



# Guidelines for selection and application of indicators for nutrition in projects

June 2021

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These guidelines are complementary to NGWN: Narrative on selection and application of indicators for nutrition, 2021



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## Colophon

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*NWGN - June 2021. The NWGN is a platform of civil society organizations, knowledge institutes, the private sector and the government, based in the Netherlands and working in the field of international nutrition. The NWGN believes that improving nutrition through both nutrition-specific as well as nutrition-sensitive actions contributes to the achievement of all SDGs in a direct or indirect way, while vice versa the achievement of many of the SDGs contributes to improving nutrition.*

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# Introduction

These guidelines provide detailed recommendations on indicators and methodologies to assess progress on nutrition improvement in value chain or agri-food related projects. These indicators are (among others) prioritized in the [Results Framework for Food and Nutrition Security](#), of the Ministry of Foreign Affairs (MFA).

The guidelines are directed towards practitioners, involved in the design and/or implementation of projects focussing on agriculture, economic, and/or food systems development, with or without a clear nutrition objective. The aim is to highlight and clarify nutrition-related opportunities within projects and to suggest approaches for measuring progress. These approaches and indicators are selected based on the latest and state-of-the-art insights.

Using the 'Framework for Food Systems of Diets and Nutrition', presented in Figure 1, monitoring progress towards nutrition (and health) improvement should focus on a limited number of strategic components within the food system. The following components have been selected: 1) dietary outcomes/diets; 2) food availability and affordability; 3) income; and, 4) position of women and their empowerment. The latter forms part of sociocultural drivers and refers to a process in which women enlarge their ability to make important decisions and enact them in their life. Further details on the rationale for this selection are available in the Netherlands Working Group on International Nutrition (NWGN) narrative on the above-mentioned Results Framework.

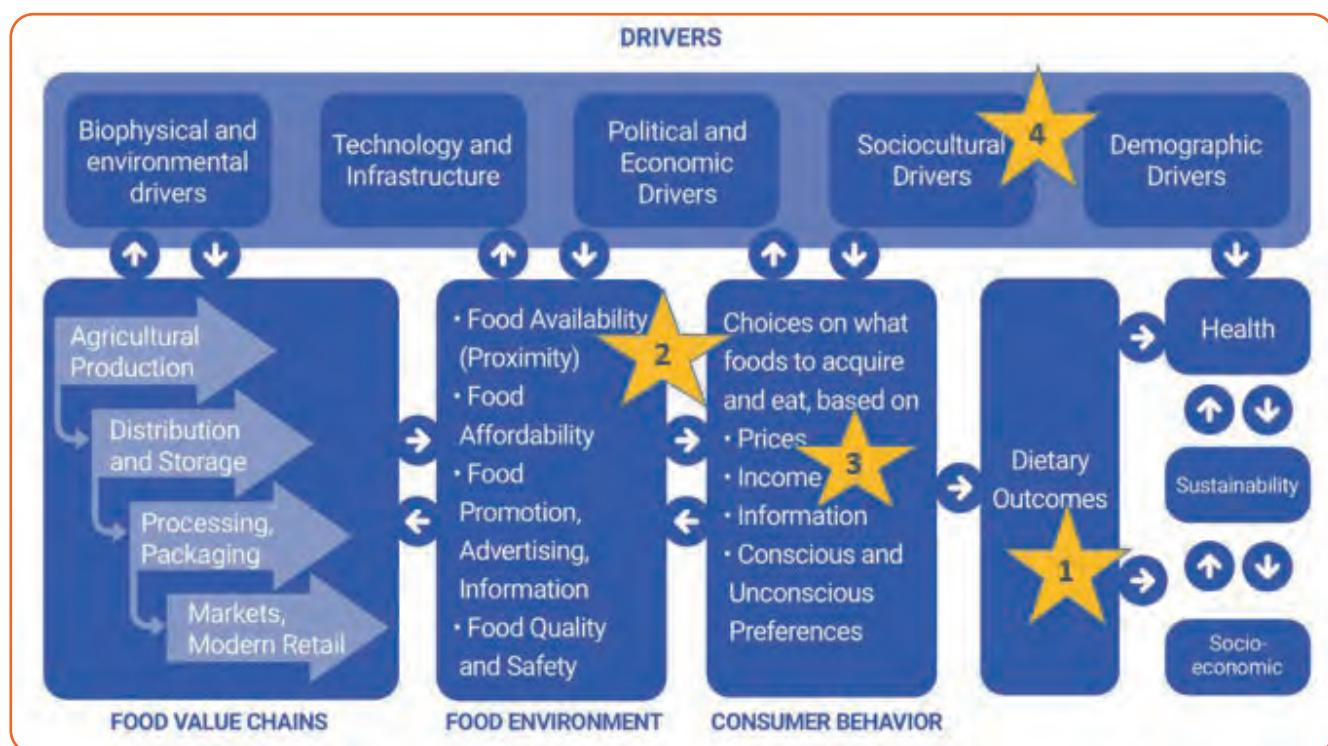


Figure 1: Conceptual Framework of Food Systems for Diets and Nutrition.<sup>1</sup>

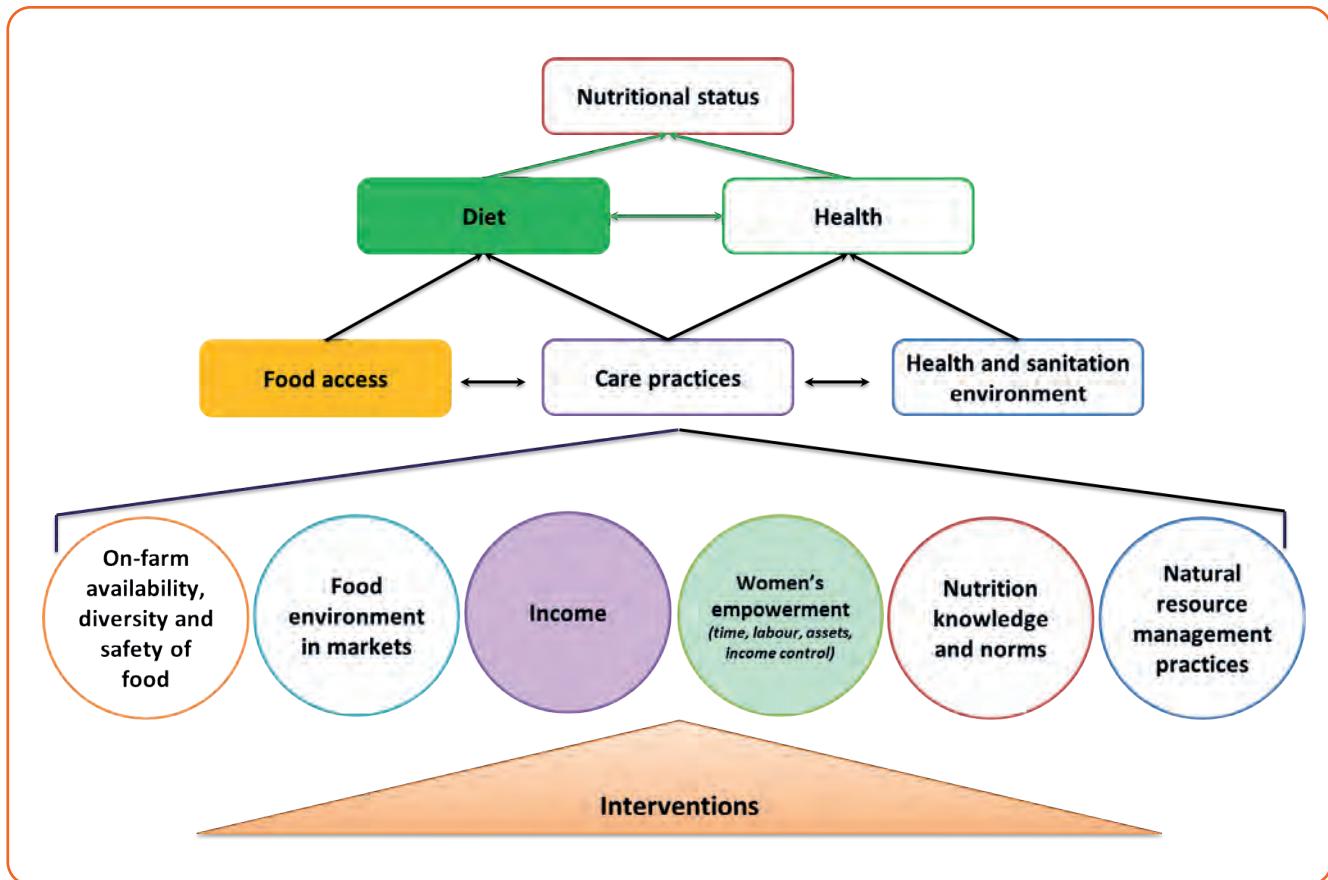


Figure 2: Conceptual framework for how agriculture interventions can affect nutrition.<sup>4</sup>

Agri-food related projects usually include a number of complementary interventions in areas such as natural resource management, availability of foods, markets, income, women empowerment and/or nutrition knowledge. Each of these areas is related to the underlying and immediate determinants for improved nutritional status as illustrated in Figure 2. The solid color shapes correspond with the

above-mentioned components for which indicators are selected. The focus on the position of women and their empowerment (4) is based on evidence that the position of (young) women is directly associated with the nutritional status of their children.<sup>2</sup> Better access to means of production for women leads to increased access to diverse food and income leading to better nourished children.<sup>3</sup>

# Decision guide for selection of indicators

It is important to use indicators that have been validated at international level for different contexts and are able to reflect a change in a relatively short time span, i.e. during 2-4 years. The use of common indicators will support practitioners to (re)define, compare and report on their results and, where needed, adjust intervention strategies.

In resource poor environments diets (1) tend to be monotonous resulting in low quality as they do not supply all required macro and micronutrients. To measure progress towards more healthy diets, it is advised to focus on women's diets as a reflection of household level diets. Evidence shows that women will ensure, as much as possible, that their household members will get food even if this is at the expense of themselves. Lastly, dietary diversity is an important component of healthy diets and increased dietary diversity is associated with increased micronutrient adequacy of diets of women and children.<sup>5</sup> Based on the above, the internationally validated indicator Minimum Dietary Diversity for Women -MDD-W is recommended. In case of interventions that specifically focus on infants and young children the Minimal Acceptable Diet-MAD for children (6-23 months) is also recommended.

Access to diverse and healthy food, based on availability and affordability (2), is a pre-condition for healthy diets. Taking into account that it is important to check the influence of seasonality and applicability at project level, the Months of Adequate Household Food Provisioning (MAHFP) indicator is recommended.

Increased production and/or income (3) at household level does not automatically lead to improved access to food and healthy diets. To obtain further insights into the relationship between production, income and access

to food and diet, information on production quantities and quality and/or income should be gathered. Guidelines for the measurement of production quantities and quality are beyond the scope of these guidelines. Recently, a simplified methodology for benchmarking and measuring [living income](#) of rural households in low-income countries has been elaborated and is being validated.<sup>6</sup>

Currently the so-called Project Women Empowerment in Agriculture Index (Pro-WEAI) (4) is being revised and simplified. The new version is referred to as the Women's Empowerment Metric for National Statistical Systems (WEMNS) and is expected to be ready by the end of 2021. Once tools related to new methods for (living) income and women empowerment measurement are released, they will be added to these guidelines.



## Decision tree for measuring Food Security and/or Nutrition outcomes within Agri-Food / Food System interventions

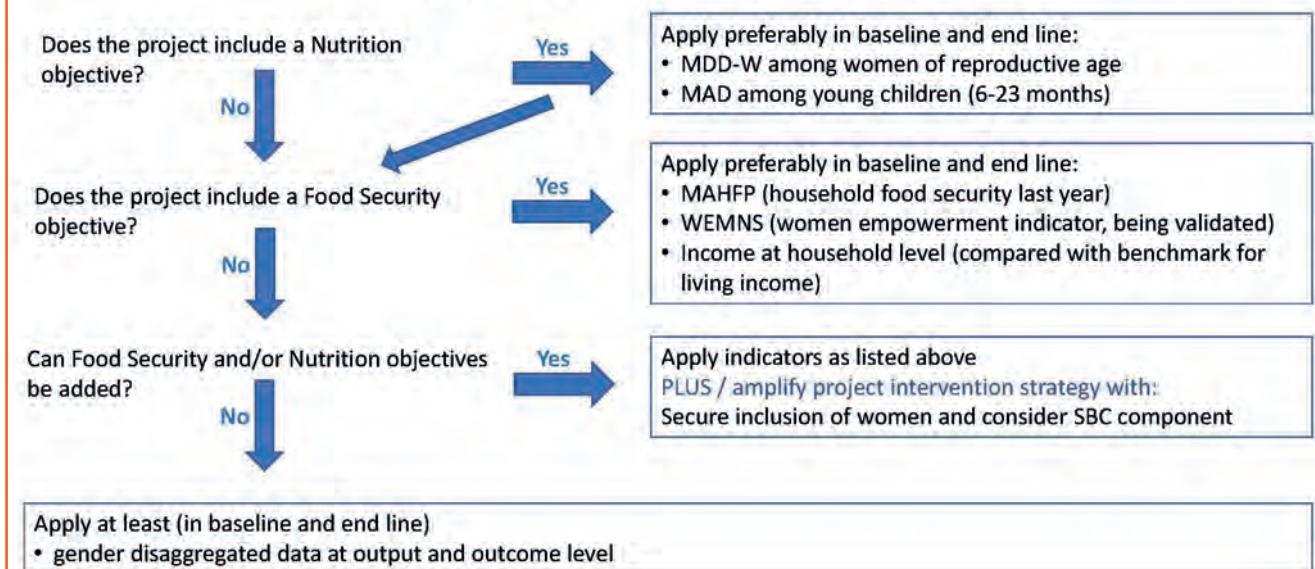


Figure 3: Decision tree developed for the MFA in support of the Results Framework on Food and Nutrition Security.

To support practitioners in the decision as to which indicators to include in their monitoring & evaluation (M&E) system, a decision tree has been developed (see Figure 3). It recommends (combinations of) specific indicators, depending on the objectives and ambitions of the project related to the inclusion of nutrition and food security objectives. Evidence shows that improved access to food, through increased production and/or income, does not necessarily lead to improved diets. Inclusion of a specific nutrition objective is essential when impact on diets is included in the overall goal. In the case that 'improved diets' is

part of the project goal, it is recommended to include components for social behavioural change (SBC) and women's empowerment. SBC is a strategy that triggers people/society/communities to adopt healthy, beneficial and positive behavioural practices, and healthier diets based upon informed decisions. As mentioned above, women's empowerment and improving their position is an important driver in translating interventions to healthier diets. If these components cannot be included, it is strongly recommended to report data at output and outcome level in a gender disaggregated way.

# Minimum Dietary Diversity for Women - MDD-W

## What information does MDD-W provide?

To measure dietary diversity, relevant foods have been classified into 10 pre-defined food groups. Data is collected at individual level through an interview applying a so-called 24 hour recall questionnaire among women of reproductive age, between 15-49 years. MDD-W is based on the quantitative assessment of the number of pre-defined food groups from which the women consumed foods during the previous day and night.

The pre-defined food groups include the following 10 groups:

1. Grains, white roots and tubers, and plantains
2. Pulses (beans, peas and lentils)
3. Nuts and seeds
4. Dairy
5. Meat, poultry and fish
6. Eggs
7. Dark green leafy vegetables
8. Other vitamin A-rich fruits and vegetables
9. Other vegetables
10. Other fruits

## What does MDD-W measure?

MDD-W measures the proportion of women 15-49 years of age who reach a minimum of five food groups. In a (target) population, this can be used as a proxy indicator for probability of adequacy of micronutrient intake. Consuming food from five food groups or more means low risk of inadequate micronutrient intake. MDD-W is commonly used in national and sub-national assessments, which could provide for references to compare findings at programme or project level. The 10 pre-defined food groups can be used universally. However, the allocation of foods into the 10 groups depends on the region and target

group as available foods are context specific.

Four ways for using the data from the indicator

1. To calculate the MDD-W, i.e. the proportion of women who have consumed foods from at least five out of the 10 pre-defined food groups the previous day and night compared with the baseline;
2. The proportion of women who have consumed 1,2,3, ... or 10 foods from the ten pre-defined food group the previous day and night, compared with the baseline
3. The proportion of women who have consumed an extra particular food out of the 10 pre-defined food groups the previous day or night compared with the baseline.
4. The median and interquartile ranges (25th percentile to and 75th percentile) of the MDD-W compared with the baseline.

The indicator should **not be used to:**

Screen individuals for selection for interventions, nor to identify individuals at risk of poor intakes.

## Considerations for applying the MDD-W:

- The dietary diversity questionnaire is to be applied at individual level to the female household member (of reproductive age) who is responsible for meal preparation. The data is to be collected through a face-to-face interview, preferably by a female enumerator, who asks the respondent to recall all meals and foods consumed during the previous 24 hours or day and night. The interviewer should ask which ingredients were used and register all different ingredients included in the meal (whenever the quantity is > 15 g per serving). On the spot, the interviewer has to register per meal which foods have been consumed by ticking the related food group from the list of 10 different food groups shown above. Therefore, the questionnaire should be

applied by an interviewer with basic knowledge about (local) food preparation and nutrition.

- It is important that the foods mentioned by the respondent are registered in the right food group. To this end, questionnaires adjusted to the context should be developed to guide enumerators. Please refer to Annex 1 for an extensive food list sample.
- An **alternative methodology** for data collection (to be ready by end 2021), known as the data quality questionnaire tool (DQ-Q tool), has been designed and is being developed in a context specific way for a growing number of countries. It is based on a pre-defined 29-food item questionnaire and asks whether specific foods belonging to this group have been consumed during the previous day or night.

### DQ-Q in summary

- 29-item questionnaire, based on MDD-W list-based method
- Asks about foods and beverages consumed in the previous day or night
- Focus on sentinel foods per food group
- In development for 51 countries (ready at end of 2021)

To decide if 'the list based' or 'open recall' method is used in the interview, it is good to check

which method is commonly used in the country (for comparison).

- When calculating the sample size, it is recommended to consult a statistician that has experience in calculation sample size for the indicator.
- The MDD-W should preferably be applied during the lean period. For follow-up research, i.e. mid-term or end-line surveys, it is important that the data is collected during the same season to be able to compare with previous (baseline) assessments.
- Before developing the questionnaire and selecting the data collection method, it is recommended to check whether there are tools, examples and/or experiences from other actors that could be used.
- It is important that the interviewer verifies first if the 'reference day' for registering the foods/meals consumed can be considered as an average. He/she should check whether the meals were different due to a celebration, the weekend, illness, or other special event or circumstances. If so, an earlier 'more average day' should be identified for the 24-hour recall.

Link to guides for more detailed information:

- [Dietary Diversity for Women, a guide to measurement](#)
- [INNDEX recommendations for MDD-W](#)

## The DQ-Q tool

- 29-item questionnaire, based on MDD-W list-based method
- Asks about foods and beverages consumed in the previous day or night
- Focus on sentinel foods per food group
- In development for 51 countries (ready end 2021)



(Do not read food group names)		Yesterday, did you eat any of the following foods?	(circle answer)
01 staple foods made from grains		Rice, pasta, or bread, including sandwiches?	YES or NO
02 whole grains		Wholegrain corn couscous, corn, brown rice, wholegrain bread, or oats?	YES or NO
03 white roots/tubers		Potato, cassava, or yam?	YES or NO
04 legumes		Beans or lentils?	YES or NO
		Yesterday, did you eat any of the following vegetables?	
05 vitamin A-rich orange veg		Pumpkin, carrot, or sweet potato?	YES or NO

# Minimum Acceptable Diet (MAD) for young children (6-23 months)

## What information does MAD provide?

This indicator is relatively simple to calculate and interpret and is applicable across sociocultural contexts. It is also applicable for both breastfed and non-breastfed children. Analyses have shown that the MAD indicator is associated with child anthropometric status, particularly stunting.

MAD is recommended as an indicator of adequate food intake in the age group from 6 to 23 months old. Children aged 6-23 months should be fed meals at an appropriate frequency and in a sufficient variety to ensure, respectively, that energy and nutrient needs are met. This indicator combines information on minimum dietary diversity (proxy for nutrient density) and minimum meal frequency (proxy for nutrient density), with the extra requirement that non-breastfed children should have received milk at least twice on the previous day.<sup>7</sup>

## What does MAD measure?

MAD measures the percentage of children 6-23 months of age who consumed a minimum acceptable diet during the previous day. The indicator is calculated from the following two fractions:

*Breastfed children 6-23 months receiving at least the minimum dietary diversity and the minimum meal frequency for their age during the previous day*

*Breastfed children 6-23 months of age*

and

*Non-breastfed children 6-23 months receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day as well as at least two milk feeds*

*Non-breastfed children 6-23 months of age*

The minimum acceptable diet indicator combines standards of dietary diversity and feeding frequency by breastfeeding status. The numerator includes only those children who consumed at least the minimum dietary diversity and minimum meal frequency during the previous day AND are either breastfed or consumed the minimum milk feeding frequency during the previous day. The indicator thus provides a useful way to track progress in improving the key quality and quantity dimensions of children's diets.

The DD is collected in a similar way as described for MDDW above.

The minimum number of times for meal frequency are:

- 2 times for breastfed infants 6-8 months
- 3 times for breastfed children 9-23 months
- 4 times for non-breastfed children 6-23 months.

## Considerations for applying the MAD:

- All considerations for MDD-W also apply for MAD.
- A weakness of this indicator is that it does not provide quantitative information about children's food and nutrient intake and was not designed to capture excessive intake of energy, sugar, or fat that would yield information about risks for overweight and obesity.<sup>8</sup>
- The project is advised to engage with a nutritionist or the nutrition department of the province or country to access the identified food groups and assist in the training of enumerators.

Link to guides for more detailed information:  
[Indicators for assessing infant and young child feeding practices: definitions and measurement methods](#)

## Summary

	Minimum Dietary Diversity score for women (MDD-W)	Minimum acceptable diet for young children (6-23 months of age) (MAD)
<b>Target group</b>	Women of reproductive age (15-49 years) (not pregnant-not lactating)	Children 6-23 months old
<b>Data collection method and tool</b>	<ul style="list-style-type: none"> <li>• Qualitative (Q) 24 hour recall questionnaire</li> <li>• List-based (L) 24 hour recall questionnaire</li> <li>• DQ-Q questionnaire (in development)</li> </ul>	Combination of minimum dietary diversity (list based 24 hour recall) and age-based meal frequency (breastfed or non-breastfed) and minimum milk feeding frequency on previous 24hour
<b>Structure of questionnaire</b>	10 food groups	7 food groups
<b>Derived indicators</b>	<ul style="list-style-type: none"> <li>• Average MDD-W (range 0-10)</li> <li>• % women consuming <math>\geq 5</math> food groups</li> <li>• % consuming separate food groups</li> </ul> <p>Option: add fortified foods</p>	<ul style="list-style-type: none"> <li>• % children 6-23 months who receive <math>\geq 4</math> food groups</li> <li>• % children with minimum meal frequency</li> <li>• % children 6-23 months who consume at least 2 (breast) milk feed</li> <li>• % of children who received <math>\geq 4</math> food groups AND minimum meal frequency AND minimum milk feeding frequency</li> </ul>
<b>Duration of questionnaire</b>	<ul style="list-style-type: none"> <li>• 24 hour recall 20-30 minutes</li> <li>• DQ-Q: 10-15 minutes</li> </ul>	40 minutes
<b>Enumerator training</b>	<ul style="list-style-type: none"> <li>• Q and L requires at least 2 days training</li> <li>• DQ-Q needs 1 day training</li> </ul>	MAD requires at least 2 days training (more complicated than MDD-W)

# Months of adequate household food provisioning - MAHFP

## What information does MAHFP provide?

The MAHFP is a simple indicator for household food access, which can show changes in the household's ability to address vulnerability over time. In an intervention, the indicator can be used to track progress in improving household food security throughout the year.<sup>9</sup>

## What does MAHFP measure?

The MAFHP is comprised of only two questions. The respondent must answer in which months the household did not have sufficient food to meet their needs over the past 12 months. It is focussed on quantity of foods, without taking into account elements of quality (diversity). These questions should be answered by the person in the household responsible for food preparation, usually the woman. The final MAFHP score is 12 minus the number of months that the household was not able to meet their food needs. In addition, the indicator provides information on lean periods and to what extent the household was affected by a lack of food.

## Considerations for applying MAHFP:

- The advantages are that MAHFP can help to identify the food insecure months and lean periods and be used to adjust the intervention so it addresses food shortage during these months. The indicator captures multiple outcomes of an intervention, including increased agricultural production, storage, and the household purchasing power. Due to the long timeframe, it is also a good indicator of chronic food security and allows seasonality to be accounted for.
- The disadvantages are that MAFHP has not yet been validated against other food security or dietary intake indicators, and is not able to detect acute food insecurity. MAHFP is limited in its representation of 'household food



security' because it captures the respondents' perceptions of whether they had enough food.

- MAHFP can be useful in situations where the programme is of long duration (e.g. 4+ years) in order to capture change in household food security.
- The MAFHP questionnaire should be performed during the lean period to increase the accuracy of recall for the times that the household did not have enough food.
- The Sustainable Food Lab, a community of several companies and organizations, recommended adding a question about the number of days in the months that the family experienced food insecurity. This is because months was not sensitive enough to show improvement within a project timeframe. Looking at the number of days within the months allows better tracking of change, but reduces the simplicity of the indicator.
- During analysis, it is important to consider contextual data such as climate and conflicts.

Link to guides for more detailed information:  
[https://www.fantaproject.org/sites/default/files/resources/MAHFP\\_June\\_2010\\_ENGLISH\\_v4.pdf](https://www.fantaproject.org/sites/default/files/resources/MAHFP_June_2010_ENGLISH_v4.pdf)

# Example questionnaire

QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
<p>1. Now I would like to ask you about your household's food supply during different months of the year. When responding to these questions, please think back over the last 12 months, from now to the same time last year.</p> <p>Were there months, in the past 12 months, in which you did not have enough food to meet your family's needs?</p> <p>PLACE A 1 IN THE BOX IF THE RESPONDENT ANSWERS YES. PLACE A 0 IN THE BOX IF THE RESPONSE IS NO.</p>	<input type="checkbox"/>	IF NO, END HERE
<p>2. If yes, which were the months in the past 12 months during which you did not have enough food to meet your family's needs?</p> <p>THIS INCLUDES ANY KIND OF FOOD FROM ANY SOURCE, SUCH AS OWN PRODUCTION, PURCHASE OR EXCHANGE, FOOD AID, OR BORROWING.</p> <p>DO NOT READ THE LIST OF MONTHS ALOUD. PLACE A 1 IN THE BOX IF THE RESPONDENT IDENTIFIES THAT MONTH AS ONE IN WHICH THE HOUSHOLD DID NOT HAVE ENOUGH FOOD TO MEET THEIR NEEDS. IF THE RESPONDENT DOES NOT IDENTIFY THAT MONTH, PLACE A 0 IN THE BOX.</p> <p>USE A SEASONAL CALENDAR IF NEEDED TO HELP RESPONDENT REMEMBER THE DIFFERENT MONTHS.</p> <p>PROBE TO MAKE SURE THE RESPONDENT HAS THOUGHT ABOUT THE ENTIRE PAST 12 MONTHS.</p> <p>A January      B December      C November      D October      E September      F August      G July      H June      I May      J April      K March      L February</p>		

# Considerations for the application of indicators

Besides the identification of indicators to measure progress, other basic issues need to be considered that support the measuring progress. With regard to data collection and analysis, all data should always be disaggregated for gender and age.

## Frequency of data collection:

The selected international validated indicators covering diet and food availability and affordability, measure progress and results of interventions addressing nutrition at outcome/impact level. These indicators need time to change and therefore will only need to be measured during different moments in the project, such as baseline, midline and/or end-line evaluations.

## Target group:

With limited budgets, preference should be given to collect data from women of reproductive age (15-49 years) as evidence has shown that intervention effects on nutrition are observed first in women. Disaggregation of data collection and analysis is recommended for sub-age groups (15-19 year, 20-25 years and 26-49 years), which will support identifying target-group specific entry points of interventions.

## Resources required:

The use of standard and internationally validated indicators makes it possible to use existing tools for questionnaires and training of enumerators as a starting point. In order to contextualize these tools and adequately train and supervise enumerators, it is recommended to involve (hire) a nutrition expert.

## Electronic data collection:

With the increasing availability and financial accessibility of devices like smart phones and tablets, it is strongly recommended that data be collected electronically to ease data collection, reduce data collection errors and significantly reduce time for and mistakes in data entry. Furthermore, although extra budget is needed for tablets and ICT support before and during fieldwork, overall the use of electronic devices lowers the budget needed. There are many data collection software available, for example ODK and Kobo Collect.



# Annex 1 Extensive food list sample

This list should not be used as a questionnaire, but as a reference tool for list-based or open recall methods

MDD-W food groups	Row	MDD-W food groups subdivisions	Food items
1. Grains, white roots, tubers and plantains	A	Foods made from grains	Porridge, bread, rice, pasta/noodles, sorghum, millet, corn, couscous, barley
	B	White roots and tubers or plantains	White potatoes, white yams, manioc/cassava/yucca, cocoyam, taro roots or tubers, plantains
2. Pulses (beans, peas or lentils)	C		Beans, peas, lentils, hummus, tofu, tempeh
3. Nuts and seeds	D		Groundnut/peanut, cashew, walnut, baobab seeds, chia seeds, flaxseed
4. Dairy	E	Milk	Milk
	F	Dairy foods	Cheese or yoghurt
5. Meat, poultry and fish	G	Organ meats	Blood sausage, gizzard, heart, kidney, liver
	H	Red flesh meat from mammals	Beef, goat, lamb, mutton, pork, rabbit, yak
	I	Processed meat	Salami, bacon, bologna, hot dogs
	J	Poultry and other White meats	Chicken, duck, goose, guinea fowl
	K	Fish and seafood	Fresh, frozen or dried fish, shrimp, clams
6. Eggs	L		Eggs from poultry or any other bird
7. Dark green leafy vegetables	M		Kale, mustard greens, spinach, amaranth greens, chicory, broccoli, Swiss chard

MDD-W food groups	Row	MDD-W food groups subdivisions	Food items
8. Vitamin A-rich fruits and vegetables	N	Vitamin A-rich vegetables or roots	Pumpkin, carrots, squash or sweet potatoes
	O	Vitamin A-rich fruits	Ripe mango, ripe papaya
9. Other vegetables	P		Beets, cabbage, cauliflower, celery, cucumbers, eggplant, zucchini, radish, tomato, mushroom
10. Other fruits	Q		Apple, avocado, banana, baobab fruit, berries, pineapple, orange, watermelon, guava, coconut flesh, tangerine

Adapted from: FAO (2021). Minimum dietary diversity for women. Rome. <https://doi.org/10.4060/cb3434en>

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