Measuring Food and Nutrition Security: what has been your experience?

Summary of discussion no. 74

From 2 to 22 November 2011
About the Document
This document summarizes the results of an online discussion held on the Global Forum on Food Security and Nutrition http://km.fao.org/fsn from 2 to 22 November 2011, which attracted 43 contributions from 30 countries.

The following summary is aimed at providing readers with a general overview of the discussion, including the list of all references shared.

For a complete record, please refer to the proceedings document (http://typo3.fao.org/fileadmin/user_upload/fsn/docs/Food_security_indicators/PROCEEDINGS_FNS_Indicators.doc), in which the full contributions are included.

Disclaimer
The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned. The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO. The word “countries” appearing in the text refers to countries, territories and areas without distinction.

This document was prepared with the generous support from the FAO Innovation Fund.
Table of contents

I. Introduction 2

II. Debated methodological approaches and challenges to face 2

III. Other issues raised 4

IV. Indicators and techniques employed 4

V. Examples of ad-hoc developed indicators 7

VI. From indicators to action or why is data sitting on the shelves? 7

IV. Resources shared 9
I. Introduction

Measuring Food Security is a highly diverse field of action and requires a careful selection of the indicators and techniques employed during assessment. Indicators and sets of indicators might work well in a particular setting but might not be appropriate for another. The diversity of measurement approaches and the wide range of indicators described by participants to the online discussion confirm this complexity.

The discussion highlighted evolving views on methodologies – what to measure, how to measure it and how well to measure it – along with proposals on elements to keep in mind when determining the appropriate food security indicators and challenges encountered when dealing with measurements of food and nutrition security.

Experiences with indicators used and examples of both entirely newly designed indicators and innovative combinations of different existing indicators and reflections on how measurements should relate more closely with decision making processes were shared.

II. Debated methodological approaches and challenges to face

The choice of methods and indicators should be driven by the aim of the measurements (targeting, monitoring, evaluation, etc.) and by the audience to which the measurements are directed (analysts, researchers, community leaders, policy makers, etc.). Examples on how participants have been using food security and nutrition indicators include:

- local assessment of Millennium Development Goals;
- information for municipal planning and development;
- impact assessment of interventions;
- national statistical surveys;
- international rankings on hunger and food security;
- targeting of poverty alleviation programmes, etc.

A much debated issue is what should be measured: contributions showed a wide range of experiences ranging from “traditional” caloric metrics to nutritional and anthropometric approaches (see chapter on indicators).

Discussion went on between advocates of subjective versus objective-scientific measures. Food security surveys can, as all surveys, be subject to errors due to biased / mal interpreted questions and biased / mal interpreted answers (in a participants’ experience, despite good training, enumerators misunderstood a question and ended up affecting the whole result of the survey). On the other hand, objective measures such as anthropometrics or more detailed assessments of diet components remain less used and can be much more complex.

This argument also opens the door to the consideration of practical factors that might drive the assessments towards a certain methodology or another, such as the availability of human,
professional and financial resources. Easier and straightforward methods may be the good choice in circumstances where an assessment is needed in a relatively short time with limited resources; for example, the dietary diversity score has the advantage of being simple both for data collection and analysis. One may consider though that around the world education levels are increasing as well as computational efficiency and in this regard the rate of difficulty should not be a decisive factor when choosing the right indicators or methods.

Some participants stressed the need to pay more attention to measurement approaches that empower local populations to respond to the needs of their communities rather than relying on external experts.

Among other challenges described is the need to shift away from the use of countries as units of measure of food security as this widely used practice hides the sometimes huge differences among regions or areas of the same country and can provide biased classifications among countries.

Furthermore, specific situations need specific monitoring tools: in the case of urban areas, for instance, the food and nutrition security of urban dwellers is much different and subject to different risks compared to rural communities.

Some participants also pointed at the lack of objective analysis and the need for further research on the correlation between food security and prices.

- A much-needed step is to discontinue the practice of using food availability or caloric adequacy as a sole or proxy indicator for food security. (Anna Herfoth)
- It is necessary to upgrade the measurement practices, including the actual compositions necessary to satisfy nutritional requirements and connect measurements with objective outcomes. (Ronald Calitri)
- It is necessary to develop food and nutrition security measurements and indicators that are able to capture urban specificities as well as disparities between cities and within the same city. (Food for Cities multi-disciplinary Initiative)
- The main difficulties were related to the information gathering and the financial costs of the surveys; such difficulties can be possibly overcome through agreements with NGOs and university local graduates (José Campero Mananón) and support by international agencies. (M.A. Sheriff)
- It’s time to give more attention to helping local people in analyzing their own situations and empowering local communities by increasing their capacity to act on their own problems, as many methods and frameworks tend to assume that decisions will be made outside the community. Local food policy councils are an example of this shift in initiative and ownership (George Kent). Emphasis should go to the role of community leaders and members and on local decision making. (Xavier Medina)
- Food security lists and rankings should shift from using countries as units of reference in favor of regions, districts and lower administrative levels in general, acknowledging the great diversity and variety among populations and agro-meteorological contexts. The smaller the administrative level we can reliably describe using all the tools at our disposal, the better our ability to influence policy and decision making. (Rahul Goswami).
- Existing indicators and approaches have to be adapted to urban specificities as they were developed initially in a rural context. (Food for Cities Multidisciplinary initiative)
III. Other issues raised

When tackling food security and nutrition indicators the context in which measurements are carried out comes in mind. Participants described various elements to consider when measuring food and nutrition security that, although they may not strictly relate to the measurement itself, can affect the overall understanding of the food security situation and the follow up actions. Specific socio economic and political aspects, for instance, influence the level of vulnerability and resilience of a population and the effectiveness of responses and interventions. Further, risks and flows affecting the food supply chain have to be considered when putting together the elements of the food and nutrition situation of a certain area or community.

- Vulnerability and resilience in many communities is influenced by social and cultural values; in the crisis times, sharing food and not letting others starve is a strong cultural value among in many societies. Such social aspects should be also considered in food security measurements. (Nishadi Somaratne)

- Measurement of food and nutrition security should also consider risks in the logistics and food supply chain occurring in regions affected by political instability and conflicts, such as the Middle East. (Saleh Alshanfari)

- The lack of storage infrastructure and methods for packaging and preservation of food should be among the priorities to consider for food security in Africa (Mamadou kh Salla) and are causing food losses that are not carefully assessed and measured. (Michel Foucault)

- Need to raise awareness on the importance of increasing intake of fruit and vegetables (Bernard Okafor) and correlating nutritional needs with the food consumers choose. (Benone Pasarin)

IV. Indicators and techniques employed

In order to get the most meaningful results possible and to capture the multifaceted nature of food insecurity, most of the participants argued in favour of the application of a combination of indicators including inter alia dietary measurements, food production measurements and poverty indicators.

It is however also important for the tools to be flexible, easy to apply by extension workers and yield data which can be analyzed in several ways.

To achieve this, different organization have developed special sets of indicators, the food consumption score, the food diversity score and coping strategy, being amongst them. Some organizations have developed highly specialized sets such as the 300 indicators collected by the WFP in collaboration with the North Kivu provincial government during household surveys in the DRC. Others, such as the SUN Movement seek to build upon information that is already available and to promotes consistency and comparability across space and time.

In some circumstances, to carry out measurements in a way that best suits the particular conditions and circumstances of the area under scrutiny developing ad-hoc indicators can be the way to go. Participants shared some examples of both entirely new designed indicators and innovative combinations of different existing indicators.
Food security is most often measured at the national or household level. One notable exception is the individual dietary diversity measure, which offers a picture of dietary quality that accounts for the intra-household allocation of food and individual-level food access and utilization. *(Jennifer Coates and Winnie Bell)*

The Sphere project developed a set of key indicators which serve as 'signals' that show whether a standard covering water supply, sanitation and hygiene promotion; food security and nutrition; shelter, settlement and non-food items; and health action has been reached through a particular intervention. *(Ela Varghese)*

Using the data collected I employed a regression analysis considering food insecurity (established by the food consumption score) as the dependent variable that is explained by 51 other variables. These 51 variables can be aggregated as follows: *(Sib Ollo)*

- Sex of Head of Household
- Household size
- Number of children under 5
- Durable assets
- Access to land
- Coping strategies
- Sources of income and income levels
- Food stocks

The Cornell-Radimer food insecurity questions and hunger scale used food insecurity questions and scale is valid and reliable as it has been tested in many settings. In an assessment in the Wailea squatter settlement in Fiji it was used in a cross-sectional household-based survey in conjunction with open ended questions on socioeconomic characteristics. *(Sumantla Varman)*

FAO promotes the measure of dietary diversity at individual level as a proxy of the quality of diets. The measure at individual level has also the advantage of capturing consumption outside of home, crucial in urban environments. *(Gina Kennedy)*

In our case, working with rural communities, we use the Family Production Value (Valor de Producción Familiar, VPF in Spanish) which is equal to the value of agricultural production, livestock, sale of labour, remittances from outside the community, vouchers or conditional money transfers granted by the national government. The sum of these elements, when equal to or higher than the value of the annual Basic Food Basket for a family is an indicator that the family in question in a particular year had sufficient resources for the household food and we assume this as a synonym for food and nutrition security. This is integrated with: *(José Campero Marañón)*

- Perception of poverty (subjective: who do you consider as being poor?)
- Availability of sufficient resources to cover the cost of household food (extreme poverty in case of negative answer) and availability of sufficient resources to cover health and education costs (a moderate poverty indicator, when the answer is negative for those and positive for food)
- Minimum money requirement to cover food costs (used as it is comparable to the one used by the government and is used to compile a shadow report on the MDG progress in Bolivia)
• ACF is just about to finalise its new Food Security and Livelihoods Monitoring and Evaluation Guidelines. The current plan is to apply the new core indicators and guidelines for 12–18 months, collect all data and review the results of the indicators and hence see which ones are most applicable to measure impact of food security interventions on malnutrition. (Silke Pietzsch)

• I recommend including a household dietary diversity score, which is generally well-correlated with both caloric and nutrient adequacy. (Anna Herforth)

• Measuring more than one indicator is useful to reflect different dimensions of food security. Depending on the staff capacity and purposes of the work, I find the HFIAS, the HHS, and the MAHFP indicators published by FANTA as being very useful. (Anna Herforth)

• ActionAid uses two indexes: (ActionAid)
  – Vulnerability Index, which assesses the countries' vulnerability to hunger with two main indicators:
    – existing levels of hunger, measured with 2 sub-indicators: scale of hunger and intensity of food deprivation
    – climate food security vulnerability, measured with 2 sub-indicators: percentage of land affected by degradation and percentage of population affected by land degradation.
  – Capacity and Preparedness Index, which gauges policy interventions that combat hunger, such as increased support for agriculture, rural development, and smallholder farmers

• The Scaling up Nutrition (SUN) Movement seeks to build upon information that is already available and promotes consistency. One example is ensuring that SUN outcome indicators are incorporated within the set that has been developed by the UN Commission on Information and Accountability for Women's and Children's Health. (Francesco Branca and Erin McLean)

• The SUN movement has developed a monitoring framework to assist stakeholders in setting goals against a baseline, and to monitor progress. This includes 20 core indicators to measure process, programme implementation and outcome and will help countries evaluate the success of their efforts, operationalize programmes and calculate resource requirements. Indicators have been chosen based on the following criteria: (Francesco Branca and Erin McLean)
  – Ability to be measured in a common way across countries
  – Ability to measure changes so to influence national policy makers to further invest in nutrition
  – Data are available or easy to collect
  – A balance of input, output/outcome and impact indicators

• While researching agricultural biodiversity in the climate vulnerable northern part of Bangladesh I used the following indicators through detail surveys in group discussions: (F. M. Safiul Azam)
  – food habit during lack of staple foods
  – livelihood
  – level of income
  – crop diversity of individual farmer and as well as in the area
Measuring Food and Nutrition Security: what has been your experience?

Summary of discussion no. 74

- daily intake of food and gap between daily requirement
- wild, semi wild, alternative, non-conventional food plants surrounding their homesteads
- adaptive actions for preserved foods during starving
- detail study on nutritional status of these famine food plants.

- The National Observatory on Food Security of Haiti has developed an Analytical framework and Indicators especially geared towards the measurement of Food Security and Nutrition status and the vulnerability to hunger in the country. (Gary Mathieu)

V. Examples of ad-hoc developed indicators

- I developed a nutrient deficit score for the locality using the proportion of households with a deficit and the average percentage deficit of all households as I felt they would best meet the World Summit definition of food security in terms of measuring whether nutrient needs were being met. (Stephen Thornhill)

- In order to measuring the impact of biofuel companies on local food and nutrition security, I have developed an aggregated household food security index using the various calorie, protein and micronutrient gaps providing a single measure to determine whether a company has had a negative impact or not. (Stephen Thornhill)

- While researching agricultural biodiversity in northern Bangladesh I came to measure the availability of non-cultivated food plants and agro-biodiversity. (F. M. Safiul Azam)

- Individual metabolism is itself a measure of food security and nutritional health. (Rudolph Ryser)

VI. From indicators to action or why is data sitting on the shelves?

Most of the discussion focused on methodological issues but even the best measurement remains a stand alone exercise if not linked to any follow up action, decision, or policy. There seem to be a common perception that there is a lot of data on food security sitting on shelves and not being used.

It is likely that the problem is not only technical or technological ("these are abundant") but also a problem of "political will of the countries" (Victor Puac) and understating of the data collected and of its implications.

More specifically, a reflection is due on why measurement and action are separated, when they should be considered elements of a broader system of decision making: decision-makers should be involved in designing the measurement processes, and in deciding what are the important questions that need to be answered and, vice versa, choices regarding measurement methods should be made on the basis of clear objectives in the particular context. (George Kent)

A practical use of food security indicators is being made in biofuel certification schemes; indicators are used to assess whether the company has succeeded in mitigating or improving its
impacts on food security of the community affected by the investment. In the case of a positive outcome the company obtains or renews the certification.

- Measurement processes should not be designed in isolation. They should be seen as component elements in broader systems of decision-making. Usually there is no need to accurately measure all aspects of food and nutrition security as decision-makers have different concerns and objectives. (George Kent)

- The key role of communication has been underestimated: only if the right information is delivered using the appropriate channel and language that allows it to be understandable to people and decision makers the link can be made between indicators and actions. (Amandeep Singh Sangha)

- Practical use in certification schemes: Indicators were used to identify the impact of biofuel operations, to evaluate whether a company has had a negative impact on food security and to measure whether a company has mitigated such impacts and is enhancing food security in its locality. (Stephen Thornill)
VII. Resources shared

Disclaimer: the following list is a compilation of references shared by the participants in their contributions. All positions and views expressed therein do not necessarily reflect the views of FAO.

WEBSITES

- International Scientific Symposium on Food and Nutrition Security Information 2012
  http://www.foodsec.org/web/newsevents/iss/home/en

- FANTA Project
  http://www.fantaproject.org/index.shtml

- FIVIMS
  http://www.fivims.org

GUIDELINES AND REPORTS AVAILABLE ONLINE


- ActionAid HungerFREE Scorecard 2011
  http://aamapping-production.torchboxapps.com/hungerfree

- Changes in consumption of native biodiversity in Brazil from 2002-3 to 2008-9: health, income, geographic diversity, or markets?
  http://www.eurofir.net/9th_ifdc/oral_presentations

- Experiential household food insecurity in an urban underserved slum of North India

- Fanta 2 Household Food Consumption
  http://www.fantaproject.org/focus/household.shtml

- FAO, Rising Food Prices and Undernourishment: A Cross Country Inquiry
  http://www.fao.org/docrep/012/ai054e/ai054e00.pdf

- Food security situation in Nepal
  http://typo3.fao.org/fileadmin/user_upload/fsn/docs/Food_security_indicators/Practical_Aid_Nepal.pdf

- Framework document of the National Observatory on Food Security in Haiti

- Global Database on Body Mass Index
  http://apps.who.int/bmi/index.jsp

- Guidance on assessing food and nutrition security during urban crisis
Measuring Food and Nutrition Security: what has been your experience?

Summary of discussion no. 74

- Guidelines for measuring household and individual dietary diversity

- IASC Strategy, Meeting Humanitarian Challenges in Urban Areas

- International Evidence on Food Consumption Patterns

- Levels and predictors of experiential household food insecurity among urban poor of North India (presentation)

- Measures of schoolchild height and weight as indicators of community nutrition, lessons from Brazil
  http://sites.google.com/site/childpovnetwork/CalitriRonald-Measuresofschoolchildh.doc

- Nutritional Risk Assessment: Perspectives, Methods, and Data Challenges, Workshop Summary
  http://www.nap.edu/catalog/11940.html


- Proceedings of the 2002 International Scientific Symposium on Measurement and Assessment of Food Deprivation and Undernutrition
  http://www.fao.org/docrep/005/Y4249E/y4249e00.htm

- Scaling Up Nutrition (SUN) country fiches 2011
  http://www.scalingupnutrition.org/sun-countries

- Scaling Up Nutrition (SUN) Progress report (sept 2011)

- Sphere Standards
  http://www.sphereproject.org

- WFP Analysis on Food Security and Vulnerability in Six Counties in Rural China

- WFP China – A Report on the Status of Food Security
  http://www.wfp.org/content/china-report-status-food-security-2009

**BOOKS**
