



DEVELOPING A RESOURCE TRACKING SYSTEM FOR MEASURING SPENDING ON NUTRITION IN LOW- AND MIDDLE-INCOME COUNTRIES

December 2011

This publication was produced for review by the United States Agency for International Development. It was prepared by Geir Sølve Sande Lie, Nirmala Ravishankar, Martha Benezet, Marie Jeanne Offosse, Eyob Zere Asbu, Dorcas Lwanga for Health Systems 20/20 Project. Abt Associates Inc. and FHI 360.

Health Systems 20/20 is USAID's flagship project for strengthening health systems worldwide. By supporting countries to improve their health financing, governance, operations, and institutional capacities, Health Systems 20/20 helps eliminate barriers to the delivery and use of priority health care, such as HIV/AIDS services, tuberculosis treatment, reproductive health services, and maternal and child health care.

December 2011

Download copies of Africa Health 2010 Publications at: <http://africahealth2010.aed.org> and Health Systems 20/20 publications at: www.healthsystems2020.org

Cooperative Agreement No.: GHS-A-00-06-00010-00

Contract No. RLA-C-00-05-00065-00

Submitted to: Robert Emrey, AOTR
Health Systems Division
Office of Health, Infectious
Disease and Nutrition
Bureau for Global Health
United States Agency for
International Development

Hope Sukin, USAID/AFR/SD
Ishrat Husain, USAID/AFR/SD
Bureau for Africa
Office of Sustainable Development
United States Agency for International
Development

Recommended Citation: Lie, Geir Sølve Sande, Nirmala Ravishankar, Martha Benezet, Marie Jeanne Offosse, Eyob Zere Asbu, and Dorcas Lwanga. December 2011. *Developing a Resource Tracking System for Measuring Spending on Nutrition in Low- and Middle-Income Countries*. Bethesda, MD: Health Systems 20/20, Abt Associates.



Abt Associates Inc. | 4550 Montgomery Avenue | Suite 800 North
| Bethesda, Maryland 20814 | P: 301.347.5000 | F: 301.913.9061
| www.healthsystems2020.org | www.abtassociates.com

In collaboration with:

| Aga Khan Foundation | Bitrán y Asociados | BRAC University | Broad Branch Associates
| Deloitte Consulting, LLP | Forum One Communications | RTI International
| Training Resources Group | Tulane University School of Public Health and Tropical Medicine

DEVELOPING A RESOURCE TRACKING SYSTEM FOR MEASURING SPENDING ON NUTRITION IN LOW- AND MIDDLE-INCOME COUNTRIES

DISCLAIMER

This study and report are made possible by the support of the American People through the United States Agency for International Development (USAID.) The contents of this report are the sole responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government, Abt Associates Inc. or FHI 360.

CONTENTS

Acronyms	vii
Acknowledgments	ix
Executive Summary	xi
1. Introduction	1
2. Background on Nutrition Resource Tracking I	5
3. Options for Nutrition Resource Tracking	9
4. The Value of Tracking Nutrition Health Spending⁰	13
5. Tracking TNHS Using the NHA Framework	17
5.1 Boundaries of NHA.....	17
5.2 Classifying Nutrition Health Spending.....	18
6. Discussion and Recommendations	23
Annex A: Survey on Tracking Nutrition Spending in Low- and Middle-Income Countries	25
Annex B. References	29

LIST OF TABLES

Table 1: Snapshot of the International Classification for Health Accounts Scheme for Health Care Functions (ICHA-HC).....	19
Table 2: Nutrition Health Activities Classified to HC and HC.R Codes ²⁰	

LIST OF BOXES

Box 1: What is National Health Accounts?.....	3
Box 2: OECD Purpose Codes Related to Nutrition and Their Definitions.....	5
Box 3: Lessons from the Democratic Republic of the Congo.....	11
Box 4: Additional Nutrition Activities of Tracking Interest to Survey Respondents.....	16

LIST OF FIGURES

Figure 1: Trends in Global ODA Commitments, 1995–2009.....	1
Figure 2: Trends in Global ODA Commitments for Nutrition Indicators, 1995-2009.....	6
Figure 3: Intersection Between Health and Nutrition Spending.....	10
Figure 4: Nutrition Health Activities.....	14
Figure 5: Nutrition Activities.....	15
Figure 6: Conceptualizing Nutrition Spending in the Context of NHA Boundaries.....	18

ACRONYMS

ARV	Antiretroviral Drug
CNAEA	National Water Hygiene and Sanitation Committee for the DRC
DRC	Democratic Republic of the Congo
FS	Financing Source (NHA terminology)
HC	Health Function (NHA terminology)
HC.R	Health Related Function (NHA terminology)
HF	Financing Agent (NHA terminology)
HP	Health Provider (NHA terminology)
ICHA	International Classification for Health Accounts
IYCF	Infant and Young Child Feeding
NGO	Nongovernmental Organization
NHA	National Health Accounts
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
PLWHA	People Living with HIV/AIDS
RUTF	Ready-to-Use Therapeutic Foods
SHA	System of Health Accounts
SUN	Scaling Up Nutrition
TB	Tuberculosis
TNHS	Total Nutrition Health Spending
TNS	Total Nutrition Spending
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene

ACKNOWLEDGMENTS

The work and preparation that went into this paper benefited tremendously from the support of many people.

The authors would like to thank Stephen Musau of Abt Associates Inc. for conducting the initial investigation for this study. We also thank Michele Abbott, of Abt, who assisted by publishing the survey online, and Douglas Glandon, John Lamb, Jamie Wright, and Darwin Young, also of Abt, who provided valuable feedback in the initial stages of the paper concerning the intersection between NHA and nutrition.

We would like to thank our development partners including Lesley Elder, Meera Shekar Charu Garg, and Peter Berman of the World Bank; Patricia Hernandez of the World Health Organization; Ismael Thiam of the West African Health Organization; and Unni Silkoset of the Norwegian Agency for Development Cooperation (NORAD) for their expert input on NHA methodology and/or nutrition priorities that helped frame the overall concept that informed the feasibility of this work.

Finally, we would like to thank USAID, the Academy for Educational Development – now FHI 360 – and the USAID-funded Africa’s Health in 2010 project for their financial and technical support of this study and report, and USAID’s Health Systems 20/20 project for funding this publication. Sambe Duale, Africa’s Health in 2010, contributed valuable inputs into the conception of the study and provided comments on the final manuscript. And we are especially thankful to Kathleen Kurz who was the original motivator for this Africa 2010 activity; we greatly appreciated her applied expertise and ongoing enthusiasm for the developing work.

EXECUTIVE SUMMARY

Addressing under-nutrition, with its devastating effects on human health and economic development, has risen on government agendas in developing nations as well as that of U.S. government and other bilateral and multilateral organizations. In the majority of developing and emerging countries affected, historically only limited financial resources have been applied directly to improving nutritional status among low-income, young children and other at-risk populations. Recently, however, many world leaders have publicly recognized the importance and cost-effectiveness of investing in better nutrition. A challenge that remains is how to disaggregate and track what individual governments already spend on nutrition, both through the health sector as well as non-health sectors such as food security and agriculture, to cost nutrition intervention strategies, potentially revise national policies, and assess the impact of the resources applied.

This paper explores how to approach tracking nutrition spending in low- and middle-income countries, specifically (i) whether the National Health Account (NHA) framework, an internationally recognized methodology for comprehensively tracking spending within the health sector, might be used to track the health component of nutrition spending and (ii) whether an NHA-based methodology could be used to also track non-health sector nutrition spending.

Nutrition resource tracking is a nascent field. A desk review reveals limited existing literature on tracking nutrition spending at a national level. What is available indicates that, although some nutrition health spending is captured by NHA, there is no existing methodology or process for systematically measuring nutrition health or non-health spending at the country level.

There are pros and cons in using NHA to track nutrition health spending versus developing an independent resource tracking methodology for measuring all nutrition spending across sectors and not only nutrition health spending, possibly based on the NHA model. For purely health-related nutrition spending, NHA would be fairly easily leveraged, with the addition of some extensions, such as a cost-tracking methodology, and NHA also has the advantage of already being used in many developing countries. The disadvantages of using an NHA-based tracking methodology to also track non-health nutrition expenditures includes the investment needed to revise the methodology, the training needed for non-health actors on the methodology and the additional time required to collect and analyze the data from multiple systems, to list a few. All of these also have added-cost implications.

Considering the pros and cons, should tracking non-health expenditures be of sufficient interest to nutrition experts as well as policymakers to warrant the additional investment of time and expense to adapt the NHA methodology? We conducted a survey among a group of international nutrition experts, asking which nutrition interventions they would prioritize for resource tracking. Respondents were presented with a list of 45 interventions (25 nutrition health and 20 nutrition non-health) and asked to indicate the importance of tracking spending associated with each intervention on a scale of 1 (least important) to 5 (most important). The results show the mean score for the nutrition health interventions was 4.2 compared to 3.8 for the non-health nutrition interventions, indicating that tracking health-related nutrition spending rather than non-health spending was preferred, although both scores were high, indicating an overall interest in the nutrition resource tracking as an exercise.

As it's generally agreed that countries cannot manage what they cannot measure, we then explored how the current NHA framework can be leveraged to measure nutrition health activities, suggesting specific Health Function codes for each nutrition health activity as a guide on how to track these nutrition health activities within the NHA framework. We also investigated how to broaden the framework of nutrition

resource tracking to include non-health expenditures and concluded that additional discussion addressing several key questions was required before even a generalized global framework could emerge, including what standard data might actually be available and at what level of detail, and what actor or actors should take on the responsibilities for this multi-sector data collection and reporting effort.

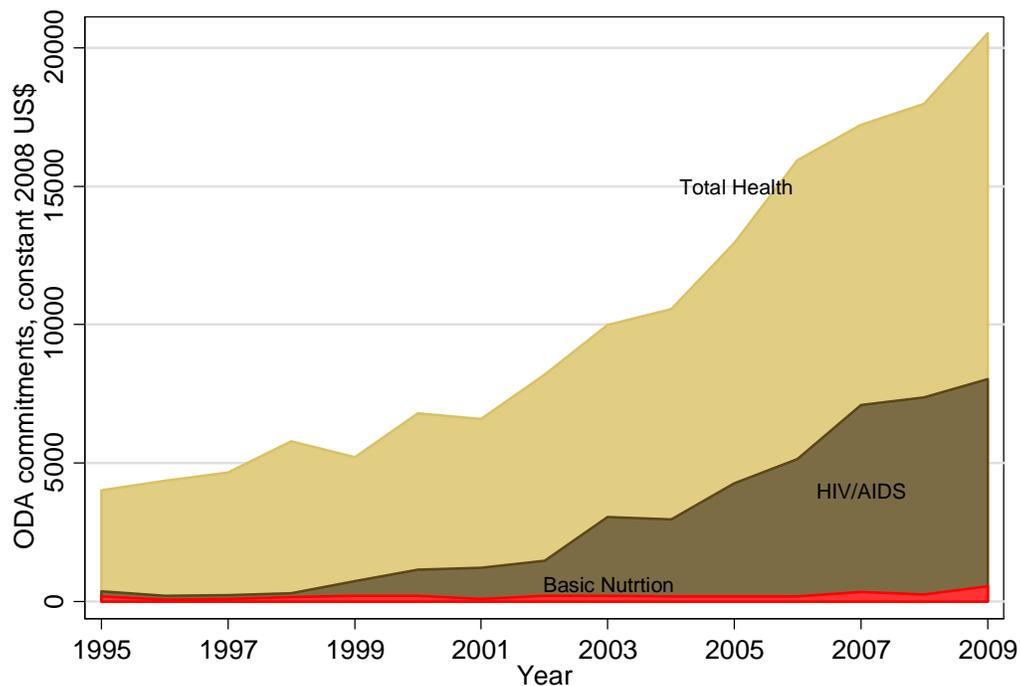
To resolve these issues and, as a first step, develop a consensus within the international nutrition community on how to define a total nutrition spending framework that could be customized for use by countries based on local priorities, the authors suggest convening a global consultation of nutrition experts from various sectors to discuss, debate, and decide on guidelines for a methodology to track total nutrition resources based on a meaningful analysis of what holistic combination of interventions effectively supports improved nutritional status.

I. INTRODUCTION

Under-nutrition remains the single most important cause of child mortality. It is responsible for the death of more than 3.5 million children each year (Horton et al. 2010).¹ In addition, it contributes to the chronic illness, wasting, stunting, and compromised development of millions of young children around the world due to ongoing lack in adequate kilocalorie and nutrient intake. Under-nutrition also results in economic losses for countries, estimated to be a 2 to 3 percent reduction in gross domestic product every year because of productivity loss (Horton et al. 2010). Until recently the global community was committing comparatively meager amounts of resources to improving basic nutrition. For this reason nutrition has been labeled the “forgotten MDG [Millennium Development Goal]” (Ross 2010).

Figure I depicts the trends in global Official Development Assistance (ODA) commitments for the period 1995–2009. As seen in the figure, data on ODA maintained by the Organization for Economic Cooperation and Development (OECD) show that development aid for basic nutrition over the last 15 years has been very low and relatively flat compared with other social sectors such as health and priority diseases such as HIV/AIDS.

FIGURE I: TRENDS IN GLOBAL ODA COMMITMENTS, 1995–2009



Source: OECD (2011)

This trend of low investments in nutrition has shifted in recent years, with leaders from developing countries and development partners recognizing that committing funds to improving nutrition is one of the most cost-effective investments one can make to improve maternal and child health outcomes as well as stimulate development in a country (Horton et al. 2010 and 2008, Bhutta et al. 2008, Behrman et al. 2004). This has led to several donors announcing major nutrition initiatives in the past few years. For example, more than 100 international agencies and organizations came together in 2010 to endorse “Scaling Up Nutrition: A Framework for Action” (SUN), a global agenda developed to catalyze investments in nutrition.¹ The 1000 Days Partnership is bringing together governments, the private sector and civil society organizations to promote targeted action and investment to improve nutrition for mothers and children during this crucial period of human growth and development.² The U.S. government has also recently launched “Feed the Future,” a cross-sectoral initiative to reduce hunger and under-nutrition in 20 countries in Africa, Asia and Latin America.³

While OECD databases can be used to track development assistance flowing from donors to developing countries for basic nutrition, there is no established methodology or framework for tracking spending associated with nutrition programs in low- and middle-income countries. OECD data provide accurate information about commitments and disbursements from both bilateral and multilateral donors for improving nutrition in developing countries but the data are uninformative about both how aid that is received by the latter is spent and how much developing country governments are spending to improve nutrition from their own resources. With the initiation of new programs and additional funding for nutrition, and given the emphasis increasingly placed on country ownership and mutual accountability, countries and donors acknowledge that they cannot effectively manage what they cannot measure. There is now widespread agreement that accurate and timely data on nutrition spending is urgently needed for evidence-based policy making to address under-nutrition and track the effectiveness of existing nutrition programs.

The purpose of this paper is to explore options and propose general guidelines for tracking nutrition spending in low- and middle-income countries. Specifically, the paper synthesizes findings from i) a comprehensive desk review of resource tracking for nutrition to assess whether it is beyond the scope of National Health Accounts (NHA), an internationally recognized methodology for comprehensively tracking spending within the health sector, or if it can be easily incorporated within the NHA methodology, ii) a survey of the nutrition experts to prioritize which nutrition activities might be prioritized for tracking, iii) informal consultations with key NHA experts to ascertain whether NHA can serve as the tool to track nutrition spending and respond to questions policymakers and nutritionists want answered, and iv) an assessment of the pros and cons of tracking nutrition spending using a modified version of the existing NHA framework (see Box I for a brief introduction to NHA).

¹ <http://siteresources.worldbank.org/NUTRITION/Resources/281846-131636806329/PolicyBriefNutritionScalingUpApril.pdf>. Accessed June 2011.

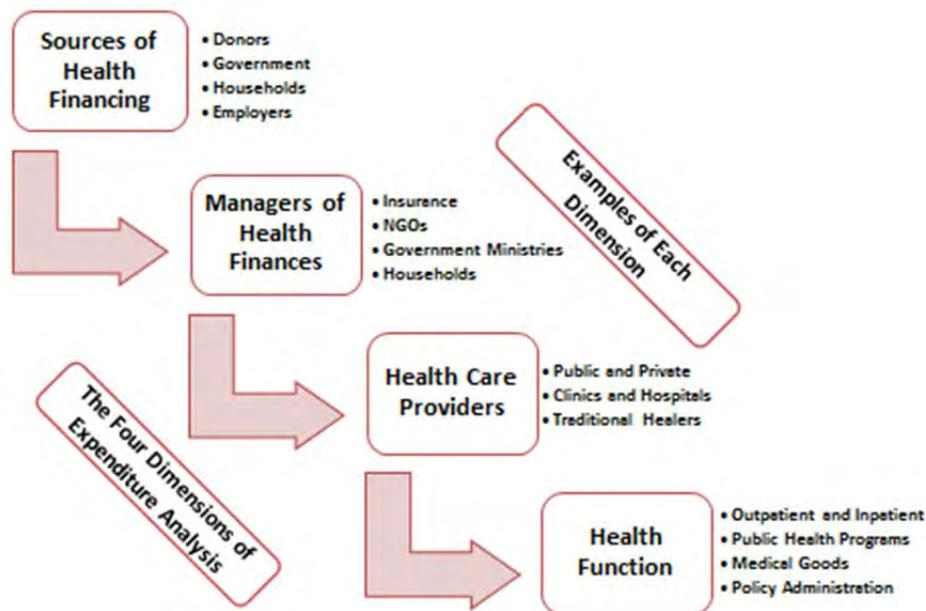
² <http://www.thousanddays.org/>. Accessed July 2011.

³ USAID. <http://www.feedthefuture.gov/>. Accessed June 2011.

Box I: What is National Health Accounts?

NHA is an internationally accepted and endorsed methodology that tracks all health spending in a given country over a defined period of time regardless of the entity or institution that financed and managed that spending (OECD 2000, World Health Organization et al. 2003). The purpose of the NHA is to generate consistent and comprehensive data on health spending in a country, which in turn can contribute to evidence-based policy-making in the country. NHA can also be used as a monitoring and evaluation tool to track whether changes in policy priorities and the introduction of reforms and new programs have resulted in changes in the way health resources are allocated and spent.

The NHA data allow analysts to investigate a range of important questions about health financing and governance within the health sector. What is the total envelope of health spending? Who are the main financiers of health spending – governments, donors, household, or other private sector actors? What agencies or entities are responsible for making programmatic decisions over health spending? What kinds of services and goods do the funds purchase? How is health spending distributed across different providers of health services? The NHA methodology yields information that can be used to address such questions by collecting and analyzing data on health spending from donors, nongovernmental organizations (NGOs), private companies, insurance providers, government entities and households, which each contribute to health spending. Data from all of these different sources are cross-checked to avoid double counting and to produce an accurate estimate of total health spending in a country over a fixed time period, typically a fiscal year. The envelope of total health spending is further disaggregated according to four key dimensions, which are shown in the figure below: Financing Sources (FS), agents or managers of health spending (HF), health providers (HP), and the health function (HC) served.



The Four Dimensions of Expenditure Analysis in NHA

The NHA methodology has been extended in recent years to generate more detailed spending information about priority areas such as HIV/AIDS, child health, reproductive health, and malaria. This is achieved through NHA subaccounts, which are undertaken along with the general NHA; the latter provides an estimate of the total envelope of health spending, which the former breakdown into greater spending details.

As an option, NHA could be further extended to track the health component of nutrition spending, henceforth referred to in this paper as nutrition health spending. Such an extension of NHA would yield valuable information on spending for several high-priority nutrition interventions and has the added advantage of building on a resource tracking system that is well established and widely used by developing countries. There are, however, limitations to this extension of NHA methodology that should be considered. Given that NHA focuses on measuring spending in the health sector, it is best suited for tracking nutrition spending that is closely related to health. Tracking resources for a range of nutrition interventions that fall outside of the health sector, for example, food security, emergency assistance, and agricultural interventions, cannot be achieved within the construct of the NHA, both for conceptual and practical reasons. If tracking the entire universe of nutrition spending, which cuts across multiple sectors, is the key objective for policymakers, then a new accounting framework potentially modeled after NHA and customized to track all manner of nutrition spending would have to be developed.

The paper is structured as follows:

- Chapter 2 reviews existing nutrition tracking data systems at the country-level;
- Chapter 3 discusses options for deriving estimates of nutrition spending, comparing the pros and cons of an approach that would use the NHA framework to track nutrition health spending versus the alternative of developing an independent resource tracking methodology for measuring all nutrition spending across multiple sectors;
- Chapter 4 presents evidence from a survey of nutrition experts;
- Chapter 5 explores in greater detail how the NHA framework could be leveraged to measure nutrition health spending; and
- The final chapter (6) discusses the main findings of this analysis and key concerns that will drive the decision about how nutrition resource tracking should be implemented.

2. BACKGROUND ON NUTRITION RESOURCE TRACKING

Resource tracking for nutrition spending is a nascent field compared with other social sectors such as health, where there is a long and developed tradition of measuring spending. Most of the existing data track international resource flows for nutrition. OECD tracks ODA flowing from donors to recipient countries, both in terms of commitments for future funding and the actual amount of funds disbursed on an annual or project basis. These measures, however, do not track how much the recipient countries spend on nutrition, either from funds received from donors or from their own resources. Nevertheless, the OECD data offer valuable insight into how much the global community currently invests in nutrition programs and how that commitment has changed over time. OECD categorizes all development assistance based on the sector that it targets, referred to as purpose codes within their databases (OECD 2011). Of the various purpose codes used by OECD to classify aid, five relate to nutrition. They are listed in Box 2, along with their definitions.

Box 2: OECD Purpose Codes Related to Nutrition and Their Definitions

I. Basic nutrition:

Direct feeding programs (maternal feeding, breastfeeding and weaning foods, child feeding, school feeding); determination of micronutrient deficiencies; provision of vitamin A, iodine, iron etc.; monitoring of nutritional status; nutrition and food hygiene education; household food security

II. Food aid/Food security programs:

Supply of edible human food under national or international programs including transport costs; cash payments made for food supplies; project food aid and food aid for market sales when benefiting sector not specified; excluding emergency food aid.

III. Emergency food aid:

Food aid normally for general free distribution or special supplementary feeding programs; short-term relief to targeted population groups affected by emergency situations. Excludes food security assistance programs/food aid.

IV. Agro-industries:

Staple food processing, dairy products, slaughterhouses and equipment, meat and fish processing and preserving, oils/fats, sugar refineries, beverages/tobacco, and animal feeds production.

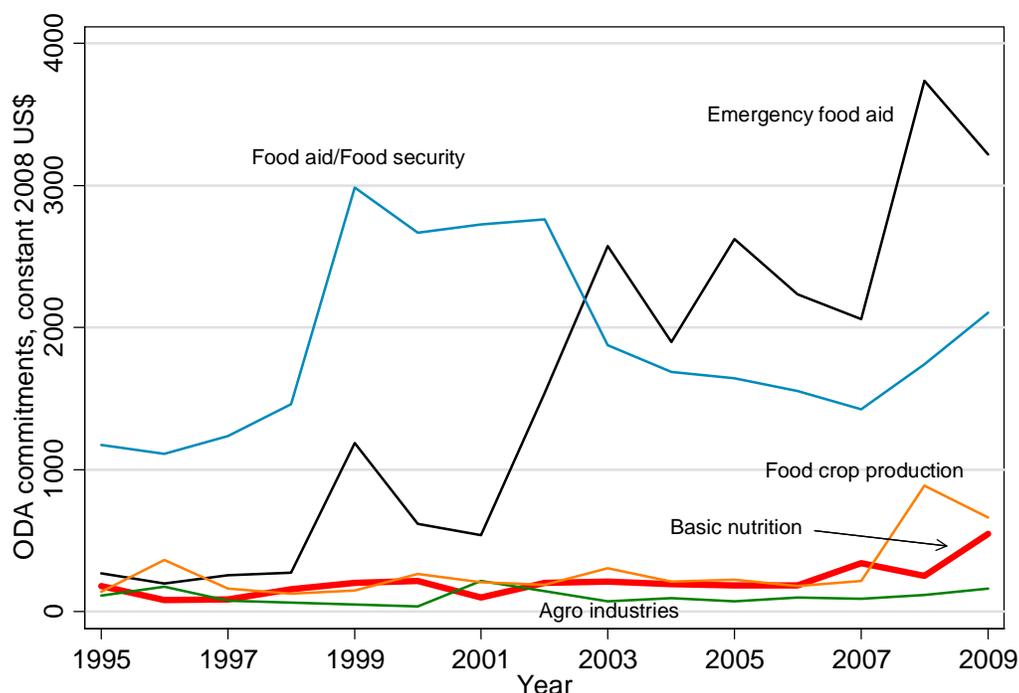
V. Food crop production:

Including grains (wheat, rice, barley, maize, rye, oats, millet, sorghum); horticulture; vegetables; fruit and berries; other annual and perennial crops.

Source: OECD (2011)

Figure 2 shows trends in ODA commitments for these five purpose codes over the past 15 years. It reveals that investment in basic nutrition, which includes direct feeding programs, nutrition supplementation, and nutrition monitoring, is considerably smaller than spending on food security programs and emergency food aid. Additionally, it shows a significant upswing in donor assistance for basic nutrition in recent years starting in 2006.

FIGURE 2: TRENDS IN GLOBAL ODA COMMITMENTS FOR NUTRITION INDICATORS, 1995-2009



Source: OECD (2011)

Compared with this system for measuring international resource flows for nutrition, data on country-level spending on nutrition are both scarce and not standardized. For example, the United Nations Children’s Fund (UNICEF) attempts to provide data on public spending on child nutrition in its national reports for different countries. Scanning the reports shows that in most cases these data are missing. In the few instances where estimates are available, they are based on expert opinions rather than robust estimation methods (UNICEF 2009).

Most low- and middle-income countries have no specific framework in place to track nutrition spending. There are a few valuable country studies that have provided a snapshot of national spending on nutrition. For example, Malawi’s Public Expenditure Review assessed the composition and expenditures on interventions intended to reduce the level of malnutrition in Malawi (Government of Malawi 2006). A comparative study of India, Madagascar, Philippines, and Tanzania in the 1990s showed that most direct spending on nutrition subsumed under health spending was low, poorly targeted, and represented only a small fraction of total health spending (Gillespie et al. 2003). However, these studies are not set up to provide consistent measures of nutrition spending for a large number of countries over time and frequently do not provide the level of detail needed for policy-making.

While there is no unique methodology or process for systematically measuring nutrition spending at the country level, some nutrition spending is captured by NHA, the accounting framework for measuring

health spending. Specifically, spending for nutrition activities that fall within the health sector is included in the estimate of total health spending that NHA yields. Examples of such activities are nutritional counseling and supplementary feeding programs to reduce child malnutrition and expand breastfeeding counseling and promotion, as well as targeted food supplementation for malnourished children, and micronutrient supplementation for under-five children. However, while spending for these activities are included in the resource envelope measured by the NHA, at present those implementing the NHA are not isolating the portion of health spending that is for nutrition. In other words, the estimate of total health spending that is produced by NHA as it is currently implemented includes nutrition health spending, although it is not separately reported.

In sum, the review of the existing literature and resource tracking data shows that while there is a well-established information system at OECD for tracking development assistance for nutrition, there is no comprehensive and comparable framework for tracking nutrition spending at the country level. Some nutrition health spending is included in the estimate of total health spending yielded by the NHA, but it cannot be tracked separately. In the remainder of this paper, we discuss options for how country-level spending for nutrition may be tracked.

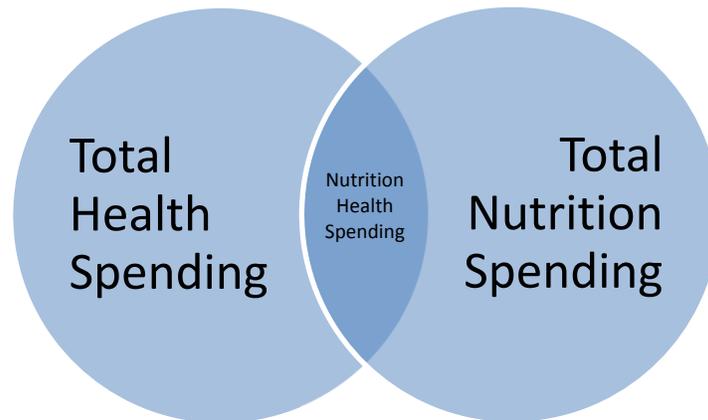
3. OPTIONS FOR NUTRITION RESOURCE TRACKING

Nutrition is an issue that spans multiple sectors. It is closely linked to agriculture and food security, social protection including emergency food relief, and health. It is also linked, albeit less directly, to education, water-supply and sanitation, and a host of determinants of under-nutrition such as gender inequality, state fragility, and chronic poverty (World Bank 2011). Hence, in considering how to approach nutrition resource tracking, we first need to specify what quantity we are interested in measuring.

The SUN framework distinguishes between two linked but distinct approaches to reducing under-nutrition: scaling up direct nutrition-specific interventions and a multi-sectoral approach. The approach of focusing on direct nutrition interventions builds on previous research done to identify nutrition interventions with proven health impact (Bhutta et al. 2008) that are also cost-effective (Horton et al. 2010). The set of direct nutrition interventions focuses almost exclusively on addressing maternal and child under-nutrition. In contrast, the multi-sectoral approach emphasizes the linkages between nutrition outcomes and various social, political, and economic determinants. Consequently, it emphasizes the importance of integrating nutrition into all sectors related to these determinants such as food security, agriculture, emergency relief, and economic growth.

Because the set of interventions identified as being direct nutrition-specific interventions are all closely related to health, tracking spending for these interventions could be achieved using the NHA, a method for measuring health spending. In other words, with some easy-to-implement extensions, the NHA framework can be leveraged to track and measure spending associated with nutrition interventions that are closely associated with the health sector, referred to in this study as nutrition health spending. This includes all spending associated with activities that fall within the intersection of the two circles representing health and the entire domain of nutrition in Figure 3. Such an approach has the advantage of using a resource tracking platform that already exists and is widely used by developing countries. However, it is worth recognizing that using this approach would not yield estimates of total nutrition spending (TNS), but rather of total nutrition health spending (TNHS), that is, the spending in the region of overlap between health and nutrition.

FIGURE 3: INTERSECTION BETWEEN HEALTH AND NUTRITION SPENDING



Tracking all nutrition spending – including that which is within the domain of health as well as that which falls in other sectors, such as agriculture and food security – using NHA is not preferable for both conceptual and practical reasons. The conceptual issue stems from the fact that NHA is set up solely to track health spending. Adding on unrelated spending in other sectors will detract from the conceptual clarity of the framework. On the practical side, the challenges are considerable. There are many actors and institutions implementing nutrition interventions that are not in the health sector. Having to track them in addition to the health actors will increase the cost, complexity, and time need to complete data collection and analysis. The NHA team typically consists of health accountants and health planners who may not have the expertise necessary to implement data collection for non-health activities and analyze them with accuracy. Key health stakeholders are routinely consulted at different points during the initial planning, data analysis, result validation, and dissemination stages of the NHA. These stakeholders may not overlap with those that are actively working in nutrition. Many of these challenges were experienced by the NHA team in the Democratic Republic of Congo when they attempted to undertake resource tracking for water, sanitation, and hygiene as part of a standard NHA exercise; their experience is discussed in detail in Box 3.

Box 3: Lessons from the Democratic Republic of the Congo

The Democratic Republic of the Congo (DRC) is currently developing a framework to track water, hygiene, and sanitation (WASH) spending. The information from this exercise will inform the five-year strategic plan that the National Water Hygiene and Sanitation Committee (CNAEA) is developing. For the purposes of the resource tracking exercise, WASH spending was defined as spending associated with activities that have the principal objective of providing safe drinking water and basic hygiene and sanitation services for the population (Offosse 2010). Some of these activities fall within the domain of the health sector – i.e., are either health or health-related. However, a majority fall outside health and therefore would not be typically tracked in a standard NHA exercise. Regardless, the NHA approach was applied to estimate total WASH spending and to disaggregate it according to FS, HF, HP, and HC functions. Several challenges were encountered while undertaking this exercise.

First, WASH resource tracking stakeholders are distinct from those typically consulted during an NHA exercise. In addition to the traditional NHA stakeholders, WASH stakeholders cover international humanitarian organizations that work mostly with refugees and displaced persons; local NGOs; public entities; and regional organizations promoting safe drinking water. Hence, undertaking WASH resource tracking in conjunction with a standard NHA for health increased the scope of the NHA activity and the stakeholder engagement process considerably. Second, developing classifications for WASH activities proved to be more complicated than anticipated. Given that WASH spans many sectors besides health, such as public works and infrastructure, sanitation etc., many additional codes had to be developed outside the realm of health (HC) and health-related (HC.R) classifications to categorize WASH spending. Given that this was the first attempt to extend the NHA framework to track the range of WASH activities, many new types of spending items, providers of service, and types of services emerged during the data analysis phase. These had to be accommodated in the classification.

Finally, tracking WASH spending in addition to health spending substantially increased the amount of data that had to be collected. Actors engaged in WASH activities are not the same as those engaged in health. Hence, the universe of actors from whom data were needed expanded, in turn increasing both the time needed for completing surveys and the costs associated with data collection. Approximately 75 percent of the actors from whom the team collected information on WASH activities did not undertake any health activities, and hence would not have been surveyed as part of a standard NHA exercise. Information on public and private entities spending on WASH was easily available, except in the case of household spending. Due to budget limitations and there being no opportunity to include WASH resources tracking items in a routine household survey, the team had to rely on secondary data. The estimates generated in this manner are prone to error given all the simplifying assumptions that had to be made to derive them.

This raises the second key question about nutrition resource tracking: Is estimating and tracking TNHS of interest to the nutrition community as a recommendation to policymakers? Or would measuring TNS, the entire envelope of nutrition spending spanning all sectors, be of greater value? If TNS is the priority, a new resource tracking framework that is geared toward measuring all nutrition programs spanning multiple social sectors will be necessary. This approach would require analysts to take into account nutrition programs in sectors such as agriculture, education, and water and sanitation in tandem with the nutrition health programs. This independent accounting framework for nutrition could potentially be modeled after the NHA and be tailored to track all types of nutrition spending within as well as beyond the health sector. Additional thinking would be needed to ascertain what sectors and which interventions should be included in the new framework, as well as to develop a schema to classify the spending items that are included.

However, if TNHS is an important and policy-relevant quantity, it is more easily measured. As described in Box 1 (above), NHA presents a comprehensive and well-established framework for tracking health spending. It derives data from multiple sources – governments, development partners, households, insurance providers, etc. – about health spending and offers classification schemes that are mutually exclusive but collectively exhaustive to disaggregate health spending based on the original financier, the agency or entity that has programmatic control over spending, the type of service that is consumed, and the provider of the service. Tracking nutrition health spending would require modest changes to existing

data instruments and further refinement of the classification scheme; these changes are discussed in Chapter 5.

Ultimately, the two approaches present an important trade-off. Developing a new accounting system for tracking and classifying TNS would yield a more comprehensive estimate of spending associated with all nutrition activities but require greater effort to produce. Alternatively, the existing NHA methodology could be leveraged to measure TNHS with less effort and at lower costs.

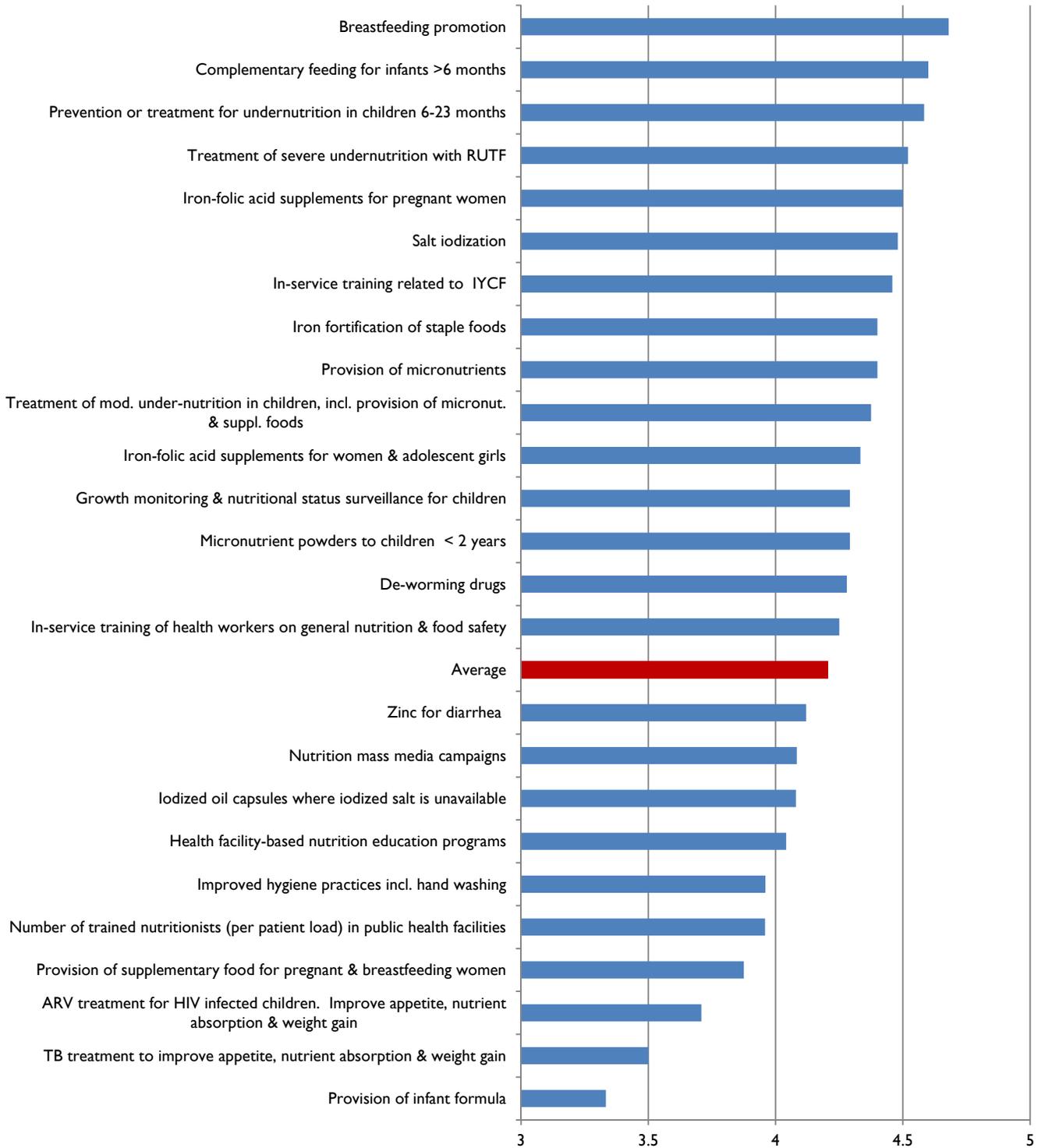
4. THE VALUE OF TRACKING NUTRITION HEALTH SPENDING

To investigate the choice between estimating TNHS versus estimating TNS, we undertook a survey of nutrition experts, asking them to identify the priority interventions for which they would like to see spending data. The survey, “Tracking Nutrition Spending in Low- and Middle-Income Countries,” was distributed to academics and policy analysts in the field of nutrition. Rather than selecting a specific sample of nutrition experts, we used a wide set of established electronic mailing lists to identify professionals working in the field of nutrition who could serve as survey respondents. In total, 20 people completed all the questions in the survey. The respondents were presented with a list of interventions that could be broadly considered as having a public health impact on nutritional status. Respondents were asked to indicate the importance of tracking spending associated with each intervention on a scale from 1 to 5; choosing 1 indicated that the intervention is not important at all to include in resource tracking for nutrition and 5 indicated that spending for the intervention is very important to track. The full list of the nutrition interventions, as well as information regarding respondents, is included in Annex 1.

A total of 45 nutrition interventions were included in the survey list. Of these, 13 interventions are nutrition health interventions identified by the World Bank study, “Scaling Up Nutrition, What will it cost” (Horton et al. 2010). The list of 13 includes some of the key interventions identified by the 2008 Lancet under-nutrition series (Bhutta et al. 2008, Black et al. 2008) as well as some new additions. In addition, 12 nutrition health interventions and 20 nutrition interventions were added to the survey. These activities were added based on reviewing the related literature.⁴ In sum, respondents were asked to evaluate the importance of tracking a total of 25 nutrition health interventions and 20 non-health nutrition interventions. The average importance accorded to the list of 25 nutrition health interventions is shown in Figure 4. Responses to the non-health nutrition interventions are shown in Figure 5. In both graphs, the average score for that group is shown in red.

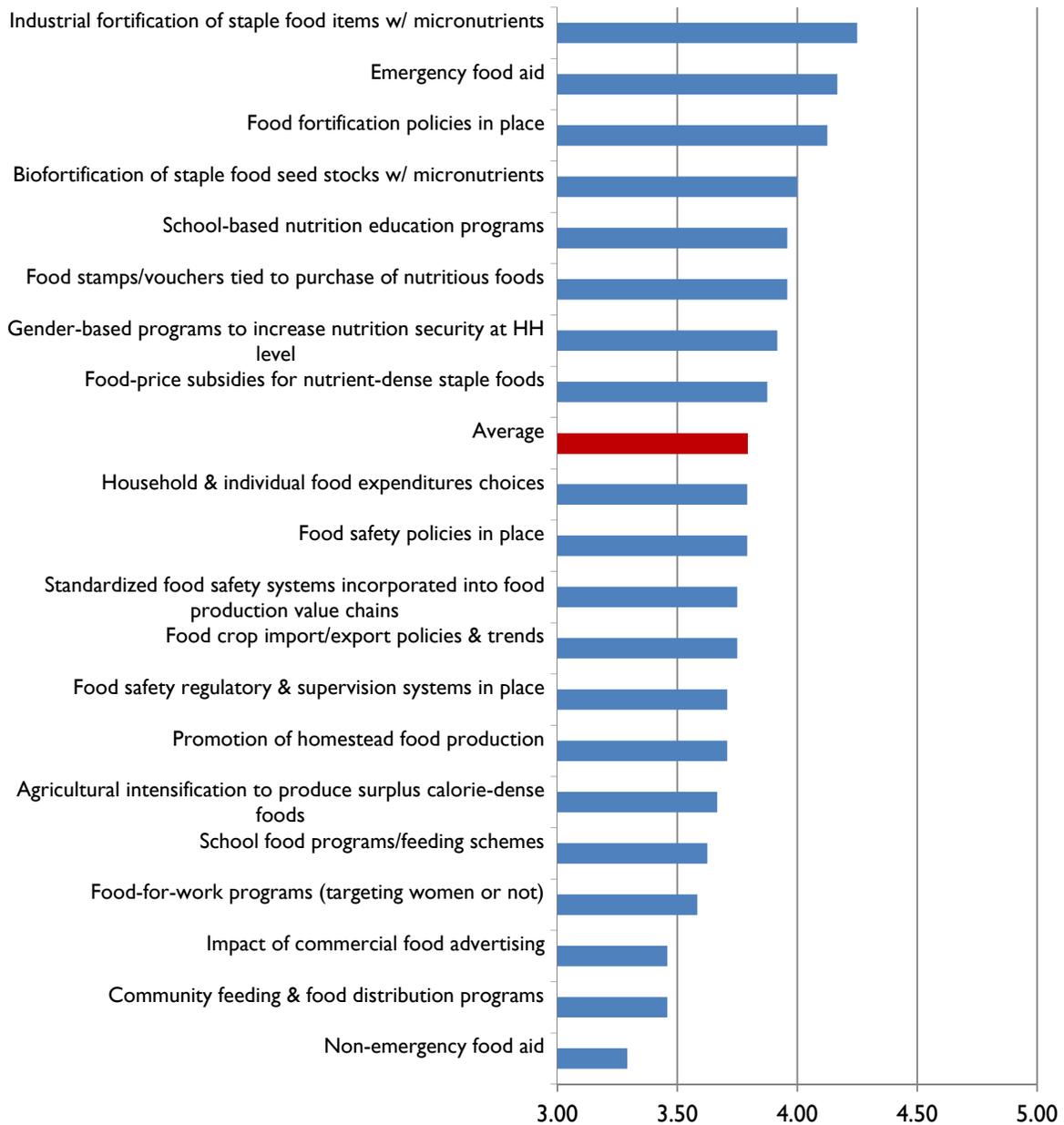
⁴ Related publications are noted with an asterisk (*) in reference list.

FIGURE 4: NUTRITION HEALTH ACTIVITIES



Note: RUTF= Ready-to-Use Therapeutic Foods, IYCF=Infant and Young Child Feeding

FIGURE 5: NUTRITION ACTIVITIES



Note: HH=household

The figures show that tracking spending for nutrition health interventions, TNHS, was given greater priority compared to tracking spending for the non-health nutrition interventions (the mean score for the nutrition health interventions was 4.2 compared with 3.8 for the non-health nutrition interventions). However, it would be erroneous to put too fine a point on this gap because it was not substantial and the non-health interventions also scored high on the scale. In addition to ranking the relevance of the activities, the respondents were asked in an open-ended questionnaire to list any other nutrition

interventions they thought were important to include in a nutrition resource tracking exercise. Box 4 lists the responses; the items that can be tracked using the NHA framework are in boldface.

Box 4: Additional Nutrition Activities of Tracking Interest to Survey Respondents

- Home fortification programs with lipid based nutrient supplement
- Monitoring of junk food
- Research spending on food based solutions
- Multisector programming
- **Capacity building**
- **Number of nutritionists trained**
- **Institutions offering nutrition courses**
- Sales of fortified food
- School lunches/breakfast
- Food safety (quality assurance in manufacturing of processed foods)

It can be concluded from the survey that the community of nutrition experts polled would in general prefer to track both health and non-health interventions, but when asked to prioritize between the two, they would prefer to have estimates for the nutrition health interventions. In sum, the survey provides preliminary evidence that TNHS is of quantity interest for the nutrition community. While many of nutrition interventions that fall outside the scope of health are also of interest to this community, developing a consistent and easy method for tracking TNHS via that NHA would be of primary value.

5. TRACKING TNHS USING THE NHA FRAMEWORK

This section explores how the NHA framework could be used to track nutrition health spending. The section first discusses the “boundaries” or type of health spending that the NHA captures and then explores how nutrition health spending could be tracked within the NHA framework.

5.1 BOUNDARIES OF NHA

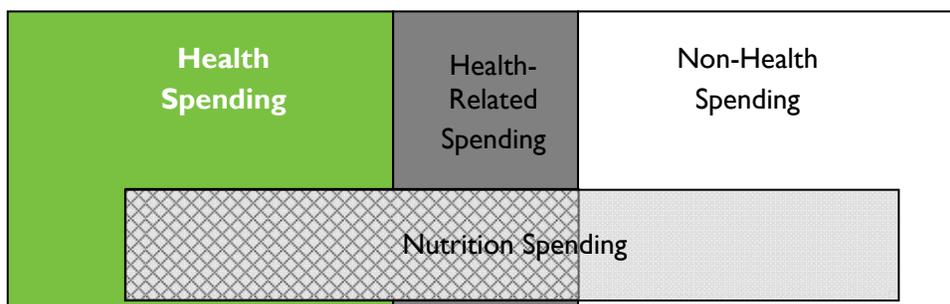
The primary purpose of NHA is to measure health spending. To achieve this, the exercise is begun by defining the universe of activities whose primary purpose is improving, restoring, and maintaining health. This includes functions such as promoting health and preventing diseases, curing illness, care for chronic conditions, care for persons with disabilities, administering public health, and administering health programs, health insurance, and so forth. All spending associated with these activities is included in the NHA estimate of total health spending, regardless of the entity implementing the activity. The NHA framework further distinguishes between health spending defined using this functional approach from health-related spending and non-health spending.

Health-related spending accounts for activities that strictly speaking are not in the health sector but are closely associated with and has a very immediate impact on health. This includes food, hygiene, and drinking water control, environmental health, and the education and training of health personnel. All other spending falls outside the scope of NHA. In some special circumstances, some non-health items are tracked even though they do not meet the NHA definition for health or health-related spending because they are of policy relevance. Income support for people living with HIV/AIDS (PLWHA) and addressing gender violence are good examples of such budgetary line items.

It should be noted here that this distinction between health, health-related and non-health spending is the subject of much debate for country NHA teams. Depending on the context, some items that are categorized as non-health or health-related in the NHA framework could legitimately be considered as health spending by national policymakers. To accommodate this, NHA offers countries the flexibility to track these additional items as addendum or memorandum items. Following the strict definition of the health boundary posited by NHA is important for two reasons: First, given that health has numerous social determinants such as education, income, and political stability, most government spending has some effect on health. Relaxing the definition of health to include all activities that link with health will soon result in NHA measuring everything and losing its effectiveness. Second, if each country implements its own unique definition of health, then measures of health spending from the NHA will not be comparable across countries.

Nutrition as a whole is a multi-sectoral issue. Therefore, some nutrition activities fall within the domain of health and health-related activities as the NHA’s defines them, while interventions geared toward, for example, improving food security, fall outside the NHA boundary. This idea is depicted in Figure 6. The gray box cutting across the segments corresponding to health, health-related, and non-health spending represents the entirety of nutrition spending. The patterned part of the box corresponds to nutrition health spending, which falls within the scope of the NHA and is the part of total nutrition spending that can be tracked within the NHA framework.

FIGURE 6: CONCEPTUALIZING NUTRITION SPENDING IN THE CONTEXT OF NHA BOUNDARIES



5.2 CLASSIFYING NUTRITION HEALTH SPENDING

The System of Health Accounts (SHA) developed by the OECD in 2000 provides a standardized way to classify or categorize health spending according to three core dimensions corresponding to who managed the spending (financing agent), what kind of service or function was provided (health function), and who provided the service (health provider) (OECD 2000). This classification scheme is called the International Classification for Health Accounts (ICHA). The Producer’s Guide to NHA (World Health Organization et al. 2003) customized and extended the SHA framework to make it applicable to developing country contexts. Specifically, it introduced a distinction between the sources of financing and the managers of these funds at the national level in recognition of the fact that donor contributions constitute a significant percentage of health financing in developing countries but are absent in OECD countries. The Guide, which has been applied in over 100 countries worldwide, presents four key dimensions to categorize health spending (they are shown in figure 2): financing source (FS), financing agent or manager (HF), health provider (HP) and health care function (HC).

All nutrition health intervention tracked within an NHA exercise would be classified according to these four dimensions. Coding an activity as health, health-related, or non-health using the HC dimension determines whether a particular activity is counted toward total health spending. In other words, all nutrition health activities would need to be mapped to an HC code. Hence, understanding how nutrition health interventions would be mapped according to the HC dimension is key to knowing how nutrition resource tracking could be operationalized using NHA.

Table 1 provides a snapshot of the ICHA codes for the HC dimension. HC 1-7 correspond to health activities, and HC.R.1-5 corresponds to health-related spending. Table 2 maps all nutrition health interventions to their corresponding HC or HC.R codes. Classifying the nutrition health activities to the function codes is important for two reasons: First, it identifies the transactions that lie inside the nutrition health boundary; second, it creates a basis for deciding which transactions contribute to the various specific aggregate of nutrition health spending.

TABLE I: SNAPSHOT OF THE INTERNATIONAL CLASSIFICATION FOR HEALTH ACCOUNTS SCHEME FOR HEALTH CARE FUNCTIONS (ICHA-HC)

ICHA codes
<p>HC.1 Services of curative care</p> <ul style="list-style-type: none"> • HC.1.1 Inpatient curative care • HC.1.2 Day cases of curative care • HC.1.3 Outpatient curative care • HC.1.4 Services of curative home care
<p>HC.2 Services of rehabilitative care</p> <ul style="list-style-type: none"> • HC.2.1 Inpatient rehabilitative care • HC.2.2 Day cases of rehabilitative care • HC.2.3 Outpatient rehabilitative care • HC.2.4 Services of rehabilitative home care
<p>HC.3 Services of long-term nursing care</p> <ul style="list-style-type: none"> • HC.3.1 Inpatient long-term nursing care • HC.3.2 Day cases of long-term nursing care • HC.3.3 Long-term nursing care: home care
<p>HC.4 Ancillary services to medical care</p> <ul style="list-style-type: none"> • HC.4.1 Clinical laboratory • HC.4.2 Diagnostic imaging • HC.4.3 Patient transport and emergency rescue
<p>HC.5 Medical goods dispensed to outpatients</p> <ul style="list-style-type: none"> • HC.5.1 Pharmaceuticals and other medical nondurables • HC.5.2 Therapeutic appliances and other medical durables
<p>HC.6 Prevention and public health services</p> <ul style="list-style-type: none"> • HC.6.1 Maternal and child health; family planning and counseling • HC.6.2 School health services • HC.6.3 Prevention of communicable diseases • HC.6.4 Prevention of no communicable diseases • HC.6.5 Occupational health care
<p>HC.7 Health administration and health insurance</p> <ul style="list-style-type: none"> • HC.7.1 General government administration of health • HC.7.2 Health administration and health insurance: private
<p>HC.R.1–5 Health-related functions</p> <ul style="list-style-type: none"> • HC.R.1 Capital formation for health care provider institutions • HC.R.2 Education and training of health personnel • HC.R.3 Research and development in health • HC.R.4 Food, hygiene and drinking-water control • HC.R.5 Environmental health

Source: World Health Organization et al. (2003)

TABLE 2: NUTRITION HEALTH ACTIVITIES CLASSIFIED TO HC AND HC.R CODES

Category	Description	Suggested NHA code
Promoting good nutritional practices	• Breastfeeding promotion	HC.6.1.2.1*
	• Complementary feeding for infants after the age of six months	HC.6.1.1.1*
	• Improved hygiene practices including hand washing	HC.R.4**
Increasing intake of vitamins and minerals	• Provision of micronutrients for young children and their mothers (Vitamin A supplementation)	HC.5.2.8***
	• Therapeutic zinc supplements for diarrhea management to all children under five	HC.5.2.8.1*
	• Multiple micronutrient powders to children < 2 years of age	HC.5.2.8.2*
	• De-worming drugs for children (to reduce losses of nutrients)	HC.5.2.8.3*
	• Iron-folic acid supplements for pregnant women to prevent and treat anemia	HC.5.2.8.4***
	• Iodized oil capsules where iodized salt is unavailable	HC.5.2.8.5
Provision of micronutrients through food fortification	• Salt iodization	HC 5.2.8
	• Iron fortification of staple foods	HC.5.2.8
Therapeutic feeding for malnourished children	• Prevention or treatment for moderate under-nutrition in children 6–23 months of age	HC.6.1.1.3*
	• Treatment of severe under-nutrition (“severe acute malnutrition”) with RUTF	HC.6.1.1.3* or HC.1.1
Clinical nutrition support:	• Treatment of moderate under-nutrition in children, including provision of micronutrients and supplemental foods	HC.6.1.1.3*
	• Provision of infant formula for low-income women unable or unwilling to breastfeed	HC.6.1.1.1*
	• Growth monitoring and nutritional status surveillance for children	HC. 1.3*
	• Iron-folic acid supplements for women and adolescent girls	HC.5.1.3.1***
	• Provision of supplementary food for pregnant and breastfeeding women	HC.5.1.3.1***
	• Antiretroviral drug (ARV) treatment for HIV-infected children to improve appetite, nutrient absorption and weight gain	HC.1.3.3* or HC.5.1.1*
	• Tuberculosis (TB) treatment to improve appetite, nutrient absorption, and weight gain	HC.1.3.3* or HC.5.1.1*
Training	• In-service training of health workers on general nutrition and food safety	HC.R.2
	• In-service training related to IYCF	HC.R.2*

Category	Description	Suggested NHA code
Nutrition education and behavior change:	<ul style="list-style-type: none"> Nutrition mass media campaigns (public service announcements for healthy eating; promotion of nutritious food item, e.g., orange-flesh sweet potatoes, iron-enriched soft drinks) 	HC.6.1.2* or HC.6.4
	<ul style="list-style-type: none"> Health facility-based nutrition education programs 	HC.R.2
	<ul style="list-style-type: none"> Training of nutritionists (per patient load) from public health facilities 	HC.R.2

* Tracked in the Child Health (World Health Organization 2009)

** Tracked in the Main NHA methodology (World Health Organization et al. 2003)

*** Tracked in the Reproductive Health Subaccount (De et al. 2004)

6. DISCUSSION AND RECOMMENDATIONS

While tracking nutrition health spending using NHA is a promising option to achieve nutrition resource tracking, it comes with its own challenges.

First, tracking nutrition health spending will require additional data collection. Quite simply, all entities – public, private, and the development partner community – who at present are asked to report health spending in the aggregate will now be asked to also report nutrition health spending. Regardless of how easy or difficult that reporting may be, it will be an added reporting burden. Second is the related issue of data availability or complexity. Classifying health spending to a high level of detail using the functional classification detailed above assumes that there is sufficient information about spending on nutrition health programs. In the absence of detailed data, it will be difficult to separate nutrition health spending from other health spending. For example, a range of nutrition health interventions targeting children may be delivered as part of a national child health program. Unless spending for those interventions appears as separate line items within the executed budget for that program, spending for nutrition will be challenging to isolate. It is similarly unclear if NGOs and donors collect data with the level of detail needed to track nutrition health activities from their end.

Finally, there remains an outstanding question about what would count as nutrition spending or nutrition health spending by households: Does all money spent on food count as nutrition or is it only a selected basket of health-supportive foods? Breaking down spending on different kinds of food consumption would be extremely difficult given that income and expenditure surveys mostly report aggregate food spending rather than tracking spending for the specific commodities or items (Elder and Kiess 2004). Specialized household surveys on maternal and HIV/AIDS surveys, or nutrition and diet may track information at the level of detail that would be necessary to ascertain spending for nutrition components such as free or reduced-cost infant formula.

Although robust and somewhat flexible in its approach, the proposed strategy of using NHA for tracking nutrition health spending will not yield estimates of total nutrition spending; this is an issue that policymakers should be made aware of before an attempt is made to implement this approach as a total nutrition resource tracking method.

If individual countries prefer to track total nutrition spending – both health and non-health – rather than just measuring nutrition health spending, the NHA framework is not the optimal methodology to use. Instead, resource tracking experts and nutrition experts would have to work together to develop an independent accounting framework for tracking and categorizing total nutrition spending. NHA could serve as an important guide in the process, but any framework for a National Nutrition Account will be fundamentally different from the NHA.

To establish a global best-practice methodology to track total nutrition spending, the international nutrition community would first need to come to a consensus about what kind of cross-sector nutrition interventions should be tracked to support policy and adequate funding to improve nutritional status, both for general and target populations. Developed guidelines based on this consensus would inform researchers and policymakers in individual countries and shape discussion on adopting or adapting the international methodology or developing a separate, locally relevant accounting framework for nutrition spending. A successfully implemented local methodology to track nutrition resources may lead to

significant national improvements in nutritional status and health outcomes; it may also strengthen a country's dossier when applying for funding from the U.S. government and other major international funders now focusing on improving nutritional status as a priority social intervention.

Hence, we recommend as the key next step a global consultation or convening of nutrition experts to discuss, debate, and decide on a course of action to realize meaningful resource tracking methodology for nutrition and establish global best-practice guidelines for such a methodology. If consensus emerges that all nutrition spending, both health and non-health, should be tracked to create the clearest understanding of how much governments are spending on nutrition and what impact it may be having the nutritional status of their citizens and can agree on guidelines for the methodology (whether NHA-based or not), the next steps to actualize this methodology implementation might be as follows:

- Reviews of the proposed nutrition resource tracking methodology by selected pilot countries, possibly SUN, Feed the Future, or Global Health Initiative Plus countries; exploring the feasibility of designing a new independent methodology through an in-country consultative process including all stakeholders – ministries of health, NGOs, nutrition and resource tracking experts – teaming up to assess whether to adopt or revise the global best-practice methodology to reflect local priorities and resources;
- Piloting the methodology in selected regions of each country and an independent evaluation of the results.

However, if tracking only nutrition health expenditures are preferred based on the NHA methodology, we recommend:

- Further developing and modifying the NHA HC codes currently mapped to the nutrition health activities. Some of this work would be prepared in the international nutrition forum recommended above; however in-country work, such as exploring which nutrition health activities have available data, would help create a more precise and usable methodology.
- Assess if the universe of actors from whom data are needed to survey for an ordinary NHA would have to be expanded if tracking nutrition health activities.
- Implement nutrition health activities into current NHA surveys.
- Train nutrition experts on the basics of NHA so that they can play an active role during the planning and implementation of NHA.
- Pilot test nutrition resource tracking in a country where technical support for NHA estimation is provided. The pilot test will be used to refine the paper and develop detailed guidelines for tracking nutrition spending using the NHA methodology. The results from the pilot and the lessons learned will be documented in a report.

ANNEX A: SURVEY ON TRACKING NUTRITION SPENDING IN LOW- AND MIDDLE-INCOME COUNTRIES

This annex presents the full list of the nutrition interventions, information regarding respondents, and results from the survey “Tracking Nutrition Spending in Low- and Middle-Income Countries.” The survey was distributed to academics and policy analysts in the field of nutrition. Rather than selecting a specific sample of nutrition experts we used a wide set of established electronic mailing lists for professionals working in the field of nutrition to respond to the survey. The respondents were presented with a list of interventions that could be considered as a nutrition intervention. Respondents were asked to indicate the importance of tracking spending associated with each intervention on a scale from 1 to 5; choosing 1 indicates that the intervention is not important for inclusion in resource tracking for nutrition and 5 indicates that spending for the intervention is important to track.

- Total Started Survey: 26
- Total Completed (all questions in the) Survey: 20 (76.9%).
- 16 respondents were female and 7 male, 3 skipped the question.
- Their professions were: 5 researchers, 5 government employers, 1 consultant, 2 policy analyst and 10 “other,” (3 skipped the question).
- Employers: 3 from academic institution in a low- or middle-income country, 15 from international development partner, 4 NGO, 1 other, 3 skipped the question.

	1 - Not relevant	2	3	4	5 - Very relevant	Rating Average
Promoting good nutritional practices:						
Breastfeeding promotion	1	0	1	2	21	4.68
Complementary feeding for infants after the age of six months	1	0	1	4	19	4.60
Improved hygiene practices including hand washing	1	3	4	5	12	3.96
Increasing intake of vitamins and minerals:						
Iodized oil capsules where iodized salt is unavailable	2	2	2	5	14	4.08
Provision of micronutrients for young children and their mothers (Vitamin A supplementation)	1	0	3	5	16	4.40
Therapeutic zinc supplements for diarrhea management	1	1	4	7	12	4.12
Multiple micronutrient powders to children < 2 years of age	1	0	4	5	14	4.29
De-worming drugs for children (to reduce losses of nutrients)	1	0	3	8	13	4.28
Iron-folic acid supplements for pregnant women to prevent and treat anemia	1	0	2	4	17	4.50
Provision of micronutrients through food fortification for all:						
Salt iodization	1	0	2	5	17	4.48
Iron fortification of staple foods	1	0	2	7	15	4.40
Therapeutic feeding for malnourished children with special foods:						
Prevention or treatment for moderate under-nutrition in children 6-23 months of age	1	0	2	2	19	4.58
Treatment of severe under-nutrition ("severe acute malnutrition") with ready-to-use therapeutic foods (RUTF)	1	0	2	4	18	4.52
Clinical nutrition support:						
Treatment of moderate under-nutrition in children, including provision of micronutrients and supplemental foods	1	0	3	5	15	4.38
Provision of infant formula for low-income women unable or unwilling to breastfeed	3	4	6	4	7	3.33
Growth monitoring and nutritional status surveillance for children	2	0	1	7	14	4.29
Iron-folic acid supplements for women and adolescent girls	1	0	2	8	13	4.33
Provision of supplementary food for pregnant and breastfeeding women	2	0	5	9	8	3.88
ARV treatment for HIV-infected children to improve appetite, nutrient absorption and weight gain	2	0	9	5	8	3.71
TB treatment to improve appetite, nutrient absorption and weight gain	2	1	9	7	5	3.50
Training:						
In-service training of health workers on general nutrition and food safety	1	1	3	5	14	4.25
In-service training related to infant young child feeding (IYCF)	1	0	3	3	17	4.46
Social policy and programs for nutrition support and food security:						
Food stamps/vouchers tied to purchase of nutritious foods	1	2	5	5	11	3.96
Food-price subsidies for nutrient-dense staple foods	1	2	5	7	9	3.88
School food programs/feeding schemes	4	1	5	4	10	3.63
Food-for-work programs (targeting women or not)	2	3	6	5	8	3.58

	1 - Not relevant	2	3	4	5 - Very relevant	Rating Average
Community feeding and food distribution programs (soup kitchens, food banks, etc.)	1	4	8	5	6	3.46
Gender-based programs to increase girls' and women's status and nutrition security at the household level	1	3	5	3	12	3.92
Nutrition education and behavior change:						
Nutrition mass media campaigns (public service announcements for healthy eating; promotion of nutritious food item, e.g., orange-flesh sweet potatoes, iron-enriched soft drinks)	1	1	4	7	11	4.08
School-based nutrition education programs	1	1	6	6	10	3.96
Health facility-based nutrition education programs	1	0	7	5	11	4.04
Number of trained nutritionists (per patient load) in public health facilities	2	0	5	7	10	3.96
Impact of commercial food advertising	3	1	8	6	6	3.46
Food fortification and agricultural interventions:						
Food fortification policies in place	2	1	3	4	14	4.13
Industrial fortification of staple food items with Vitamin A, iron, folate, other micronutrients	1	1	2	7	13	4.25
Biofortification of staple food seed stocks with micronutrients	1	2	4	6	11	4.00
Food crop import/export policies and trends and their impact on local prices and accessibility of nutritious staple foods.	1	1	9	5	8	3.75
Agricultural intensification to produce surplus calorie-dense foods for low-income populations	2	1	7	7	7	3.67
Promotion of homestead food production	1	2	8	5	8	3.71
Food aid:						
Emergency food aid	1	1	4	5	13	4.17
Non-emergency food aid	5	3	4	4	8	3.29
Food safety:						
Food safety policies in place	2	2	4	7	9	3.79
Standardized food safety systems incorporated into food production value chains	1	3	5	7	8	3.75
Food safety regulatory and supervision systems in place	1	4	4	7	8	3.71
Other:						
Household and individual food expenditures and choices (from national income and expenditure surveys)	1	2	8	3	10	3.79

ANNEX B. REFERENCES

- Behrman, J.R., H. Alderman, and J. Hoddinott. 2004. *Copenhagen consensus—challenges and opportunities—hunger and malnutrition*. Copenhagen: Copenhagen Consensus Center.
- Bhutta, Z. A., et al., for the Maternal and Child Undernutrition Study Group. 2008. “What Works? Interventions for Maternal and Child Undernutrition and Survival.” *Lancet* 371: 417–40.
- Black, R. E., et al. for the Maternal and Child Undernutrition Study Group. 2008. “Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences.” *Lancet* 371: 243–60.
- *De, S., T. Dmytraczenko, C. Chanfreau, M. Tien, and G. Kombe. 2004. *Methodological Guidelines for Conducting a National Health Accounts Subanalysis for HIV/AIDS*. Bethesda, MD: Partner for Health Reformplus (PHRplus).
- *de Pee S. 2010. “How to Ensure Nutrition Security in the Global Economic Crisis to Protect and Enhance Development of Young Children and Our Common Future.” *The Journal of Nutrition*.
- *Elder, L. and L. Kiess. 2004. *Nuts and Bolts of Nutrition*” Human Development Network. Washington, DC: World Bank.
- *Gillespie, S., M. McLachlan, and R. Shrimpton. 2003. *Combating Malnutrition – Time to Act*” Human Development Network, Health Nutrition and Population Series. Washington, DC: World Bank.
- *Gillespie, S. and L. Haddad. 2001. *Attacking the Double Burden of Malnutrition in Asia and the Pacific*. Africa Development Bank Nutrition and Development Series Number 4. Washington DC: Asian Development Bank, Manila, Philippines, and The International Food Policy Research Institute.
- Government of Malawi. 2006. Public Expenditure Review 2006. Lilongwe: Ministry of Finance.
- *Health Systems 20/20. N.d. *Guidelines for producing child health subaccounts within the national health account framework*. Bethesda, MD: Health Systems 20/20, Abt Associates Inc.
- Horton S., M. Shekar, C. McDonald, A. Mahal, and J. Brooks. 2010. *Scaling up Nutrition, What will it cost?* Washington, DC: World Bank.
- Horton, S., H. Alderman, and J. Rivera. 2008. *Copenhagen consensus 2008 challenge paper—hunger and malnutrition*. Copenhagen: Copenhagen Consensus Center.
- *Mason, J.B. 2000. “How nutrition improves, and what that implies for policy decisions. Paper for World Bank/UNICEF Nutrition Assessment.” Draft. Washington DC: World Bank.
- *Natalicchio M, J. Garrett, M. Mulder-S., S. Ndegwa, and D. Voorbraak, eds. 2009. “Carrots and Sticks: The Political Economy of Nutrition Policy Reforms.” Discussion Paper, Human Development Network. Washington DC: World Bank.
- Offosse, M. 2010. “Tracking WASH expenditures – Experience in DRC.” Presentation at Health Systems 20/20, Kinshasa, 2010.
- *Organization for Economic Cooperation and Development (OECD) Development Co-operation Directorate. 2011. “Purpose Codes: sector classification” http://www.oecd.org/document/18/0,3746,en_2649_34447_1914325_1_1_1_1,00.html. Accessed May 2011.

Organization for Economic Cooperation and Development (OECD). 2000. *A System of Health Accounts, Version I*. Paris.

* Parris, M., World Bank. February 2011. Personal correspondence.

*Quelch, J. 1979. "The resource allocation process in nutrition policy planning." *The American Journal of Clinical Nutrition* 32(May): 1058–65.

*Rokx, C. 2000. *Who Should Implement Nutrition Interventions? – The Application of Institutional Economics to Nutrition and The Significance of Various Constraints to the Implementation of Nutrition Interventions*.

Ross, Julia. April 2010. "Scaling Up Nutrition: Remembering the 'Forgotten MDG'." World Bank Meetings Center. <http://blogs.worldbank.org/meetings/scaling-up-nutrition-remembering-the-forgotten-mdg>. Accessed June 2011.

United Nations Children's Fund (UNICEF). 2009. *National Report Bangladesh*. Global Study on Childs Poverty and Disparities. New York.

World Bank. 2011. *Scaling Up Nutrition - A Framework For Action*.
<http://siteresources.worldbank.org/NUTRITION/Resources/281846-131636806329/PolicyBriefNutritionScalingUpApril.pdf>. Accessed June 2011.

*World Bank. 2006. *Repositioning Nutrition as Central to Development - A Strategy for Large-Scale Action*", *Directions in Development*. Washington DC: World Bank.

*World Health Organization. 2009. *Guide to Producing Reproductive Health Subaccounts – Within the National Health Accounts Framework*. Geneva.

*World Health Organization, USAID, UNICEF, and PMNCH. 2005. *Guidelines for Producing Child Health Subaccounts Within the National Health Accounts Framework*. Re-publication Version.

*World Health Organization, World Bank, and United States Agency for International Development. 2003. *Guide to producing national health accounts – with special application for low-income and middle income countries*. Geneva.



