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The Importance of Food Security Information for Decision Making in the Fight against Hunger

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Introduction

Using as a foundation the definition of food security that states the access by all people, all the time, to enough, safe, nutritious, and culturally acceptable food, that allows individuals to have a healthy and active life, agencies, academicians, and practitioners have searched for a measurements for the assessment of at least some of the components of such a complex phenomenon [1]. Partly, the resulting indicators have focused on one of the so called pillars of food security: food availability, access to food, and the use of the food. Conceptually, these three "columns" stand on a foundation of political, social, and economical stability. In practice, the most used tools are based on economic indicators of food production and food availability at the national and the global level. The food balance sheets, reflecting the availability of energy to meet the caloric needs of the population, compose the basis for the annual report of the Status of Food Insecurity in the World by the United Nation's Food and Agriculture Organization (FAO) [2]. The methodology used by FAO produces the prevalence of undernourishment, estimating the proportion of individuals in a country that is likely to have less than sufficient food to meets his or her caloric requirements. From a global perspective, this is the only indicator that regularly monitors the evolution of food insecurity, and its annual estimates indicate how the prevalence has varied country by country, which regions are mostly affected, and how the international community approaches the World Food Summit (WFS) and the Millennium Development Goals (MDG) to reduce hunger in the world by the year 2015. As a result of its monitoring role about how hunger is evolving over time, this indicator generates great awareness in the international media on the magnitude of the problem. The FAO report of 2009 generated great alarm since it showed an increase in the number of undernourished people, with a global prevalence of over one billion people not having enough food to meet their basic food needs [3]. Revised methods applied for the 2012 report have resulted in a lower estimate, which still registers almost 870 million people affected, mainly in Africa and Asia [2]. This represents about 300 million individuals more that the estimate needed for 2012 in order to reach the WFS Goal of reducing to half the number of undernourished people by 2015 (around 425). Nevertheless, the MDG of reducing to half the prevalence of this problem seems to be still a reachable target. Particularly Latin America and the Caribbean, with a few exceptions, seem to be right on target to reach the MDG (prevalence). At a slower pace, the number of undernourished individuals continues also decreasing towards the WFS goal, although efforts need to be strengthened to land on target.

Food Security Indicators

Being food insecurity such a complex phenomenon, its measurement goes certainly beyond the much obvious lack of sufficient available food to meet the most basic caloric requirements of people. Paraphrasing Amartya Sen, when he refers to poverty, once we move away from the extreme hunger and its effects, things are not quite so simple, and the diagnosis of the problem as well as the identification of those affected are more complicated [4]. In fact, recent scientific evidence shows that food insecure individuals might not always be or have a higher risk for underweight when compared to food secure individuals. On the contrary, at certain levels of food insecurity (i.e. mild or moderate food insecurity), people might be at a higher risk for overweight and obesity than their food secure peers. This certainly turns the issue of generating information on food security a very complex task, since the decisions to be made by decision and policy makers will be greatly influenced by the kind of data the institutions

generate. The FAO estimations for example, are based on energy requirement needs for people with a sedentary life. Once a more intense physical activity is integrated into the equation, the prevalence of undernourishment greatly increases [2]. Besides any further reflections on this indicator, it clearly focuses on one aspect of food security, namely availability of food. Therefore, other indicators have been used to asses this phenomenon. An international symposium conducted in Rome in 2002 describes a set of five major methodologies: 1) the previously describe FAO method; 2) Household income and expenditure surveys; 3) Estimates of dietary adequacy; 4) Anthropometric measures to determine the nutritional status, especially among children; and 5) Experience-based scales of household food insecurity [5]. In general, most of these indicators are generated using expensive methodologies, and at the national level they require nationally representative sample designs supporting surveys that are not easy to conduct on a regular basis.

Experience-based Scales

Responding to the need for a household based indicator, in the mid 90's researchers in the United States developed the Household Food Security Supplemental Module (HFSSM), which is applied on a continuous basis within the Current Population Survey [6]. This indicator is used by the Economic Research Services (ERS) at the US Department of Agriculture to annually report the status of foods security in that country since 1995. A wide range of studies have confirmed the validity of the HFSSM, which allows to classify US households in categories, distinguishing those who face different conditions associated to food insecurity (i.e., restrictions affecting the quality and/or the quantity of the foods being consumed) [7-9]. Additionally, this instrument focuses on the element of access to food, highlighting the lack of money as the main impediment to acquire food. Furthermore, it contains questions that refer separately to the adults and to the children in the household. Its conceptual framework sustains that households start facing uncertainty about the food supply at an initial phase of mild food insecurity. As food insecurity turns more severe, the quality of the food consumed is affected. At this phase, households are theoretically at a moderate level of food insecurity, before food quantity constraints affect the adults in the household and finally children have no access to enough food. At this severe level of food insecurity hunger is evident [9].

Besides allowing the classification of households in categories of food insecurity the HFSSM allows the identification of those who are at a higher risk of food insecurity. As shown in the annual reports by the ERS, Hispanic households in the US are among those groups with the highest prevalence of food insecurity [10]. Studies conducted to assess the validity of the HFSSM among Latino immigrants in California confirmed the suitability of this tool in this population group [11]. As a consequence, studies were conducted in rural communities in Latin America (i.e., Bolivia, Ecuador and Mexico), with the goal of evaluating the validity of an adapted version of the HFSSM in the region [12-14]. The generated results pointed at the suitability of this tool when compared to measures of dietary quality, food expenditure, and household food supply. In addition, research groups working with other minority groups and in other countries reported on the validity and adequacy of similar experience-based food security measures [15-18].

On parallel, responding to the need of evaluating national and provincial food security interventions researchers in Brazil and Colombia conducted validation studies on adapted versions of the HFSSM or of tools closely related to this indicator [19-23]. The Brazilian and Colombian Food Security Scales were subsequently used to generate national household food insecurity estimates, categorizing households at mild, moderate and severe food insecurity levels, identifying at the same time the regions and population groups with the highest prevalence. In the Caribbean, Gulliford et al reported also on the use of a similar instrument in Trinidad and Tobago [24].

The Latin American and Caribbean Food Security Scale

In an effort to bring together the accumulated experience in Latin America, the first Latin American and Caribbean Conference on the Measurement of Food Security was conducted in 2007 in Antioquia, Colombia. Researchers and practitioners from eleven countries converged at this meeting, at which the Latin American and Caribbean Food Security Scale (ELCSA - Escala Latinoamericana y del Caribe de

Seguridad Alimentaria) was launched [25, 26]. Since then, ELCSA has expanded throughout the region, being applied in numerous occasions within food security related studies, in national surveys, and to evaluate national and local food security interventions. Recent assessments on its validity have confirmed the suitability of this tool, which has gone through a process of harmonization via sub-regional FAO sponsored conferences with the participation of professionals representing governmental (i.e., National Statistics Institutes, Councils and Secretariats of Food Security, Ministries of Agriculture), and non-governmental entities, as well as academic institutions.

Studies conducted in Latin America show not only that household food insecurity estimates are significantly associated with poverty, and food expenditure, but also with the quality of diet, and with indicators of undernutrition in children [19, 27, 28]. In addition, individuals in mildly and moderately food insecure households seem to face a higher risk for obesity, which underlines the importance of the "double burden" of under and over-nutrition probably faced by food insecure households [29]. Changes in the dietary intake, as well as other phenomena affecting the life style of people seem to put food insecure households at a wide range of health related risks. Food security indicators such as ELCSA, greatly complement other estimates. Due to its low cost, easy application and analysis, and its consistency throughout Latin America, ELCSA has become a regional indicator, as shown in the second conference on the measurement of food security conducted in 2009 in Campinas, Brazil (http://www.unicamp.br/nepa/clacmesa/). Recent applications within national surveys of living conditions, household surveys, and nutrition and health surveys confirm its usefulness. In May of 2012 FAO published a manual on the use and application of ELCSA (http://www.fao.org/alc/file/media/pubs/2012/elcsa.pdf), which was developed by a group of researchers integrated as the ELCSA Scientific Committee (Ana Maria Segall-Corrêa - University of Campinas, Martha Cecilia Álvarez-Uribe – University of Antioquia, Hugo Melgar-Quiñonez - McGill University/previously Ohio State University, and Rafael Pérez-Escamilla – Yale University). This manual is currently being translated and adapted for its use in other regions of the world.

Towards a Global Household Food Security Scale

Thanks to the encouraging results generated in Latin America, ELCSA has been translated and adapted to other languages (e.g., Swahili, Chinese, Arabic), and has been applied by FAO in other latitudes. Results consistent with the observations from Latin America and the Caribbean point towards a world indicator of household food security, and efforts are being developed to test this instrument at the global level. The accumulated experience at the global level with indicators such as ELCSA points at the suitability of such an approach [30-32]. FAO has recently launched the project "Voices of the Hungry", which capitalizes on decades of research in the Americas on the development of experienced-based food security measurements. The goal is to extend the use of a food security scale to more than "150 countries covered by the Gallup World Poll and to publish updated results on each country every year". This project will lead to the establishment of a new FAO-certified standard for food security monitoring that can complement the current food security estimation and that could be easily adopted by household surveys conveyed by national institutes of statistics as it is currently the case in the USA, Brazil, and Mexico.

Conclusions

Being food security such a complex phenomenon, no indicator is capable of measuring all of its components on its own. As stated in the most recent FAO report on the State of Food Insecurity in the World "Other indicators are also needed to provide a more holistic assessment of undernourishment and food security" [2]. This responds to the growing need and demand for access indicators focusing on household experience, that allow a better targeting on high risk populations, that generate comparable estimates among countries and across regions, and that support regular monitoring and evaluation and evaluation of programs at a lower cost. Counting on a diverse palette of instruments to assess food insecurity, national and local food security programs in Latin America and the Caribbean will improve their ability to monitor their performance, to evaluate their impact, to better target those at a higher risk for food insecurity, and to have a clearer picture of the phenomenon they are facing. The realities of the epidemiological transition in the developing world require a more comprehensive approach that before, in order to identify the diversity of challenges to their health confronted by food insecure populations, which

subsequently require differentiated types of interventions. Scientifically validated indicators, that are easy to apply, low-cost, culturally appropriate, and that cover one or more components of the food security construct are greatly demanded by agencies and institutions fighting hunger across the Americas and in other continents. Appropriate decision and policy making in the effort to eradicate hunger is fundamentally based on accurate, but also real-time, current information. This will allow policy makers to propose programs and interventions that are comprehensive, responding to the specific challenges each country, and each population group faces. The use of new technologies in combination with solid indicators will also allow responding on a timely manner to a dynamic phenomenon such as food insecurity. The convergence of academia with the private and public sector on the development, validation, and application of accurate measurement tools, as currently experienced, represents a solid foundation for such an endeavor.

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