



Towards overcoming the food consumption information gap: Strengthening household consumption and expenditures surveys for food and nutrition policymaking

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ABSTRACT

The dearth of nationally representative dietary assessment studies continues to severely constrain the nutrition evidence base and throttle the pace of global progress in improving nutrition. Despite their shortcomings, household consumption and expenditures surveys (HCESs) are increasingly being used to address the food and nutrition information gap because they contain a great deal of information about food acquisition and consumption; are done once every 3–5 years in more than 125 countries; have large samples (~8500 households); are statistically representative at subnational levels; and are much less costly than other dietary assessment data sources.

To date, the nutrition community's role has been that of a passive user of HCES that have already been conducted. Many HCES shortcomings, however, stem from design and implementation issues. If the nutrition community, with its unique skills and experiences were to get more proactively involved in the design, implementation and analyses of HCES, they could be strengthened substantially as a tool for evidence-based food and nutrition policy.

This article describes the evolution in the use of HCES in addressing food and nutrition issues, identifies HCES shortcomings and distills a shared agenda and a strategy for the nutrition community to work on, together with already existing HCES stakeholders, to strengthen HCES. A two-tiered approach and process for implementing this work is described. The first tier of the approach consists of addressing a common set of activities at the global level, while the second tier is more country-level work that builds on a combination of the global-level work—including the adoption and implementation of some of outcome of the first tier activities—but may also include more idiosyncratic, country-specific work. The common global-level activities consist of addressing common, cross country, technical issues of questionnaire and survey design, implementation and data processing activities at the global level. A 115-country assessment of these aspects of HCES is already being conducted jointly by the World Bank–FAO–International Household Survey Network. This work aims to distill better practices and lessons, recommend alternative ways to address common HCES shortcomings, and establish a global research agenda for improving understanding and identifying tradeoffs involving critical issues.

The second tier of the approach consists of recognizing that HCES design and methodology has to be adapted to each country's policy needs and strategies, while reflecting each country's technical and financial constraints and building on its own experiences. Second tier activities are country level activities, and they are where the real work of strengthening HCES has to be done. That work should consist of the merging of the two tiers of the approach to create a partnership for implementing rigorous, experimental studies of the major, unsettled measurement issues confronting HCES, while providing a more sound foundation of evidence for nutrition policy.

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1. Introduction

Since the mid-1940s, the Food and Agriculture Organization's (FAO) Food Balance Sheets (FBS) have been the principle data source for monitoring global food security, as well as an advocacy tool for focusing attention on hunger and malnutrition. FBS, however, contain only national level data about food availability. They do not provide information on: (1) access to available food, (2) how available food is distributed within a country, (3) how

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much of the available food is consumed, or (4) by whom. Despite these major shortcomings, FBS continue to be one key data source used in designing food and nutrition policies—in particular, for fortification programs—due largely to the perception that no other data are available. Few countries have food consumption data from what nutritionists generally regard as the preferred food consumption methodologies—viz., observed-weighed food records (OWFR) or 24-h recall (24-HR) surveys—because they are expensive and difficult to conduct (Gibson, 2005; Neufeld and Tolentino, *in press*; Fiedler et al., 2011).

Over the past 25 years, there has been a growing body of work that has demonstrated that data on food data collected in a family of multi-purpose surveys—collectively referred to here as household consumption and expenditure surveys (HCESs)—can contribute to addressing the food consumption information gap and making nutrition policy more evidence-based (Trichopoulou, and Lagiou, 1997; Lagiou and Trichopoulou, 2001; Smith et al., 2006; Smith and Subandoro, 2007; Stein et al., 2007, 2008a, 2008b; Fiedler et al., 2008, 2012a, 2012b; Fiedler, 2009; Fiedler and Macdonald, 2009; WHO, 2009; Fiedler and Helleranta, 2010; Fiedler and Afidra, 2010; Klemm et al., 2010; Sibrián, 2008; Sibrián et al., 2008; DAFNE-ANEMOS, 2011a, 2011b; Dop, 2012; Coates et al., 2012a). How well these surveys measure food consumption, however, what their key limitations are, and the extent to which their shortcomings can be ameliorated or eliminated, are critically important, as yet, largely unaddressed, issues. The nutrition community has become the newest HCES stakeholder, and it brings with it a new set of concerns and issues about these data, as well as new methodologies and applications for using them, new criteria for assessing their quality and relevance, and a growing, still evolving, set of suggestions for improving them.

This article is intended to promote the dialog both within the large and diverse nutrition community, and between the nutrition community and the greater community of HCES stakeholders—by articulating how some members of the nutrition community would like to see HCES instruments “improved”, without creating false expectations. The development of a common understanding of the nutrition community’s “needs” is the critical pre-condition for devising a strategy for improving HCES, as judged from a nutrition perspective.

The organization of the article is as follows: the next section discusses the appeal of HCES for food and nutrition analysis, and is followed by a discussion of the growth and evolution in the use of HCES. The fourth section discusses the diversity of HCES and their relative strengths and weaknesses. The final section discusses some of the priority reform agenda items, and proposes a general, two-tiered process for refining the agenda and implementing it.

2. The relevance and allure of HCES

HCESs are relevant to food and nutrition analysts and policy-makers because they contain a great deal of useful information about food that has already proven useful in addressing the food and nutrition information gap. By contributing to a stronger empirical basis for evidence-based nutrition policymaking, HCESs have provided the wherewithal to enhance the ability of nutrition program designers and policymakers to make more and better-informed decisions. HCESs have been used to construct a number of nutrition measures including: the number, percentage and location of households that acquire specific types of foods or that purchase fortified or fortifiable foods. They have also been used to assess variations in dietary patterns, to measure nutrient intakes, to identify the most common food sources of specific nutrients and to model the impact of fortification and biofortification

programs. They have been used to estimate the coverage and impact of existing programs, as well as to conduct feasibility and cost-benefit analyses.

HCES have a number of appealing characteristics for food and nutrition analysts and policymakers. Most fundamentally, they contain a wealth of information about household food acquisition and consumption behaviors. They collect data on how food was acquired, differentiating whether it was purchased, home-produced or received free-of-charge (e.g., from friends or relatives or a social program, or as payment in-kind). In addition, they are generally based on large samples of households and are statistically representative at the national level and almost always at a subnational (regional or state) level, as well.

HCESs are also appealing because of their enormous coverage. Over the last two decades there has been a dramatic increase in the number, quality and availability of HCES in developing countries. The World Bank’s 1990 *World Development Report* presented original cross country analyses of HCES from 22 countries, with a single survey for each country. Today, there are more than 700 surveys for 116 countries—an average of six per country—and the collective sample from the latest surveys of each of the 116 countries totals 1.2 million households comprised of more than five million persons (Ravallion, 2011).

The cost of using HCES to analyze food and nutrition issues is another of its attractions. A recent study based on analysis of the costs of 24HR surveys in nine countries, estimated that it would cost \$2.3 million to develop (from scratch) a clean, ready-to-use, nutrition analytic file for 8500 households. The costs would cover questionnaire development, sample development and selection, the household interview survey fieldwork, data entry and data cleaning, and (using this data along with food composition tables), constructing individual-specific variables of macro- and micro-nutrient intake (Fiedler et al., 2011). In sharp contrast, to develop a nutrition analytic file from an extant, already-processed HCES would cost about \$40,000, roughly two percent of the 24HR survey costs.² The fundamental, unanswered question, of course, is: What is the precision-cost tradeoff between of the individual-specific 24HR and the household level HCES measures?

A final attraction of HCES is that they are conducted routinely, and updated periodically, generally once every 3 years. In stark contrast, the only country in the world that routinely conducts an individual-based, nationally representative, 24HR survey is the Philippines, which has conducted them once every 5 years since (ca.) 1970.

3. The growth and evolution of HCES-based analyses of food and nutrition issues

The history of using HCES in food and nutrition analyses goes back a quarter of a century and has involved five distinct sets of landmarks—most of which involve projects, as distinct from more regularly funded and more permanent programs. The University of Athens’ *DATA Food NETWORKING* (DAFNE) Project pioneered the use of HCES in 1987, to monitor trends in food habits and food availability (Trichopoulou and Lagiou, 1997; Lagiou and Trichopoulou, 2001; DAFNE-ANEMOS, 2011a, 2011b). Since then, DAFNE has become DAFNE-ANEMOS. The Project has harmonized

² The key activity in processing the HCES would be the matching of each item in the HCES food item list with a food composition table entry to construct the household-level variables of macro- and micro-nutrient availability and then adjusting them using the FAO adult male consumption equivalent to take into account intra-household distribution to obtain estimates of individual nutrient intake.

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