to the other children of this mother (same age group or not) or to another mother if this one has no other children.

If the illness where food consumption was unusual lasted only during the day before the interview, then the recall period is the day preceding the illness.

**DAE15:** ask if yesterday was a celebration or a market day when food consumption was unusual. If no, go to the open recall of the dietary diversity questionnaire. If yes, go to DAE15A.

**DAE15A:** if yesterday was a celebration day or a market day (DAE15=1), ask if the celebration or market lasted for several days. If so, this child cannot be interviewed for dietary diversity: cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Then skip to the other children of this mother (same age group or not) or to another mother if this one has no other children.

If the celebration or market lasted only the day before the interview, then the recall period is the day preceding the celebration or market day.

If the child has been absent for several days/weeks/months before the interview, record the cluster number, the household ID number, the name and number of the mother and of the child; cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Specify it in observations by indicating the number of the child.

Dietary diversity:

Read out to the person in charge of the child's meals yesterday the following sentence as it is written in the questionnaire (in local language):

**"Please describe all foods (meals and snacks) that the child ate and drank yesterday during the day and the night, whether at home or outside the home. Start with the first food or drink of the morning."**

**The person/s in charge of the child's meals yesterday** has to describe all foods and drinks consumed **by the child yesterday.**

**The methodology used for the open recall, for transcribing to the list of foods and for transcribing to the boxes in the right-hand column of the list of food groups is strictly identical to that used for the mother → see methodology used for the mother (section 2).**

**It is very important to ensure that the child has not received some other foods, such as a piece of fruit or a biscuit as a snack. The child may also have consumed some porridge prepared at household level in which sugar, milk or another food has been added specifically for him. It is important to check these points.**

Once the open recall is completed, check the consistency between the number of times the child consumed solid, semisolid or smooth foods (DAE13) yesterday and what is indicated in the open recall.

If the child ate fortified flour, underline this food in the groups “cereals” AND “pulses”.

The food group « milk/milk products » does not include breastmilk. If the child received breastmilk yesterday, it has to be indicated in question DAE11 “Yesterday, was the child breastfed during the day or the night?”.

Do not forget to ask question **QDAE18** about child’s consumption outside the home.

**Administer the dietary diversity questionnaire to all children 6-23 months in the household.**

<b>SECTION 5: DIETARY DIVERSITY QUESTIONNAIRE FOR CHILDREN AGED 24 TO 59 MONTHS</b>
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This dietary diversity questionnaire is only for children aged from 24 to 59 months.

**All children aged 24-59 months in the household are to be surveyed with this questionnaire (one questionnaire filled for each child).**

**DAEG4: Mother’s ID number:** record the mother’s ID number of the child.  
**This number must match the number of the mother recorded in the first column of table ME20.**

**DAEG6: Child’s ID number:** record the number of the child.  
**This number must match the number of the child recorded in the second column of table ME20.**

**DAEG7: Child’s date of birth**  
Record the child’s date of birth which is mentioned in table ME20.  
Probe the mother for the child’s birthdate.

Check that the child is aged **from 24 to 59 months** before administrating this questionnaire. Check that the date of birth corresponds to the cut-off points reported in the table included in the calendar of local events.

**DAEG10:** specify which person was in charge of the child’s meals yesterday; distinguish between an adult family member and a family member under 15.

**Ask this person (usually the mother) to answer the questionnaire.**  
If the person in charge of the child’s meals yesterday is not present, the dietary diversity questionnaire for the child cannot be administrated (cross out the open recall and record ‘9’ in each box in the right-hand column of the list of food groups).

**DAEG11:** ask if the child was breastfed **YESTERDAY during the day or the night.**  
If the child was breastfed yesterday (DAEG11=1), go to question DAEG13.

**DAEG13:** ask how many times the child ate solid, semisolid or smooth foods yesterday during the day or the night. Any solid, semisolid or smooth food has to be counted, including fruit, peanuts, curd...which may be eaten as a snack. Liquids (tea, coffee, milk) should not be counted.

If the child was ill yesterday, or if yesterday was a celebration or market day, etc. this question is asked regarding the day preceding the illness or the celebration/market day (go back to this question if the child was sick or if it was a celebration day yesterday).

After the open recall is completed, check for the consistency between the number of times the child ate solid, semisolid or smooth foods and what is reported in the open recall.

**DAEG14:** ask if any illness prevented the child from eating as usual yesterday. If no, go to question DAEG15. If yes, go to question DAEG14A.

**DAEG14A:** if the child was ill yesterday (DAEG14=YES), ask if this illness that prevented the child from eating as usual lasted for several days. If so, this child should not be interviewed for dietary diversity: cross out the open recall and record ‘9’ in each box in the right-hand column of the list of food groups. Then skip to the other children of this mother (same age group or not) or to another mother if this one has no other children.

If the illness where food consumption was unusual lasted only during the day before the interview, then the recall period is the day preceding the illness.

**DAEG15:** ask if yesterday was a celebration or a market day when food consumption was unusual. If no, go to the open recall of the dietary diversity questionnaire. If yes, go to DAEG15A.

**DAE15A:** if yesterday was a celebration day or a market day (DAEG15=1), ask if the celebration or market lasted for several days. If so, this child cannot be interviewed for dietary diversity: cross out the open recall and record ‘9’ in each box in the right-hand column of the list of food groups. Then skip to the other children of this mother (same age group or not) or to another mother if this one has no other children.

If the celebration or market lasted only the day before the interview, then the recall period is the day preceding the celebration or market day.

If the child has been absent for several days/weeks/months before the interview, record the cluster number, the household ID number, the name and number of the mother and of the child; cross out the open recall and record '9' in each box in the right-hand column of the list of food groups. Specify it in observations by indicating the number of the child.

Dietary diversity:

Read out to the person in charge of the child's meals yesterday the following sentence as it is written in the questionnaire (in local language):

**"Please describe all foods (meals and snacks) that the child ate and drank yesterday during the day and the night, whether at home or outside the home. Start with the first food or drink of the morning."**

**The person/s in charge of the child's meals yesterday** has to describe all foods and drinks consumed **by the child yesterday**.

**The methodology used for the open recall, for transcribing to the list of foods and for transcribing to the boxes in the right-hand column of the list of food groups is strictly identical to that used for the mother → see methodology used for the mother (section 2).**

**It is very important to ensure that the child has not received some other foods, such as a piece of fruit or a biscuit as a snack. The child may also have consumed some porridge prepared at household level in which sugar, milk or another food has been added specifically for him. It is important to check these points.**

Once the open recall is completed, check the consistency between the number of times the child consumed solid, semisolid or smooth foods (DAEG13) yesterday and what is indicated in the open recall.

If the child ate fortified flour, underline this food in the groups "cereals" AND "pulses".

The food group « milk/milk products » does not include breastmilk. If the child received breastmilk yesterday, it has to be indicated in question DAEG11 "Yesterday, was the child breastfed during the day or the night?"

Do not forget to ask question **QDAEG18** about child's consumption outside the home.

**Administer the dietary diversity questionnaire to all children 24-59 months in the household.**

### 7.2.5. Instructions for using the manual

The interviewer manual is detailed by sections corresponding to the order of administration of the dietary diversity questionnaires. It provides the interviewers with all the information required for collecting dietary diversity data and completing the questionnaires.

### 7.2.6. Advantages and limitations of the manual

The main advantage of the manual is that it describes in a very detailed way how to collect dietary diversity data and how to complete the questionnaires. It emphasizes the main aspects which require attention from the interviewer and provides many examples of data collection and of how to complete the questionnaire. This manual also aims at homogenizing the survey methodology.

During fieldwork, particular situations can arise, as well as problems in data collection or in completing the questionnaire. Each difficulty should be discussed with supervisors and debriefings should be organized to discuss difficulties and solutions chosen, and to harmonize the survey methodology.

Prior to the survey, it is crucial to ensure solid theoretical and practical training of the interviewers.



As for all the survey materials presented in this document, this manual was developed in a specific context with the support of survey teams, supervisors, interviewers and all persons involved in the process. It also relied on feedback from field practices. It is not intended to be used as is for another survey. It can be used as material to discuss the main methodological aspects that need agreed upon before conducting a survey and also to develop a new interviewer manual for another survey.

## **7.3. Aide-memoire for interviewers for collecting dietary diversity data**

### 7.3.1. Purpose

Due to some problems and difficulties in collecting data and completing the dietary diversity questionnaires in the field, an aide-memoire for interviewers for collecting dietary diversity data was developed in addition to the interviewer manual. Its purpose is to facilitate data collection by highlighting important points to follow when collecting dietary diversity data. It is a compilation of technical decisions that were made during the surveys. In the field, interviewers can easily refer to this aide-memoire.

The aide-memoire was also a useful training material.

### 7.3.2. Description

The aide-memoire presents the 3 steps of collecting dietary diversity data: open recall, transcription of foods from the open recall to the list of foods of the questionnaire, completion of the boxes in the right-hand column of the list of food groups. For each step, it details how to collect the information and how to fill the questionnaire.

### 7.3.3. Development

The aide-memoire was developed after a series of first surveys, after having highlighted some difficulties in completing the dietary diversity questionnaires. It has been improved progressively to compile all technical decisions made during the different surveys. These improvements have been done with the supervisors.

### 7.3.4. Presentation

The aide-memoire is common to all the dietary diversity surveys conducted in the different areas of intervention of the PASA Mali 5-funded projects.



The aide-memoire presented here is only an **example** and should not be used as is in another context.

### Aide-memoire for interviewers for collecting dietary diversity data

#### Three steps:

- 1. Open recall: read the sentence « Please describe all foods... » in order for the respondent (the mother) to describe her food consumption (or that of the child)
- 2. Transcribe foods eaten from the recall to the list of foods of the questionnaire
- 3. Fill the boxes in the right-hand column of the list of food groups and probe for food groups not consumed

## 1. OPEN RECALL

### 1. Ask for what is consumed :

It can be :

- ↳ A food eaten by itself (as a snack, for example): peanuts, wild dates, tea, fresh milk
- ↳ Foods included in a preparation or in a mixed dish : cereal porridge, millet tô with sauce, sweetened curd

### 2. Describe what is consumed

#### 2.1. Food eaten by itself:

A food consumed by itself must be described with precision:

- 1) PART of the plant: fruit, leaves, bulb, seed, root, pulp...
- 2) STATE: fresh, dry, powder, paste, juice

Ex:

- Fresh OR dried peanut seeds (+ possibly toasted)
- Fresh OR dried mango OR mango juice
- Tamarind fruit OR leaf juice
- Piece of orange-fleshed squash
- Piece of white-fleshed sweet potato
- Fresh OR powdered milk drink

Note: the **colour** is to be indicated if a food can be either white-fleshed or orange-fleshed, ex: orange-fleshed squash, white-fleshed sweet potato



#### Special cases of fritter and other fried foods eaten by itself:

For fried fritters, do not forget oil and sugar included in the fritter. Break down as follows:

Millet fritter: Millet flour, oil (ingredient), sugar (ingredient)

→ Oil and sugar are always considered as ingredients in the fritter

Other examples:

Bean fritter: bean flour, oil (ingredient), sugar (ingredient)

Aloco: plantain, peanut oil OR other oil (ingredient)

#### 2.2. Food that goes into a dish (preparation or mixed dish):

- Record the full name of the dish : form (tô, porridge, “cream”) + main food (millet, sorghum, rice)  
→ Ex: sorghum porridge, millet tô, millet couscous, oily rice

The different parts of the dish should be recorded (staple dish + side dish)

- Ex 1: millet tô with baobab leaf sauce: 2 parts = tô + sauce
- Ex 2: rice with peanut paste sauce: 2 parts = rice + sauce

- **Record all foods included in the dish and consumed by the individual, by breaking them down by part if there are several parts**
  - Ex 1: sorghum porridge: sorghum flour, sugar
  - Ex 2: millet tô with baobab leaf sauce (2 parts in this dish):
    - millet tô: millet flour, potash
    - baobab leaf sauce: fresh baobab leaves, datou (hibiscus seeds), dried fish powder
- The same dish consumed several times during the day → each time, indicate all the foods included and eaten by the individual (possible differences between different preparations or between foods consumed each time by the person)
- **For each food that goes into a dish, ask and record:**
  - 1) **PART of the plant: leaves, fruits, seeds, bulbs, pulp, etc.**
    - Ex: baobab leaves, shallot leaves, okra fruit, peanut seeds, onion bulb, shea pulp
  - 2) **STATE: fresh, dry, powdered, paste, juice**
    - Ex: fresh baobab leaves, dried onion bulb, dried shallot leaf powder, peanut paste, tamarind fruit juice
  - 3) **QUANTITY used in the recipe**
    - **MORE than 1 tablespoon = INGREDIENT**
    - **1 tablespoon or LESS = CONDIMENT**
    - Ex: fresh baobab leaves (ingredient), dried onion bulb (condiment), dried shallot leaf powder (condiment), fresh shallot leaves (ingredient)

Note: + indicate the colour if a food may be white-fleshed or orange-fleshed, ex: orange-fleshed squash, white-fleshed sweet potato

↪ When the respondent has finished enumerating all foods of the dish:

- **Check that the main foods of the dish are recorded**
  - Ex: baobab leaf sauce must contain baobab leaves, millet tô must contain millet flour
- **Check if optional foods (sometimes used in recipes collected in the area) were added in the dish or preparation**
  - Ex 1: millet porridge: millet flour, sugar
    - Mothers often add: milk, tamarind fruit juice
    - If the mother did not mention any food added, ask: did you add any sugar, any milk?
    - If she answers yes, record the food added in the recall and specify the quantity added (ingredient or condiment)
  - Ex 2: white rice with tomato sauce: tomato sauce: tomato paste, salt, pepper
    - The mother did not mention oil: ask her whether oil was added in the sauce. If yes, record oil in the recall (specify peanut oil, shea butter, red palm oil) and specify the quantity (ingredient or condiment)

### 2.3. Foods “picked” from a mixed dish:

Some foods may be « picked » from a mixed dish and consumed during the meal or outside the meal

**These foods are considered as food eaten by itself, so indicate:**

- 1) **PART**
- 2) **STATE**

→ Ex: piece of smoked fish, piece of meat, piece of white-fleshed squash, orange-fleshed sweet potato

**Example of open recall record:**

Breakfast	Snack	Lunch	Snack	Dinner	Snack
<u>Tea with sugar:</u> - tea - sugar (condiment)  Bread	Fresh peanuts	<u>Millet tô with fresh baobab leaf sauce:</u>  <u>Millet tô:</u> - millet flour - potash - unsweetened tamarind leaf juice  <u>Fresh baobab leaf sauce:</u> - fresh baobab leaves (ingredient) - datou (condiment) - dried onion bulb powder (condiment) - fresh shallot leaves (condiment) - fresh shallot bulb (ingredient) - salt - pepper - shea butter (ingredient)	/	<u>Millet porridge:</u> - millet flour - sugar (ingredient) - fresh milk (ingredient) - unsweetened tamarind fruit juice	Fresh milk

**Notes on quantities:**

- **Food eaten by itself = INGREDIENT** → **no notion of minimal quantity** (not necessary to indicate the quantity consumed)  
 → Ex: fresh peanuts and fresh milk in the example of open recall record here above
- **Foods that go into a dish** → **quantities of all foods**, including milk, sugar, oil, etc. **have to be specified** (specify 'ingredient' or 'condiment')

**Food = ingredient if quantity used in the recipe > 1 tablespoon, otherwise condiment**

- ↳ if the preparation is made at household level → minimal quantity applies to the preparation for the household (ex: tô + sauce prepared for the whole household → estimate the quantities used in the recipe for the household)
- ↳ if the preparation is made at individual level → minimal quantity applies to the preparation for the individual (ex: sweetened porridge prepared for a child → estimate the quantities used in the porridge prepared for the child)

Note: for a « mixed drink » also specify the quantity of foods added (ex of tea with sugar in the example of open recall record here above)

- **Foods « picked » from a mixed dish = INGREDIENT** → **no notion of minimal quantity** (not necessary to specify the quantity consumed, indicate « piece of »)  
 → Ex: piece of fish, piece of meat, piece of orange-fleshed squash, piece of carrot, piece of cabbage, etc. picked from a dish and eaten by the individual during a meal or outside the meal

**Exceptions:**

- No need to specify quantities for foods for which the notion of ingredient is obvious; that relates to staple cereals of a mixed dish
- No need to specify quantities for foods for which the notion of condiment is obvious, ex: pepper, garlic, Maggi cube, salt, potash...
- Unsweetened tamarind fruit juice in tô or porridge → always in the food group « spices, condiments, beverages », no need to specify the quantity

**Snacks and drinks:**

- Between meals, there may be some snacks, ask for consumption of snacks
- Drinks: always remember to ask for drinks
  - All drinks must be recorded with the exception of water
  - Some foods may be added to drinks: sugar, milk → ask and record the quantity added (ingredient or condiment)

**2. TRANSCRIBING FROM THE OPEN RECALL TO THE LIST OF FOODS OF THE QUESTIONNAIRE**

Underline **ONE BY ONE** all ingredients and condiments recorded in the open recall in the corresponding food group

→ All condiments must be underlined in the food group « condiments »

→ All ingredients must be underlined in the corresponding food group

**Examples of transcribing:**

▪ **Millet tô with baobab leaf sauce**

↳ In the **open recall**:

Millet tô with baobab leaf sauce:

- Millet tô: millet flour, potash

- Baobab leaf sauce: fresh baobab leaves (ingredient), datou (condiment), dried onion bulb powder (condiment), fresh shallot leaves (condiment), fresh shallot bulb (ingredient), salt, pepper, shea butter (ingredient)

↳ Underline in the **questionnaire**:

- Millet flour in the food group « cereals »

- Potash in the food group « condiments »

- Fresh baobab leaves in the group « dark green leafy vegetables » because large quantity (ingredient)

- Datou, dried bulb onion powder, fresh shallot leaves, salt, pepper are ALL underlined in the food group « condiments » because small quantities (condiments)

- Fresh shallot bulb in the food group « other vegetables » because large quantity (ingredient)

- Shea butter in the food group « oils and fats » because large quantity (ingredient)

▪ **White rice with tomato sauce:**

↳ In the **open recall**:

White rice with tomato sauce:

- Rice: white rice, salt

- Tomato sauce: fresh tomatoes (ingredient), tomato paste (condiment), fresh onion leaves (ingredient), dried fish powder (condiment), salt, maggi cube, pepper, peanut oil (ingredient), dried shallot leaf powder (condiment)

↳ Underline in the **questionnaire**:

- Rice in the food group « cereals »

- Fresh tomatoes (ingredient) in the food group « other vegetables »

- Fresh onion leaves (ingredient) in the food group « dark-green leafy vegetables »

- Peanut oil (ingredient) in the food group « oils/fats »

- Salt, dried fish powder (condiment), tomato paste (condiment), maggi cube, pepper, dried shallot leaf powder (condiment) in the food group « spices/condiments »

▪ **Millet porridge:**

↳ In the **open recall**:

Millet porridge: millet flour, sugar (ingredient), unsweetened fresh tamarind leaf juice, milk (condiment)

↳ Underline in the **questionnaire**:

Millet in the food group « cereals », sugar in « sweets » because ingredient (large quantity), unsweetened fresh tamarind leaf juice in « beverages », milk in «spices/condiments » because condiment (small quantity)

**Note:**

- *juice is not sweetened, so it is classified in the group « beverages »*
- *milk is added in small amount to the porridge so it is classified in the group « spices/condiments »*

▪ **Sweetened tamarind leaf juice:**

- ↳ In the **open recall**:  
Sweetened tamarind leaf juice
- ↳ Underline in the **questionnaire**:  
Sweetened tamarind leaf or fruit juice only in the food group « sweets »

***Note that the juice is sweetened, so classified only in the food group « sweets »***

▪ **Tea with sugar:**

- ↳ In the **open recall**:  
Tea with sugar: tea, sugar (ingredient)
- ↳ Underline in the **questionnaire**:  
Tea in « beverages » and sugar in « sweets »

▪ **Sweetened fresh milk:**

- ↳ In the **open recall**:  
Sweetened fresh milk: fresh milk (ingredient), sugar (condiment)
- ↳ Underline in the **questionnaire**:  
Milk in «milk/milk products» because ingredient (large quantity), sugar in «spices/condiments » because condiment (small quantity)

▪ **Dried peanuts:**

- ↳ In the **open recall**:  
Dried peanuts
- ↳ Underline in the **questionnaire**:  
Peanuts in « pulses/nuts/seeds » because food eaten by itself (necessarily ingredient)

***Note that quantity is not specified because food eaten by itself so necessarily classified as ingredient***

▪ **Fresh milk:**

- ↳ In the **open recall**:  
Fresh milk
- ↳ Underline in the **questionnaire**:  
Fresh milk in « milk/milk products » because food eaten by itself (necessarily ingredient)

***Note that quantity is not specified because food eaten by itself so necessarily ingredient***

**3. COMPLETION OF BOXES IN THE RIGHT-HAND COLUMN OF THE LIST OF FOOD GROUPS AND PROBING QUESTIONS**

**For each food group, if at least one food is underlined, record '1' in the box in the right-hand column of the corresponding food group**

**If no food item of a group is underlined, probe the respondent for consumption of a food of that group (read out the list of foods of this group)**

- **If the respondent remembers having consumed a food of that group, underline the food item, record 1 in the box AND write down the food item in the open recall record (check for quantity)**
- **If the respondent has not consumed any food of that group, record '0' in the box**

**Before continuing the interview, check that all boxes include '0' or '1'**

#### 7.3.5. Instructions for using the aide-memoire

The aide-memoire is an additional material to the interviewer manual. In the field, it allows interviewers to easily check a specific point that might cause concern.

#### 7.3.6. Advantages and limitations of the aide-memoire

The advantage of this aide-memoire is that it includes, in a short compact document, many technical aspects of data collection. However, this compilation is not exhaustive.

### **7.4. Dietary diversity questionnaire check-list for supervisors**

#### 7.4.1. Purpose

The dietary diversity questionnaire check-list for supervisors includes all different points that supervisors need to check once the dietary diversity questionnaire has been completed in the field.

Many points need to be reviewed to ensure the quality of dietary diversity data collection. This check-list allows for systematic and easy checking of the questionnaires in the field.

#### 7.4.2. Description

The check-list indicates, for each step of dietary diversity data collection, the points that need to be checked, which checks need to be done and solutions proposed to solve problems.

#### 7.4.3. Development

The check-list was developed after conducting the first surveys. It was compiled after a detailed check of many questionnaires completed in the field and resulted from common decisions on data collection and questionnaire completion.

#### 7.4.4. Presentation

The dietary diversity questionnaire check-list for supervisors was a training material that was common to all the surveys conducted within the M&E system of the PASA Mali 5.



This check-list is only an **example** and should not be used as is in another context.

Document 8: Standard dietary diversity questionnaire check-list for supervisors

<b>Dietary diversity questionnaires check-list for supervisors:</b>			
<b>Step of dietary diversity data collection</b>	<b>Points to check</b>	<b>List of checks</b>	<b>Possible solutions in case of problem</b>
		<b>Verify the completion and correct order of the various sections of the questionnaire</b>	
<b>1. Open recall</b>	Precise description of a food eaten by itself (e.g. for snack)	<p>Check that each food eaten by itself is described accurately.</p> <p>Check that the following information is recorded:</p> <ul style="list-style-type: none"> <li>- part of the plant (fruits, leaves, seeds, etc.)</li> <li>- state (fresh, dry, powder, paste, juice)</li> </ul> <p>(+ possibly colour: white-fleshed, orange-fleshed, etc.)</p> <p>no need to specify quantity of a food eaten by itself (always considered as an ingredient)</p> <p>Fried foods:  → Fritters: check that 'oil' and 'sugar' are added (ingredients)  → Other fried foods: check that 'oil' is added (ingredient)</p>	If a food is not described accurately enough, go back to the respondent to ask the required information
	Precise description of the dish consumed (note: dish=preparation or mixed dish)	<p>Check that each dish is described accurately = FORM (porridge, <i>tô</i>, couscous, etc.) + MAIN FOOD (millet, sorghum, etc.)  Ex.: sorghum porridge</p> <p>If the dish is made of several parts (ex 2 parts <i>tô</i> AND sauce), check that each part is described accurately (form+main food)  Ex: millet <i>tô</i> with baobab leaf sauce</p>	If the form or the main food is not specified, go back to the respondent to ask the required information
	Sauces that accompany dishes	<p>Check that sauces that accompany dishes are recorded in the recall  Ex <i>tô</i> with sauce, etc.</p> <p>If no sauce is recorded in the recall, check that it is specified that the dish was consumed without sauce and that it is recorded 'millet <i>tô</i> without sauce' for example</p>	If a sauce is not recorded and if the mention 'dish X without sauce' is not specified, go back to the respondent to ask the required information
	Disaggregating dishes into ingredients and condiments	<p>1) <u>For each part of the dish</u>, check that the interviewer has recorded the foods included in the dish and consumed by the person</p> <p>2) Check that the main food of a dish is always recorded (ex baobab leaves in baobab sauce, rice in oily rice, etc.)</p> <p>3) Check that all ingredients, including those used in small quantities (condiments), are recorded in the recall</p>	<p>1) If a part of the dish is not disaggregated, go back to the respondent to ask the required information</p> <p>2) If the main food of a dish is not recorded, go back to the respondent to ask the required information</p> <p>3) Check with the interviewer that all ingredients have been asked for (ex: had he asked for oil?). Go back to the respondent to ask the required information</p>
	Food items added to the dish	<p>Check that the interviewer has asked if some foods have been added to the preparation :  Ex: tamarind leaf juice in <i>tô</i>, milk in porridge, etc.</p>	Check with the interviewer that all ingredients have been asked for. Go back to the respondent to ask the required information
	Oils/fats added to the dish	<p>Check that the interviewer has asked if the dish contained or had been prepared with oils/fats.  Check that the type of oil is specified (shea butter OR peanut oil OR red palm oil, etc.)</p>	Go back to the respondent to ask the required information

# DIETARY DIVERSITY CHECK-LIST FOR SUPERVISORS – PASA Mali 5

Step of dietary diversity data collection	Points to check	List of checks	Possible solutions in case of problem
	Detailed description of foods that went into a dish	<p>Check that each food item is described accurately. Check that the description of the food items include <b>the 3 following points:</b></p> <ol style="list-style-type: none"> <li><b>Part of the plant</b> → fruit OR leaves OR seeds OR bulb, etc.</li> <li><b>State</b> → fresh, dry, paste, juice</li> <li><b>Quantity used in the recipe</b> MORE than one tablespoon= INGREDIENT LESS than one tablespoon= CONDIMENT (+ colour if a food item may be white-fleshed or orange-fleshed)</li> </ol> <p>Check that the quantity is specified for all food items that went into the dish, including for food items added in preparations such as porridge (sugar, milk) and in "mixed drinks"</p> <p>**** Exceptions: no notion of quantity for staple cereals of a mixed dish, for foods that are always condiments (salt, Maggi, etc.) and for foods 'picked' from a dish (see here below).</p>	If a food item is not described accurately enough, go back to the respondent to ask the required information
	Food 'picked' from a mixed dish	Check that part and state (+colour possibly) are recorded, check that 'piece of' is recorded for piece of vegetable, of meat, of fish, etc.	Go back to the respondent to ask the required information
	Condiments	<p>Definition of a condiment: a condiment is a food, <u>whatever its type</u>, that is added in a small amount (i.e. LESS than ONE tablespoon) to flavour dishes.</p> <p>Check that condiments are recorded in the open recall</p>	
	Consumption of the same dish in various meals	<p>If a same dish is eaten at several meals, check that the interviewer has recorded foods of the dish under each meal in the open recall.</p> <p>Check that there is no record of type "tô same as lunch" in the open recall</p>	
	Same dishes consumed by the mother and by the child	<p>Check that the same dishes consumed by both the mother and the child are detailed in both the mother's and the child's recall;</p> <p>Check for the overall consistency of foods included in the dishes consumed by both the mother and the child (if consumption at home), keeping in mind that some foods may be added to the dish of the child (sugar in the porridge, etc.) or that certain foods of the dish are not given to the child or are reserved for the child</p>	Go back to the respondent to ask the required information
	Beverages	<p>Check that the interviewer has asked the person what she has drunk ;</p> <p>Check that the interviewer has asked if some ingredients were added to the drinks (e.g. sugar in tea) and has recorded the quantity added</p>	
	Snack	If no snack was consumed, check that there is '/' in the corresponding column	Go back to the respondent if no snack is recorded and if there is no '/' indicating that no snack was eaten
	Consumption of infants	<p>If some infants do not eat any foods other than breastmilk, check that:</p> <ul style="list-style-type: none"> <li>- the child was breastfed yesterday and did not eat any solid, semisolid or smooth foods</li> <li>- the open recall is crossed out</li> <li>- '0' is recorded in each box in the right-hand column of the list of food groups</li> <li>- this information is recorded in the section 'observations'</li> </ul>	Go back to the respondent to ask the required information
	Absence/illness or celebration/market for several days	Check that an absence, illness/celebration/market for several days is recorded, check that nothing is recorded in the open recall and that it is crossed out ; check that '9' is recorded in each box in the right-hand column of the list of food groups	In case of ambiguity, check with the interviewer and go back to the respondent to ask the required information

# DIETARY DIVERSITY CHECK-LIST FOR SUPERVISORS – PASA Mali 5

Step of dietary diversity data collection	Points to check	List of checks	Possible solutions in case of problem
<b>2. Transcribing from the open recall to the list of foods of the questionnaire (foods recorded in the recall are underlined in the questionnaire and all foods underlined in the questionnaire are recorded in the recall)</b>	All foods recorded in the open recall have to be underlined in the list of foods of the questionnaire	Check ONE BY ONE that all foods recorded in the open recall are underlined in the list of foods	If a food is recorded in the recall but not underlined in the list of foods, underline it in the list of foods and write down '1' in the box in the right-hand column of the corresponding food group
	Check that each food consumed is underlined in the corresponding food group (correctly classified)	<p>Depending on the part consumed (leaves, fruits, seeds, etc.) and the quantity used in the recipe (ingredient or condiment), check that each food recorded in the open recall is underlined in the correct food group.</p> <p>Strengthen control over foods that may belong to different food groups depending on the part, state and quantity consumed; Ex:            - cassava (classified in roots/tubers) OR cassava leaves (classified in dark green leafy vegetables)            - sorrel leaves (classified in dark green leafy vegetables) OR sorrel pulp (classified in other vegetables) OR unsweetened <i>dah</i> pulp juice (classified in beverages)            - <i>soumbala</i> ingredient (classified in pulses/nuts/seeds) OR <i>soumbala</i> condiment (classified in condiments)            - dried baobab leaf powder ingredient (classified in dark green leafy vegetables) OR small amount of dried baobab leaf powder condiment (classified in condiments)</p> <p>Check that the foods eaten by itself or picked from a dish are classified in the corresponding food group (and not into the group 'condiments/spices/beverages' unless it is a drink)</p>	Correct if there is no ambiguity, if not, go back to the respondent to ask the required information
	Foods underlined in the questionnaire have to be recorded in the open recall	<p>Check ONE BY ONE that all foods underlined in the questionnaire are recorded in the open recall. Ex: if the interviewer, during probing, has underlined 'oil', check that 'oil' has been recorded in the open recall.</p> <p>Strengthen controls over foods that may belong to different food groups depending on the quantity consumed Ex: baobab leaves underlined in 'condiments' AND 'dark green leafy vegetables' → check that both baobab leaves (ingredient) AND baobab leaves (condiment) are recorded in the open recall</p>	Check with the interviewer and go back to the respondent to ask the required information
	A food recorded once in the open recall and underlined in 2 different food groups	A food recorded once in the open recall and underlined in 2 different food groups → ERROR – this should never happen	- correct the questionnaire if, based on the recall, there is no ambiguity - request clarification from the interviewer - go back to the respondent to ask the required information in order to underline the food only once in the corresponding food group
	Food mentioned by the respondent that is not included in the questionnaire ("new" food)	If a food is not included in the questionnaire, check that it is written down in the margin, add it in the corresponding food group by ensuring it is classified in the correct food group, and record 1 'yes' in the box in the right-hand column of the corresponding food group	If the supervisor does not know in which food group this food should be classified, check with a nutritionist (be careful for fruit/vegetables rich or not in vitamin A in particular)

Step of dietary diversity data collection	Points to check	List of checks	Possible solutions in case of problem
<b>3. Completion of boxes in the right-hand column of the list of food groups (consumption of food group yes/no)</b>	Transcription errors between the questionnaire (list of foods) and the boxes in the right-hand column of the list of food groups (i.e. foods underlined in the list of foods but consumption=0 or food not underlined and consumption=1)	<p>Check that if at least 1 food of a food group is underlined, "1" is recorded in the box in the right-hand column of the corresponding food group</p> <p>Check that if no food of a food group is underlined, "0" is recorded in the box in the right-hand column of the corresponding food group</p>	<p>If at least one food of a group is underlined, the code '1' should be recorded in the box in the right-hand column of the corresponding food group</p> <p>If "1" is recorded in the box but no food of that group is underlined, check again with the open recall and, if necessary, go back to the respondent to ensure that a food of that group was consumed</p>
	Missing value (nothing is recorded in a box or a box is crossed out)	Check that there is no missing value in the boxes in the right-hand column of the list of food groups	<p>- if a food of the group is underlined, record '1' in the box of the corresponding food group</p> <p>- if no food of the group is underlined, check again the open recall and record '0' if the food is not recorded in the open recall</p> <p>- (if the person is absent or in case of illness/celebration/market for several days, check that the open recall is crossed out and that '9' is recorded in each box)</p>
	Outliers (value other than 0 or 1)	<p>Check that there is no value other than 0 or 1 in the boxes</p> <p>Only in case of absence/illness/celebration/market for several days should "9" be recorded in each box</p>	<p>- if a food of the group is underlined, record '1' in the box of the corresponding food group</p> <p>- if no food of the group is underlined, check again the open recall and if the food is not recorded, record '0' in the box of the corresponding food group</p>
Other variables of the questionnaire	Household/mother/child ID variables	<p>Check for the consistency of ID variables between household, mother and child levels</p> <p>Check that ID number of the mother of a child corresponds to the one recorded in table ME20</p>	In case of error, correct ID variables by using table ME20
	Children's birthdate	<p>Check that birthdate is recorded</p> <p>Check that there is no mistake on this date (aberrant day/month or year)</p>	Go back to the household to check child's birthdate
	Number of times the child ate solid/semisolid or smooth foods	<p>Check the consistency between the number of times the child ate solid/semisolid or smooth foods and the open recall.</p> <p>Fruit, peanuts, curd, or any other solid/semisolid or smooth foods have to be counted. Liquids don't have to be counted (except if they were eaten with solid/semisolid or smooth foods of course).</p>	Correct the number of times the child ate solid/semisolid or smooth foods if there is no ambiguity, otherwise check with the interviewer and go back to the respondent to ask the required information

#### 7.4.5. Instructions for using the check-list

Dietary diversity questionnaires were checked every day by supervisors before leaving the survey village.

Based on the check-list, supervisors can check point by point the 3 steps of dietary diversity data collection (open recall, transcription from the open recall to the list of foods of the questionnaire, transcription to the boxes in the right-hand column of the list of food groups). For each point to check, specifications for the required checks are provided. In case of problem, solutions are proposed for each point.

#### 7.4.6. Advantages and limitations of the check-list

The main purpose of this check-list is to avoid omitting to check some points of the dietary diversity questionnaires. In case of problem in the questionnaire, it may be necessary to go back to the household to collect missing information. Thus, all checks have to be done before leaving a village.

Although many checks are proposed, the list is not exhaustive. Solutions should be discussed with the survey team.

The check-list is also intended to harmonize survey methodology.

### **8. Example of a dietary diversity questionnaire completed in the field**

Document 9 shows an example of dietary diversity questionnaire of a mother completed in the field (during the lean season survey of AVSF 2013).

SECTION 2 : INDIVIDUAL DIETARY DIVERSITY QUESTIONNAIRE FOR MOTHERS OF CHILDREN UNDER 5			
DAIF1. Cluster number :	1 0 1 0 1 1	DAIF2. Household ID number :	1 0 1 4 1 0 1
DAIF3. Mother's first name / last name:		DAIF4. Mother's ID number	1 0 1 4 1
		→ Interviewer: refer to the number assigned in ME20	
DAIF5 : Age of mother (years) :			2 2
DAIF6: Are you currently breastfeeding? (1=yes, 0=no)			1
DAIF7: Are you currently pregnant? (1=yes, 0= no)			0
DAIF8. Ethnic group of the mother: 01=Dogon, 02=Peulh, 03=Bambara, 04=Bobo, 05=Mossi, 06=Sonrhaï, 07=Malinké, 08=Sarakole/Soninke/Marka, 09=Tamachek, 10=Sénoufo/Minianka, 12=Dafing, 11=Other, specify _____			0 1 1
DAIF9. Marital status of the mother : 1=married, 2=single, 3=widowed, 4=divorced, 5=other			1
DAIF10. Educational level of the mother : 1=None 2=Basic 1st cycle 3=Basic 2nd cycle 4=Secondary 5=Higher 6=Coranic 7=Literate			1
DAIF11. Three main occupations of the mother in descending order of importance: 01=Farmer 02=Livestock rearing 03=Fishing 04=Forest work (gathering/wood-charcoal/hunting...) 05=Trader 06=Carrier 07=Public employee 08=Private employee 09=Housewife 10=Pupil 11=Retired/Pensioner 12=Artisan, 13=Tour guide, 14=Traditional healer 15=Marabout/feticheur 16= Other independent 17=Tree farming/plantation 18= Horticulture, 19= Petty trader		DAIF11A	0 9
		DAIF11B	0 1
		DAIF11C	2 2
DAIF12. Did you suffer any illness that prevented you from eating as usual yesterday? (yes=1, no=0) If no, go to DAIF13			0
DAIF12A. If yes, has this illness that prevented you from eating as usual been lasting for several days? (yes=1, no=0)			1
DAIF13. Was yesterday a celebration day (baptism, marriage, funeral) or a market day? (yes=1, no=0) If no, go to open recall			0
DAIF13A. If yes, has this celebration or market been lasting for several days? (yes=1, no=0)			1

Instructions for the interviewer:

- 1) This dietary diversity questionnaire has to be administered to the mother of a child under 5.
- 2) The recall time period is the day before (day and night), however:
  - If the day before was a celebration day (baptism, marriage, funeral) or a market day when food consumption was unusual, or a day when the mother was ill<sup>1</sup>, then the recall period is the day preceding the celebration/market/illness.
  - If the celebration, market or illness lasted for several days (DAIF12A=1 OR DAIF13A=1), do not ask about the food consumption of the mother: cross out the open recall space and write "9" in each box in the right-hand column of the list of food groups. Then skip to the children of this mother.
- 3) Write down all foods and drinks mentioned by the mother in the spaces below. Detail the composition of mixed dishes (list of ingredients). When the mother has finished mentioning all foods and drinks eaten (meals and snacks), probe for meals and snacks not mentioned. When the recall is complete, underline all foods mentioned in the list of foods on the next page of the questionnaire. For each food group not mentioned, ask if foods of that group were eaten.

Read to the respondent:

**"Please describe all foods (meals and snacks) that you ate or drank yesterday during the day and night, whether at home or outside the home. Start with the first food or drink of the morning."**

**Into Bambara :**

Am bi fe ka dòn, kounau tilé kono, ani sukonon, i ye doumini nounouké ani a yé mi mi miu sokonon ani kénénan. Anba daminé ni douminiu folo ani a ye mi min sôgoma.

**Into Peulh :**

Halanam, nguuré/gnamri ko naminda kègnè na yarinda, ioudè fadjiri waredè m'bôtari yaade hirande ley suuduma et sellafou. Pati yekiita kô gnamindafou feytogutaari wôhin. In poundiran tadjolkodjol

**Into Dogon :**

Ya yedié aame, ya daga dè, kagné togou ou gné maa togou wo non be pōrôlétromin doumounôlé yadô tégébèrèou

Daraka (breakfast)	Kofana / Dalamagalan / Niéguéla (snack)	Tiléla (lunch)	Kofana/ Dalamagalan/ Niéguéla/ Kodjan (snack)	Sourofana (dinner)	Kofana Dalamagalan Niéguéla (snack)
<u>Millet tô</u> <u>with dried</u> <u>okra fruit</u> <u>powder</u> <u>sauce</u> • <u>Millet tô</u> : - millet flour - potash • <u>Dried</u> <u>okra fruit</u> <u>powder</u> <u>sauce</u> : - dried okra fruit powder (ingredient) - salt - white Naggi - chili - fresh shallot bulb (ingred) - piece of mutton meat - daton (ingredient)	<u>Sweetened</u> <u>millet</u> <u>cream</u> <u>with curd</u> - millet flour - sugar (ingredient) - curd (ingredient) - unsweetened tamarind fruit juice - unsweetened ginger juice - chili - salt	<u>Millet tô</u> <u>with dried</u> <u>fakaye leaf</u> <u>powder sauce</u> • <u>Millet tô</u> : - millet flour - potash • <u>Dried fakaye</u> <u>leaf powder</u> <u>sauce</u> : - dried fakaye leaf powder (ingredient) - salt - white Naggi - fresh shallot bulb (ingredient) - daton (ingredient) - smoked fish powder (condiment)	fresh mango	<u>Oily rice</u> <u>dish</u> - white rice - fresh shallot bulb (ingredient) - chili - Naggi cube - smoked fish powder (condiment) - dried okra fruit powder (condiment) - peanut oil (ingredient) - salt	Fresh mango

No.	Food groups	Examples	Consumption no = 0 yes = 1 (not applicable=9)
QDAF1	CEREALS	Sorghum, sorghum "cream", sorghum couscous, sorghum <i>tô</i> ; <u>millet</u> , <u>millet "cream"</u> / <i>Idégue/thiamguiri</i> , millet couscous, <u>millet <i>tô</i></u> (made from flour/broken millet), maize (broken maize or maize flour), toasted sweet maize, maize <i>tô</i> , fonio, fonio <i>tô</i> , rice, noodles (macaronis, etc.), wheat, bread, millet/wheat « <i>paté</i> », <i>farini</i> (made from wheat), millet/rice crepe, maize/millet/rice porridge, millet/maize/rice fritter	1
QDAF2	WHITE ROOTS AND TUBERS	White-fleshed sweet potato, potato, cassava, taro root, plantain ( <i>aloco</i> ), yam, African fan palm root, water lily root, turnip, <i>tô</i> made from white-fleshed sweet potatoes	0
QDAF3	VITAMIN A RICH VEGETABLES AND TUBERS	Carrot, red pepper, orange-fleshed sweet potatoes, orange/dark-yellow-fleshed squash ( <i>tô</i> made from orange-fleshed squash), <i>tô</i> made from orange-fleshed sweet potatoes	0
QDAF4	DARK GREEN LEAFY VEGETABLES	Baobab leaves, roselle leaves ( <i>dah</i> ), dark-green shallot leaves, onion leaves, squash leaves, bean leaves, <i>jaxatou</i> leaves ( <i>goyo</i> ), <i>m'poron</i> , potato leaves, spinach, dark-green lettuce, <i>lélé</i> leaves, <i>fakoye</i> leaves, any dark-green wild leaves	1
QDAF5	OTHER VEGETABLES	Fresh tomato, fresh or <u>dried okra</u> , eggplant, local eggplant ( <i>jaxatus</i> or <i>goyo</i> ), zucchini, light-coloured fleshed squash, cucumber, cabbage, onion, <u>shallot</u> , green pepper, green beans, beets, <i>kapoké</i> flowers, lettuce (light-green leaves), green peas, <i>dah</i> pulp, <i>gougoune</i> fruit	1
QDAF6	VITAMIN A RICH FRUITS	<u>Mango</u> , papaya, orange-fleshed melon, fruit of African locust bean ( <i>néré</i> ), powder made from the fruit of African locust bean	1
QDAF7	OTHER FRUITS	Watermelon, orange, lemon, wild dates ( <i>zéguéné/mono</i> ), dates, jujuba, pineapple, apple, banana, guava, <i>sounsoun</i> , avocados, wild fruits (« <i>raisin</i> »/ <i>bembé</i> , monkey-bread, baobab fruit), shea fruit pulp, liana fruit ( <i>zaban</i> ), African fan palm fruit, <i>dana</i> , <i>oumbouré</i> , <i>tabanoro</i> , <i>tabakoumba</i> , <i>dramo</i> , <i>béré</i> , <i>yiriba-den</i> , cashew nut fruit, doum fruit Fresh fruit juices, plum fruit juice, grape « gel »	0
QDAF8	ORGAN MEAT	Liver, kidneys, heart, lungs, or any other organ meat (from calf, mutton, goat, camel, poultry), entrails (entrails soup), coagulated blood	0
QDAF9	FLESH MEATS	Beef, <u>mutton</u> , goat, rabbit, bush meat, chicken, guinea fowl, camel, bird, gazelle, goose, duck, <i>varan</i> , turtle, insects, caterpillars/worms, lizard, wild rats, bush rats, squirrels, partridges, snake, mouse, warthogs, deer	1
QDAF10	EGGS	Chicken or guinea fowl or <i>varan</i> or duck eggs	0
QDAF11	FISH AND SEAFOOD	Fresh fish, smoked fish, salted fish, dried fish (except pinch of powder), canned fish (sardines, tuna...), all shellfish and seafood (shrimp, squid, octopus, lobster...), dried or smoked fish powder (in large quantities)	0
QDAF12	PULSES, NUTS AND SEEDS	Beans (cowpeas), <i>fari</i> , peanut (paste or plain), sesame, bambara groundnut/wandzou, sweet peas, hibiscus/ <i>datou</i> (in large quantities for <i>sauce</i> ), African locust bean/ <i>soumbala</i> (in large quantities for <i>sauce</i> ), cashew nuts, boscia nuts, wild nuts, chickpea, lentil, water lily seeds, other dried pulses	1
QDAF13	MILK AND MILK PRODUCTS	Fresh milk, milk powder, condensed milk (sweetened or not), <u>curd</u> , yogurt, cheese	1
QDAF14	OILS AND FATS	<u>Vegetable oil</u> (peanut, sesame, coconut, wild date oil, etc. – for sauces, seasonings, frying, fritter, crepe...), shea butter/oil, cow butter ( <i>sirimé</i> ), vegetable fats/margarine, mayonnaise, sour cream, fresh cream, lard	1
QDAF15	RED PALM PRODUCTS	Red palm oil, red palm nuts	0
QDAF16	SWEETS	<u>Sugar</u> , lump sugar (in tea, coffee, porridge, fritter, crepes...), soft drinks (sweetened soda, hibiscus juice, sweetened ginger juice, tamarind leaf or fruit sweetened juice, monkey bread juice, lemon juice), palm wine ( <i>banji</i> ), honey, jam, candy, biscuits	1
QDAF17	SPICES, CONDIMENTS  BEVERAGES	<u>Spices, condiments</u> : <u>chili</u> , pepper, vinegar, garlic, mix spices, cinnamon, <u>salt</u> , <u>Maggi cube</u> , <u>white Maggi</u> , laurel, tomato paste, condiment made from roselle/hibiscus (seeds/ <i>datou</i> , leaves or pulp/ <i>dah-sogo</i> ), condiment made from onion or dried/processed onion leaves or from dried shallots, « <i>potash</i> », condiment made from turnip roots, condiment made from soy, <i>nanayé</i> , kola nut, boscia stem juice, « <i>alkafoune</i> » seed powder <u>Small quantity</u> of fish powder, of okra powder, of dried baobab leaf powder/ <i>nanogonifing</i> , of pepper powder, of <i>lélé</i> leaf powder, of african locust bean powder ( <i>soumbala</i> ), yeast Tea, "lipton", coffee, <i>chicory</i> , <i>kinkeliba</i> , <u>unsweetened tamarind leaf or fruit juice</u> , <u>unsweetened ginger juice</u> , <u>unsweetened hibiscus (<i>dah</i>) pulp juice</u> , <u>unsweetened fermented millet bran water</u> , <u>unsweetened « <i>niaman</i> » leaf juice</u>	1
QDAF18	Did you eat anything outside the home yesterday? yes=1, no=0		0

## 9. Dietary diversity data analysis protocol

The data analysis protocol should be developed before and refined during the development of the questionnaires, with all partners and resource persons in the field of statistical analysis.

The data analysis protocol depends on survey objectives. The main objective of this M&E system was to assess the quality of the diet of mothers of children under 5 and of infants and young children and to assess changes in the quality of the diet after the implementation of food security interventions. Another objective of these surveys was to define the socio-demographic characteristics of households of mothers, of infants and of young children who had low dietary diversity, in order to improve targeting of beneficiaries.

It is important to develop a detailed analysis protocol before implementing the survey.



The data analysis protocol developed in the M&E system of the PASA Mali 5 is available in appendix 4 of the document “Outils et supports d’enquête de diversité alimentaire – Annexes”, available on the CONFED website (in French only). This analysis protocol is only an example.

## **10. Conclusion**

The dietary diversity tool is an easily implemented, rapid and low cost tool. However, it is essential to adapt this tool to the context and to translate it. The present document provides an example of the adaptation of the dietary diversity questionnaire in the framework of the joint M&E system of the PASA Mali 5. This questionnaire has been tested and used in several dietary diversity surveys, in separate areas, including an adaptation process in each area. It should not be used as is in another context but can easily be adapted to a new context.

Other tools and materials are also needed to conduct a dietary diversity survey and to ensure the reliability of the data collected. Different tools and materials are provided as examples in this document. They have been improved through survey feedback, experience sharing and solving of difficulties that have arisen. As for the dietary diversity questionnaire, they should be adapted to each survey context and developed in close collaboration with survey teams. All actors in the field should be involved in the development and adaptation of survey tools and materials.

FAO has published guidelines for measuring dietary diversity in a standardized way. The present document, which is based on these guidelines, is an example of the operationalization process of dietary diversity in a specific context. All tools and materials presented in this document can easily be adapted to a new context.

In surveys, it is recommended not to use the dietary diversity measure as a standalone indicator. It should be integrated into broader survey instruments and the results triangulated with other characteristics of interest such as wealth or food security status in order to obtain a holistic picture of the food and nutrition security situation in a community (Kennedy et al., 2010).

Collecting information on dietary diversity should be of interest to all programmes or initiatives where a primary or secondary objective is to improve the diet of the beneficiary population. Dietary diversity data are useful for evaluating the impact of food and nutrition security programmes. Other sectors that could usefully incorporate this information into their monitoring and evaluation systems include agriculture, fisheries and forestry. Dietary diversity can also be used to help evaluate programmes that address cross-cutting issues such as biodiversity, gender equality, HIV/AIDS or the Right to Food where improving the quality of diet is an important outcome (Kennedy et al., 2010).

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