Milan Urban Food Policy Pact Monitoring Framework

Draft version, July 2018

Indicator 7: Minimum dietary diversity for women of reproductive age

MUFPP framework of actions' category: Sustainable diets and nutrition

This is an indicator to assess dietary quality at individual level, specifically looking at women of reproductive age (MDD-W). It is a proxy for the probability of micronutrient adequacy of women's diets.

Overview table

MUFFP Work stream	Sustainable diets and nutrition
MUFFP action	**Promote sustainable diets** (healthy, safe, culturally appropriate, environmentally friendly and rights-based) through relevant education, health promotion and communication programmes, with special attention to schools, care centres, markets and the media.
What the indicator measures	This is an indicator to assess dietary quality at individual level, specifically looking at women of reproductive age (MDD-W). It is a proxy for the probability of micronutrient adequacy of women's diets. The indicator reflects micronutrient adequacy, which is one critical dimension of diet. It does not reflect adequacy of specific target nutrients.
Which variables need to be measured / what data are needed	Foods and beverages consumed during a period of 24 hours
Unit of measurement *(i.e. Percentages, averages, number of people, etc.)*	Number of food groups consumed
Unit(s) of Analysis *(i.e people under 5 years old, etc.)*	Women of reproductive age (15-49 years)

	Note: If desired also a MDD-YC focussing on young children age 6-23 months can be measured[1].
Possible sources of information of such data	Household surveys
Possible methods/tools for data-collection	Household survey (individual interview within household). While food group diversity indicators can be derived from detailed quantitative dietary intake surveys, this guide is intended for users who are not in a position to conduct such surveys. When relatively simple data collection approaches are required, as in a number of large-scale and multi-module surveys, food group diversity indicators can be measured using two main methods: open recall and list-based.
Expertise required	Survey data collection and analysis. It should be clear that a certain level of academic training is needed. Ideally the city would partner with a research institution/university.
Resources required/ estimated costs	Specialised knowledge of survey methodology, sampling design and statistical analysis.
Specific observations	This indicator has been validated as an indicator of likelihood of micronutrient adequacy among women of reproductive age. There is a recent global consensus on this indicator as the best, most valid measure of women's dietary diversity; it replaces the WDDS (Women's Dietary Diversity Score) that had been previously developed by FAO and Food And Nutrition Technical Assistance project (FANTA). Unlike former measurements, it offers a threshold for women's micronutrient needs. Consortium of International Agricultural Research Centres (CGIAR) and USAID Feed the Future have mainstreamed the use of this indicator in their evaluations. The MDD-W is validated and relatively easy to administer, but it does not capture dietary quality completely because it is an indicator of micronutrient adequacy and diversity, but does not deal with specific healthy or unhealthy amounts or components of the diet. Other dietary quality scores have been constructed (e.g. the Healthy Eating Index, Dietary Quality Index), but these require a full quantitative –and more costly- 24-hr recall.
Examples of application	There are as yet no known examples of application of this indicator at city level.

Rationale/evidence

Consumption of sufficient, safe, and nutritious food is critical to the health and well-being of any urban household/individual. The Milan Pact Monitoring Framework proposes a set of indicators to measure different aspects of food security and sustainable diets and nutrition. The combination of these indicators provides the more comprehensive analysis. For example Indicator 18 (*Percentage of food insecure households based on the Food Insecurity Experience Scale -FIES*) gives insight into food access at household or individual level. Indicator 9 (*Costs of a nutritious food bask*et) looks at the food environment in markets to assess affordability and accessibility of foods by relating the cost of the food basket to individual/family incomes.

This indicator Minimum Dietary Diversity for Women of reproductive age (MDD-W) responds to a long-standing need to have a simple and effective indicator to assess women's diet quality. Women are a group that is often nutritionally vulnerable because of their increased requirements in micronutrients and because, in some settings, they may be disadvantaged in intra-household distribution of nutrient-

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[1] See further: http://www.fao.org/3/a-i6275e.pdf. Page 16 as well as:
IYCF MDD = Minimum Dietary Diversity indicator, as an indicator of infant and young child feeding practices; see: Indicators for assessing infant and young child feeding practices (WHO, 200811 and WHO, 2010).
http://www.who.int/maternal_child_adolescent/documents/9789241596664/en/.

dense foods. Nutrition-sensitive interventions have intensified in recent years due to an increased focus on deploying efforts towards good nutrition for women and children during the critical 1,000-day period of their life. The MDD-W offers one way to measure impact of these nutrition-sensitive efforts. The MDD-W is a brief set of questions, requiring much less time and expense than traditional dietary surveys. It is validated as an indicator of nutrient adequacy. Moreover, it can provide information about dietary patterns and what are the food groups predominantly consumed at population level (or missing from the diet) and in a given agro-ecological zone. For example, indicators can be derived for consumption of vitamin A-rich plants, and for consumption of iron-rich food groups. This information, if properly accessed and incorporated to inform decision making, can provide sound evidence to influence policies and investment choices towards more nutrition-sensitive agriculture production or other nutrition interventions. It is important to note that MDD-W does not provide comprehensive information on diet quality or all impacts of agriculture on diet. It may not capture changes when projects aim to increase production and consumption of food items or food groups already widely consumed. Likewise, it will not reflect increase in nutrient intake due to consumption of fortified or bio-fortified foods. These projects can have a positive impact on nutrition but need other metrics. Also, it does not measure consumption of unhealthy foods such as ultra-processed snacks and sugar-sweetened beverages, which negatively affect diet quality and non-communicable disease risk in many settings. MDD-W is a powerful tool to track progress and raise awareness on gender specific needs and it fosters the message of the important link between food production (agriculture) and individual consumption (nutrition).

MDD-W is a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups the previous day or night. The proportion of women 15–49 years of age who reach this minimum in a population can be used as a proxy indicator for higher micronutrient adequacy, one important dimension of diet quality.

MDD-W is thus a population-level indicator based on a recall period of a single day and night, so although data are collected from individual women, the indicator cannot be used to describe diet quality for an individual woman. This is because of normal day-to-day variability in individual intakes.

This indicator will be useful when programme design, activities and impact pathway indicate a potential to increase food group diversity. Note that many agricultural and health sector projects may improve nutrition, but only some will do so by increasing food group diversity. In many contexts, it will also be important to increase the quantity of nutrient-dense food groups that are accessible and consumed by target groups. Users should note that consumption of food items from five or more food groups, while useful as a population-level benchmark, does not ensure micronutrient adequacy for the population, particularly if quantities of micronutrient-dense foods consumed are too small.

Note that cities may be interested in monitoring specific food intake, rather than or in addition to food group diversity. A specific indicator on meat consumption (Indicator 10) is therefore proposed as part of the overall Milan Urban Food Policy Pact monitoring. Other cities are principally interested in fresh fruit and vegetable consumption, given that eating fruits and vegetables can lower risks of heart disease and some cancers. For example, New York City's goal, established in OneNYC in April 2015, is to increase the average number of servings of fruits and vegetables adult New Yorkers eat every day by 25 percent over the next twenty years. Monitoring is done by means of a computer-assisted telephone Community Health Survey[2]. The survey includes a question about "Fruit and vegetable

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[2] You can learn more about the survey and its methodology here: https://www1.nyc.gov/site/doh/data/data-sets/community-health-survey-methodology.page.   You can download the dataset for public use, here: https://www1.nyc.gov/site/doh/data/data-sets/community-health-survey-public-use-data.page. And you can use the online query system to pull up data about fruit and vegetable consumption here: https://a816-healthpsi.nyc.gov/epiquery/CHS/CHSXIndex.html

consumption: How many total servings of fruit and/or vegetables did you eat yesterday? (A serving would equal one medium apple, a handful of broccoli, or a cup of carrots)". A large number of New Yorkers is surveyed and it is designed to be a representative sample of the city as a whole. The question is self-reported and while servings are defined, it is acknowledged that there is variation in interpretation and responses on that question. Although it is self-reported, this results in quantitative analysis of data on the number of servings of fruit and vegetables consumed that can be used to determine the average citywide as well as disparities in age, neighbourhood, and population. Cities can easily include such a question in a MDD-W food consumption diversity survey.

Glossary/concepts/definitions used

Dietary diversity is universally recognised as a key component of healthy diets. It relates to nutrient adequacy (coverage of basic needs in terms of macro and micro nutrients) and to diet variety/balance, which are two of the main components of diet quality.

Women of reproductive age (WRA) include women age 15-49 years of age. WRA are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation. Requirements for most nutrients are higher for pregnant and lactating women than for adult men. Outside of pregnancy and lactation, other than for iron, requirements for WRA may be similar to or lower than those of adult men, but because women may be smaller and eat less (fewer calories), they require a more nutrient-dense diet. Insufficient nutrient intakes before and during pregnancy and lactation can affect both women and their infants.

Food group diversity refers to the diversity of consumption. For this purpose, food items are grouped under overall food groups. The ten used food groups are: 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[3].

Preparations

A meeting should be organised with all staff who will be involved in this activity to:
- Familiarise them with the methodological guidelines
- Agree on the objectives and scope of the analysis and data collection requirements
- Decide on the data collection method, agree on frequency and period of data collection
- Draft a list of food groups and adapt model questionnaires to local contexts
- Train enumerators
- Field test and modify the questionnaire where needed.
- Coordinate activities.

Sampling

There are numerous sampling, sample size and survey design decisions that depend on the objectives and context for data collection. There are a few decisions specific to measurement of food group diversity for women of reproductive age (WRA), including selection of respondent(s) within the household, sampling of days of the week, sampling of "unusual" days (e.g. feasts) and issues related to seasonality that are described in the Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), Appendix 1. http://www.fao.org/3/a-i5486e.pdf.

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[3] The food groups are further described and defined in http://www.fao.org/3/a-i5486e.pdf, Section 2, and Appendix 2

With regards to the total number of households to survey, in general a 10% sample (10% of all households) will provide reliable data. A specific policy priority, surveys could be implemented among specific target groups (e.g. lower-income households; women producers vs. non-producers) or in specific areas of the city.

Data Collection

Data are collected on the foods and beverages consumed in the previous 24 hours which are aggregated into 10 distinct food groups. Does not require information on **quantitative** food intake (amounts eaten per day).

Data can be collected through (1) The open recall method or (2) The list-based method.

Open recall method. In a qualitative open 24-hour recall (henceforth, "open recall"), the enumerator asks a series of standard probing questions to help the respondent recall all foods and beverages consumed the previous day and night and also probes for main ingredients in mixed dishes. Specifically, the recall period covers from when the respondent awoke the previous day, through the day and night for a 24-hour period. The recall is "open" because the enumerator does not read predefined foods/groups to the respondent. Each food or beverage that the respondent mentions can be circled, underlined or ticked on a predefined list. Foods not already included on the predefined list can be either classified by the enumerator into an existing predefined food group or recorded in a separate place on the questionnaire and coded later into one of the predefined food groups. This method is recommended and is detailed in Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), Section 3 (model questionnaire), http://www.fao.org/3/a-i5486e.pdf.

List-based method. In the list-based method, the enumerator does read a list of foods and beverages to the respondent. The enumerator informs respondents that they should respond "yes" for each food or beverage consumed during the specified recall period of the previous day and night. The enumerator continues by reading a list of foods organised in groups, giving multiple examples for each food group. There is anecdotal evidence that data collected with this method are less complete. An example questionnaire and more details are given in Appendix 3 of the Minimum Dietary Diversity for Women: A Guide to measurement. (FAO/Family Health International (FHI) 360, 2016), http://www.fao.org/3/a-i5486e.pdf.

There are advantages and disadvantages to each method as detailed in the mentioned Guide to measurement. This guide describes and recommends the open recall because it may lead to more accurate and complete recall of all foods and beverages consumed. Of key concern are the linked issues of respondent burden and the time needed (and thus cost) to implement the recall. There is no universal answer regarding which method is quicker, because it depends on the simplicity or complexity of the woman's diet, on the length of the food group list and on the number of examples needed for each food group on a list-based questionnaire. When diets are simple, the open recall is likely to be the quicker of the two.

The Guide to measurement provides two elements that comprise the MDD-W questionnaire. The first element is a block of standard text (a "script") to adapt and use in guiding the respondent through an open recall of foods and beverages consumed the previous day and night. The text also includes statements to guide the enumerator in recording information. The second element is a model questionnaire form, which needs to be adapted with local foods (see Section 4 for guidance on translation and adaptation of the text and questionnaire). Guidance notes on enumerator training and how to field test the methodology are also provided.

Data Analysis and Disaggregation

Women who consume foods from at least 5 out of 10 food groups have a higher likelihood of micronutrient adequacy. Several indicators can be derived from the basic data, including (i) proportion of women who consume 5 or more food groups out of ten; (ii) mean dietary diversity score; (iii) proportion of women consuming any specific food group such as animal source foods.

The referenced Guidelines also outline a standardised methodology for data analysis. Presentation can be as simple as the percent of WRA achieving MDD-W or "minimum dietary diversity". The indicator was developed for exactly this purpose, i.e. when a single, simple, dichotomous indicator is needed. The interpretation of the indicator is: "X% of women achieved minimum dietary diversity, and they are more likely to have higher (more adequate) micronutrient intakes than the X% of women who did not".

In some cases, it may be useful to present results separately by selected geographic, socioeconomic or household characteristics (e.g. by different areas in the city, by wealth quintile or by level of education), but decisions on appropriate disaggregation will be survey- and context-specific and will depend on objectives, sampling and sample sizes. While designed to meet the need for a single, simple indicator, the data collected to construct the indicator also provide a rich description of diet patterns. The information may also reflect specific food groups of interest in particular contexts (e.g. animal-source foods, fruits and vegetables, nutrient-poor and/or energy-dense groups and other specific food groups promoted in interventions).

References and links to reports/tools

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