

Building evidence for policy and program action for nutrition in Ghana

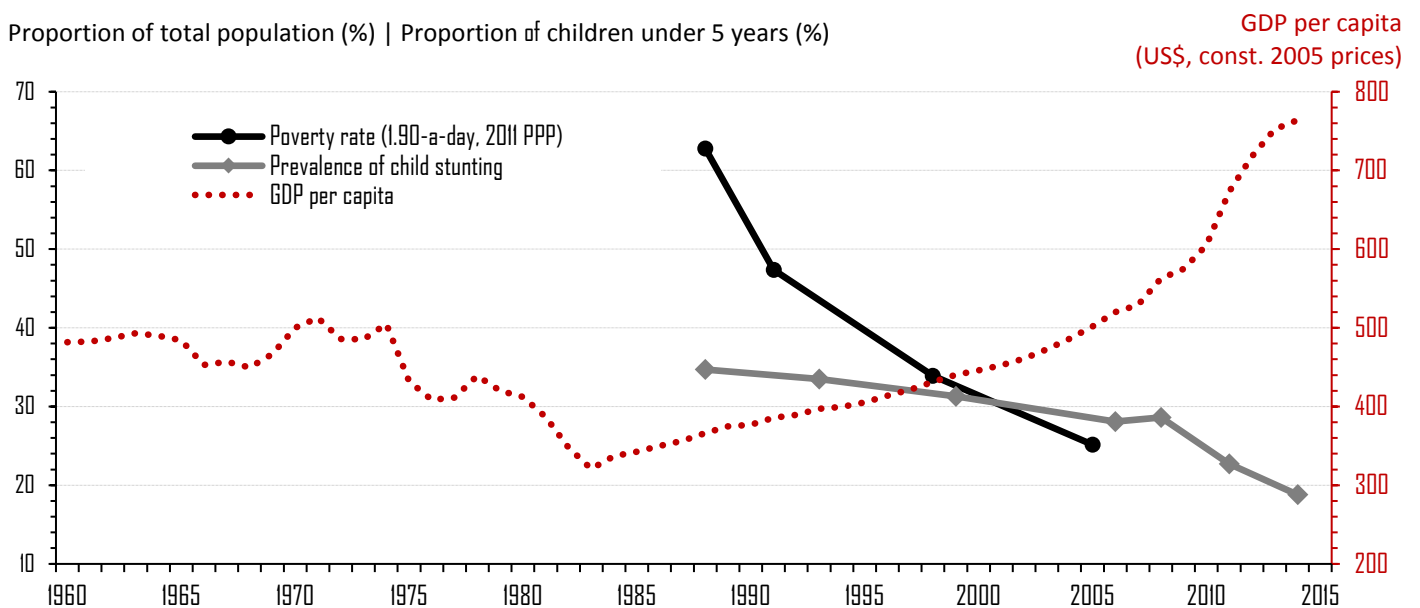
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The human and economic costs of malnutrition are far-reaching. Inadequate nutrition in early childhood can have lifelong consequences, including poor physical and psychological health, low educational attainment, and reduced employment opportunities (Alderman et al. 2006; Hoddinott et al. 2013; Victora et al. 2008). Despite growing attention to malnutrition globally, challenges persist and sustained commitment is required to achieve lasting progress. A strong evidence base can support the case for prioritizing nutrition in the policy arena. Evidence can generate better understanding of the problem in terms of prevalence among different populations, drivers in different contexts, and consequences of inaction. Evidence can also help decision makers identify optimal policy and program options for reducing malnutrition. This brief provides an overview of existing literature on nutrition in Ghana, summarizing the issues covered by existing evidence and identifying remaining evidence gaps. It also describes promising new research initiatives underway to further build the evidence base for nutrition action in Ghana.

NUTRITIONAL STATUS

In recent years, Ghana has achieved substantial progress in reducing malnutrition and is “on course” to achieve most of the World Health Assembly (WHA) Global Nutrition Targets set for 2025 (Development Initiatives 2017). Marked improvements have been seen in the prevalence of chronic malnutrition, measured by stunting (low height-for-age) among children under five years of age (U5), which fell from 28.1 percent in 2008 to 18.8 percent in 2014 (GSS 2014). This change occurred over a period of relative economic prosperity for Ghana with a steep decline in the poverty rate and increase in per capita gross domestic product (GDP) (Figure 1). However, micronutrient deficiency has remained widespread. Anaemia is estimated to be present in 66.7 percent of U5 children and 42 percent of women of reproductive age (WRA) (GSS 2014). Half of all U5 children are vitamin A deficient (Stevens et al. 2015).

Figure 1: National GDP and prevalence of poverty and child stunting



Source: Ecker and Asselt 2017 using WDI and DHS data.

Progress has not been evenly distributed. Geographic disparities in nutritional status persist, including both rural-urban gaps and regional variations. For example, the stunting prevalence in the Northern region is 33.1 percent, nearly twice the national average and more than three times the rate in the Greater Accra region (GSS 2014). The country’s population is rapidly urbanizing at an average annual rate of 4.2 percent between 1985 and 2015; today more than 50 percent of the population lives in cities (World Bank 2017). These demographic shifts have prompted changes across the food system, including in production, processing, distribution, and consumption patterns. As a result of changing diets, overweight and obesity is rising quickly and creating a double burden of malnutrition, that is, the coexistence of overnutrition and undernutrition. The prevalence of overweight and obesity among WRA increased from 25 percent in 2003 to 40 percent in 2014, while the prevalence among children has remained low at only 2.6 percent but is expected to rise if trends continue (GSS 2014).

The negative consequences of undernutrition undermine the potential of human capital to achieve economic progress. The Cost of Hunger in Africa (COHA) study, an initiative led by the African Union Commission (AUC), uses a model and data from the 2011 Ghana Multiple Indicator Cluster Survey (MICS 2011) to estimate the economic losses incurred as a result of childhood malnutrition in areas such as health, education, and potential productivity (NPDC 2014). The study finds that in Ghana 6.4 percent of potential GDP was lost in 2012 as a result of child undernutrition. Child mortality associated with undernutrition is estimated to have reduced Ghana’s workforce by 7.3 percent. Overnutrition is a risk factor for several noncommunicable diseases (NCDs) such as diabetes and heart disease, also called chronic diseases because they require long-term treatment, which places an additional burden on the healthcare system.

SUMMARY OF PUBLISHED LITERATURE ON NUTRITION INDICATORS

A systematic search was conducted of published literature on nutrition indicators in Ghana to map the existing literature, examine trends, and identify evidence gaps. Search terms were developed according to an established framework to identify literature published between January 2010 and November 2017¹ on the indicators used to measure the 2025 WHA nutrition targets.² It is worth noting that there are other useful nutrition indicators, beyond those used to measure WHA targets, such as dietary diversity and nutrition knowledge, that are not represented in this search.

The search results were categorized according to problem (prevalence and drivers), program (only randomized controlled trial [RCT] studies of programs were included), and policy. Studies reporting on disease-specific populations were excluded. Data were extracted from each publication at the abstract level. Summaries of the literature are presented according to three WHA target categories: (1) under five nutritional status (U5NS), including stunting, wasting, low birthweight, and overweight, (2) anaemia in WRA, and (3) exclusive breastfeeding (EBF).

Seventy-eight publications met the inclusion criteria and were mapped according to the categorizations. The majority of published studies focused on U5NS ($n=51$) with low birthweight and U5 stunting indicators used most frequently (Table 1A). Within the selected categories, the problem category is best represented in the literature ($n=66$), with most studies addressing prevalence and drivers of malnutrition (Table 1B).

Table 1: Number of publications

A) By WHA indicator

WHA indicator	Publications
U5NS	51
<i>Stunting</i>	23
<i>Wasting</i>	15
<i>Low birthweight</i>	25
<i>Overweight</i>	3
Anaemia in WRA	18
EBF	3

B) By category

	Publications
Problem	66
<i>Prevalence and drivers</i>	48
<i>Prevalence only</i>	6
<i>Drivers only</i>	11
<i>Combined with policy</i>	1
Program (RCT)	8
Policy	5
<i>Policy only</i>	4
<i>Combined with problem</i>	1

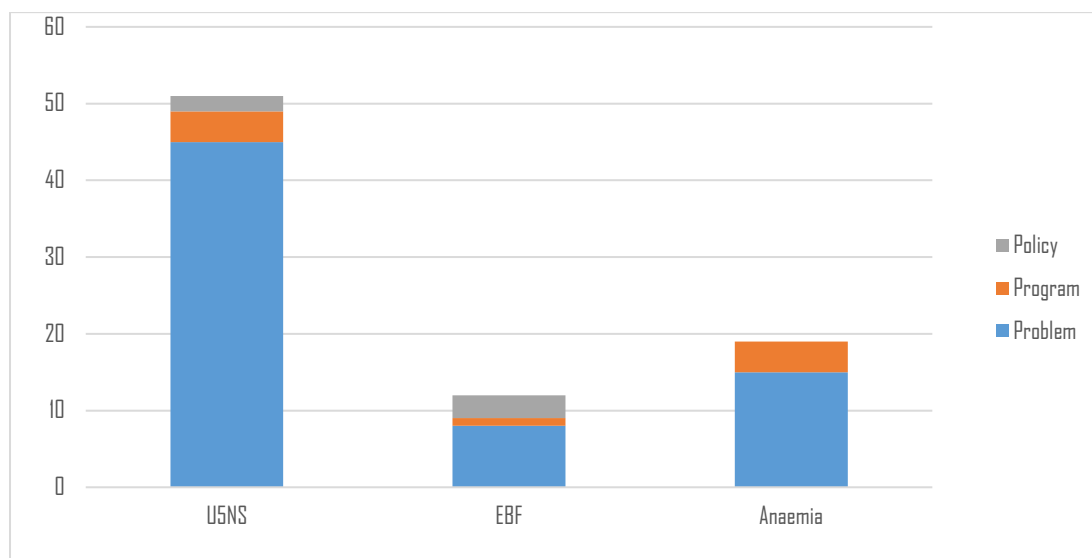
¹ The timeframe for the search spans the life of the Scaling Up Nutrition (SUN) Movement, launched in 2010 and led by member-country governments with support from a range of stakeholders to eliminate malnutrition by 2030, until 2017.

² 2025 WHA nutrition targets: 40% reduction in the number of children under 5 who are stunted; 50% reduction of anaemia in WRA; 30% reduction in low birthweight, no increase in childhood overweight; increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%; and reduce and maintain childhood wasting to less than 5%.

EVIDENCE GAPS

The evidence on nutritional status highlights a clear need for continued progress to reduce nutrition disparities, address persistent micronutrient deficiencies, and reverse the trend in overweight and obesity. Coherent program and policy actions that are informed by a robust evidence base are required. There is considerable evidence available on the problem of U5NS, but research on programs and policies across all WHA target groups is relatively thin (Figure 2). Of particular note is the low level of evidence on overweight prevalence among children, given the steep upward trends of overweight and obesity among WRA in recent years. Further analysis of problem at the subnational level can help to appropriately target program and policy actions. This will require representative data on nutrition indicators at the district level; the level of decentralized governing entities. Evidence-based programs and policy solutions will need to be identified to appropriately respond to the identified problems. The summary of nutrition literature is limited to peer-reviewed publications, excluding the existing grey literature, which may provide further evidence, especially under the program category.

Figure 2: Number of publications by category and WHA category



BRIDGING EVIDENCE GAPS—NEW RESEARCH ON NUTRITION IN GHANA

Several new research initiatives are underway in Ghana that will help to bridge the evidence gaps identified through the systematic review. Three examples are summarized here, each meeting a different evidence need. Together these studies demonstrated a shift in focus of evidence generation away from only describing the problem, toward solution-based evidence to inform policy.

Ghana Stories of Change in Nutrition

Ghana is widely viewed as a nutrition success story in the West Africa region due to the recent reductions in the prevalence of stunting. A *Stories of Change in Nutrition* study will be conducted in 2018–2019, as part of the new Transform Nutrition–West Africa research initiative (2018–2021). The aim of this study is to identify what has changed over time in terms of nutrition-specific and nutrition-sensitive indicators as well as nutrition-relevant policies and programs, and what have been the drivers of these changes. Furthermore, experiential knowledge of those involved in nutrition policy and programming in the country at various administrative levels will be documented. The study will adopt the mixed methods approach used during the first iteration of *Stories of Change* studies,³ adapting it to the Ghanaian context.

Consultations will be held to engage stakeholders and gain understanding of their perceptions on drivers of change in nutrition in Ghana over time. An assessment of the policy environment will include review of relevant nutrition-specific and nutrition-sensitive policies, assessment of policy coherence and coordination mechanisms, and gaining understanding of institutional arrangements such as resource allocation and tracking. Stakeholder mapping will be undertaken to determine linkages and power/ influence dynamics as well as issues related to leadership and governance on nutrition within and across sectors. A situational analysis of program implementation, delivery, and coverage at national and subnational levels and across sectors will be conducted to identify opportunities that may have contributed to change or created barriers that may have slowed progress. Key informant interviews and group consultations will be conducted to deduce outstanding situations/events that may have driven change in Ghana. Based on this work, the study also aims to identify nutrition-related challenges that will need to be addressed in the future.

³ *Stories of Change in Nutrition* were conducted in six countries—Bangladesh, Nepal, India (Odisha), Ethiopia, Senegal, and Zambia—as part of the Transform Nutrition research consortium (2012–2017) http://www.transformnutrition.org/stories_of_change/

The Ghana *Stories of Change* study will contribute towards building evidence on policy processes and implementation for nutrition in the Ghana context. Understanding the factors that have influenced progress to date can help to sustain momentum in areas that have lagged, such as reduction in anaemia prevalence. The evidence can also be applied to policy in other countries with a similar context. The results will be disseminated widely within Ghana and the region through the Transform Nutrition-West Africa regional knowledge hub and network of partners.

mNutrition Ghana

mNutrition is a global initiative to use mobile technology to improve the health and nutritional status of children and adults in low-income countries around the world. The potential to utilise mobile technology to change attitudes, knowledge, behaviors, and practices around health and agriculture for improved nutritional status has been recognised for some time, but to date there have been no rigorous evaluations of m-services at scale. The mNutrition intervention that is the focus of the evaluation in Ghana is the Vodafone Farmers' Club (VFC) service. The service is a "bundled solution" offering agricultural and nutrition information through voice and SMS services in addition to free calls to other VFC members. The goal of adding mNutrition messages to VFC is to make the agriculture information platform more nutrition sensitive by providing relevant nutrition information about the crops farmers grow. The evaluation will assess the impact, cost-effectiveness, and commercial viability of mNutrition through a range of methods and interlinked elements, including qualitative, quantitative, business model, and cost-effectiveness components.

The quantitative evaluation uses a randomized encouragement design to determine the causal effect of the program on dietary diversity, agricultural income, and production. In addition, the study will assess the cost-effectiveness of the program, determine farmers willingness to pay for the VFC service, and investigate whether targeting of the service to men versus women leads to a difference in program impacts. The qualitative evaluation will provide an in-depth understanding of context and the factors that are likely to affect the take-up and outcomes of the service. The processes of change will be explored to identify the underlying mechanisms that explain how and why (or why not) mobile phone-based services lead to change of agricultural and/or nutritional behaviors.

Baseline qualitative and quantitative data for the evaluation were collected in 2016 and 2017, respectively in the Upper West and Central Regions of Ghana. Baseline quantitative data shows that nutrition knowledge and dietary diversity remain low, suggesting need for nutrition information to improve knowledge and behaviors. However, the qualitative findings indicate low demand for nutrition information among farmers in the study regions. Thus, mobile-phone-based services need to raise demand for nutrition information in addition to providing the information.

Table 2: mNutrition evaluation select outcome indicators at baseline

	N	All	Central	Upper West
Agriculture indicators				
Number of crops cultivated	3,846	2.97	2.96	2.98
Total value of production (Ghanaian cedi)	3,811	3,526.25	4,353.12	2,691.97
Total input costs (Ghanaian cedi)	3,817	1,167.42	1,057.17	1,278.77
Female farming knowledge/behavior (mean score %)	3,827	53.82	49.89	57.76
Male farming knowledge/behavior (mean score %)	3,185	57.91	53.73	61.61
Nutrition indicators				
Women's Dietary Diversity Score (1–10)	3,770	4.48	4.55	4.41
Household Dietary Diversity Score (1–12)	3,721	5.84	6.29	5.38
Female nutrition knowledge/behavior (mean score %)	3,828	59.26	54.78	63.76
Male nutrition knowledge/behavior (mean score %)	3,186	55.05	51.67	58.04

Endline data will be collected in 2018 for the quantitative component and 2019 for the qualitative component. Results from the evaluation will contribute toward building the evidence base on nutrition programs, specifically nutrition-sensitive programs. Although this study is outside the scope of the systematic search, because the WHA indicators are not used as outcome measures, the nutrition indicators on dietary diversity and nutrition knowledge are nonetheless important.

Leveraging food systems for improved diets

Food systems in transition is a growing topic of interest given the implications for livelihoods, environment, and health. In the Ghanaian context, changes in the food system, including increased urbanization and consumption of processed foods, appear to be contributing to a steep rise in overweight and obesity. A new study (2018–2019) will examine the food system in Ghana as a key driver of nutrition. The study aims to identify opportunities within the ongoing nutrition transition that can be leveraged to improve diets by assessing diets and food security for the urban and peri-urban poor and assessing value chains for nutritious foods. The study will examine the extent to which programs and policies may support or inhibit nutritious food systems and offer policy options to improve the availability, affordability and appeal of nutritious diets while increasing profitability of food producers and enterprises.

A diagnostic tool will be adapted to the Ghanaian context and used to identify market-based interventions and policies that can improve diet quality among low-income households. The tool will identify a basket of foods best able to improve the diets of low-income households, accounting for current diet gaps across key age groups and regions, cultural acceptability of nutritious foods, local and regional production patterns, and opportunities to improve incomes among small farmers, processors, and traders. A set of policy options for addressing structural problems in the larger food system will be created for government agencies and NGOs to increase availability and consumption of highly nutritious foods in Ghana.

This work operationalizes a multidisciplinary framework and assessment tool to support the identification, design, and evaluation of interventions in value chains for nutritious foods. The study aims to address the rising nutrition challenge of obesity, for which there is little existing research in Ghana. The policy and program focus of the research will meet the identified knowledge gap in these areas.

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