UNITED NATIONS SYSTEM

STANDING COMMITTEE ON NUTRITION

Task Force on Assessment, Monitoring, and Evaluation

Fact sheets on Food and Nutrition Security Indicators/Measures:

Dietary Diversity (DD)

Caution note:

This fact sheet focuses on collecting information to construct the most frequently used indicators of dietary diversity which are: the individual dietary diversity scores (FANTA/FAO); the household dietary diversity score (FANTA/FAO); and the food consumption score (WFP) which incorporates dietary diversity and food frequency at the household level.

TF-AME, however, acknowledges that despite past and current efforts to standardize these tools, additional validation is still needed to reach a consensus on their use in various contexts. As a matter of fact, WFP in close consultation with FAO is organizing a meeting on Food Consumption indicators on 9-10 April 2008. A number of characteristics included in the present fact sheet will be reviewed in depth. An update of this fact sheet will be made available shortly after the meeting.

Notes:

- The template aims at providing a standard framework for compiling key information on food and nutrition security indicators or measures. It starts by listing characteristics most useful for decision-makers (rows 1 to 5). More technical features follow.
- AME = assessment, monitoring and evaluation
- For decision-makers/managers, a table selecting rows 1 to 6 could be extracted.
- For technical/programme staff, the whole table would be relevant

Characteristics	Explanation
1. What does the indicator evaluate?	*What is the meaning of the indicator?* Dietary diversity (DD) 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. DD is thought to reflect the adequate intake of essential nutrients either at the household level (HDD), in which case it can be measured by a HDD score

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	(HDDS) or by a Food Consumption Score (FCS), or at the individual level (IDD), in which case it can be measured by an IDD score (IDDS).
2. Which are the target population groups for the indicator?	*For which population group(s) is the indicator relevant?* HDDS or FCS have no specific target and are relevant in any population group. IDD scores target more specifically young children and women of childbearing age, because of the importance of micronutrient adequacy for growth, development and protection of the fetus and infant.
3. For which purpose is the indicator collected?	*What use is made of the indicator at different levels (individual, household, community, district, national, regional, global)?* The scores that reflect DD are key elements to any comprehensive analysis of the food security situation at the individual, household or community level. Both HDDS and FCS, but not IDDS, are used to identify food access and consumption problems at the population's level. All scores can also be used as part of any food security and nutrition information system, at the regional or national level. They can help in early warning systems and in targeting of interventions. They are also used at the community level for the evaluation of programmes aiming at improving population's food security and nutrition. However, scores to capture DD still need further standardization to be used at the global level. Also, they shouldn't be used alone as they reflect only part of the food and nutrition security components (i.e. food consumption).
4. What is the relevance of the indicator for nutrition and food security AME?	*To what extent does the indicator reflect nutritional status, food security, the health and care situation and their evolution?* At the household level, scores are mainly used as proxies of food security; they are correlated to the energy adequacy of intakes, i.e. to the ability of the household to cover basic energy needs of its members. They have been shown to be associated with various other measures of household food security related to access. However they are not directly related to the nutritional status of household members. IDD is more a proxy of the nutrient (mainly micronutrient) adequacy of the diet of an individual. It has been shown to be associated with the mean micronutrient adequacy of the diet of both breastfed and non-breastfed children, of adolescent and of adults as well. IDD has also been shown to be associated with the nutritional status of individuals (children under 5, women) after controlling for confounding socio-economic factors. All DD scores are relevant for assessment (situation analysis and diagnosis), monitoring and evaluation of food security situation. Despite the relationship between IDD and individual nutritional status, the use of such an indicator for nutrition situation AME is still in debate.

Characteristics	Explanation
5. What is the relevance of the indicator for poverty AME?	*To what extent does the indicator reflect the socio-economic situation and its evolution?* DD scores have been shown to be strongly linked to socioeconomic characteristics of households or individuals. Household exhibiting lower HDDS or lower FCS and individuals with lower IDDS are more likely to belong to the lowest quintiles of poverty indices.
6. What is the relevance of the indicator for MDGs AME?	*To what extent does the indicator reflect progress made towards the achievement of the MDGs?* As indicators of the diet quality, DD scores are of direct relevance to MDG 1; Achieving better DD is also of great help in pursuing MDGs 4, 5 and 6.
7. How is the indicator constructed?	*Which data are required for the indicator?* DD is assessed through different scores that are derived from questionnaires. Examples of these questionnaires can be found at the following address: http://www.foodsec.org/tools_nut.htm DD scores are defined as the number of foods or food groups consumed by an individual (IDDS) or by any member of the household inside the home (HDDS) over a reference time period. The recommended reference time period is the last 24 hours. Food grouping can be different according to objectives, putting emphasis on energy-dense foods or micronutrient-rich foods. In most cases, the final number of food groups varies from 5 to 14, depending on the main characteristic of the diet that the score intend to reflect (i.e. energy or micronutrient adequacy). FCS is calculated over a reference time period of 7 days and based on a list of 8 food groups. Different weights, ranging from 0.5 to 4, are applied to the food groups according to their nutrient density. The consumption frequencies are summed for each food group (with an upper limit of 7). FCS is computed by multiplying frequencies and weights for each food group and summing values over the 8 groups (theoretical range = 0-112).
8. Which reference(s) is(are) used to interpret the indicator?	*Against which reference, standard or threshold is the indicator compared in order to interpret it at individual and at population levels?* There is currently no standard list of foods or food groups, and no cut-off point, upon which the international community agrees for a broad use in all contexts. However, a huge research work is currently ongoing and several propositions have already been made to standardize the indicators; notably: - Standard food groupings (but still no cut-point) have been proposed for both HDDS (12 food groups) and IDDS (14 food groups) by FANTA and FAO; - For IDDS among children 6-23 months of age, an indicator of 'minimum dietary diversity' has been defined as the proportion of children who received foods from at least 4 food groups the previous day, using a standardized list of 7 food groups. Research work is ongoing for defining a similar indicator among women of childbearing age. - A categorization of the FCS has been proposed to define 3 profiles of

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	household's diet, respectively as 'poor' (FCS ranging from 0 to 21), 'borderline (FCS above 21 and up to 35) or 'acceptable' (FCS above 35). At the household level a recent work concluded that, mainly due to the diversity of contexts, a universal threshold linking DD and adequacy of energy intakes would probably be difficult to find.
9. Which type of analysis should be conducted with the indicator?	*Which cross-tabulations and other causal analyses are appropriate in conjunction with the indicator to assist with its interpretation and use?* For internal validation purposes, it is recommended that DD scores are cross-tabulated with other indicators of food consumption and food security, when available in the same data set/survey sample. For basic analytical purposes (in-depth description, interpretation), cross-tabulations with socio-demographic and socio-economic data are useful. IDDS can also be cross-tabulated also with anthropometric status of individuals (children under 5, women) after controlling for confounding socio-economic factors. Whenever possible, comparisons with results for the same indicators from neighboring contexts and/or different times or seasons are of great help for a situation analysis.
10. What are the practical requirements to use the indicator?	*Which equipment, staff, skills and other resources are required to collect the data and interpret the indicator?* DD questionnaires are very simple in their conception and use. They require only minimal staff training. However, they need to be adapted to each context. In particular, the food groups list to be used in the questionnaire (which is not necessarily the one that will be used to compute the score and often range from 9 to 25 food items/groups) must be carefully designed and a list of examples of foods for each food group must be established. The computation of the scores and basic comparisons can be done with no specific analytical skills. However, minimum technical background in nutritional epidemiology is required for further analysis and interpretation of the results of whole surveys.
11. What are the main limitations of the indicator?	*What are the main weaknesses in and constraints to using the indicator?* Establishing the food groups list to be used in the questionnaire requires a good knowledge of local diet and of the nutrient value of local foods. This step should therefore be done preferably by nutritionists. It is often recommended that a minimal quantity of foods must be consumed so that the corresponding food group can be counted in the score. To define how this minimal quantity can be practically acknowledged when administering the questionnaire is sometimes critical. It is also necessary to decide how several ingredients entering in the

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	composition of mixed dishes should be accounted for. Research is still needed to define how to deal with micronutrient enriched foods and with foods coming from food aid. Seasonality is always an issue for DD assessment due to the seasonal availability of certain foods. For comparative purposes scores or indices must be collected at the same period of the year. In the case of a unique assessment, there is still a debate on the most appropriate season. DDS based on 24-hour recall, either at the household or individual level, are proxies for habitual diet. They give a valid picture of the dietary diversity at the community level only. No individual/household targeting can be done based on these scores.
12. What are the main strengths of the indicator?	*What are the main positive qualities of the indicator?* The main strength of DD indicators is that they are very simple tools that can be used very easily by local staffs. They can also be analyzed and interpreted at the decentralized level. Even if there is still some lack of standardization, such indicators are very useful at the local or national level for targeting, monitoring and evaluation purposes.
13. In which context is the indicator most appropriate?	*In which type of situation (sudden onset crisis, slow onset crisis, post-crisis, 'stable' situation) is the indicator most suitable?* A lot of the research work on DD indicators has been done in stable situations and in rural settings. However the FCS has been mainly applied in emergency and crisis-prone contexts and its usefulness for food security analysis has been ascertained.
14. Where can data and results on this indicator be found?	*From which sources, websites, reports etc. can data and results on the indicator be found?* IDDS (women and young children) are now part of the Demographic and Health Survey (DHS) questionnaires (starting from 2005 / DHS-IV). Corresponding DHS reports are available from ORC Macro website (http://www.measuredhs.com/pubs/browse_type.cfm). FCS is mainly used by WFP within the most recent Comprehensive Food Security and Vulnerability Analysis (CFSVA) surveys and in Emergency Food Security Assessment (EFSA) that can collect household-level data (i.e. generally not the very initial assessments). Reports are available from WFP website (http://vam.wfp.org/cfsva and http://odan.wfp.org).
15. Which guidance can be consulted on the indicator?	*Which reference documents exist on the collection, interpretation and use of the indicator?* - Swindale, Anne, and Paula Bilinsky. Household Dietary Diversity Score (HDDS) for Measurement of Household Food Access:

Characteristics	Explanation
	Indicator Guide (v.2). Washington, D.C.: Food and Nutrition Technical Assistance (FANTA) Project, Academy for Educational Development, 2006. - FAO Nutrition and Consumer Protection Division. Guidelines for measuring household and individual dietary diversity. Rome, Italy: FAO with support from the EC/FAO Food Security Information for Action Programme and the Food and Nutrition Technical Assistance (FANTA) Project, 2007. http://www.foodsec.org/tools_nut.htm - WFP/VAM. Food consumption analysis. Calculation and use of the food consumption score in food security analysis. Technical guidance sheet. Rome, Italy: World Food Programme, Vulnerability Analysis and Mapping Branch (ODAV), 2008. - Indicators for Assessing Infant and Young Child Feeding Practices. Conclusions of a consensus meeting held 6-8 November 2007 http://www.who.int/child_adolescent_health/documents/pdfs/iycf_indicators_for_peer_review.pdf - Mukuria, A. Monica, K. and Noureddine, A. Infant and Young Child feeding updates. Calverton, MD. USA: ORC Macro, 2006. - International workshop. Simple tools for measuring household access to food and dietary diversity. Nairobi 21-23 March 2007. FAO, EC/FAO programme Food insecurity Information for action, and FANTA. http://www.foodsec.org/tr_nut_05.htm (final report).

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